

MEGA-PROJECTS IN THE MAKING: A CENTURY OF TRANSPORTATION
INFRASTRUCTURE INVESTMENT IN VANCOUVER CANADA

by

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ABSTRACT

Mega Projects in the Making explores why the development of infrastructure mega-projects have dominated the urban transportation landscape in Vancouver for over a century, even as such projects have repeatedly failed to meet the public interest for a regional transportation system that is efficient, competitive, equitable, and environmentally sound.

Through a multidisciplinary approach that presents specific transportation investment decisions as historically contingent, path dependent, and the product of both individual agency and institutional structures, the decision to consistently favour large-scale projects is situated within the context of the Vancouver region's spatial, economic, social, environmental and political history. Within this context, it is shown that choices made by a densely interconnected group of decision makers in the early stages of each planning process effectively locked in decisions on the scale of the projects, the route, technology and service delivery mechanisms. The decisions of these individuals were patterned by their own self-interest and pressure from specific interest groups, the institutional norms, traditions and laws that regulated their actions, and also the evolving desires of the general public to see solutions to what has long been perceived to be a worsening urban congestion problem.

In this sense, it is illustrated that when problems such as urban congestion are constructed as being mega in scale with significant negative externalities, they legitimize the quest for mega scale solutions. At the same time, large-scale transportation projects are developed for reasons that are beyond the movement of people, and include symbolic messages related to intercity competitiveness, urban progress, visionary leadership and the cultivation of an all-round positive image that can catalyze further investment. When viewed in its entirety, *Mega Projects in the Making* is more than a project concerned with approaches to congestion relief or mega-project development; it is an examination of the tangible, political and symbolic forces that direct urban change.

Table of Contents

Abstract.....	ii
Table of Contents.....	iii
List of Figures.....	ix
Chapter 1: Explaining Mega Project Development.....	1
Introduction.....	1
Structuring the Issues: Mega Solutions for Mega Problems.....	4
The Case Study: Seeking Congestion Relief in Vancouver, Canada.....	9
Research Approach: Explaining the Persistence of the Mega.....	10
Transportation Project	
Methods and Data: A Multi-Dimensional Approach.....	11
Archival Data Analysis.....	16
Primary Research.....	17
Telling the Story of Transportation Infrastructure Development.....	18
in Vancouver	
Undertaking Value-Rational Research.....	19
Thesis Outline.....	23
PART I: FOUNDATIONS.....	26
Chapter 2: A Multi-Disciplinary Approach to Explaining Urban.....	27
Transportation Investment Decisions	
Introduction.....	27
Why This Project, Why Now: A Theoretical Perspective.....	28
on Decision Making	
Shifting Perspectives: From Rational Comprehensive.....	29
to Institutional Analyses	
The Context Dependence of Decision Making:.....	31
An Institutional Approach	
The Power in Networks: Understanding Who Controls the City.....	37

Explaining the Emergence of the Private-Public Partnership:.....	40
A Market Based Account	
Decision Making in the Field of Transit Infrastructure Planning.....	41
The Politics and Processes of Urban Transportation Planning.....	42
Motivations, Politics and Transportation Decision Making.....	42
The Processes of Planning Transportation Infrastructure Investment.....	46
The Method of Producing Transportation Infrastructure Projects	51
Evolutions in the Provision of Transportation Infrastructure.....	52
Unpacking the Private-Public Partnership.....	55
Transportation for a Livable City.....	59
Providing Effective Transit in Dispersed Cities:.....	59
A System Wide Approach	
Supporting Mega Project Development.....	63
Implications of a Mega Project Development Paradigm.....	64
Different Delivery Model, Same Challenges.....	72
Conclusion.....	73
Chapter 3: Welcome to Lotus Land: Antecedents to a Mega Problem.....	75
Introduction: A City in Search of Identities.....	75
Matching Population, Land Use and Transportation.....	77
Positive Outcomes of Regional Growth Management.....	83
in Greater Vancouver	
Shortcomings of Regional Growth Management in Greater Vancouver.....	84
The Land use-Transportation Connection in Greater Vancouver.....	89
Politics in Paradise.....	91
A Unique Urban Governance Structure.....	96
An Economy for the 21 st century.....	99
The Making of a Mega Problem.....	105

PART II: EVOLUTIONS.....	115
Chapter 4: In Search of Solutions to Vancouver's Transportation.....	116
Mega Problem	
Introduction.....	116
The Early Years (1886-1961).....	117
Blacktop Politics: Paving the Way to Vancouver's.....	121
Manifest Destiny (1961-1972)	
Transportation for a Livable Region (1972-1975).....	126
Chapter 5: The Rise of Rapid Transit.....	132
Introduction.....	132
Skytrain and the Politics of Transit Mega Projects (1975-1986).....	133
The Pitch for Advanced Light Rapid Transit.....	134
The Costs and Benefits of Advanced Light Rapid Transit.....	139
Building a Partnership for Project Delivery.....	143
The Initial Experience with Developing Rapid.....	145
Transit in Greater Vancouver	
Responses to Skytrain: The Politics of Reacting to.....	147
Mega Projects (1986-1991)	
Keeping the Train Rolling.....	149
The Critics of Skytrain Have their Say.....	152
Conclusion.....	155
Chapter 6: Skytrain, Redux.....	157
Introduction.....	157
The Story Never Changes, Just (some of) the Names and.....	158
Faces (1991-1999)	
Charting a New Course for Transit Investment in Greater Vancouver.....	159
NDP Transit Policy in Action: A Return to the Mega Project.....	161
Rhetoric and Reality in the Partnership Approach to.....	169
Infrastructure Delivery	
Changing Tracks.....	172

A Partnership Approach to Project Delivery.....	179
Opposition Response to Skytrain Announcement.....	181
Holding firm on the Skytrain Decision.....	184
Surface Transit Wars.....	187
Perpetuating the Infrastructure Mega Project Paradigm.....	191
 The Knock-On Effect of Capital Intensive Public Transit.....	193
Investments (2001-2004)	
A Political Shift in Direction.....	194
Initial Performance on the Millennium Skytrain Line.....	198
 Conclusion.....	200
 Chapter 7: All Aboard: Reflections on the Persistence of.....	202
Transportation Mega Projects	
The Political-Economic-Institutional Support for a Mega Project.....	202
Paradigm	
The Path Dependence of an Infrastructure Mega Project Development.....	204
Paradigm	
Mega Projects and the Public Interest.....	207
 PART III: THE MAKING OF A MEGA PROJECT IN.....	210
THE NEOLIBERAL CITY	
 Part III: Introduction.....	211
Neoliberalism and Transportation Planning in Canada.....	212
Situating the Debate on Neoliberal Transportation Policy.....	215
Carrying Out the Analysis.....	216
 Chapter 8: The Rise of a Balanced Transportation Policy in.....	218
Greater Vancouver	
Introduction.....	218
Out with the Old.....	220
Economic Decline.....	221
The Special Interest Connection.....	221
Tax and Spend Policies.....	222

A Failure to Address Road Congestion.....	222
The NDP Legacy.....	227
In with the New: The Rise of a Neoliberal Transportation Planning Framework.....	228
The Conservative Critique of Conventional Transportation Planning in Greater Vancouver.....	229
The Shifting Politics of Transportation Planning in Greater Vancouver.....	232
Reconciling Differences: The Allure of a Neoliberal Planning Approach to Transportation.....	235
Greater Vancouver and the Neoliberal City.....	237
1. Infrastructure investments are guided by both local demand and a desire to have facilities that are internationally competitive.....	238
2. Attraction of international mega-events, complemented by the development of mega-projects to raise the local profile and generate business opportunities.....	240
3. Public services delivered using a strict business model based on cost recovery.....	241
4. Wide variations in the development models being practiced by the 21 member municipalities of the GVRD.....	242
5. Planning and regional transportation priority setting involving interest groups.....	242
6. The Intellectualization of a Neoliberal Growth Model.....	246
7. Encouraging Neoliberalism through Policy Reform.....	248
8. Trickle Down Ideology: The Institutionalization of Private-Public Partnerships in the Transportation Sector.....	250
The Institutionalization of a neoliberal planning framework: Big Projects, Many Partners.....	253
Conclusion: A Neoliberal Transportation Program.....	255
Chapter 9: New Project Delivery Model, Same Old Story: The Case of the RAV Line	261
Introduction.....	261
Defining the Project Specifications: Partnerships and Priority Setting.....	266
Getting the Richmond-Vancouver Rapid Transit Onto the Agenda.....	267
Shaping the Project Specifications.....	273

Transit Priority Setting in Practice.....	284
The Tangled Webs We Weave, When We Set Out to Plan a Mega Project.....	286
The Competitive Selection of a Private Sector Concessionaire.....	287
The Public Approval Process.....	291
The Intersection of Public and Private: Cost Creep, Risk Transfer.....	299
and Scope Changes	
The Surprises Continue Following Project Approval.....	302
Private-Public Partnerships: Less Private, More Public.....	307
Private-Public Partnerships: Implications for Mass Rapid Transit.....	308
1. Meeting Congestion and Environmental Objectives.....	309
2. A Catalyst for Land Use Change.....	311
3. Regional Transit Service.....	313
4. The Airport Connection.....	314
5. The Labour Force.....	314
6. Fare Changes.....	315
7. Operating Costs.....	316
8. Tax Burden and Risk.....	317
9. Flexibility and Control.....	318
Conclusion.....	318
Part III: Conclusion.....	321
PART IV: REFLECTIONS.....	326
Chapter 10: Reflections on the Mega Project Phenomena.....	327
Why Build Mega Projects?.....	332
Where to from here?.....	336
Bibliography.....	341
Appendix I: List of On the Record Interviews.....	374

List of Figures

1.1. Research Methods and their Appropriateness for Studies on.....	12
Transportation Investment Decision Making	
3.1. The Greater Vancouver Regional District and its Municipalities.....	78
3.2. Population Growth in Selected North American Metropolitan Areas.....	79
3.3. Migration Components of Population Change in GVRD.....	80
3.4. Greater Vancouver Growth Concentration Area.....	82
3.5. Population density and Area statistics for Canada's three largest CMA's.....	85
3.6. Median Commuting distance for Large Canadian Census.....	86
Metropolitan Areas, 2001	
3.7. Change in Mean Commuting Times in Selected North American.....	87
Cities, 1990-2000	
3.8. Concentration of Low Income Populations in Greater Vancouver,.....	88
1991 and 2001	
3.9. Transit Supply and Demand in Large Metropolitan Areas, 1999.....	91
3.10. British Columbia Provincial Government and Premier, 1952-2005.....	93
3.11. A Selection of BC Mega-projects.....	95
3.12. Current Translink Funding Sources.....	99
3.13. Employment by Industry for Vancouver CMA.....	103
3.14. Front Page Media Exposure of Greater Vancouver Traffic Problem.....	110
3.15. Observed Congestion on Key Transportation Arteries.....	112
3.16. Translink Study of Regional Road Congestion.....	112
4.1. Proposed Freeway Schemes.....	124
5.1. UTA Cost Comparison Between Different Transit Alternatives in 1980.....	138
5.2. Selected Developments Near Skytrain Stations and Parking.....	148
Allowances as Proposed in 1989	
5.3. Transit Trip Origin Mode Shares by Sub Region, 1985-1992.....	153
6.1. Transit Staging in the Transport 2021 Medium Range.....	161
Transportation Plan	
6.2. Comparison of Intermediate Capacity Transit System Options.....	164
6.3. Comparison Between Alternate Rapid Transit Corridors.....	165
6.4. Crown Corporation Secretariat Estimates of Cost Per Boarding.....	167
Using Alternate Technologies	
6.5. Shifting Rapid Transit Plans, 1995-1998.....	176
6.6. Skytrain Extension Budget.....	177
6.7. Greater Vancouver B-Line Rapid Bus Network.....	188
6.8. Contracts Awarded to Bombardier by Crown Companies.....	198
Led by Lecia Stewart	
6.9. Predicted and Actual Ridership on Millennium Skytrain Line.....	199
8.1. The History of Provincial Debt in British Columbia, 1871-2005.....	223
8.2. Variations in the Perception of the Core Purpose of Transportation.....	225
Between Translink and the Gateway Council	
8.3. Gateway Council Infrastructure Priorities.....	226
8.4. Gateway Council Justification for the RAV Project on RAVCO Web Site.....	245
8.5. Major Capital Projects Proposed in Translink's 10 Year Strategic Plan.....	257

8.6. The Gateway Road and Bridge Program.....	259
9.1. Potential Benefits and Costs of Transportation Infrastructure.....	264
Delivery Through Private-Public Partnerships	
9.2. Translink's Ranking of Major Capital Projects: Candidates for.....	268
Federal Funding	
9.3. Strategic Analysis of the International Airport Growth Potential.....	271
9.4. Translink Comparison of Major Capital Projects Based on Suitability.....	273
and Potential Financing Sources	
9.5. Competition and Selection Procurement Model for the RAV Line.....	276
9.6. Summary of Interests for RAV Stakeholder and Shareholders as.....	277
of Summer 2003	
9.7. Comparison of Transportation Alternatives for RAV Line.....	280
9.8. Political Donations to Provincial and Federal Party in Power.....	290
by RAV Proponents	
9.9. Capital Funding Sources For RAV.....	296
9.10. Funding Agency Contributions for RAV (\$2003 millions).....	306
9.11. General Motors Advertisement Targeting Bus Riders.....	311
9.12. Post Card Comparing Kids Transit Fares in Canada, February 2004.....	316

Chapter 1: Explaining Mega-project Development

Introduction

This study was initially intended to be an analysis of a single infrastructure mega-project in a single city. My aim was to explore the motivations, processes and politics that have led to the decision in 2004 to invest in a fixed rail connection between Central Vancouver, the International Airport, and the suburban municipality of Richmond (known by the acronym RAV). The RAV project was conceived as the largest single capital investment in the Greater Vancouver region's history at some \$2 billion, and one that had captivated local attention. Hardly a day went by without local media coverage of the RAV project. The public discourse focused primarily on the project's massive scale, the potential economic, social and environmental impacts in the run up to the 2010 Olympic Games being hosted by Vancouver, and the political machinations that had led to the project being approved.

As well as unpacking in more detail the way these procedural and political factors influenced the decision to proceed with the RAV line, I was also interested in the way the project was being delivered as a private-public partnership. The RAV line was the first time that a design-build-partially finance-operate-transfer style private-public partnership had been used to deliver a major public transit infrastructure project in Canada. Thus I was interested to see how this new project delivery model would impact on the planning processes, the regional politics of the project, the route alignment choice, the technology selected and the project costs.

Despite my initial intentions, the focus of this thesis has evolved. Through my archival research and interviews with those involved in the RAV project planning, it became clear that the decision to proceed with the RAV project was not isolated in time as a one off planning process.

On the contrary, the constellation of processes, institutional structures and individual actions that coalesced in the realization of the RAV line could be best explained as the

product of a historically contingent, path dependent lineage of regional planning and political proceedings. In other words, what had happened in the past in Vancouver with respect to land use decisions, infrastructure development, planning processes and even the dense network of interconnected individuals and organizations involved in certain previous planning projects was having a considerable impact on the processes undertaken for the RAV line. The mode of delivering the RAV project as a private-public partnership, the technology choice, the route alignment and even much of the procedural and political wrangling that surrounded the RAV project could only be well understood when situated as part of a much longer review of transportation infrastructure planning in Vancouver – both public transit and highway programs. This would require that details of the RAV project be positioned within the evolving institutional structures at the local, provincial, national and even international scale, and matched with the ongoing actions of individual agents.

This type of historically contingent analysis of mega-projects in a single city provides an important addition to the burgeoning body of literature on infrastructure mega-projects (Hall 1982; Mackett and Edwards 1998; Olds 2001; Altshuler and Luberoff 2003). For some time now, researchers have been aware of an inherent paradox embedded in large-scale infrastructure projects, what Bent Flyvbjerg has subsequently called the mega-project disaster gene (Ehrenfeucht 2004). In his ground breaking book, *Great Planning Disasters*, Peter Hall (1982) recognized that just as the prevalence, spatial diffusion and scale of infrastructure mega-projects was growing larger and larger, evidence suggested that many of these projects were being completed vastly over budget and then failed to achieve their stated benefits. Nearly a quarter century later, Flyvbjerg and his colleagues (2003) quantified this relationship, using statistical analysis of some 200 projects on all six continents to show that infrastructure mega-projects are systemically over budget, while patronage forecasts are systemically incorrect.

Explanations for the discrepancy between predicted and actual performance have been varied, often focusing on underdeveloped forecasting methods, the role of political interference, opportunism by special interest groups, and strategic misrepresentations

(also known as lying) on the part of those planning the project (Hall 1980; Flyvbjerg 2003; Altshuler and Luberoff 2003). Situating infrastructure mega-projects more centrally within a framework of economic and cultural globalization, Olds' (2001) research on Vancouver leads him to assert that the prominence of a mega-project development paradigm is embedded in the increasingly global flow of planning expertise, urban imagery, and a networked economic elite. Siemiatycki (2005a) has shown that infrastructure mega-projects have remained popular as a result of a complex selling job that is not only about tangible benefits, but is also closely related to local narratives of inter-regional competitiveness, progress and urban modernity, encapsulating what Throgmorton (1996) calls persuasive storytelling about the future.

In seeking to build on the explanations already available to explain the preference for infrastructure mega-projects, what seems to be missing is an explanation for the consistent activities of planners, decision makers and the public over time in a single geographic location, such as a city. More specifically, why would planners and elected officials in a city that already has a landscape scattered with under-performing mega-projects make the decision to invest in still another of the breed?

For instance, why would elected officials in a city with an under-performing billion dollar rail line decide to approve another billion dollars for a new rail line, and when that rail line fails to meet expectations, approve more than a billion dollars for still another new urban rail line? At the same time, why would elected officials try to alleviate congestion by building new and larger urban highways, when evidence suggests that these new highways will only provide free flowing traffic for a short time before returning to gridlock? Finally, why would the public continue to be generally supportive of transportation mega-projects, even as the ongoing costs of servicing these infrastructures mount in very noticeable ways, such as increased property taxes or rising user fees? Testing and extending the existing explanations for the persistence of the mega-project paradigm to infrastructure development will be the central focus of this research.

Structuring the Issues: Mega Solutions for Mega Problems

In spite of the documented history of cost overruns and poor performance, why do societies around the world continue to invest in mega-projects? The emerging explanation in the academic literature is rooted in 'inadequate deliberation about risk and a lack of accountability in the project decision-making process' (Flyvbjerg, Bruzelius and Rothengatter 2003: 6). In addition to serving their tangible purpose, mega-projects have the potential to bring great financial and political windfalls to a wide array of special interest groups. Not surprisingly then, promoters such as politicians, contracting companies and property developers have been all too willing to proceed with risky projects, as long as there is no mechanism for holding them accountable if the project under-performs in the long run.

The result has been a systemic pattern of self-serving misinformation, where costs are underestimated and demand overestimated, where potential environmental damage is underestimated while development effects are overstated. In the eyes of proponents of this position (see Wachs 1988; Flyvbjerg 2003), such misrepresentations are not an accident or solely the cause of poorly calibrated forecasting models; rather, they constitute a deliberate intent to misinform parliament, the public and the media in order to get projects approved.

Adherents to this type of analysis argue that the problems facing mega-projects today can be rectified by better internalizing risk and accountability within the decision-making process. To achieve greater accountability, scholars across the political ideological spectrum have advocated increased private sector involvement in the development of infrastructure projects, to allow market mechanisms of competition and the quest for profit to better align the interests of the many parties involved (Flyvbjerg, Holm and Buhl 2005; Savas 2000; Lave 1985).

However, I will argue in this thesis that it is only a partial explanation to say that mega-projects continue to be built because mendacious rent seekers repeatedly dupe the general

public into supporting specific projects. This type of analysis does not give enough credit to the general public. While the particulars may vary from case to case, the massive scale of infrastructure mega-projects has ensured that most proposals receive intense media scrutiny, which often includes at least some detailed examination of the interest groups that stand to benefit from a given project, the connections of the individuals involved, their underlying motivations, and the results of some similar projects in other jurisdictions. The prevalence of media exposure to the politics and processes underpinning infrastructure mega-project development makes it difficult to argue that the average citizen or decision maker is entirely unaware of the rent seeking *realpolitik* that has guided mega-project selection, or the long history of escalating costs and poor performance related to such projects.

Instead, if the public is seen to be at the very least generally aware of the self-serving motivations that often underpin mega-project development as well as the long history of poor performance, it suggests that an alternative account is to some degree necessary to explain why the public remains widely supportive of certain mega-projects. Moreover, it suggests that the cause of the mega-project paradox of greater costs and lower performance may not be entirely redressed by the new conventional wisdom of creating more accountable processes or encouraging greater private sector involvement in the planning and delivery process.

In this sense, I would like to extend the contemporary scholarly focus on special interest groups and rent seeking behaviour into a broader explanation for the perpetuation of infrastructure mega-projects. Specifically, I will show that in addition to genuine forecasting errors and opportunistic behaviour on the part of project promoters, infrastructure projects continue to be built because they convey a powerful set of symbolic meanings that are beyond the movement of people, and provide an opportunity to address some of the most pressing challenges in society.

At a time when the Western conception of modernity and progress is driven by a paradigm that emphasizes the corrective powers of science, rationality and technology,

mega-projects present an imagery of possibility that transcends their tangible benefits. In particular, large infrastructure projects create a meta-narrative of hope, reflecting an optimism that 'big bang' engineering solutions may be able to solve some of the most pressing problems of our time – namely disease, the overproduction of greenhouse gases that are contributing to global climate change, regional underdevelopment, chronic unemployment etc – while maintaining the lifestyles that we have all come to enjoy. In other words, when challenged by what are perceived to be mega problems, societies repeatedly turn to mega scale solutions that offer the possibility of incredible reward, while posing the least threat to the existing ways of life and requiring the least amount of individual behaviour change or societal transformation. Moreover, the ongoing allure of developing mega-projects comes from their potential to connote a positive symbolic imagery that is rooted in the experiences of the local context, and include messages of interregional competitiveness, urban modernity and progress, and visionary leadership.

In this thesis, I will use the study of urban transportation, mobility and congestion relief to develop the argument that mega-projects continue to be built not only because of the poor forecasting and rent-seeking explanations provided by other researchers, but also because they remain widely popular as a way of addressing one of society's most pressing mega problems. As Hall perceptively wrote in his analysis of the planning process for the Bay Area Rapid Transit system in San Francisco:

The fact was that everyone wanted to believe the predictions, because they seemed to offer a way out of serious present problems [with congestion]. Because of this desire, there was a mass suspension of belief, and almost an ideological commitment to the new system. (1982: 127)

Drawing on Hall's observations from San Francisco as well as research into similar infrastructure investments in cities around the world (Mackett and Edwards 1998), the mega problem that rests at the core of motivating the development of transportation mega-projects is congestion and its attendant impacts. Put simply, urban transportation has become a mega problem because the stakes related to congestion and mobility are high. Proximity, access and the ability to move freely around a city affect the everyday

lives of all citizens, playing a critical role in shaping social and economic relations, while impacting directly on the environment and personal health (Hall 1998; Badiozamani 2003; Frank et al. 2005). Yet the benefits and costs of infrastructure investment do not accrue evenly to all in society. While some in society benefit from greater power, wealth and status as a result of improved mobility provided by infrastructure improvements, others may face increasing exclusion from an economic and social system that relies on access and mobility (Castells 2000).

The cost of urban congestion in many jurisdictions has been calculated to be billions of dollars; research has illustrated that there is a close correlation between obesity and time spent in automobiles (Frank, Andersen and Schmid 2004); emissions from automobiles contribute a large share of greenhouse gas emissions; and addressing transportation issues frequently ranks as one of the most pressing issues for urban dwellers in order to improve their quality of life.

In attempting to reduce the array of costs associated with urban congestion, mega infrastructure projects such as highways, bridges and railways have become the dominant logic for shrinking space to achieve what Flyvbjerg, Bruzelius and Rothengatter (2003: 2) call the 'zero-friction society'. And yet, a growing number of prominent scholars such as Anthony Downs (2004) and Martin Wachs (2005) have noted that human congestion has been an endemic feature of urban living for as long as there have been cities, regardless of the attempted solutions. In this context, the historical record of persistent congestion appears to be out of synch with the contemporary international crisis of public perception about worsening congestion and its attendant costs, which has been recorded by public opinion surveys in countries around the world and amplified by the mass media (Silkstone, *The Age*, 5 November, 2005; *Manchester Evening News*, 6 May, 2004; American Public Transit Association/American Automobile Association, 2005; Ong and Hasellhof, 2005, *Vancouver Sun*, 16 November, 2005, A20). So why have infrastructure mega-projects remained so popular in the urban transportation sector?

Answering this question requires an interrogation of the intersection between the rhetoric and the measured reality of worsening congestion and wider issues of urban modernity that have consistently underpinned arguments in favour of large transportation projects, in order to gain an understanding of the dynamics that determine why certain narratives get privileged and others do not. Furthermore, explaining why mega projects continue to be built necessitates an interdisciplinary research approach that is as interested in cultural analysis as it is in cost benefit analysis; as focused on the past as it is on the present and the future; as rooted in the political landscape as it is in the physical landscape; and as attuned to power relations as it is to institutional relations.

To make an important distinction, the intention of this analysis is not to imply that all mega-projects are inherently poor investments. Throughout history, there are transportation infrastructure mega-projects that have had a dazzlingly positive impact on the way people in cities live, work and play, and have garnered considerable public support. One can hardly imagine what Paris would be like without the Metro, Hong Kong without the Cross Harbour tunnel or San Francisco without the Golden Gate Bridge. In fact, the lure of replicating these international success stories serves as an important driver of new mega-projects in other cities around the world.

Instead of challenging the entire paradigm of mega-project development, my point is to show that in the face of intense political and ingrained interests surrounding infrastructure mega-projects as well as a pervasive public perception that government initiatives have been ineffective at addressing congestion (Ong and Haselhoff 2005), there has been a tendency to perpetuate a development approach that favours large-scale projects. This reflects a universalization of the wrong lessons from past projects. Specifically, the success of certain past mega-projects has led to a continued adherence to a modernist paradigm of investing in one-size-fits-all fixed mega solutions to mega problems, at precisely the same time that the rise of a post-modern economic accumulation regime has called for increasing flexibility and diversity of alternatives.

In sum, when viewed in its entirety, this thesis is more than a project concerned with approaches to congestion relief or mega-project development; it is an examination of the forces that direct urban change.

The Case Study: Seeking Improved Mobility in Vancouver, Canada

Vancouver, a metropolitan city of some 2.3 million people in the province of British Columbia on the west coast of Canada, provides an ideal case study to explore the historically evolving politics, processes, and impacts related to infrastructure mega-projects, and the ongoing quest for a cure to the congestion mega problem. Since the city was first founded in 1886, Vancouver has generally followed the transportation infrastructure investment trajectory of many Canadian, American and Australian cities, both in terms of technologies and project delivery mechanisms. With respect to technologies, Vancouver sequentially experimented with many of the state-of-the-art systems being used in other cities, chronologically evolving from tramways to trolley buses, to the development of urban freeways, to a rebellion against urban freeways that resulted in spending on mass rapid transit, and finally back to the search for some balance in spending between public transit and road infrastructure. Transportation ownership and project delivery mechanisms have also evolved, from the early days when transportation services were developed, owned and operated entirely by the private sector, to a period when transportation services were the jurisdiction of the public sector, and more recently to a period where there is a growing mixture between private and public sector ownership and delivery.

During each of these epochs of transportation infrastructure development, and regardless of the ownership structure and project delivery mechanisms in place at the time, there has been an almost singular adherence to the development of infrastructure mega-projects, at the expense of investments in smaller scale solutions. And yet, just as in other cities, each successive state-of-the-art investment phase has failed to redress the problem of growing congestion, leading to plans for still larger scale and more imaginative transportation mega-projects.

As such, using Vancouver, Canada as a case study, this thesis will excavate the more than 100-year history of infrastructure investment in the city in an attempt to provide insight into the factors that have continued to motivate the development of transportation mega-projects. My analysis will show that in addition to poor forecasting methods and opportunistic behaviour, public support for infrastructure mega-projects that will reinforce the high quality of life in Vancouver without challenging existing patterns of mobility remain a driving force behind the continued development of such large-scale projects.

Research Approach: Explaining the Persistence of the Mega Transportation Project

Conceptually, this study seeks to explain why infrastructure mega-projects have remained popular in the urban transportation sector in Vancouver by following an approach that presents specific transportation investment decisions as historically contingent, path dependent, and the product of both individual agency and institutional structures. (The theoretical foundations of these principles and their application to the field of transportation planning will be expanded upon in Chapter 2).

The decision to consistently favour large-scale projects can only be understood within the context of the Vancouver region's spatial, economic, social, environmental and political history. When situated within their historical context, it can be seen that choices made by a densely interconnected group of decision makers in the early stages of each planning process effectively locked in decisions on the scale of the projects, the route, technology and service delivery mechanisms. The decisions of these individuals were patterned by their own self-interest, the institutional norms, traditions and laws that regulated their actions, and the evolving desires of the general public to see solutions to what has long been perceived to be a worsening urban congestion problem.

The diversity of issues impinging on transportation investment decisions makes a single theory of decision-making ill equipped to explain all elements of transportation decisions.

Instead, explaining transportation investment decisions will be based on the interplay of three key dynamics: first, the characteristics of the decision-making environment; second, the politics and planning processes surrounding the project; and third, the service production mechanism, in other words who designs, finances, builds and operates the system. As will be illustrated, the conflation of these three factors has particular implications on the material outcomes of the project as planned, and reinforces the predilection for large-scale infrastructure projects.

Methods and Data: A Multi-Dimensional Approach

Research on the factors that influence the decision to invest in transportation mega-projects has relied on a wide variety of research methods, ranging from statistical analysis of system performance characteristics (Flyvbjerg et al. 2002; Newman and Kenworthy 1999), to structured mail-in surveys with key planning decision makers (Mackett and Edwards 1998), to comparative case studies (Cervero 1998; Mees 2000), to detailed qualitative studies using a single case example (Richmond 2005). Each of these methods is associated with a specific set of strengths and weaknesses for answering certain types of questions, and each method was considered for this study (Figure 1-1).

For this particular study, since I have posed questions that are centrally interested in identifying shifting power relations over time and are thus heavily rooted in a local context, I have decided that the most appropriate research method is to undertake a detailed study of a single case. The selection of such a method is in line with the theoretical support for case based research in the social sciences, and substantiated by experience from the existing literature that has sought to understand the motivations for investing in specific transportation projects at moments of strategic choice.

Figure 1.1: Research Methods and their Appropriateness for Studies on Transportation Investment Decision Making

Method	Sample Question	Strength	Weakness
Statistical Analysis	What can be deduced about the motivations for investing in mega-projects based on the statistical observations about the difference between project cost estimates and actual project performance?	<ul style="list-style-type: none"> • If sample is representative, results can be used to predict outcomes in other locations. • Results can be compelling to decision makers, and influence public opinion 	<ul style="list-style-type: none"> • May provide less insight into the reasons why certain events take place, such as why cost overruns are a persistent part of mega project development • Lack of data availability for certain cases might weaken results
Structured Surveys	What do planning decision makers say motivates their choice to invest in an infrastructure mega-project?	<ul style="list-style-type: none"> • Compare experiences in a variety of contexts based on a similar set of criteria • May provide results that can be generalized to other settings 	<ul style="list-style-type: none"> • Little opportunity for follow up questions – may make it difficult to understand underlying motivations of those ultimately in charge of decision making
Comparative case studies using qualitative methods	What are the explicit and implicit factors that motivate investments in specific mega-projects in different contexts?	<ul style="list-style-type: none"> • Provides the opportunity to examine stated, unstated and contextual factors that motivated investment decisions. • Comparative studies provide an opportunity to highlight the variables that are common and exceptional to specific cases. 	<ul style="list-style-type: none"> • May not be able to delve into great depth about history or context for any single case • Specific context may make it difficult to generalize experiences from one case location to another
Single case study using qualitative methods	What are the explicit and implicit factors that have consistently motivated investments in transportation mega-projects in a single location?	<ul style="list-style-type: none"> • Provides space and scope to undertake a detailed, historically contingent analysis in a given location • Facilitates the use of multiple methods, including interviews, content, discourse, statistical and spatial analysis to triangulate explanations for a single phenomena 	<ul style="list-style-type: none"> • Case selected may be exceptional, making it inaccurate to generalize results to other locations. • Missing data or unwillingness of certain parties to cooperate can skew results

Flyvbjerg (2001) argues that situations characterized by intricate dynamics of power can best be researched through detailed, case study research. His strict adherence to a dense-data case method is rooted in the disparate philosophies of Friedrich Nietzsche and Richard Rorty. Rorty's distinctive brand of pragmatic philosophy implores the comprehension of difference by sticking to the concrete, and focusing on elaborate descriptions of particular practices and the outcomes they conduce. For Nietzsche, focusing on the 'little things' was necessary in order to understand the problems of politics and social organization. When closely examined, discreet and apparently insignificant truths often reveal themselves to be pregnant with paradigms, metaphors and general significance.

Employing a case study method based on a single example has facilitated deep insights in the study of regional transportation planning. Since the early 1970s, works of this nature have contributed to the evolving theoretical understanding of transportation decision making as being predicated not only on instrumental rationality (namely through the rational comprehensive planning model), but also on inherent political factors underpinned by values and power imbalances.

In *Bureaucrats in Collision* (1971), Levin and Abend presented regional transportation planning case studies from five cities of various sizes – Boston, Philadelphia, Buffalo, Manchester (New Hampshire) and Portland (Maine) - to question the relationship between organizational structure and human agency in planning decisions, and examine the role that the planner has in acting as a political agent to shape transportation outcomes. Gakenheimer's *Transportation Planning as a Response to Controversy* (1976), which examines the first humanistic regional transportation planning exercise in Boston and Pill's *Planning and Politics* (1978), which focuses on the second such project in Toronto, continue this tradition by examining early efforts to open up the process of planning in response to the anti-highway movements of the early 1970's. Two decades later in *Rationality and Power* (1998), Flyvbjerg used the case of an award winning transportation scheme in Aalborg, Denmark to excavate the workings of power in

administrative decision-making, and what it actually means for more general concerns of social and political organization. In each case, the research goes beyond drawing conclusions that are exclusively pertinent to transportation projects, and instead tries to link society, politics, planning and the creation of urban form.

Regardless of their different contexts, each of these studies is part of a relatively coherent story, one of an ongoing tension between planning as instrumental rationality and planning as a political act. This story is underpinned by a broader debate about the role of urban transportation: how the utilitarian and financial benefits and costs should be distributed between different groups within society. When regional transportation planning decisions are situated in the political realm and thus framed around struggles over values and interests, they can be seen to display similarities regardless of place.

While the particular players may differ based on the situation, parallels include: a recognition that to be effective urban transportation planning must be carried out on a regional scale; the relevance of politics in complementing technical deliberations; the dilemma faced by the planner to be on the one hand a neutral professional and on the other a political initiator; the importance of institutional configuration in creating the precondition for decision making; and the prevalence of power imbalances and the potential for those who hold power to disproportionately influence decision making. In light of these similarities, while studies based on a single case study will never be statistically significant or universally generalizable, they can still prove extremely valuable. To quote Pill,

The essential objective of a case study is to provide observations that can perhaps later be used in the development of a general theory but meanwhile will at least enable others to learn from the experience of the case at hand. (1978: 16)

My research follows in this methodological tradition of the in-depth case study based on the ongoing process of transportation investment in Greater Vancouver. I will build on the lessons learned from earlier studies – particularly with respect to the influence of politics and power imbalances in planning - as I seek to provide a better explanation for why specific transportation projects are selected for development at specific moments in

time. Following in the tradition of the ‘new institutionalism’, my research will explore the role that both formal and informal laws, policies, rules, norms, conventions and traditions have on the actions of individuals and organizations.

In moving beyond the boundaries of the earlier studies and into the depths of the contemporary politics of planning, my research will try to identify the roles that individuals, government agencies and corporations have played in the promotion of specific investment projects. While such an approach is not uncommon for exploring the actions of elected officials and top bureaucrats, few studies have delved into the role that specific corporations and their employees have had in promoting investment decisions.

This under-examination of corporations and their agents has begun to change, as information is more readily being made available to the public, and the line between academia and investigative journalism begins to blur. In *Cities for Sale* (1975) and *The Land Racket* (1979), Leonie Sandercock trenchantly exposes the interconnections of private land developers and elected officials that resulted in suburban style land developments which violated official government policies in Australia. More recently, in *You Don't Always Get What You Pay For* (2000), Elliott Sclar examines the role that specific private sector consultants have played in promoting public service outsourcing. In *City of Quartz* (1992), Mike Davis provides a compelling exegesis of the unholy alliance between elected officials, public bureaucrats and private interests in Los Angeles, and the implications of these relationships on urban form and culture. And in *Globalization and Urban Change* (2001) and *Unsettling the City* (2004), Kris Olds and Nicholas Blomley respectively identify the confluence of political actors, private developers and international investors that coalesced to realize the advancement of mega land development projects in Vancouver.

By ‘naming names’ so to speak, my research builds on this academic parallel to investigative journalism and enables the addition of a new dimension to the study of transportation infrastructure decisions – the concept that policy formation is path dependent and historically contingent. By attributing specific actions to named

individuals and organizations, I will be able to more centrally position the role of self-interest within the investment decision-making framework. As well, I will be able to trace how the chronology of decisions by interconnected self-interested actors from the early stages of the planning process locked investment decisions along a given path, making certain proposals more feasible than others at subsequent moments of strategic choice.

The examination of these tight connections is particularly important when seeking to explain why neoliberal policies such as the private-public partnership have become popular in the field of transportation, and why large-scale infrastructure projects have been repeatedly favoured over other alternatives. In the case of transportation planning in Greater Vancouver, issues to be explored will include political campaign finance connections, the interests of those individuals who were hired to lead crown corporations, the role that specific private firms played as consultants to the public sector, and the way that public discourse was shaped through the media. By accounting for the evolving role of specific individuals and organizations over time, my research will provide a robust explanation of why each successive wave of investment became the top regional transportation priority – from trams to trolleys to highways and bridges to rapid transit and now to a ‘balanced’ approach to transportation infrastructure investment which combines new roads and new transit projects.

To account for the complex decision-making environment that characterizes transportation infrastructure investment in Greater Vancouver, actualizing this research requires a multi-disciplinary methodology, based on a wide variety of qualitative techniques.

Archival Data Analysis

A review was carried out to chart the historical shift in transportation project objectives and priorities in the Vancouver Region, and the emerging trend towards private involvement in the financing and delivery of transportation services. Seminal

transportation planning documents dating back to the mid 1890's were examined for this review.

The specific role that individuals and organizations played in the project planning process was derived from a variety of secondary sources. An in-depth content and discourse analysis of meeting minutes from municipal and provincial political bodies was undertaken. Archival newspaper stories were examined to gain an understanding of the individuals involved as well as the political discourse that surrounded the rapid transit planning process. A review was carried out of recorded accounts of the politics and planning processes that surrounded the development of earlier transportation projects. Finally, policy documents from key stakeholder organizations were reviewed, including organizations such as the Gateway Council, labour unions and environmental groups to understand their position on the shifting regional investment priorities, the project's politics and private sector involvement in transit service provision.

Primary Research

Secondary data on the transportation planning environment in Vancouver was complemented by primary interviews with those involved in the RAV decision making process. These interviews provided me with a more textured understanding of the factors that motivated the actions of those involved in the project, and helped inform my analysis.

In-depth, unstructured interviews were conducted with key decision makers (eg. politicians, planners, bureaucrats) and stakeholders (private sector, civil society) to gain a detailed understanding of the relationship between shifting transit priorities and the growing delivery of projects using the private-public partnership model. Since the majority of those being interviewed were public figures who have played an active role in shaping the discourse surrounding regional transportation planning, few objected to being interviewed on the record and having their participation in the study noted (Appendix I).

Finally, over a two-year period from 2003 to 2005, I attended many council meetings, and public consultation forums, and I was also appointed by the City of Vancouver as a member of a public advisory committee to aid in the formation of a new local area transit plan. These first-hand experiences provided me with insight into the political machinations and planning cultures that pervade the transportation decision making environment in Greater Vancouver.

Telling the Story of Transportation Infrastructure Development in Vancouver

The story of 100 years of transportation project development in Greater Vancouver presented in this study is primarily based on secondary data that has been made widely available in the public domain. Nearly all of the quotations from those involved in project planning as well as much of the quantitative data used to support the arguments for and against specific projects has been derived from the mainstream media (in many cases front page newspaper stories) as well as easily accessible online legislature and council transcripts. These sources of information have been triangulated for accuracy against the information obtained from my personal interviews and observations.

I have also relied on data embedded in more technical planning documents that are kept for reference in the public library as well as online information, which has been useful in verifying the accuracy and adding to the robustness of the data presented in the media. Very little of the information presented in this thesis is derived from sources that are not widely available to the public such as personal interviews or confidential planning documents that have been released to certain interest groups through freedom of information act requests.

A central point of presenting my thesis based nearly exclusively on data that is easily available is to reinforce the argument that while perhaps not fully informed - as few individuals have the time or inclination to follow a single mega-project proposal in great depth - there is enough information in the public domain for the average citizen to be well aware of the political machinations and interest group lobbying that influence decisions

related to investments in major infrastructure projects, as well as the long history of project cost escalation and under-performance. With this information widely available, a more robust explanation is necessary to explain the persistent public and political support for large-scale projects than one focusing exclusively on overly optimistic forecasts, aggressive pursuit of self interest and poorly accountable planning processes.

Undertaking Value-Rational Research

In disciplines across the social sciences ranging from sociology to political science, economics to geography, there has been a growing dissatisfaction with the quest for explanatory and predictive theories that deliver immutable laws of human behaviour, regardless of contextual variables such as time and place, institutional configurations and local cultures. This has led a growing number of scholars to highlight the need for normative research that more centrally focuses on value-laden decisions (Scott and Shore 1979; Stehr 1992; Bryant 1995).

In *Making Social Science Matter* (2001), Bent Flyvbjerg challenges his readers to practice social science with a *phronesis* approach. Traced back to Aristotle's three intellectual virtues, *phronesis* is more concerned with practical wisdom and ethics rather than the craft of practice (*techne*) or theoretical knowledge (*episteme*). *Phronesis* presents a framework for conducting value-rational research, which is characterized by Flyvbjerg (2001: 60) as 'analyses and interpretations of the status of values and interests in society aimed at social commentary and social action, i.e. praxis.' It departs from traditional social science research methods that derive from the natural sciences by seeking to answer four questions:

- 1) Where are we going?
- 2) Is this desirable?
- 3) What should be done?
- 4) Who gains and who loses?

Answering these questions requires a research framework that is context-dependent, and emphasizes the interaction between the general and the particular. *Phronetic* research is

oriented towards action, which is driven by interests, judgments, and choices. To account for this inclination towards action, a fifth question can be added to those listed above: how can we get where we would like to go?

In my dissertation, I hope to take up Flyvbjerg's challenge to revitalize the concept of *phronesis* and to practice a social science that places certain values at the centre of my work. The concept of undertaking value-rational research has particular relevance in the contemporary study of transportation infrastructure, a field that has been largely dominated by an emphasis on technical forecasting of the future, and yet a field where researchers have increasingly uncovered systemic malversation during the project planning phases and under-performance in terms of operations (Wachs 2001). Of concern is whether the perpetuation of infrastructure mega-projects and the processes by which they are delivered serve the public interest.

Of course, the central challenge of undertaking research that emphasizes questions related to values and interests is whose values and interests should be privileged as representing the public good. In a diverse, multi-cultural society, defining the general public interest is not easy, and in addition, the public interest has to be deliberatively argued about and negotiated for each specific instance. Postmodern scholarship has informed us that there is not a single public interest or shared set of values, but in fact multiple publics and a series of interests that are based on the position of the individual (Sandercock 1998; Heath 2003).

Yet in spite of the differences between individuals, the life work of pollster Michael Adams (1997; 2003), compiled in his two best-selling books on Canadian values, suggests that there is a strong set of common social values that bonds the country together, informing what can at the very least be loosely called the Canadian public interest. According to Adams, much of this public interest dates back to the foundational values upon which the country was formed. While the American Declaration of Independence defined the largely individualistic goals of 'life, liberty and the pursuit of happiness', the Canadian fathers of confederation followed their Commonwealth cousins

of Australia and New Zealand in dedicating their country to the considerably more collective objectives of 'peace, order and good government'.

Today, the findings of Adams' polling suggests that the Canadian public interest supports the values of: accountability and transparency of process to assuage a growing cynicism about the efficacy of our main institutions; policies that promote equality by gender, race, ethnicity and class; a sustainable balance of job creation and economic development with cultural preservation and environmental stewardship; a degree of understanding that some collective action is required to better the position of everyone. As can be seen, dating all the way back to confederation in 1867 and through the more recent polling work of Michael Adams, the Canadian public has demonstrated a strong interest in both the procedures by which decisions are made, and also the material outcomes of those decisions.

Even philosopher Joseph Heath who opposes the 'myth of shared values in Canada' on the grounds that it is at odds with the pluralistic composition of the country, suggests that there is a core set of principles that underlies the nation's institutional structures as well as individual behaviour. Heath's core principles include: a quest for improved efficiency defined by a decision that improves life for one individual without worsening it for another; equality in the way that all individuals are treated in the eyes of the state; autonomy to make decisions and provide consent that is free from coercion; and a low threshold for violence in both the private and public realms that can be used to guide behaviour (Heath 2003). While the language may be different, Heath's core principles establish a loosely defined public interest that is similar to that posited by pollster Michael Adams.

While the notion of a national set of values, core principles, or public interest may appear abstract, for over thirty years, Greater Vancouver has been at the forefront of tangibly integrating the hopes and aspirations of ordinary citizens into the process of guiding urban change. Since the early 1970s, the political and planning establishments in Greater Vancouver have been engaged in an ongoing dialogue with thousands of citizens to

identify a common vision for the region, a vision that is encapsulated in a public consultation summary report from 1975: 'The people have a modest dream: let Greater Vancouver continue to be a good place to live' (GVRD 1975: 2). While the definition of livability has evolved over time, Vancouverite's modest dream for a good place to live has remained wedded to the core values that Canadians appear to share, and is poignantly elaborated in the following excerpt from the 1990 regional vision setting report, *Creating our Future: Steps towards a More Livable Region*:

Greater Vancouver can become the first urban region in the world to combine in one place the things to which humanity aspires on a global basis: a place where human activities enhance rather than degrade the natural environment, where the quality of the built environment approaches that of the natural setting, where the diversity of origins and religions is a source of social strength rather than strife, where people control the destiny of their community; and where the basics of food, clothing, shelter, security, and useful activity are accessible to all. (GVRD 1990: 7)

In the transportation sector, issues of upholding the public interest have converged most centrally in the ongoing debate over the potential measures to address congestion, which have a broad impact on the environment, economy and social equity. Over the past 100 years, humans agglomerating in cities have experimented with varying combinations of solutions to address congestion, from improving public transit, to building bigger roads, to planning different land use activities to limit the need for movement. Regardless of the exact solution, as Joseph Heath points out, urban transportation embodies the classic collective action problem, where working together provides a better opportunity to achieve greater efficiency for all than when each individual seeks to promote their own position:

Promoting the public good means using collective action to promote what each individual regards as good by his or her own lights. It means creating win-win outcomes, under conditions of freedom and equality, but without trying to specify what should count as winning and what should count as losing. (Heath 2003: 34)

Based on the broad definition of the Canadian public interest provided above and the way that it has been interpreted in Vancouver, I proceed to explore the degree to which past

transportation planning processes in Vancouver have been congruent with the stated public interest for procedural transparency, social equity, efficient performance, and broad sustainability that includes economic development as well as environmental and cultural preservation. In this sense, my intention is to interrogate one of the key challenges of practicing value-rational research: the potential to explain dissonance between stated individual values and the collective public interest, and actual observed actions and policy decisions that may go counter to the rhetorical statements. I will also examine whether the perpetuation of a development paradigm that favours infrastructure mega-projects creates systems that maximize broad cooperation rather than the pursuit of self-interest.

Thesis Outline

The thesis is structured in four parts. In Part I, I present the academic and applied context for the study of transportation infrastructure investment in Greater Vancouver. Chapter 2 develops a theoretical framework that seeks to explain the decision to invest in specific transportation infrastructure projects, and the material implications of such decisions. Chapter 3 provides an introduction to contemporary Vancouver. Following an examination of the spatial, social, economic and political structures in the city, I will show that transportation and congestion have become popularly perceived as a mega problem, elevating the search for solutions to the top of the urban agenda.

In Part II, I explain the perpetuation of mega solutions that have been employed to redress Greater Vancouver's congestion mega problem, dating from the city's founding in 1886 until the early 2000s. Chapter 4 highlights the politics and governance structures that surrounded the early evolution of transportation alternatives, from the tram to the trolley bus to an emphasis on highway building and finally to strong opposition to such plans which led to a renewed emphasis on smaller scale public transit solutions. It also provides an overview of the transition of ownership and service delivery in the Vancouver transportation sector from the private sector to the public sector around the middle of the 20th century.

Chapter 5 examines the forces that coalesced in Greater Vancouver to support the realization of the city's first rapid transit mega-project, even as many of the local plans prioritized investment in smaller scale infrastructure to address worsening congestion. Chapter 6 focuses on the development of the second rapid transit mega-project in Greater Vancouver. Specifically it seeks to understand why a new governing party at the provincial level that had opposed the development of the first rapid transit line in Vancouver when they were in opposition due to the high cost and lack of effectiveness could turn around and invest in the same type of mega-project using the same technology when they came to power.

Chapter 7 revisits some of the major themes that have emerged from this historically contingent analysis of transportation planning in Greater Vancouver, and highlights the importance that both institutional structures and the individuals involved in the processes played in shaping the investment decisions that were actually made.

In Part III, I shift focus to the contemporary transportation planning landscape in Greater Vancouver, and explore the implications of a transportation investment program that is increasingly being guided by the private sector and market forces. The Introduction to Part III returns to a brief review of the motivations for encouraging greater private sector involvement in the transportation sector. Chapter 8 will show how the adherence to a market driven approach to transportation planning has provided politicians who previously opposed infrastructure mega-projects with a way of putting both large-scale highway and transit projects back on the urban agenda. While much of the contemporary plans for transportation mega-projects are still in their early phases, making it difficult to entirely assess the impacts of the overall program, one project has reached the conclusion of the approval process through a competitive procurement process.

Chapter 9 focuses specifically on the implications of project delivery using a private-public partnership, through a detailed case study of the recently approved RAV rail project. This case study will challenge the literature that advocates in favour of such a

delivery model by first illustrating that the private-public partnership approach to planning did not improve the accountability of the decision making process, and second that the project as designed will be only minimally effective at achieving the public interest for greater efficiency, equity and environmentally sound urban mobility across the entire region. The Conclusion to Part III reflects on the broad implications of market driven planning in the transportation sector, and the implications that such an approach has on achieving the public interest for accountable, equitable and sustainable mobility.

In Part IV, the concluding Chapter 10 draws together the main arguments and the central findings of this thesis, specifically highlighting the prominent role that infrastructure mega-projects have played in addressing congestion in Greater Vancouver for over 100 years. This chapter argues for the importance of understanding the selection and approval of an infrastructure project as part of a historically contingent context. I also suggest that an explanation for the perpetuation of a mega-project approach to addressing the mega problem of congestion that focuses on the role of poor forecasting and rent seeking must be complemented by an examination of the way that the general public has repeatedly and knowingly supported such decisions.

PART I: FOUNDATIONS

Chapter 2: A Multi-Disciplinary Approach to Explaining Urban Transportation Investment Decisions

Introduction

In introducing their textbook on Canadian urban governance, Graham, Philips and Maslove remark that

the lens that we use to focus upon urban phenomena determine to a large degree what we see and how we explain and evaluate what we see. Indeed, the particular lens we are predisposed to use may influence the kinds of questions that we ask in the first place. (1998: 19)

This quotation is equally relevant in the field of decision-making theory and public administration, where scholars from a variety of academic disciplines have long grappled with the challenge of formulating theoretical frameworks to explain specific public policy decisions in time and space. Developing a theoretical framework to understand and explain transportation investment policy decisions is punctuated by a series of particular challenges:

- 1 Transportation mega projects are by their very nature massive in scale and affect numerous constituencies within a community. A new highway or subway can easily cost into the billions of dollars, displace thousands of people, and affect the future development of the entire region within which they are situated.
- 2 Transportation investment decision-making requires the creation of investment priorities between many important projects. Within a budgetary context characterized by finite resources, the opportunity cost of investing in one project necessarily negates the possibility of developing many others.
- 3 Decisions to proceed with a certain project are made by individuals with a diverse range of interests, agendas, allegiances and constituencies, working within institutions that have their own formal and informal histories, interests and agendas. The ultimate decision makers are in some cases supported by a bureaucracy which itself is comprised of individuals and organizations with their own histories, interests, agendas, norms and patterns of behaviour.
- 4 Large-scale transportation decisions often require formal and informal cooperation and collaboration between diverse decision makers, organizations and stakeholders.

- 5 The range of possible alternatives to any transportation problem is to a varying degree guided and constrained by past policy decisions, such as land use, energy, finance and taxation policy.
- 6 Transportation investment decisions are made over long periods of time; yet exist within dynamic environments characterized by policy, technology and public opinion shifts.

Due to the diversity of issues impinging on transportation investment decisions, a single theory of decision-making is ill equipped to explain all elements of transportation decisions. Instead, this chapter will propose a theoretical framework to explain transportation investment decisions that is based on understanding the interplay of four key dynamics: the characteristics of the decision-making context; the politics and planning processes surrounding the project; the service production mechanism, in other words who designs, finances, builds and operates the system; and finally, the potential material outcome of the project as planned.

Taken together, the fusion of these literatures provides the foundation for a nuanced understanding of transportation investment decisions. The four substantive bodies of literature have been ordered to form a logical progression that will maximize the potential interaction between each of the discourses. By the end of the chapter, it will be possible to provide a broad explanation of how and why specific transportation investment decisions are made. This framework will underpin the method of analysis used to explain decision-making in the case of transportation investment in Vancouver.

Why This Project, Why Now: A Theoretical Perspective on Decision Making

This section seeks to provide an understanding of how regional priorities are set and specific project decisions are made. First, drawing on the work of Martin Wachs, the case will be made for moving beyond a rational comprehensive model of transportation planning analysis. Instead, transport investments will be situated within a context that combines an emphasis on the institutional constellation of laws, norms, traditions and

histories, and an approach that stresses the importance of individual agency in decision-making.

Second, emphasizing the role of individual actions within a broader institutional structure provides a scaffold for studying transport investment decisions at a variety of scales: individual, organizational, local government, national government, international governance. More specifically, such an approach makes it possible to see how the institutional structure of the polity along with the actions of individual staff members themselves guide policy decisions down particular paths at significant instances of strategic choice. Finally, theories of public administration and political science will be explored to understand who in the city controls urban decision-making, and the dominant logic that underpins the private provision of public services.

Shifting Perspectives: From Rational Comprehensive to Institutional Analyses

Martin Wachs is the transportation scholar who has been at the forefront in calling for a paradigm shift in the way that scholars explain transportation investment decisions. In *Planning, Institutions and Decision Making: A Research Agenda*, Wachs (1985) highlights the transportation sector as having one of the most highly developed rational comprehensive models of planning and project evaluation. To Wachs, a rational comprehensive worldview of planning, institutions and decision making is defined by the search for optimal solutions to predefined problems, the separation of analysts and decision makers, and the commitment to problem solving using a sequence of logical steps.

Within this paradigm, individuals are seen to be rational actors who use information to make decisions that maximize their personal benefit. Transportation investment decisions, then, can be explained by systematically measuring the various inputs such as capital costs, implementation time, and the opportunity cost of building one project versus another, and balancing them against the broad range of economic, environmental, social, and sometimes political benefits that will derive from the project (Meyer and

Miller 1984). To achieve this end, the research program complementing the rational comprehensive paradigm of transportation planning has emphasized the enhancement of an ever evolving technical toolbox, which seeks more sophisticated ways to measure the costs and benefits of specific projects (Scott 1995).

However, for Wachs, the rational comprehensive model of planning alone does not explain the transportation investment decisions that actually get made in practice, or accurately predict the projects that will be successful from those that will not. As Wachs (1985: 13) states, 'A research agenda drawn entirely from the rational comprehensive model is likely to be incomplete because we cannot assume rationality in a sometimes irrational world. To do so, in fact, is to be irrational!'

Instead, Wachs sketches out the rationale for a broader research program, one that seeks to understand transportation decision-making, institutions and planning processes through an examination of both 'organizational' and 'personal' perspectives. Organizations are important to Wachs since they pattern behaviour and provide the rules within which decision are made, while a personal approach is necessary since the actions of individuals cannot be fully explained by their surroundings.

While Martin Wachs' invocation for a transportation research agenda that adds 'organizational' and 'personal' perspectives to the dominant rational comprehensive approach is some 20 years old, it remains pertinent in a discipline that has continued to emphasize studies of quantitative methods and data. Wachs' proposed research agenda for the field of transportation corresponds closely with a broader research trajectory in planning theory and the social sciences that has questioned the privileged position of technical and expert knowledge within a rational process (Sandercock 1998; Jessop 2001).

Instead many contemporary social scientists have sought to complement a rational comprehensive epistemological stance by seeking to understand decision making through the relationship between the agency of individual actors, social institutions and

organizations within which they operate (North 1990; Hall and Taylor 1996; Jessop 2001). The following section will review the literature on what has come to be known as 'new institutionalism', a model which has particular relevance in explaining transit investment decisions.

The Context Dependence of Decision Making: An Institutional Approach

Contemporary institutional theory emerged out of nineteenth century economics and sociology, where scholars challenged the classical construction of society as the agglomeration of rational actors by highlighting the contextual social, cultural and organizational 'institutions' that patterned individual behaviour. Traditional institutionalist thought took a largely functional view of societal structures as being the determining force guiding individual actions, which is encapsulated in Max Weber's notion of the 'iron cage' that traps individuals in a web of rule based control. Seeking to provide a more nuanced interpretation of society that is less prone to minimizing the importance of decisions made by individual actors, new institutionalism has sought to put forward a more fluid interpretation of the relationship between social structures and human agency (Campbell 2005).

While strong internal divisions punctuate theories of new institutionalism, it is held together by a common understanding that formal and informal rules known as 'institutions' pattern behaviour, and guide the decisions that get made. In theories of new institutionalism the central hypothesis is that context matters in determining the outcome of a decision. In this sense, new institutional approaches provide a reinterpretation of the theoretically dualistic stalemate between whether individual agency or organizations and structures are the fundamental variable that explains decision-making (Giddens 1979; Archer 2003). The basic new institutional perspective is perhaps best conceptualized in a sports analogy put forward by Nobel laureate Douglas North (1990): institutions are the rules of the game, while organizations are the teams and players are individual actors. Player and team strategies are influenced by, but separate from the rules of the game. However, shifts in team and player strategies may reflexively lead to changes in the rules

of the game (Pierson 2000a). Unpacking this analogy provides insight into the relationship between individuals, organizations and institutions, and can aid in the explanation of specific policy decisions.

Individuals who are flexible, malleable and varied ultimately make decisions that are culturally dependent and socially constructed (March and Olsen 1996; Bourdieu 1998). In this sense, individual behaviour cannot be studied in isolation from its context (Merton 1957) since individuals in objectively the same situation will think and behave differently depending on social context variables such as their occupation, income, education, social origin and religion (Linz 1969).

The direct contexts within which individuals make decisions are the organizations for which they work. Organizations are collections of individuals who are charged with achieving a common goal or objective. Organizations include economic bodies (business firms, trade unions, cooperatives, non profit organizations), political bodies (councils, parliaments, regulatory agencies, government bureaucracies), social bodies (churches, athletic clubs, non-governmental organizations), and educational bodies (schools, universities, colleges). Understanding organizations involves studying governance models, the articulation of related organizations, and how learning by doing within an organization shapes future decisions (North 1990). The concept of societal structure also takes on a broader political economy definition, referring to the characteristics of the economic and social system within which individuals are situated. Under capitalism, the decision-making capabilities of individuals and organizations must be situated within an understanding of the processes of capital accumulation, production and consumption.

Based on this conceptualization, it is institutions that bind together individuals and their surrounding organizations and structures, thus influencing decision-making (Moulaert 2000). Context-dependent formal institutions such as rules, laws and constitutions establish standards of practice, management hierarchies, jurisdictions, responsibilities and mandates for both individuals and organizations. Context-dependent informal institutions such as conventions, norms, traditions, symbols and cultures largely direct how the

formal precepts will be carried out, by patterning cooperation, collaboration, animosities, information sharing and policy agendas (Hall and Taylor 1996). This emphasis on both formal and informal institutions provides a scaffolding for understanding investment decisions at a variety of scales, including individual, organizational, local government, national government, and international governance.

Overall, then, what emerges is a dense network of reciprocal relationships between individuals, organizational structures and institutions. Individuals form organizations based on the prevailing institutions of the time; the internal and external institutions of organizations pattern individual behaviour; over time, individuals and organizations seek to reshape the formal and informal institutions within which they operate, which can lead to the formation of new organizations. Understanding the composition and control of these networks as they relate to urban decision-making has been a topic of intense debate, and will be examined in depth later in this section.

A key dynamic of this definition of individuals, organizations and institutions is the importance placed on the historical context and contingency of decision-making. An emerging body of literature by historical institutionalists and regulation theorists (both themselves branches of new institutionalism) have highlighted the prevalence of policy path dependence, whereby decisions made at preceding stages induce further movement in the same direction (Pierson 1993).

This construction of path dependence is conceptually quite simple, but has significant implications for the formulation of decisions and public policy. First, as embodied in the economic concept of increasing returns or positive feedback loops (North 1990), once a policy starts down a certain path, the costs of reversal can become very high. This is because, as more is invested in one path or policy trajectory over time, its relative benefits compared to other alternatives become greater (Pierson 2000b). In other words, the cost of exit increases as 'sunk costs' grow, which largely 'locks in' a specific policy alternative (Arthur 1994). Second, timing and sequencing matter in understanding specific decision-making processes, policy formulation and ideological propensities.

Following the work of Thomas Kuhn, the flow of historical events can be divided into periods of relative continuity along a given path, punctuated by moments of significant upheaval or paradigm shifts which act as branching points onto new paths (Hall and Taylor 1996). Third, small decisions or events at earlier stages of a path can have large consequences later on. This directly challenges a classic postulate in political science that large outcomes are the result of large causes (Pierson 2000a).

Taken together, the concept of path dependence provides a theoretical foundation for Bradford's comment:

New economic ideas once institutionalized in the state and polity channel policy thought and collective action down particular tracks, rendering certain policy visions more feasible than others at subsequent moments of strategic choice. (Bradford 2001: 51)

According to Pierson (2000a) policy path dependence occurs for four reasons, each of which is characteristic of transportation infrastructure planning and projects.

1. *Large set up or fixed costs* act as strong incentives to stick with a single alternative once it has been identified. Planning for mega transportation infrastructure projects is a major endeavour, often costing millions of dollars and taking many years. Even small planning shifts can have large financial and time costs. The growing involvement of the private sector in the planning, designing, building, financing, operating and maintenance of transportation infrastructure projects adds a new dimension to the equation, since the early outlay of private money on project planning can often increase the 'lock in' burden on government officials to proceed with a given project. Later in the implementation phases, contractual obligations with private firms make it prohibitively expensive and often a violation of national and international law to alter a particular course of action.
2. *Learning effects*. Knowledge gained from past experience with a complex system can lead to greater efficiency in the future. The planning of transportation mega projects is an extremely complex endeavour, requiring extremely detailed technical skills to understand financial, planning, engineering and design arrangements. This has led to a tendency for governments to hire outside consultants who specialize in particular aspects of project planning. The growing prevalence and sophistication of private-public partnership arrangements has led governments to set up special agencies to manage such deals, knowledge which will be used to aid in the more efficient delivery of future projects using the private-public partnership mechanism.

3. *Coordination effects* occur as the benefits of any one user of a system gain as others adopt the same option. Public transit infrastructure investment benefits greatly from coordination effects, as the greater proliferation and integration of service across a region make it easier for each individual rider to reach more distant destinations (Mees 2000). Rail service also benefits directly from coordination effects. Once one type of rail technology is selected, further investment in that technology is encouraged due to the potential for interoperability and seamless integration of service. Road development too benefits from coordination effects, as more households purchase cars, and land use patterns evolve to accommodate this mode of transportation.
4. *Adaptive Expectations*. In situations where the selection between competing technologies has significantly different outcomes later on, decision makers may be compelled to make predictions about future usage patterns and then formulate complementary policy decisions in the hope that those expectations are realized. Different transportation infrastructure investments - be they rail, road, bus, etc – have significant implications on land use patterns, energy consumption, and travel behaviour. Often policies are set to compliment transportation investment policies, and adapt public behaviour to the mode selected.

The planning and policy characteristics of transportation infrastructure mega projects clearly embody many of the key features of path dependent systems. Path dependence may be magnified when projects are carried out as private-public partnerships, since such arrangements increase the initial set up costs, and use binding contracts at varying stages of the planning process to lock in the intent of decision makers (Levy 1996). The concept of path dependence has also been used more broadly to describe the spread of free market policies that embody the private-public partnership (Brenner and Theodore 2002).

Nevertheless, there has been ambivalence in the literature regarding the application of the concept to explain the development of public policy formulation or decision-making (Pierson 1993; Kay 2003). This is for two key reasons: first there is the question of the often-convoluted relationship between different levels of individuals, organizations and institutions; second, policy environments are often highly dynamic, characterized by many subtle changes. For these reasons, which are both primarily methodological in nature, studies of path dependence have tended to focus on macro scale processes.

However, these challenges with charting cause and effect in the path dependence of policy formulation do not mean that path-dependent relationships are devoid of micro foundations (Kay 2003). In fact, Swyngedouw's (1997) work on global and local interactions indicates that decisions increasingly derive from the deliberations of networked actors at a variety of scales, each of which is governed by a series of organizational and institutional pressures that pattern their behaviour. Large-scale transportation infrastructure decisions fit this profile, where a single project is often dependent on decisions by multiple levels of government, private firms, interest groups and the voluntary sector. In such cases, the path dependence of policy formulation and decision making is situated precisely in the frequent interactions between networked individuals, whose interconnected actions influence, reinforce and impinge upon the decisions of others in the network (Pierson 1993).

From a psychological perspective, the work of Nobel laureate Daniel Kahneman illustrates the presence of a phenomenon called 'anchoring,' where an original plan is fixed and then analysis and organizational pressure builds to affirm this decision (Lovallo and Kahneman 2003). And Hedin's (2001) research on political and social networks shows that trust between interconnected actors helps to guide decision making by propagating cooperation. In this sense, path dependence and policy lock-ins are the results of increasing returns within the networked decision making context.

A broader cautionary note about the application of path dependence to policy formulation is that such an approach may present a deterministic, depoliticized way of viewing decision making, which overlooks the role of individual agency or the many stages at which a different path could be taken (Kay 2003). This is a valid concern, and empirical analyses that seek to understand path dependence must carefully chart cause and effect relationships, while constantly questioning whether other social forces are at play. As noted by Jessop (2001), a key benefit of new institutionalism is that such approaches are complementary to other 'turns' that have recently occurred in the literature, including new emphases on collaborative, rhetorical and argumentative processes. Combining the search for path dependence with an examination of other social phenomena provides a

safeguard against the threat of presenting a deterministic analysis, and makes the social relationships uncovered by new institutional theories critical to understanding transportation investment decisions.

The Power in Networks: Understanding Who Controls the City

As was elucidated in the previous section, an institutional approach to understanding transportation investment decisions places a strong emphasis on the networked interrelationships between individual actors and organizations. This raises a second set of questions, namely, who is involved in these networks, how do they form, and who actually influences urban decisions. One group of scholars seeking answers to these types of questions are community power theorists. Community power studies encompass a diverse range of perspectives, but in each theoretical formulation, community power and the ability to influence decisions are constituted not only in individuals, but also in the relationships that exist between different sets of actors.

In both elite and growth machine theories, decisions of resource allocation in urban areas are directed by a small group of eminent individuals, whose power stems from ownership of property and control of key businesses (Lorimer 1978; Dye 1986). The brokering of power is seen to occur behind the scenes by a small group of senior executives from these key businesses, who are politically, socially and economically connected. This marginalizes the importance of elected officials and state bureaucrats (Judge 1995), who are largely seen to be mediators of private interests.

In this sense, the network being highlighted as the driver of decisions is that of a small cadre of well connected individuals who seek to maximize their personal gain through rational bargaining about the costs and benefits of certain projects. Represented industries included developers, financiers, construction companies, associated professionals such as lawyers, consultants, architects and urban designers. The power of these property related industries is maintained in no small part through financial contributions to political campaigns. From the perspective of elected officials and

bureaucrats, continued support for growth-related endeavours is often promoted through an emphasis on job creation, expansion of the tax base, funding public services and a symbolic narrative of progress (Logan and Molotch 1987: 33).

A key observation made by Hunter (1953) in his influential study of Atlanta was that the top-level elites were rarely visible in the local community, public debates or civic associations. Instead a second order of less powerful, but still notable individuals assumed the role of promoting the public side of the urban elite. This has particular relevance to transportation investment decisions. While logistics companies, large-scale property developers and construction firms stand to benefit greatly from investments in transportation infrastructure, the executives of these firms are not generally high profile individuals. One need only think of the face recognition of the CEOs of information technologies firms compared to those of rail companies to illustrate this point (the development industry may provide an exception to this trend, where individuals such as Donald Trump in the United States and Lee Ka Shin in Canada and Asia have become more high profile). This, however, does not mean that these individuals are not exerting great influence on infrastructure investment decisions. On the contrary, while they act behind the scenes, the public face of a transportation expansionist message has been assumed by leaders of local boards of trade, prominent politicians and top bureaucrats, who have greater credibility in promoting both the public and private benefits of such a message.

In contrast to elite and growth machine theories, regime theory presents a broader interpretation of who has influence over urban policy decisions. In addition to recognizing the importance of a small cadre of business leaders, regime theories give prominence to members of the polity, the voluntary sectors and special interest groups in shaping urban decisions. In this formulation, decision-making is viewed as complex and fragmented, making it impossible for a single group to control decisions. This refers to the situation within a federalist state such as Canada, where collaboration is often required between multiple levels of government and bureaucratic departments in order to fulfill a specific policy agenda (Inwood 2000). It also refers to the increasing prevalence

of policy formulation without polity, where the solutions to pressing problems lie outside the jurisdiction of the state (Hajer 2003).

As such, while the state is seen as more than simply an arbiter of special interests and state actors are seen to have a large degree of autonomy to shape policy, they still require cooperation from diverse interest groups to realize their policy goals. In this sense, regime theory places emphasis on both policy formulation and implementation. In the transportation sector in particular, the traditional rational comprehensive model of planning has situated state actors at the centre of guiding policy decisions, yet actual contemporary practices suggest that wider community acceptance has remained necessary to successfully implement the agreed upon agenda.

More fundamentally, regime theories seek to understand under what conditions diverse interest groups can work collectively to achieve mutually beneficial policy goals. This informal and temporally flexible coalescence of interest groups to achieve policy goals is known as an 'urban regime'. The potential of a regime to achieve its goals is in no small part a product of the strength of the relationships between members of the collective, in addition to the profiles of those involved in the regime and the resources that each group brings to the table (Stone 1989). Therefore regime theory places heavy emphasis on the relational and trust qualities embedded in networks to influence the urban policy agenda (Hedin 2001). Regime theory is particularly appropriate to explain some of the 'strange bedfellows' that agglomerate in response to a transportation mega project proposal (Altshuler and Luberoff 2003).

Overall then, while often internally contradictory, elite and growth machine theories as well as regime approaches may together provide insight into aspects of the decisions that surround a single transportation project. On the one hand, elite and growth machine theories may be particularly appropriate to understand the origins, motivations and leaders behind a specific investment decision. Regime theory on the other hand, may more accurately explain the diverse and often contradictory coalitions that agglomerate to oppose major transportation infrastructure investment plans and projects.

Explaining the Emergence of the Private-Public Partnership: A Market Based Account

While Martin Wachs (1985) advocates an analytical model that emphasizes individuals and organizations, he is quick to point out that rational comprehensive approaches still have explanatory power for certain components of transportation investment decisions. In particular, public choice theories that apply economic concepts of markets and exchanges to explain urban governance are relevant in understanding the proliferation of private-public partnerships as well as the setting and selection of regional priorities.

Public choice theories are based on three elements: individuals, public goods and organizations. Individual actors are seen to be utility maximizers, who seek to fulfill prior desires through a process of exchanges based on rational deliberations about benefits and costs of a specific decision (March and Olsen 1996). Individuals seek to achieve their preferred mix of goods and services at tax rates and user fee levels that they are willing to pay. The response of local governments to the desires of their constituents requires an analytical separation between the provision and production of public goods. Provision refers to the amount of a service being delivered, while production refers to the physical process of making or rendering the good or service. According to public choice theorists, the delivery of public services usually becomes inefficient because they are provided and produced under government monopolies. Without being subjected to the forces of competition, governments have little incentive to innovate or cut costs in the production of services (Bish and Warren 1972). Bureaucrats contribute further to the potential for inefficient provision of services by propagating self-interest to protect the budgets of their own department (Niskanen 1971).

Based on their market orientation, public choice theories provide one explanation of the dominant logic that supports the emerging trend towards private-public partnerships in the provision of government services (McDavid and Schick 1987; Osborne and Gaebler 1992), a phenomenon that has become increasingly popular in urban transportation. By separating the provision and production functions of urban service delivery, government

can retain control over service provision (and thus set service levels and quality) while developing a market for production. Such an arrangement creates an incentive structure that uses competitive forces to drive innovation, reduce costs and improve efficiency. Whether the infusion of competition into the production of urban services actually achieves its stated benefits has been the topic of heated debate, and will be given greater attention later in this chapter. Nevertheless, it is safe to say that the seductive quality of a delivery approach that putatively reduces costs for cash strapped governments has gained immense popularity the world over.

Decision Making in the Field of Transit Infrastructure Investment

The necessity for a holistic analytical framework as presented in this section is confirmed by the findings of previous studies from the transport studies literature. For example, in exploring the importance of contextual factors, a series of interviews conducted by Edwards and Mackett (1996: 230) with senior managers from 11 newly developed or proposed rail based transport systems in Britain showed that: 'decisions are not based purely on objective transport criteria. In addition, local circumstances influence the way in which projects develop.'

Yet the configuration of the contextual environment on its own is not sufficient to explain investment in public transport. Policy formulation embodies a range of different inputs including rational-type analysis, but also forms of information gathering such as institutional and personal experience (Lindblom and Cohen 1979). This has led Forster to note that:

whilst public policy-making might make use of rational techniques, they are typically encapsulated within a wider process, involving people and organizations which is altogether more complex and messier than the picture the rational model depicts. (2000: 3)

This brief overview of findings from the transport literature indicates that a framework that combines structural issues and human agency is both suitable and necessary to fully explore transportation investment processes, motivations and outcomes.

The Politics and Processes of Urban Transportation Planning

Fundamentally, transportation infrastructure investment decisions are about temporally allocating massive amounts of scarce resources over space, such that investment in one project necessarily precludes investment in many others (Peferlaw 1980). This allocation of resources is complicated by the pervasiveness of uncertainty about the future impacts and outcomes of today's decisions (Hall 1982). In this context of competing resource allocation, Edwards and Mackett have noted that,

The decision to invest in a new public transport system is essentially a political decision made within the current economic and legislative framework. In addition, the objectives of building a new system are not related solely to transport needs and must be viewed in the broader context of the socio-economic needs of the city. (1996: 234)

Building on the broad theoretical framework of urban decision making developed in the previous section, the following section will explore the expanding body of literature that seeks to understand why and how specific transportation infrastructure investment decisions get made. This section will begin with a review of the literature on the politics of transportation infrastructure investment, and then chart the current procedures that are used to make transit investment decisions. Such a review will provide a second lens through which to understand the development of specific infrastructure projects.

Motivations, Politics and Transportation Investment Decision Making

In recent years, urban transportation issues have catapulted into the public consciousness, and consequently to the top of the urban agenda in many countries around the world. This is in no small part a reaction to reports of economic loss as a result of increased road congestion, environmental degradation stemming from growing automobile usage (Newman and Kenworthy 1999), and declining social equity of mobility between those who operate and those who do not operate personal motor vehicles (Grengs 2002).

Investment in public transit provides one component of a solution to these issues, and fits

within a policy thrust promoting sustainable development, defined in terms of a desire to meet environmental, economic and social concerns (Kennedy 2002).

In light of the transportation problems that cities face, the decision to invest in specific projects is rooted in a desire to provide tangible improvements to the existing situation (Edwards and Mackett 1996). For example, Mackett and Edwards (1998) uncovered six transport related variables that were identified as salient in guiding investment, which I have classified into two categories. First are tangible benefits that are directly related to the movement of people, including reduced traffic congestion, greater improvement of public transit and better access to the city centre. Second are tangible benefits that come as a by-product of improved public transit. These include both localized and global environmental amelioration if trips made by pollution emitting personal motor vehicles are replaced by zero emission transit trips, and the stimulation of economic activity and property development as a result of improved accessibility.

In addition to the desire to ameliorate particular transportation problems, two non-mobility related criteria were also seen to shape investment decisions. First, transit mega projects can support the cultivation of positive symbolic meanings, including an image of urban vitality, community pride and cohesiveness, a sign of a permanent effort towards revitalization, and a linkage with a city's historic modes of communication (particularly in the case of streetcar reinvestment) (Edwards and Mackett 1996; Siemiatycki 2005a). In this sense, high quality public transit facilities can be seen as part of the package of local amenities that Florida (2002) sees as necessary for cities to attract the 'creative class' of highly skilled, footloose workers and the innovative economic activities they generate.

A second non-mobility factor shaping investment decisions was the existing level of regulation and the degree of private sector involvement in the transit industry. Private sector involvement in the operation and maintenance of transit facilities through private-public partnerships encouraged the selection of technologies that were familiar, proven and reliable (Edwards and Mackett 1996). Third, funding programs for transit from

senior levels of government are more readily available for capital expenses than operating expenses, and in many instances overtly favoured rail projects. Faced with declining revenue bases, the transit capital investment decisions of local governments have been largely beholden to the stipulations of senior levels of government (Li and Wachs 2001). Taken together, these structural characteristics of the institutional environment encouraged decisions that favoured expensive rail projects, even as other alternatives such as bus-based systems may have been more cost effective (Edwards and Mackett 1996).

Overall, while the approach outlined above highlights the official motivations that typically guide transit infrastructure investment decisions, it is largely bounded by a construction of decision makers who rationally seek to fulfill their objective goals (Meyer and Miller 1984). However, in the last half century, this conception of decision makers as rational utility maximizers has been challenged by a diverse series of scholars who have sought to present an altogether more complicated picture of how and why decisions get made. In particular, they have sought to recast transportation planning and decision-making as an inherently political process that is pluralistic yet consensus seeking, complex yet in search of problem simplification, and pervaded by uncertainty yet risk averse (Li and Wachs 2004). Transportation investments are thus seen as fundamentally about trade-offs between costs and benefits, winners and losers

Transportation investment decisions are not only directed by stated priorities, but the stated priorities are shaped through the interactions of policy makers, bureaucrats, interest groups and stakeholders, each of whom may have a strikingly different vision of a desirable future. Studies of early participatory transportation planning efforts in Canada, the United States and Europe found that investment decisions are reflections of power relations, with elected officials and special interest groups imposing immense pressure on the bureaucratic staff to advocate for a policy package that suits their interests. In the search for an advantageous consensus, all parties involved also sought to shape the public discourse to provide their group with better negotiating leverage (Pill 1978; Gakenheimer 1978; Flyvbjerg 1998).

The production and dissemination of technical information serves a critical role in the planning process. Once seen to be the impartial technical foundation for transportation decision-making, quantitative analysis and forecasts have been reconstructed as a negotiated process over competing visions of the future. In light of endemically understated costs and overstated patronage for public transit mega projects (Pickrell 1992; Flyvbjerg et al. 2003), forecasts have come to be seen as the product of systematic institutional pressures that situate bureaucrats as political agents in the shaping of transportation investment outcomes (Hall 1982). To this end, technical information such as forecasts, models and opinion surveys are increasingly identified as persuasive rhetorical devices used by planners and project promoters to shape political and public support for specific initiatives (Throgmorton 1991).

More recently, a far more trenchant analysis of the motivations for transit investment has been constructed, which places central emphasis on deception and malfeasance in guiding the mega projects that actually get constructed. Articles such as 'When planners lie with numbers' (Wachs 1988) and 'The lying game' (Flyvbjerg 2003) illustrate that there is a systemic pattern of wilful misinformation on the part of project proponents. As Flyvbjerg notes, the projects that get built are not

necessarily the best ones, but those projects for which proponents best succeed in conjuring a fantasy world of underestimated costs, overestimated revenues, undervalued environmental impacts and overvalued regional development effects. (2003: 60)

For Altshuler and Luberoff (2003), the continued investment in urban transit mega projects in spite of systemic underperformance reflects the private financial benefits and political potency of a pro-transit message. Transit resonates with a wide range of powerful interest groups, including downtown and construction related businesses, consultants, construction and transit labour unions, environmentalists, and advocates for the poor. Concurrently, the failure to invest in transit has 'great nuisance potential.' In this sense, transit investment is part of a confluence of business and political forces,

which guides individual decision-making.

The implications of a transportation decision-making paradigm that highlights both transport-specific criteria and political factors are two fold. On the one hand, such an approach suggests the need for more quantitative research into tools that better assess the relative merits of specific proposals, in an attempt to reduce the uncertainty surrounding decision-making. On the other hand, there is a need to review the processes through which transportation mega projects are planned and approved, in an attempt to determine whether a structure can be devised that internalizes uncertainty, centralizes political factors and provides better incentives for actors to behave honestly, transparently and accountably.

If the studies by Flyvbjerg and Wachs among many others are any indication, a reliance on devising more sophisticated tools for evaluating transportation investment decisions will not in and of itself lead to the selection of better projects. As clearly stated in the title of an article by Edwards and Mackett (1996), developing new urban public transit systems is 'an irrational decision-making process,' in which political frameworks beyond the rational decision making of planners create a situation where projects get built that are not necessarily those that are most highly prioritized. To put it another way, transportation investment decisions are not necessarily irrational; instead the traditional view of technical rationality is complemented by what could be called a political rationality. Decision-making exists in a political realm where self-interested actors are not bound by the results of any technical studies; on the contrary, they marshal evidence and use power relations to suit their interests (Forester 1989). And the chain of accountability for those who ultimately make investment decisions is not to a panel of transit experts, but to an electorate whose perception of a project or plan is more malleable. In this sense, while there is certainly a need to devise better evaluative techniques, and quantification of alternatives is useful for making investment decisions, there is a more pressing need to explore the processes through which investment decisions are made (Hall 1982; Flyvbjerg et al. 2003).

The Processes of Planning Transportation Infrastructure Investment

At its core, the process of making transportation investment decisions is a manifestation of who defines the problem, and who controls the power to make decisions about resource allocation in the city. Due to the great financial and quality of life benefits and costs associated with transportation investments, interests are often highly polarized and deeply ingrained. The divisiveness of transportation investment decision can be further exacerbated by the fact that even slight compromise in position by a given group can have a large effect on their financial outlays for the project, or irreversibly alter the group's existing way of life.

After decades of rational comprehensive planning, what Schon (1983 vii) termed a 'crisis of confidence in professional knowledge' began to seep into transportation planning. By the 1970s, there was a growing recognition that public participation and the search for consensus through dialogue had the potential to more broadly set problem definitions and ameliorate project impacts (Meyer and Miller 1984). In North America, some of the earliest large-scale participatory planning exercises for transportation projects were undertaken in Boston in 1971 and Toronto in 1974.

Building on these early experiences, collaborative planning processes have come to be seen as a mechanism to create projects that are more in tune with the desires of the community, while fostering mutual understanding and capacity building among disparate interest groups (Innes et al. 1994; Healey 1997). In this formulation, participation is voluntary, and control stems from the power of deliberation through the cultivation of situations that give equal voice to disparate interests, rather than through legal regulation (Woltjer 2000). The definition of knowledge is also expanded through collaborative processes so that information brought forward by experts and non-experts alike is valued on its merits (Friedmann 1973; Sandercock 1998).

Finally, in collaborative planning, emphasis is placed on planning's political nature, which cannot be untangled from relations of power that direct the allocation of scarce

resources. Collaborative planning seeks to redress systemic issues of inequality, such as asymmetrical access to information and representation, and foster a more diverse dialogue about both problem definitions and potential solutions (Schon 1983; Forester 1989). Even as broader dialogues are held, elected officials remain ultimately responsible for deciding which projects gain approval, and state planners maintain a monopoly on the production of official information, including statistics, problem definitions or the identification of 'realistic' alternatives. To this end, the connection between listening to the different points of view that may be presented through a participatory process, and using this information to formulate policies is very important.

To achieve more collaborative forms of transportation planning, a variety of practical strategies have been utilized. Early processes engaged in large public meetings, workshops, long-term working groups and public advisory committees (Pill 1978; Gakenheimer 1978; Crewe 2001). Public comment has also become a mainstay of the transportation planning process, where draft plans are released for public scrutiny and discussion (Innes and Booher 2004). More recently, an even more inclusive dialogue has been sought through the use of Internet web sites, participatory video and extensive public opinion surveys. Information dissemination has also been increased significantly, with in-depth official planning documents now more readily available to the public in some contexts.

To date, reviews of participatory planning in the field of transportation have been mixed. Willson et al. (2003) present collaborative planning techniques as an important complement to technical processes in transportation planning, since they can broaden the range of potential solutions under review. They also follow Innes' line of thought by stressing the positive impact on both outcomes and process leading to community capacity building and empowerment. For Flyvbjerg and his colleagues (2003), public participation is a critical mechanism for increasing the rationality of transportation infrastructure decisions through better transparency and accountability. Recognizing the importance of participation, governments are increasingly prescribing public participation as a mandatory part of the transportation infrastructure planning process (see the

Transportation Equity Act for the 21st Century in the United States for example).

However, as Innes and Booher, two leading proponents of the application of participatory planning, wrote in a recent article, 'legally required participation methods in the US not only do not meet most basic goals for public participation, but they are also counterproductive, causing anger and mistrust' (2004: 419). Continuing the criticism, current participatory practices in the field of transportation have often failed to attract involvement from a diverse spectrum of the public, or improve the decisions that public agencies and officials make (Woltjer 2000). Furthermore, some interest groups claim to have become disenfranchised by participating through official channels since they feel their objections are not actually taken into consideration at the time of decision-making, and have subsequently resorted to legal challenges and extra-legal protests (Grengs 2002). And in light of mounting criticism, some government officials and planners have become weary of listening to the public at all (Innes and Booher 2004).

Despite the admitted failings of participatory planning to date, advocates of these techniques continue to believe in their effectiveness, and seek pedagogical and procedural improvements to the way they are applied (Healey 1997). For instance, Innes and Booher (2004) suggest that participatory planning can be revitalized as an applied tool through the better development of genuine dialogue. This is achieved through open, multi-directional dialogue between planning officials and the public, so that even if a participant does not like the outcome, they can still understand and appreciate the process through which the decision was made. The development of networks through collaborative processes also provides an opportunity to redress power imbalances, through the sharing of resources and mutual learning. Even if desired outcomes are not met, community capacity can be a positive by-product of a collaborative process. Finally, participatory planning practices can benefit from a new interconnectivity of decision-making between multiple scales of government and non-state organizations, which have broken up conventional institutions and dispersed power to a broader range of constituencies (Hajer and Waagenaar 2003). A systems approach is necessary to accommodate the overlapping actions and responsibilities of state agencies, individual

citizens, private businesses and non-governmental organizations that comprise present-day society (Innes and Booher 2004).

The emergence of a networked, integrated planning framework has become particularly dominant in the contemporary transportation sector. Yet unlike Innes and Booher (2004) who see such interactions as an opportunity to strengthen participatory planning, there is evidence to suggest that these relational arrangements may undermine the potential to achieve genuine collaborative planning. This is primarily because the relationship that has become the strongest is that between government and the private sector, often at the expense of other stakeholders. As a result, private sector firms, often selected through competitive tendering processes, have become increasingly involved in all aspects of transportation service delivery, including the planning and financing stages.

The growing intermingling between private and public sector planning actors can have three detrimental impacts on effective collaborative planning processes. At a surface level, some of the key information produced by the private sector for public agencies is of a proprietary nature, and competitive bidding processes to select private consultants or concessionaires often require a high degree of secrecy to maintain the integrity of the tendering procedure. The need for secrecy that is embedded in the structure of the partnership between the private and public sector can reduce the widespread dissemination of information, and challenges the potential for transparent planning processes.

Even more profound is the impact on accountability. Simonsen and Hill (1997) have shown that the widespread delegation of advisory opinions and even some decision-making authority to private actors reflects a convolution of public fiduciary stewardship on the part of elected officials. Specifically, many top consulting firms that provide advice to governments on the merits of private-public partnerships also explicitly promote their services to the private sector, and generally stand to profit from increasing privatization in all sectors of the economy (Ghere 2000). A similar relationship can be observed of top engineering firms, whose services are procured by both the private and

public sectors, and thus generally stand to benefit most widely from a proliferation of large-scale engineering solutions. The ingrained interests of the private consulting and engineering firms can create a strong incentive to provide advice that encourages the spread of privatization in the case of the consulting firms, and large engineering solutions to urban transportation challenges in the case of the engineering firms— even when other alternatives may be available.

A final challenge posed by increased interconnection of the private and public sectors in the planning and delivery of transportation projects is the fostering of relationships of imperfect information. Working from inside the bureaucracy and in widespread partnership with elected officials and agency staff, private firms benefit from asymmetries in information and connections that enable them to promote their interests more effectively than other stakeholder parties during collaborative processes. This challenge has been highlighted in the trenchant critique of neo-classical economics put forward by Nobel Laureate economist Joseph Stiglitz (1986).

In the contemporary transportation planning landscape characterized by increasingly tangled government and private sector functions, the process of producing infrastructure has a significant influence on the types of projects that will be developed. Understanding why specific infrastructure investment decisions get made requires an examination of both the planning process, and also the contextual mode of production within which it is subsumed. To this end, we now turn to an examination of the evolving methods of producing transportation infrastructure projects.

The Method of Producing Transportation Infrastructure Projects

Issues of politics, processes and procedures have been well examined in the literature on urban transportation. Many of the theoretical frameworks presented above such as regime theory, public choice theory and so-called growth machines have been applied to explain the development of transportation mega projects (Altshuler and Luberoff 2003). In this section, I will shift focus to explore the mechanisms that have been employed to

deliver transportation infrastructure projects: in other words who designs, finances, builds and operates the system.

Evolutions in the Provision of Transportation Infrastructure

I will use the example of evolutions in the delivery model of public transit projects to highlight the broader transformations that have occurred in the transportation sector. The development of roads for automobiles has undergone a similar shift in the delivery model to that which will be described below for public transit, although the dates and reasons for transformation are certainly different.

A brief history of the public transit sector in Canada (which parallels the experience of other countries such as Britain and the United States in terms of operations, patronage and ridership) reveals large cyclical oscillations in the viability of the sector, as well as the prevalence of private involvement and competition in the sector. From its provenance in the late 19th century, all aspects of urban public transit infrastructure financing and operations in Canada were the domain of the private sector, spurred by open market competition and only minimal regulation.

For a time this model was successful and transit service levels and ridership expanded. Over the long run, however, public transit operating under competitive forces faced deteriorating service quality, safety levels and operating standards, a lack of fare integration, as well as business consolidations and collusive behaviour which eroded the level of competition (this actual experience with private ownership in the transit sector is overlooked in some accounts such as Lave 1985 and Flyvbjerg 2003). Additionally, while public transit was recognized as an important force in shaping urban development patterns, the private sector was largely unwilling to invest in expanding service outside their core profitable markets (IBI Group and Soberman 2001). By the mid 1960's, governments in all major cities of Canada had assumed the responsibility for planning, procurement, financing and operating public transit systems.

Under public control, Canadian urban transit systems experienced their largest capital and service expansion, and ridership reached its highest levels in many cities. In what has become known as the conventional model of infrastructure planning, government was responsible for setting policy objectives that best achieved the public interest, and then determined how best to achieve these objectives. In this model, private sector firms were contracted by the planning agency to provide a specific solution, and financing was sourced entirely from the public sector (Flyvbjerg et al. 2003).

Yet the provision of urban mass public transit service in Canada under public monopoly ownership was unable to control broader societal trends of suburbanization and the rapid growth of car ownership, which challenged the effectiveness and competitiveness of public transit. Between 1960 and 1995, the number of registered private motor vehicles in Canada grew from some 5 million to over 17 million (Statistics Canada 1996).

By 1990, public transit operators were prone to the financial squeeze facing the public sector more generally, and transit systems in Canada felt the impact of declining revenue and rising operating costs, coupled with a decreasing share of total travel trips. As a long-term trend, between 1960 and 1996, annual transit rides per capita fell from 135 to just over 84. There is some ambiguity about cause and effect relationships from this point on, but the overall outcome was an extended period of declining operational efficiency, under-investment in new infrastructure, cuts to existing service, and transit fares which grew almost three times faster than the cost of operating a car (Pucher 1998).

Beginning in the mid 1990s, however, public transit ridership trends in Canada began to reverse, buoyed by rapid population growth in Canada's largest cities. Between 1996 and 2003, ridership grew on Canadian public transit systems by about 15 percent, and the 1.553 billion trips taken on transit nationally in 2003 was the highest number ever recorded. Nevertheless, investment in transit infrastructure has not kept pace with ridership growth. A survey conducted by the Canadian Urban Transit Association (CUTA) found that for the period 2004-2008, transit systems across the country are in need of \$21 billion worth of infrastructure investment, an increase of \$7.4 billion over the

2002-2006 period. Some \$6.9 billion of this needed investment is to keep equipment in a state of good repairs, while \$14.1 billion of new infrastructure is needed to accommodate projected ridership growth. Geographically, Canada's largest municipalities reported the greatest need for increased investment, with 75% of all needs reported by Toronto, Montreal and Vancouver. Despite the reported need for renewed transit investment, the study found a possible funding shortfall of as much as \$9 billion (CUTA 2004).

Seeking to reverse the prolonged period of under-investment in public transit, governments across Canada have increasingly sought alternative mechanisms to plan, finance, develop and operate infrastructure projects. At one end of the spectrum, some agencies such as the Toronto Transit Commission have sought to strengthen the public management function, and lobbied to increase the size and stability of government funding commitments.

At the other end of the spectrum, proponents of neoliberal economic philosophy in jurisdictions such as York Region and the Greater Vancouver Regional District have been effective in promoting governance structures and provision models that encourage market discipline, competition and commodification of services, while protecting against some of the pitfalls that plagued earlier privatization efforts. In this sense, when applied in urban settings, neoliberal policies have embodied an emphasis on:

- The strict use of financial criteria such as cost recovery to assess the viability and necessity of public services. Known as fiscalization, this phenomenon has also included the increasing prevalence of user fees to cover the cost of public service provision (Deakin 2003).
- An evolution in the role of the state to become more responsible for establishing and maintaining the preconditions for fair and competitive enterprise, as opposed to directly providing services.
- The search for collaborations between government, business and the non-profit sector to formulate public programs that will be mutually beneficial. This has included the increasing delegation of some planning and service provision functions to the private and non-profit sectors (McQuaid 2000), with an eye towards reducing costs, and increasing efficiency and service quality.

- In a climate of heightened global interactions and competition for footloose capital, at the local scale, civic governments have become increasingly entrepreneurial in their approach to attracting investment. Increasingly, the availability of high quality public infrastructure, such as transportation services, has become recognized as an important component of private sector productivity and residential quality of life (Satya 2003; Florida 2002). This has led governments to invest in transportation systems that are not only designed to provide benefits to local ridership, but are also meant to be attractive to international investors, migrants, and tourists.

One such method to apply some of the precepts of neoliberalism to the provision of urban services has been through the introduction of private-public partnerships that encompass system design, financing, construction and operation. While such arrangements have been widely employed in other developed countries such as Britain and Australia to help stimulate new investment in both road and public transit infrastructure, it is only recently that they have been experimented with in the Canadian transportation industry.

Unpacking the Private-Public Partnership

Design-finance-build-operate private-public partnerships are a unique form of private sector involvement in the provision of public infrastructure, and are applied similarly to both public transit and road projects. Under such arrangements, a public sector agency defines a series of minimum performance standards for a new service that they wish to deliver (eg. travel time, frequency, safety, cleanliness in the case of a transit link). Private proponents are then invited to use their expertise to propose the designs for a system that best meets the performance standards at the lowest cost. The winning bidder is selected through a competitive tender process, whereby the procuring government agency evaluates and selects the proposal that best meets the performance criteria at the lowest cost. While cost usually remains the dominant selection criterion, the long-term contractual nature of such arrangements have led to the consideration of other variables such as past reliability, credit worthiness and corporate reputation.

Through a concession agreement, the winning bidder is invited to form a special purpose 'project company' to realize the planning, financing, construction and operation of the

project. The concession agreement specifies a set of quality and quantity standards to be met by the project company. The project company is comprised of different partners with expertise in specific elements of the project, and often includes civil engineering contractors, financial and legal advisors, planning and design consultants and service provision firms. The project company obtains financing from private lenders such as banks, insurance companies, and pension funds, who are specifically concerned with the potential for revenue generation by the project (Walker and Smith 1995).

Capital is typically borrowed on a non-recourse basis, meaning that lenders cannot seek financial restitution or repayment of their loans from either the project company partners or the contracting public sector agency. For private members of the project company, their borrowing capacity is maintained by keeping off-balance-sheet the liabilities incurred by the project company. Instead, recourse in the case of loan default or failure to meet service provision standards is limited to the project company and its assets, which may include any real estate, plant and equipment or other rights contractually acquired. In practice, since the project company has few tangible assets, most projects require some level of guarantees by the private members of the project company or the public sector contracting agency (Debande 2002). Even so, the risk associated with financing transportation projects has meant that private sector borrowing interest rates are set higher than those that would be available to the public sector with a sovereign guarantee (Flyvbjerg et al. 2003).

The project company is reimbursed for its initial financial contribution and a return on investment through public sector contributions and revenues generated during the operation of the project, which are subject to penalties for substandard service provision as defined in the concession agreement. In this sense the role of the government shifts from being an owner of assets and direct provider of services into a purchaser of services through long-term agreement. The public sector is responsible for service monitoring, and only pays if the service meets the set of standards as specified in the contract.

Operating contracts are usually granted for between 30-50 years, after which time the

asset reverts back to public ownership. As such the private-public partnership differs from the conventional mega project production process, where the public sector has separate contracts for construction and operation that are fully designed prior to award. This is meant to stimulate innovation in the types of solutions that are suggested. It also differs from outright privatization where the ownership rights are permanently transferred to the private sector, and contracting out in which the public sector procures the capital assets and the private sector is only contracted for service provision (Debande 2002).

In the design-finance-build-operate-transfer style private-public partnership, the project is driven by the allocation of risks to the party best able to manage them. For transportation projects, major risks exist at two stages of the project: during construction as a result of possible cost overruns; and during operation as a result of revenue shortfalls if ridership levels fail to meet forecasted levels. For urban rail projects, each of these risks is of real concern. Statistical analysis by Flyvbjerg and his colleagues (2003) found that of forty-four urban rail projects analyzed, the average cost overrun was 45 percent. At the same time for the twenty-two projects for which ridership data was available, actual ridership was 51 percent lower than that forecasted. For road projects, while cost overruns of 20 percent were average, usage was on average 9 percent higher than expected.

In terms of the division of risk, for urban transportation projects that are part of an existing system, risks associated with construction are often best managed by the private sector. Thus concession agreements are often structured with a fixed construction cost, and any cost overruns during construction are borne by the project company and their lending institutions. Conversely, risk associated with demand can best be managed by the public sector, since such levels are based not only on service quality on the specific facility, but also integration into the entire system, fare policy and marketing. As such, it is not uncommon for the private concessionaire in a transportation project to be reimbursed a fixed amount for service rendered, with the public sector then receiving the revenue generated through the fare box. In this sense, the financial risk of ridership falling below forecasts is borne by the public sector (Debande 2002).

The increased prevalence of private public partnerships for the delivery of transportation infrastructure can be seen as the result of a variety of motivations:

1. The private sector has access to capital that may not be available to heavily indebted governments. In other circumstances, private sector financing of expensive transportation infrastructure is attractive to governments as it enables them to provide necessary public services without adding expenses to the liabilities side of their balance sheet. This can be important in contexts where having a balanced budget has a high degree of political currency (Bruckermann 2003).
2. Recourse to the private sector for financing and long-term system operation will result in more realistic project appraisal and viability analysis, since shareholders will be directly responsible for any failures. In this sense, the private-public partnership seeks to align interests with those that have a financial stake in the project, thus reducing incentive to be dishonest or overly optimistic. It also provides a greater incentive for full lifetime costing during the planning stages that may lead to more efficient technology and higher standards of construction, since the firm that builds the system can benefit from reduced operation costs over the life of the concession agreement (Walker and Smith 1995).
3. There is the potential for increased efficiency and innovation in the provision of public services, if a tendering mechanism is employed that uses performance specifications. This differs from a more traditional approach where the government procurement agency establishes design standards, and then tenders private firms who can develop the technology (Debande 2002).
4. The private sector payment of cost overruns during the construction phase of the project removes a significant risk from the public sector. Under a more traditional delivery mechanism, the public sector would have no choice but to pay for any added costs. An added benefit is that because the construction specifications are contractually agreed upon, there is less likelihood of *in-situ* specification changes that have become a large source of cost escalations in public sector projects (Debande 2002).

Based on the description of private-public partnerships provided above, this mechanism of producing urban public infrastructure is in many ways a form of conflict resolution that extends beyond the classic dichotomies of public versus private service provision, and instead proposes a more conciliatory 'third way'. Proponents argue that the narrative of partnerships between the private and public sector promotes cooperation, compromise and the alignment of interests in order to provide public services that better meet the needs of the population, at an affordable price to the citizenry. In fact, leading transport policy experts such as Bent Flyvbjerg have advocated private-public partnerships as a

mechanism to increase public accountability and alleviate the systemic rent seeking and malversation that has plagued infrastructure mega projects. In this light, it is no wonder that the private-public partnership has achieved widespread support from different levels of government, and from actors across the political spectrum (McQuaid 2000).

Transportation for a Livable City

Thus far, this chapter has examined how decisions related to transportation infrastructure investments are made, focusing on the institutional context, the political dynamics and planning processes, and the evolutions in delivery mechanisms. In this section, I will explore the linkage between the way that projects are planned, and the effectiveness of infrastructure solutions that are favoured. According to Vuchic (1999), transportation for a livable city has three characteristics: it is people oriented and environmentally friendly; economically viable and efficiently integrated into the activities of the city; and socially sound, that is without socio-economic, demographic or disability-based barriers. Despite this definition, as I will illustrate, both the conventional public sector planning model as well as the more contemporary private-public partnership approach to planning have supported the proliferation of infrastructure mega projects which are often ill-suited to effectively provide transportation for a livable city.

Providing Effective Transit in Dispersed Cities: A System Wide Approach

Greater Vancouver, like most North American cities, has pockets of high-density development, but is largely characterized by a dispersed residential, employment and recreational land use pattern. Today, a greater share of the region's residents live, work and recreate in suburban communities, than in the dense urban core itself (City of Vancouver 2003). This creates travel patterns that do not only flow radially into and out of a central business district. Instead, travelers have unique origins and destinations, which may be radial or orbital. These travel patterns differ significantly from the radial flows that underpinned late 19th and 20th century infrastructure investment strategies in the great transit metropolises of Europe, and require unique solutions to effectively

provide urban mobility and accessibility. At the same time, effective urban mobility is not just about the movement of people, but also the movement of goods, much of which is carried by trucks.

To effectively provide transportation services in a dispersed city, there is a growing recognition in both the academic and professional planning literature that service must be provided using a flexible, integrative, regional approach, where performance is evaluated on a system wide basis. As was framed in the 2001 *American Draft of the Proceedings of the National Summit on Transportation Operations* (Kalhammer and Belella 2001), which brought together diverse transportation service provision professionals and politicians:

All transportation decision-making processes, including capital planning and programming processes, need to be based on enhancement of overall transportation system performance. Incorporating a performance focus into existing processes requires understanding customer needs and expectations more fully, establishing performance measures focused on outcomes (as opposed to outputs), and tracking performance against those measures. (38)

In terms of service design for public transit, Mees (2000), Pucher (1998) and Richmond (1999) suggest that transit service in dispersed cities is most effectively structured as a dense network, with high frequency and reliable service provided on both radial and orbital cross-suburban routes. The busiest routes may be served using high capacity modes such as grade segregated rapid rail or bus, yet this is not always necessary. Pucher's (1998) research on public transit in Canadian cities notes that integrating bus priority measures into the existing transit network could achieve many of the same objectives as new rail systems, and at a fraction of the cost. For more inter-suburban travel, the use of high capacity trunk lines that are supported by feeder services can be an effective part of a flexible, integrated transit system (Mees 2000; Vuchic 1999; Cervero 1998). The key to such an approach is that the trunk line remains part of a well resourced network of transit service.

Temporally, Mees (2000) emphasizes the need to provide frequent service during off-

peak as well as peak times to capture the wide range of trip purposes that take place throughout the day. Affordable and integrated fares across the entire network are also an important component of an effective transit system. By blanketing the city with a spatially and temporally dense network of integrated transit services, users can conveniently reach any location within the grid.

In addition to system design, effectively providing transit in dispersed cities over the long term requires a conscious effort to link land use development patterns and transit service patterns (Cervero, 1998, Newman and Kenworthy, 1999). As Cervero (1998) demonstrates in his seminal work *The Transit Metropolis*, the effective linkage between transportation and metropolitan form can follow a variety of paths. City form can adapt around transit nodes, as has occurred in Stockholm, Sweden. Transit service can adapt to meet the configuration of an existing urban form, as occurred in parts of Adelaide, Australia's transfer-free suburban bus network. Hybrid models can also evolve as in cities such as Ottawa, Canada and Curitiba, Brazil, where there has been a policy direction that combines fixed transit infrastructure investment to encourage dense accompanying land use, as well as high frequency regular transit service in more low-density areas. Accompanying the need to link urban form and transit service, Zhang (2004) has shown that land use policies are more effective at influencing the traveler's decision to use transit when complemented by road pricing policies that make transit less costly relative to operating a car.

In the face of increasing knowledge about the qualities that characterize an effective transit system, government bodies that manage urban transportation have been restructured in many jurisdictions to facilitate more coordinated, integrated, region-wide transportation planning (Berman et al. 2004). In cities such as London and Vancouver, regional transportation planning authorities accountable to the local level of government have been formed, with the broad mandate of facilitating improved planning of multi-modal and inter-municipal service integration, as well as common fare structures. These authorities have also been charged with responsibility for bicycle infrastructure and roads within the region, thus providing the potential to better integrate public and private

transportation services. Their close ties with local authorities have encouraged a linkage between transportation and land use policy. Finally, in both the London and Vancouver case, the regional transportation authority has been given jurisdiction over pricing strategies such as transit fares and road charging, which has been shown to be an important variable in influencing transportation travel decisions.

As this final point indicates, roads are also an important component of an integrated transportation network. At present, the vast majority of all passenger travel trips in North American cities are made by private motor vehicle, ranging from over 90% in some American cities to as low as 60% in some Canadian locations (Newman and Kenworthy 1999). In recent years, the number of trips per person as well as the absolute number of people traveling by car has increased, resulting in considerable increases in road congestion and delays.

Additionally, the road network provides a central link in the movement of goods. In Canada, trucks move the vast majority of goods within cities as well as across the border with the United States, and are primarily charged with carrying high value manufactured and finished products. With some 80% of the Canadian population living in urban areas, efficient on-road goods movement has increasingly been recognized as a critical element of the economy, as well as an employment generator in its own right (Transport Canada 2003). Finally, roads provide the underlying facility upon which public transit buses operate.

Amidst the diverse pressures placed on the existing road network, transportation planners and engineers have increasingly sought measures to maximize the efficiency of the existing road network within a wider transportation system. Measures to maximize the efficiency of road usage have included the implementation of high occupancy vehicle lanes to encourage car-pooling, the provision of better information about accidents and road conditions for drivers, dedicated lanes for public transit vehicles or trucks, and road pricing schemes so that drivers can cover the full cost of road usage, while encouraging less valued trips to be made by other modes of transportation. Although policies to

maximize the efficiency of road usage have delivered some level of success, many North American cities have simultaneously continued to construct new general-purpose lanes of traffic, even as evidence shows that such an approach provides only minimal long-term relief from urban congestion (Downs 2004).

Supporting Mega Project Development

In the previous section, it was shown that the planning of transportation services through an integrative framework has been supported by professional rhetoric, academic research and innovative governance structures. Nevertheless, the potential to actually employ such techniques may be challenged by, amongst other factors, the mechanisms through which transportation infrastructure are delivered.

In North American cities, the proliferation of a mega project paradigm to solve problems of urban mobility at the expense of more system-wide approaches has been widely encouraged under public monopoly ownership, financing and operation. For instance, it has long been noted that senior levels of government have structured their funding programs to favour covering capital costs over system-operating costs. In the public transit sector, this has had the effect of promoting investments in capital-intensive, suburban-serving projects over alternatives policies such as service frequency improvements on existing routes, or fare reduction policies (Li and Wachs 2004; Mackett and Edwards 1998). Moreover, Taylor (2000; 2004) shows that transportation infrastructure priorities and technical specifications have been largely set by a political negotiation over the availability of funds for certain types of projects - namely high profile rail and road projects that deliver elevated political reward.

More recently the private-public partnerships approach to infrastructure development has further encouraged large-scale projects that are planned in isolation from an evaluation of the entire system. Private-public partnerships are structured on a project-by-project basis, where investors are interested in financing specific infrastructure projects that offer the highest rates of return (Taylor et al. 2001). Even as the strategic planning and service

coordination function under such a delivery mechanism remains in the public domain, the private-public partnership approach provides an incentive to evaluate infrastructure projects in isolation, with particular focus on individual cost recovery. And in the end, private sector financiers determine whether a project is appropriate for investment, based on its ability to generate sufficient profit.

As well, evidence suggests that investors favour projects that use existing technologies and are competitive with other transportation modes on variables such as travel time and service reliability. In the public transit sector in particular, this has led to a preference for systems that achieve high levels of grade separation, often through expensive tunneling for subway systems (Edwards and Mackett 1996; Bowman 2002). For roads, this has often meant the development of large limited access highways, which can carry high volumes of traffic.

Following this logic, in an international market where road and rail projects are competing for scarce private sector funding, large-scale projects provide total returns that are significantly larger than smaller projects, even at the same rate of return. The private financing of a \$1 billion project, for example, will yield ten times more profit than a \$100 million project at the same rate of return over its lifetime. In short, private sector investors will tend to see the greatest potential for profitability and risk mitigation in mega scale transportation solutions, primarily grade separated projects that use familiar technologies.

Implications of a Mega Project Development Paradigm

Yet from a public planning perspective, the individual projects that are the most financially rewarding for either politicians or the private sector, namely capital-intensive rail projects, may not be the highest priority, or provide the highest value to society at large in terms of economic, environmental or social benefits (Debande 2002).

Economic Benefits: Congestion is a problem that plagues cities around the globe,

estimated to cost billions of dollars annually in lost productivity. High quality off-road public transit services such as subways or elevated light rail lines are often proposed as a solution to congestion on high traffic corridors. In theory, by transferring some commuters from private vehicles to off-road public transit, more room will be available for the remaining vehicles. Yet reduced road congestion is premised on converting car users to transit, a phenomenon that has not been widely observed with the opening of new urban rail lines (Flyvbjerg 2003).

One trend that has occurred is that the development of off-road rail projects is sometimes used to reduce bus operations (Richmond 2001), thus freeing up more road space for private vehicles. Yet following the principle of induced traffic demand that has been demonstrated to exist when new freeway capacity is developed (Cervero 2003), new car commuters or goods vehicles quickly use up any new road space created by transfers to rail. As an example, the inauguration of the Bay Area Rapid Transit system in San Francisco resulted in just six months of congestion relief on the parallel running Oakland Bay Bridge, before trains ran full and traffic on the bridge returned to previous levels (Stopher 2003). Thus congestion relief benefits as a result of individual off-road rail lines may be short lived, since these projects do not take away car lanes.

The stimulation of commercial activity and property development is another potential benefit that is attributed to urban rail mega projects. Proponents of large urban rail projects suggest that such infrastructure can lead to increased commercial activity around station nodes, and developments that are oriented towards transit ridership and promote greater livability. While such a phenomenon has certainly been demonstrated to accompany certain rail investments, it is by no means ubiquitous, nor is investment evenly distributed throughout the new system (Hall and Hass-Klau 1985). As well, both Richmond (2001) and Cervero (1998) have demonstrated that less capital-intensive infrastructure projects such as the busway in Ottawa have been successful in catalyzing both commercial activity and transit oriented property development.

The development of new roads faces many of the same challenges as large-scale public

transit facilities. Despite returning to vogue as a central component of a potential solution to urban congestion in cities around the world, Cervero (2003) and Downs (2004) amongst other have challenged the effectiveness of this strategy. In a phenomenon that has been termed 'triple convergence', Downs (1992) argues that widened or new roads attract drivers who previously used alternate routes, traveled at other times or used different modes of transport. Additionally, improved accessibility provided by new roads attracts new developments that are oriented towards the automobile such as large format retail stores or low-density office parks, which serve to reinforce the dependence on the private automobile. Finally, new roads encourage longer distance and more frequent commutes. In sum, within a short period of their construction, new or widened roads typically reach a congested state.

This phenomenon has been confirmed by quantitative studies. To quote a summary of Noland and Cowart's 'Analysis of Metropolitan Highway Capacity and the Growth in Vehicle Miles of Travel,' presented to the U.S. Transportation Research Board, January 2000: 'Widening and building new highways actually causes, not relieves, traffic congestion in Cincinnati and other major U.S. metropolitan areas. This study estimates that up to 43% of traffic in Greater Cincinnati is caused just by expanding the area's road network.'

Environmental Amelioration: investments in public transit have the potential to attenuate a diversity of environmental problems that are currently being exacerbated by the high level of automobile usage in Canada. The transportation sector is responsible for emitting a high level of harmful local air pollutants that cause respiratory diseases, a considerable portion of which are produced by the private automobile. Canadians are among the highest per capita users of energy in the world, and the transportation sector comprises a large portion of the total amount of fossil fuels consumed. The transportation sector in Canada is also the second largest emitter of greenhouse gases after the electricity and petroleum industries, and within the transportation sector, gasoline fueled automobiles emit the greatest amount of greenhouse gases (Environment Canada, 2004).

Due to the diverse impacts which the transportation sector has on the environment, the benefits of spending on public transit occur if a transit investment leads to a reduction of travel trips using pollution emitting vehicles (such as cars and diesel buses), and switches them to a less polluting and more energy efficient mode of transit (such as trolley bus, electric light rail or subways).

However, the endemic ridership shortfalls on newly developed mass rapid transit systems have limited the potential for such infrastructure to deliver on their projected environmental benefits (Flyvbjerg et al. 2003). When under-utilized, mass rapid transit systems may actually utilize more energy per person kilometer of travel than other modes of transit such as trolley buses or car pools. Furthermore, Richmond (2001) has found that the riders who do patronize new urban transit mega projects are largely existing transit riders, thus leading to only minimal reductions in polluting car trips. Finally, by their very nature, fixed rapid transit lines serve a spatially confined corridor, and thus any reductions in air pollutants such as particulates will have greatest localized benefits (Zhu et al. 2002; Buckeridge et al. 2002). In sum, environmental ameliorations over the entire region may be better achieved by alternative policies to increase ridership over the whole network, such as fare reductions and service frequency improvements.

In theory, widening or building new roads can also contribute to a reduction of air pollutants, as it is argued that free flowing traffic will generate less emissions than cars stuck idling in traffic. However in practice, it is most likely that free flowing traffic will be maintained for only a short period of time, after which even more vehicles will be left idling in congestion on an even larger freeway. At the same time, the additional frequency and distance of private vehicle trips that result from the addition of road capacity and the attendant development of auto oriented low density land uses will contribute to greater vehicle emissions (Noland and Cowart 2000). This is supported by a recent study in the Seattle Region, which found that lower density residential development was associated with higher levels of greenhouse gas emissions than more compact style developments (King County 2004). Finally, the construction of new and

expanded highways, as well as any attendant land development, will reduce green spaces, add to noise pollution, and create more impervious surfaces that contribute to higher levels of rain water run off.

Social equity of mobility: Providing equitable access to urban mobility for all citizens within a city is a critical function of public transit. In achieving this mandate, urban public transit serves a dual function. First, transit provides a source of mobility to those with few other alternatives, be it for reason of poverty, age or disability. Second, transit seeks to induce car drivers to leave their cars at home, an essential step in addressing the serious problems of traffic congestion and air pollution (Garret and Taylor, 1999; Grengs, 2005).

Decades of evidence on urban mobility patterns suggest that radially aligned mass rapid transit systems, such as those typically constructed in North American cities, have disparately distributed benefits and costs. Such systems tend to attract longer distance travel by peak hour commuters traveling from suburb to employment in the urban core (Mees 2000). White passengers carry out these types of trips disproportionately, and rail travelers generally have higher incomes than the average transit rider (Garret and Taylor 1999; Grengs 2005).

But the cost of investing in these capital-intensive mass rapid transit systems – regardless of whether they are rail or bus based - has often come at the expense of local bus service. Despite carrying the vast majority of all transit trips in most cities, bus service has often been cut and fares have been raised in order to make money available for rapid transit system construction and operation (Grengs 2005; Garrett and Taylor 1999). Furthermore, while there are exceptions, the reorganization of local bus service to act as feeders into mass rapid transit systems often makes travel times slower for local trips, and service less available during off-peak periods (Richmond 2001; Thompson and Matoff, 2003).

This worsening of local bus service has a disproportionate impact on those dependent on public transit. Bus services are more conducive to the mobility patterns of women, lower

income earners, ethnic minorities and new immigrants. These demographic groups tend to make a greater number of transit trips, which are more frequent during off peak hours and characterized by shorter distances (Heisz and Schellenberg 2004; Mauch and Taylor 1997; Pucher 1982). Their usage of public transit reflects domestic purposes such as child minding and grocery shopping, and accessing jobs with non-traditional hours.

Even when rapid transit projects pass through an area inhabited by transit dependent communities, they rarely connect the types of journeys actually made by these constituencies. In recent years, evolving urban forms have challenged the potential for a radially designed transit system to provide socially equitable mobility. Work trips have become less effectively served by radial transit systems as a result of increasing employment decentralization from the city centre to dispersed office parks (Stopher 2004; Thompson and Matoff, 2003). At the same time, the spatial distribution of ethnic minorities, new immigrants and urban poverty in many Canadian cities away from the dense inner city and into aging inner suburbs has created a new challenge to providing transit service for those who disproportionately have few other alternatives (Heisz and Schellenberg 2004; Balakrishnan and Hou 1999). With dispersed residential, employment and commercial land uses, these communities are particularly unfriendly to radially designed mass rapid transit systems, and instead require solutions that are spatially and temporally flexible.

In sum, the general incapacity of a radially aligned transit system to meet the contemporary needs of both dependent and choice transit users has been confirmed in a recent longitudinal study of nine transit systems by Thompson and Matoff (2003). The authors conclude that systems planned using a network integration approach as implemented in cities along the West Coast of the United States such as Sacramento, Portland and San Diego deliver superior regional performance to traditional radial systems in terms of effectiveness, efficiency, and equity. Investments in both rail and bus based rapid transit can fit within a regionally integrated approach to transit system planning, provided they do not limit the potential for the service provider to operate appropriate quantity and quality of service across the entire network.

The significance of debates about the effectiveness and equity of transit system designs should not be underestimated. The provision of ineffective public transit has increasingly become recognized as a barrier to participation in employment, recreation and health care for those with no other mobility opportunities (Garrett and Taylor 1999). This prompted the Ontario Human Rights Commission (2002) to study the current public transit service provision as a potential violation of Ontario Human Rights Codes, an issue the commission concedes has garnered 'relatively little public discussion'.

Large-scale road projects deliver many of the same disparate benefits as public transit mega projects. Expanded roads provide considerable benefit to automobile drivers in general who will benefit from improved access throughout the region, and specifically to suburban commuters and the goods movement industry. They can also improve the potential to provide more rapid and reliable on-road bus service, which may be impossible under heavily congested conditions.

However, large road projects also have many costs. In cities such as Boston, anti-poverty groups have successfully argued that multi billion dollar expenditures on highway and tunnel projects have drawn resources away from much needed investments in smaller scale public transit infrastructure such as new buses (Brown et al. 2003). Evidence from across the United States suggests that large-scale road projects disproportionately pass through low-income neighbourhoods populated by new immigrants and racial minorities, separating communities on either side, dislocating many through land expropriations and contributing to residential segregation (Jacobson et al. 2005; Kraus 2004; Massey and Denton 1993). Widened roads connecting suburban communities with the urban core may increase the number of cars passing through low or middle income inner city neighbourhoods, with the potential to increase local air pollution, noise and traffic accidents. Finally, increased accessibility provided by new or expanded highways may lead to increases in property prices, which can contribute to a process of neighbourhood gentrification and dislocation for existing communities.

Health Implications: Emerging research has found a direct correlation between community design and obesity. In a culture that has become increasingly sedentary, Frank et al. (2004) show that every kilometer a person walks per day lessens their likelihood of being obese by around five percent. By contrast, each 30 minutes spent in a car per day increases a person's chance of being obese by 3 percent. People living in communities that had a tightly bound mix of residential, commercial and recreational land uses were found to walk more, and weigh less than their counterparts who resided in residence-only subdivisions. Effective public transit can be part of a community design that encourages more walking. Transit users who walk to and from stations increase their amount of physical exercise over the course of the day, which reduces their chance of obesity. Yet Frank's study did not consider time associated with transit use or the relationship among transit service, walking, and driving.

Based on this research, expanding highways and building new roads can considerably impact on community health, by encouraging longer automobile trips as well as land use patterns that are sprawling and less conducive to walking or other types of physical activity. A study conducted in Atlanta, for instance, illustrated that residents of communities that were considered most walkable based on the availability of mixed land uses were 2.4 times more likely to walk for 30 minutes per day as recommended by the Surgeon General as compared to those who lived in the most sprawling neighbourhoods (Frank et al. 2005).

While providing a less direct linkage, the design of commuter-oriented rail lines may similarly weaken the linkage between transit and health benefits in certain locations. As Mees (2000) has noted, rail lines connecting increasingly distant suburbs and the city centre encourage longer commutes. Around some stations, high density, mixed land use development has occurred, which encourages pedestrian access to the stations. In other communities characterized by low-density developments, the presence of park-and-ride facilities has been a significant factor in attracting system users (Kuby et al. 2004). However, by promoting driving to and from the station on the suburban end of the journey, users walk less, which reduces their potential health benefits.

Furthermore, suburban bus networks structured to feed into rapid transit lines are often infrequent during off-peak periods, and poor at servicing short distance trips (Richmond 2001). This has the effect of dissuading off-peak transit trips and encouraging car usage for those with access to vehicles. By contrast, a system wide approach to public transit that boosts the density and frequency of transit across the entire network could encourage more users to walk to the nearest pick up point at all times of day, providing measurable health benefits.

Different Delivery Model, Same Challenges

The preceding evidence suggests that the types of projects that are most attractive to politicians and private sector investors – namely large scale transit and road schemes – may not be particularly effective in achieving their stated economic, environmental and social objectives. And yet as large transportation projects continue to be developed in cities around the world, the costs associated with a failure to address the diverse issues of urban mobility faced by city regions and their residents continue to mount.

Understanding the complete costs associated with an investment in an ineffective transit system stems from a comprehensive view of the urban transportation challenge. According to leading transportation experts, even as debate rages about the relative merits of different public transit infrastructure modes and service delivery models, it is the dominance of the personal automobile that poses the greatest threat to the provision of transportation for livable cities (Newman and Kenworthy 1999; Vuchic 1999; Mees 2000; Frank 2004).

In this light, allocating money to potentially ineffective transit mega projects not only risks taking away resources from other initiatives that could deliver greater economic, social and environmental benefits. Funding poorly performing transit projects risks further propagating the perception that public transit is a second best solution for redressing the diverse externalities that exist as a result of the current urban transportation

situation. As a bold headline perceptively proclaimed in the satirical newspaper, *The Onion* (2000), 'Report: 98 Percent of U.S. Commuters Favor Public Transportation For Others.' The story proceeded to fictitiously quote the head of the Los Angeles County Metropolitan Transportation Authority as saying:

With everyone behind it, we'll be able to expand bus routes, create park-and-ride programs, and build entire new Metrolink commuter-rail lines. It's almost a shame I don't know anyone who will be using these new services.

Despite the satirical tenor of *The Onion* story, this view perpetuates much of the academic discourse. As Taylor (2004: 301) notes in the scholarly journal *Transport Policy*,

Put simply, public transit expenditures in the name of congestion reduction are growing because they are broadly popular, and not because most people believe that they are effective ways to reduce traffic congestion.

The perpetuation of a mega project paradigm for transit projects will persist as long as there remains a political and financial incentive to do so. The perception of transit as 'good enough for someone else to ride' will also persist, and along with it the impetus to strengthen the conditions that underpin our car culture through the development of major road expansion projects, until alternative models of delivering urban transportation for livable cities can be devised that provide fast, affordable, convenient, and safe access for all.

Conclusion

This chapter has sought to present transportation investment decisions as not only a rational selection of one project over another based on objective criteria, but also the product of intense contestation over the allocation of scarce resources and the struggle to satisfy diverse interests. A significant component of this analytical framework is to emphasize that the decision to invest in a specific project at a given moment of strategic choice is historically contingent, and guided by the evolving role of actors, organizations and institutions involved in the decision making process. When examined longitudinally,

political, organizational, technological or cultural decisions made at strategic moments of choice can have a lasting impact in shaping the path of future investments, thus locking in one type of development while making it all but impossible to realize another.

Yet transportation projects are not only historically contingent, they are also intensely connected to their contemporary local context, and rooted in struggles over the spatial, political, economic, social and cultural transformations of the day. Contestation in the planning of transportation investment projects occurs over the types of projects that will be prioritized, the methods for delivering these projects, and ultimately the processes for making decisions, which reflects a struggle over who controls the power to make resource allocation decisions in cities. As I have shown, the combination of these factors has supported the perpetuation of urban transportation policies that focus on mega project solutions, often at the expense of more highly prioritized smaller scale solutions. We now turn to applying this integrated framework of analysis to the case of transit development in Vancouver.

Chapter 3: Welcome to Lotus Land: Antecedents to a Mega Problem

Introduction: A City in Search of Identities

There is little doubt that Vancouver's most memorable asset is its physical setting. Snow capped mountains reflect in the Pacific Ocean inlet that bisects the city; white cherry blossom trees line the main city streets; and while prone to a considerable rainy season, the winter weather in Vancouver is considerably milder than the rest of Canada. Within this landscape dubbed 'a setting in search of a city', Vancouver has been characterized as the Canadian Lotus Land, a city where aspirations of career achievement mingle equitably with aspirations for a satisfying quality of life (Punter 2003). Vancouver consistently ranks as one of the most livable cities in the world.

Vancouver, of course, is so much more than its characterization as a 'paradise on earth'. A metropolitan area of more than two million people, Vancouver (which will be used in the remainder of this thesis to refer to the entire metropolitan region of Greater Vancouver unless otherwise noted) is a rapidly growing city with a budding economy and an emergent culture. As Hutton (1998) asserts, Greater Vancouver has been in the process of a dynamic transformation since its foundation in the late 19th century, and can no longer be characterized simply as Canada's third largest city and the urban core of British Columbia's resource-based economy. Instead, despite being far younger than the other cities at the peak of the Canadian urban hierarchy, Vancouver is emerging as a 'world city' that is increasingly part of an internationally oriented and globally interdependent province (Smith 2004; Beaverstock et al. 1999; Friedmann 1995). Greater Vancouver has become a major transportation gateway between East and South East Asia and North America; a home to successive waves of immigrants, largely from Asia; a site for international mega events, such as the World Expo Transport Fair in 1986 and the Winter Olympic games scheduled for 2010; a fulcrum for the cultivation of ideas on environmental preservation and sustainability, most prominently in the activities of the locally founded Greenpeace; and part of a rising North-South urban economic development corridor which stretches from Vancouver down to Seattle and Portland as

part of the Cascadia economic/ecological zone (Smith 2004). The City of Vancouver, the central municipality which is situated at the core of the entire metropolitan region, has also become recognized as a planning model for its use of innovative participatory, proactive and citywide approaches to shaping growth, preserving the natural environment, and maintaining urban livability and design standards within a landscape of rapid change (Punter 2003).

As Vancouver becomes a player on the global stage, the economic, social and environmental costs of rapid growth are coming into greater focus. Vancouver is becoming socially bifurcated, challenging the purported image of Eden in southwestern British Columbia. Greater Vancouver is home to both the most affluent and also the poorest postal codes in all of Canada, encapsulating an intra-urban east-west divide that more broadly covers housing affordability, architectural quality, traffic levels, air quality, available public park amenities, ethnic diversity and politics (Punter 2003).

Rapidly rising property prices have made living in the region difficult for the growing numbers of people on low and fixed incomes. As in other large cities, drug addiction, homelessness, prostitution and youth gangs have also been persistent challenges. Finally, the pressure of growth has challenged the ability of planners to shape land use and urban livability at a regional scale, where design standards and density requirements are often little match against the lure of increased tax revenue. In the face of increasing sprawl style development around the edges of the city, there is a concern that growth is stressing the local ecosystem, and having a homogenizing effect on Greater Vancouver that is leaving much of the city indistinguishable from many others across North America.

Amidst the rapid transformation that Vancouver is experiencing, the city identity has remained true to the narratives upon which it was founded. Separated from the rest of Canada by the Rocky Mountains, Vancouver has retained its identity as being part of a 'province on the edge', imbued with a frontier consciousnesses that comes with a sense of entitlement, opportunity and possibility for the future (Imagine BC 2004). This sense

of opportunity felt by Vancouverites is eloquently captured by Douglas Coupland (2000: 16) in his remarks on the city's 'history...or lack thereof':

First nations history in Vancouver goes back four or five thousand years, maybe longer. European settlement only goes back a bit more than a century, and some people don't like this lack of recent European history... This place is too new! If you're a Vancouverite, you find the city's lack of historical luggage liberating-it dazzles with a sense of limitless possibility... My own theory about Vancouver is that we're at our best when we're experimenting with new ideas, and at our worst when we ape the conventions of elsewhere.

Within this setting of striking physical beauty and unbridled opportunity is a unique local culture, one predicated on dynamism and change. Perhaps paradoxically, the unique sense of newness and possibility that Coupland elaborates in his description of Vancouver has inculcated a space of intense contestation over how this piece of clay will be molded, and who should be the sculptor.

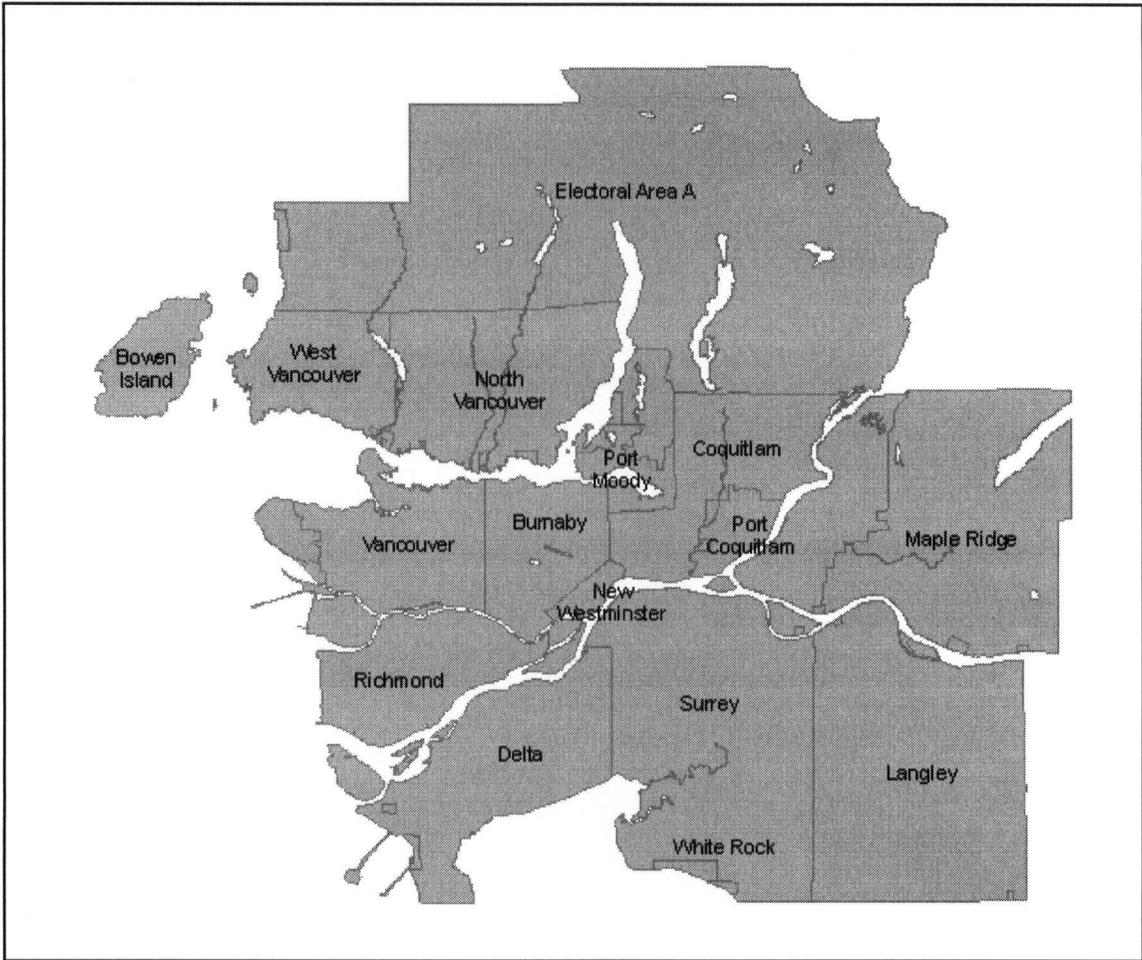
Planning decisions in Vancouver exist within this complex, historically contingent context that has decisively shaped the existing urban landscape, and largely patterns the behaviour of the individuals involved in the contemporary planning of new urban infrastructure such as the Richmond-Airport-Vancouver project. The aim of this chapter is to situate transportation infrastructure provision within the interdependent historical antecedents of the local Vancouver context, with particular respect to: the spatial morphology and existing land use patterns; the political cultures; and the region's economic structure. The following chapters will more specifically focus on the history of transportation planning in Vancouver.

Matching Population, Land Use and Transportation

This study takes place within the Greater Vancouver Regional District (GVRD), an area that is identical to the Vancouver Census Metropolitan Area, and is a federation of 21 municipalities and one unincorporated electoral area (Figure 3.1). For over thirty years, the GVRD has been at the North American forefront of proactively seeking to link land

use and transportation infrastructure, long seen to be a critical connection in providing effective and efficient urban mobility. Between 1980 and 2000, Greater Vancouver was among the fastest growing metropolitan areas in North America (Figure 3.2). In the past decade Vancouver expanded by 400,000 people to a population of 2.1 million, and added 295,000 jobs to reach a total regional employment of 1.1 million. Continued population growth is expected, and by 2031 the population is projected to be around 3 million (Translink 2003).

Figure 3.1: The Greater Vancouver Regional District and its Municipalities



City of Vancouver	577,962
Surrey	378,578
Greater Vancouver Regional District/ Vancouver CMA	2,113,697
Province of British Columbia	4,152,289

Source: Greater Vancouver Regional District, 2005

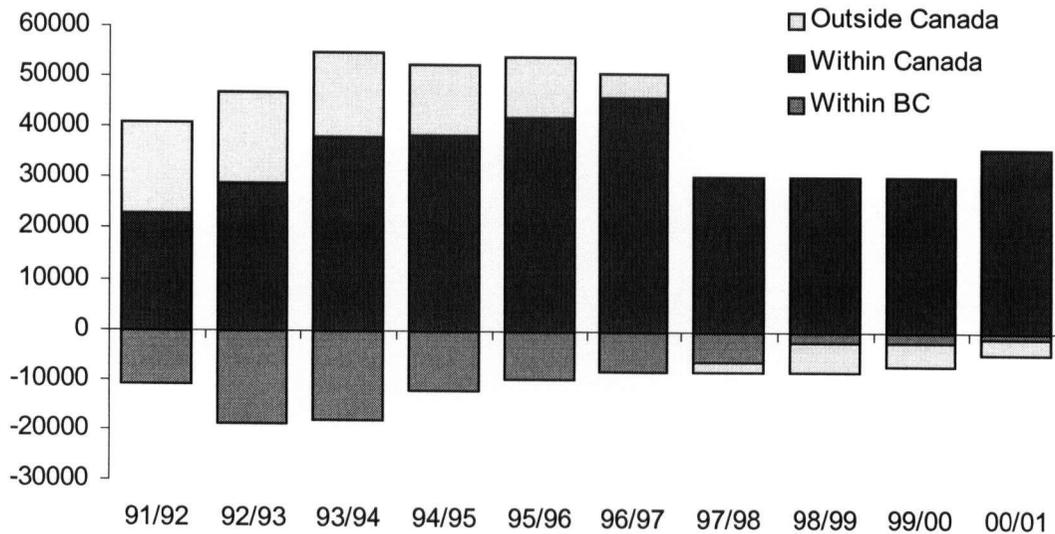
Along with population growth have come changes in population composition. Between 1994 and 2003, Greater Vancouver received on average 17% of all new immigrants to Canada annually, representing over 363,500 people since 1994 (Citizenship and Immigration Canada 2003). In fact, between 1997 and 2001, new immigrants from outside of Canada accounted for all of Greater Vancouver's net population increase (BC Stats 2001) (Figure 3.3).

Figure 3.2: Population Growth in Selected North American Metropolitan Areas

City	Growth Rate 1980-1990 (%)	Growth Rate 1990-2000 (%)
Las Vegas	83	62
Phoenix-Mesa	63	42
San Diego	42	37
Atlanta	37	34
Dallas-Fort Worth	22	30
Miami	46	27
Vancouver	25	26
Calgary	30	26
Seattle	14	24
Toronto	27	21
Ottawa	26	15
Portland	24	15
Edmonton	33	11
San Francisco-Oakland	5	11
Los Angeles-Long Beach-Santa Ana	14	9
Montreal	12	8
Boston	3	4
Winnipeg	13	3
New York-Newark	-4	3
Chicago	2	2

Source: United Nations Population Division, 2003

Figure 3.3: Migration Components of Population Change in GVRD



Source: BC Stats, 2001

The vast majority of these immigrants are from Asia, primarily China, Hong Kong and South Asia. Between 1991 and 1997, large numbers of newcomers came from Hong Kong in the lead up to the transfer from British to Chinese control, and a disproportionately large number were classified as economic migrants (Citizenship and Immigration Canada 2003). Immigration has made Vancouver one of the most diverse cities in Canada, reflected in the projection that by 2017, over 50% of the population of the Vancouver region will be made up of visible minorities (Baglole and Bisetty, *The Vancouver Sun*, 23 March, 2005, A.4).

The development pattern to accommodate this rapid growth has been in part shaped by the region's geographic situation. The GVRD is constrained on three sides: by the Georgia Strait to the west; to the south, the American border as well as a series of fault lines which make the area prone to seismic activity and have to date discouraged high density development; and the coastal Mountains to the north. Greater Vancouver still has expanses of greenfield development sites in its east and southern municipalities and into the adjacent Fraser Valley jurisdiction. Yet many of these sites are located amidst the

most fertile agricultural land in the province, raising questions about the implications of its conversion to alternative uses.

In addition to geography, proactive government planning and policy have shaped growth in the GVRD. Vancouver planning authorities, backed by much of the local political establishment and public opinion, have made considerable efforts to concentrate development and minimize urban sprawl. This policy thrust is coherently laid out in the updated version of the 1975 Greater Vancouver Region *Livable Region Plan*, which was adopted by all municipalities in 1996 and recognized by the British Columbia provincial government in the Strategic Growth Act (GVRD 1996). The updated plan broadly aims to:

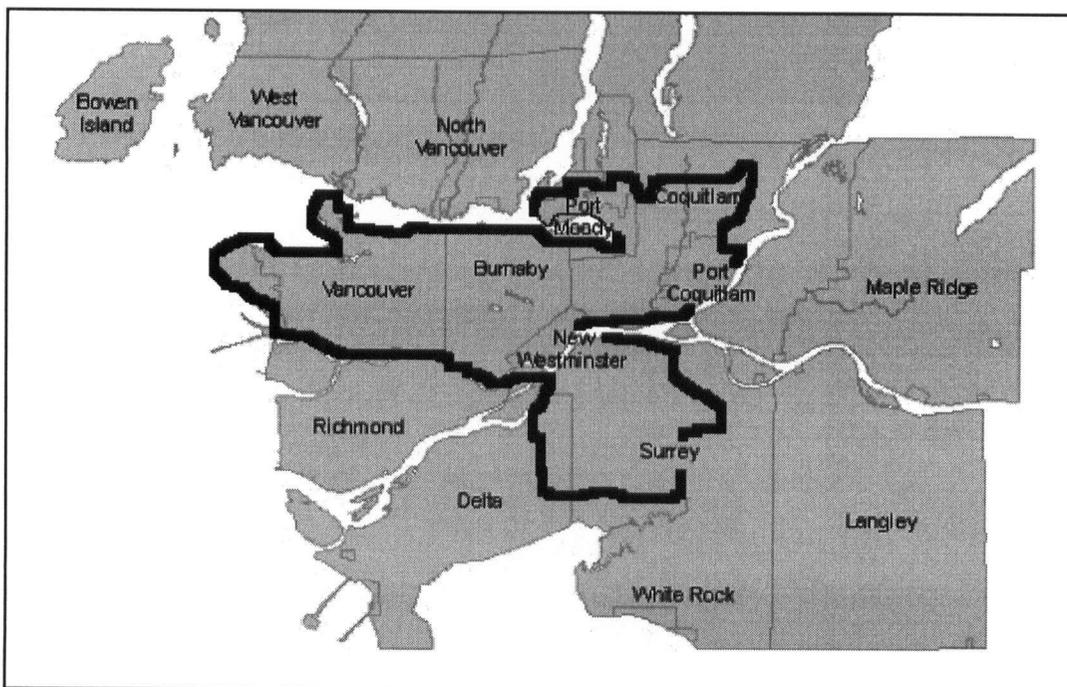
- build 'complete communities' that are compact, dense and promote a greater range of local residential, work, recreational and cultural opportunities.
- Preserve the natural assets of the city which include parks, wilderness, watersheds, ecologically sensitive area and farmland. It also establishes a long-term growth boundary and a reserve of agricultural land that cannot be developed without a specific policy exemption.
- Increase the viability of transportation alternatives to the automobile such as walking, bicycling and public transit, by minimizing the need to travel and using supply and demand control measures.

In seeking to achieve these objectives, the *Livable Region Strategic Plan* that was approved in 1996 focuses development on the downtown metropolitan centre as well as eight regional town centres within an area known as the Growth Concentration Area, such that 68% of the region's population will be concentrated in these areas. Based on the 2001 census, 67% of the region's population currently resides within the Growth Concentration Area. The goal as established in the *Livable Region Strategic Plan* has been to create a network of livable town centres that are compact and offer the opportunity to live, work and recreate locally, while at the same time providing rapid transit connections between the town centres throughout the region. Such an

arrangement is meant to reduce travel times and increase travel options, lower infrastructure costs, facilitate more efficient goods movement, and provide a range of residential dwelling alternatives.

It bears noting that as it is currently drawn, the Municipality of Richmond is outside the Growth Concentration Area, though its existing urbanized core is identified as one of eight town centres where population growth is encouraged (Figure 3.4). This is significant because both the Richmond town centre and the rest of the municipality are currently experiencing population and employment growth that is placing pressure on the existing transportation network. To accommodate this growth, there have been calls for the construction of a fixed rapid transit connection between Richmond and downtown Vancouver. If developed, this new system could catalyze further development in both the town centre, and also development that is outside the town centre and is thus incongruent with the existing growth management plans.

Figure 3.4: Greater Vancouver Growth Concentration Area



(Source: Adapted from GVRD, 1999)

Positive Outcomes of Regional Growth Management in Greater Vancouver

The policy measures implemented by the GVRD, the authority responsible for the coordination of regional planning initiatives, largely reflect a realization of Newman and Kenworthy's (1999) ideal preconditions for transit that serves a polynucleated city, and helps explain why Cervero (1998) lauded Vancouver as a budding *transit metropolis*. The regional precepts to manage growth within the GVRD that are established in the Livable Region Strategic Plan have translated into a successful linkage between land use and transportation in certain locations within the region.

In the City of Vancouver, a hands-on approach to spatial planning and policy setting has led to the cultivation of a dense and vibrant urban core, which mingles residential, commercial and recreational space (Hutton 2004). After a fifteen-year period beginning in 1981 where commercial completions outpaced residential development by a factor of three, downtown Vancouver has experienced a decade-long period of residential development and densification. Driven by mega-scale condominium developments on the brownfield Expo 86 site and at Coal Harbour, as well as large infill projects throughout the inner city, in the ten years since 1995 some 11 million square feet of new residential space was developed (City Plans Division 2005).

Today the close proximity of residences and offices has fostered high levels of walking and non-motorized commuting trips within the downtown, while electric trolley buses serve the dense area with zero point of source emission public transit service. Nevertheless, the persistent pressure by developers to convert commercially zoned properties to residential uses in the downtown core has led to a temporary moratorium on the practice, as city staff study the long-term impact that a primarily residential downtown could have on economic growth and transportation patterns (City of Vancouver 2004).

In the region's eastern corridor, a conflation of active planning and market forces have led to the clustering of mixed commercial, residential and recreational land uses around urban mass rapid rail stations on the Expo Skytrain line like pearls on a necklace, strung along 28 kilometres from downtown Vancouver, to Burnaby, to New Westminster. In the municipality of North Vancouver, medium density mixed use development has concentrated around the terminal where ferries collect passengers and shuttle them across the ocean inlet into downtown Vancouver.

The regional transit landscape also consists of suburban commuter rail that connects Vancouver with distant communities to the east, and paratransit is in place to provide door-door service for the disabled. For its high quality service and integrated planning, Vancouver was awarded the 1996 Public Transit System of the Year by the American Public Transit Association. More recently, the addition of an unlimited access student bus pass, a new Skytrain line, express bus service along heavy travel corridors, and small community shuttle mini bus service along lower traffic routes has increased the ridership and efficiency of the transit system. In 2003, the Vancouver public transit system carried some 141 million passenger trips, the third highest of any city in Canada. And between 2003 and 2004, ridership rose by 8.3%, the largest increase of any system in Canada (Translink 2005).

Shortcomings of Regional Growth Management in Greater Vancouver

In spite of the regional plans and accompanying rhetoric about fostering a livable region through managed development, the GVRD has not been entirely successful at shaping growth. Earth-toned low rise buildings and single family suburbs sprawl expansively across the Vancouver census metropolitan area (CMA), a geographic region some 2,875 square kilometres in size with a cumulative density that is 81% that of Montreal and 87% that of Toronto (Figure 3.5). Because of these lower population densities over the entire CMA, the Vancouver transit system serves an area three times that of the Toronto Transit System in Toronto (Translink 2003).

Figure 3.5: Population density and Area statistics for Canada's three largest CMA's

	Vancouver	Toronto	Montreal
CMA Area (Square km)	2,879	5,903	4,047
CMA Gross Density	690.3	793.3	846.6
City Land Area* (Square km)	115	97	186
City Gross Density*	4,759	6,962	5,591

(Source: Statistics Canada, 2001)

*City refers to the inner municipality that comprises the centre of the metropolitan area

Vancouver's natural environment and population distribution compounds the difficulty of the transportation landscape. The region is bisected by numerous water bodies that create increased distances between points in Greater Vancouver, and also have required the development of bridges that are key transportation bottlenecks. The two largest regional employment centres, the central business district and the University of British Columbia, are located in the western portion of the metropolitan area, creating the potential for lengthy commutes for those making cross-regional commutes to reach these destinations. As well, a considerable portion of the population lives in mountainous terrain, which may limit the amount that residents of those areas are willing to use non-motorized modes of transportation such as walking and cycling to commute to work.

Emerging trends increase the challenge of effectively servicing the Vancouver region with public transit. First, the *Livable Region Strategy* has experienced mixed results to date. As stated in a recent Translink planning document, 'Although the regional town centres have had some success in attracting high density residential and retail uses...they have not been as successful in attracting office development' (2003: 6). Between 1990 and 2000, the share of total office space in the GVRD that was located in regional town centres declined from 11% to 10%. At the same time, while the absolute quantity of office space in Vancouver's downtown increased, the central area's share of the regional total declined from 69% to 60%. In comparison to the declining significance of office space in downtown and the regional town centres, the share of total office space in the remainder of the GVRD grew from 20% to 30% between 1990 and 2000, reflecting a

dramatic increase in the prevalence of suburban office parks. The Richmond regional town centre has been particularly impacted by this trend, where low rents, high vacancy rates and an inability to attract high-density office towers have persisted in the face of new local highway oriented office parks (Royal LePage Advisors Inc. 2001).

The dispersal of work locations into lower density sites across the GVRD, combined with the shortage of employment opportunities in the emerging regional town centres minimizes the chances of travel mitigation through complete communities, which was a key desire of the *Livable Region Strategy*. In 2003, 57% of rush hour commuters travelled from their home in one municipality to their place of employment in another. While downtown Vancouver is still the largest employment destination leading to considerable radial traffic flows, there has also been a growth in orbital travel between outlying municipalities as commuters seek to reach places of employment in dispersed office parks. This increasingly prevalent orbital travel pattern is poorly served by the existing public transit system, and has contributed to growing road congestion across the region. While the median commuting distance in Greater Vancouver was amongst the lowest of any large city in Canada (Figure 3.6), the mean travel time between 1990 and 2000 has increased by 36% from 19.5 to 26.5 minutes (Translink 2003). As a point of comparison, between 1990 and 2000, Vancouver had the greatest increase in travel times of similarly sized cities on the pacific rim of North America, bringing the average commuting time in line with these other cities (Figure 3.7).

Figure 3.6: Median Commuting distance for Large Canadian Census Metropolitan Areas, 2001

Census Metropolitan Area	Median Commuting Distance (km)
Montreal	7.9
Ottawa-Hull	7.8
Toronto	9.2
Hamilton	8.2
Calgary	7.7
Edmonton	7.6
Vancouver	7.6

Source: Heisz and LaRochelle-Côté, 2005

Figure 3.7: Change in Mean Commuting Times in Selected North American Cities, 1990-2000

Metropolitan Area	Travel Time 1990	Travel Time 2000	Rate of Change (%)
Vancouver	19.5	26.5	36
Seattle	24.1	27.7	13
Portland	21.5	24.4	13
San Francisco	25.6	29.3	14
San Diego	22.2	25.3	14

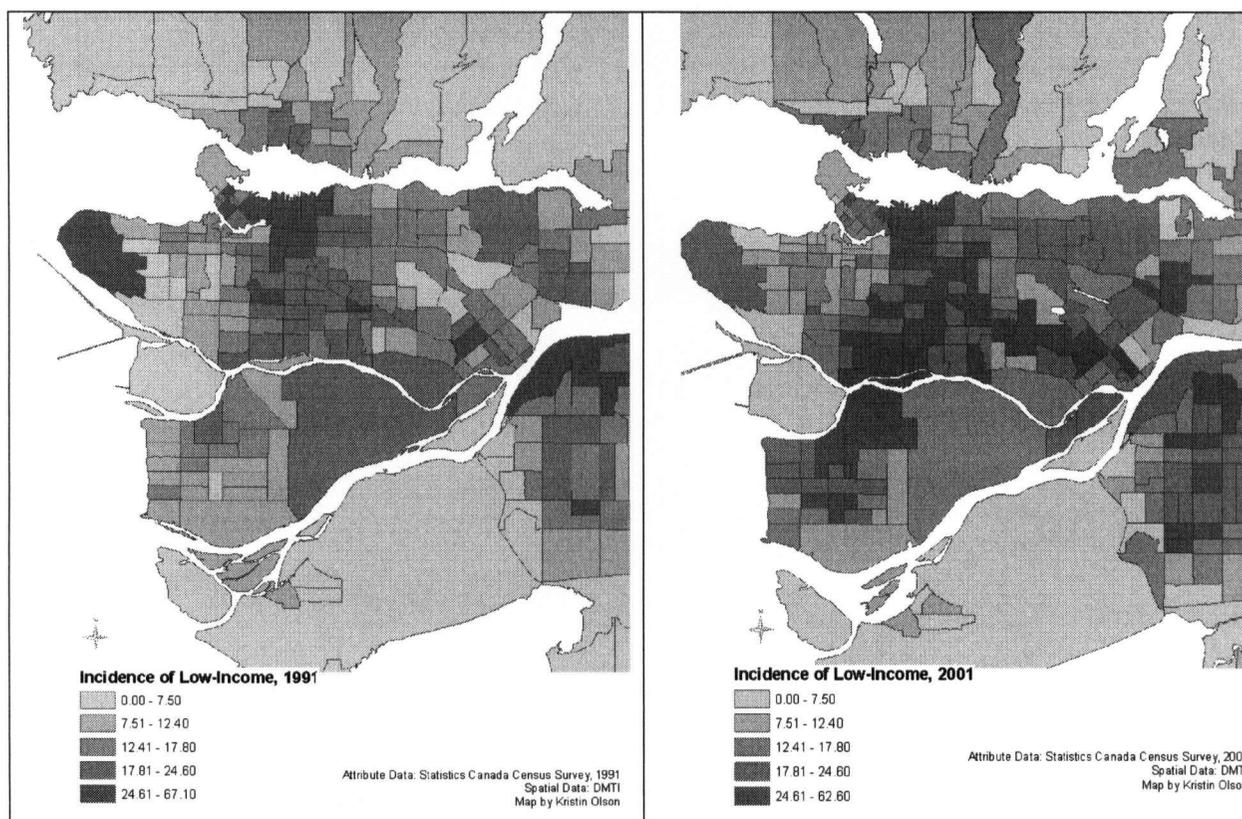
(Source: US. Department of Transportation, Translink)

A complementary problem that is guiding the increase in commuting times is that of an overheated residential property market. In 2002 Greater Vancouver was the most expensive market in Canada, with average prices in the region topping \$300,000 (RE/MAX Market Trends Report 2002). More recently, condominiums in downtown Vancouver have been one of the hottest market segments, attracting offshore investors, young urban professionals and empty nesting baby boomers back to the inner city, thus driving up prices (Real Estate Board of Greater Vancouver 2005). This has pushed many young families and first time buyers out of the downtown market, and led to pressure for renewed greenfield suburban development.

The settlement patterns of those living on low incomes (defined as individuals who are in the bottom 10% of income earners for the entire Census Metropolitan Area) in the Vancouver region has also shifted, transforming the challenge of effectively providing transit service to people who often have few other mobility options. In 1991 people living on low incomes were most prominently concentrated in the densely populated downtown east side of the City of Vancouver, and in pockets of the inner suburbs. By 2001, however, while there remained a high concentration of low-income residents in the downtown eastside, low-income residents had also begun to disperse out of downtown, and into southeast Vancouver as well as suburbs further a-field (Figure 3.8) (Statistics Canada 2001). With lower population densities, less mixed land use leading to large

repartitions between commercial and residential areas, and non-grid street patterns in some locations, these suburban communities are considerably more difficult to serve effectively with public transit. This increasing suburbanization of low-income settlement in Vancouver can result in long commuting times, difficulty accessing employment and social isolation for those without access to an automobile.

Figure 3.8: Concentration of Low Income Populations in Greater Vancouver, 1991 and 2001



* Incidence of low income is a measure of the proportion of residents in a census tract that are in the bottom 10% of income earners for the Census Metropolitan Area.

Finally, a concurrent trend is the spatial distribution of newcomers to Vancouver. While earlier waves of new immigrants to Vancouver and other North American cities first settled in the urban core before dispersing to other parts of the city, the current wave of immigrants has largely bypassed the city centre in favour of more suburban locations (Balakrishnan and Hou 1999). For example, in the case of the South Asian community, settlement has largely occurred in the eastern municipality of Surrey. For the recent

newcomers from Mainland China and Hong Kong, south Vancouver and the southern municipality of Richmond have been their preferred destinations (Statistics Canada 2001).

As a result of the residential property market conditions, the dispersal of first time property buyers and people on low-incomes out of downtown, and the pattern of new immigrant settlement, the fastest growing areas in metropolitan Vancouver are the suburban municipalities of the Fraser Valley and the communities just beyond the eastern boundary of the GVRD. It is predicted that by 2025, the population of Surrey in the east of the region may exceed that of the central City of Vancouver. And the outer suburbs of Mission, Chilliwack and Abbotsford, which are just beyond the border of the GVRD, are the fastest growing communities in British Columbia. With their generally low-density sprawling development patterns, these rapidly growing communities are difficult to service by conventional forms of rail or bus based public transit (Smith, P.J. 2004).

The Land use-Transportation Connection in Greater Vancouver

Resulting from the region's urban form and geographic situation, Vancouver has become largely auto dependent. In terms of transportation infrastructure supply, Vancouver has more arterial/expressway lane-kilometres per resident and more off-street parking per employee than other major Canadian cities such as Toronto and Montreal. By contrast, Vancouver has the lowest supply of public transit of any major city in Canada (Translink 2003).

In terms of demand for transportation services, the emerging suburban residential and employment land use patterns have been accompanied by persistent growth in car ownership. Between 1993 and 2003, the number of private vehicles in the region has grown by as many as 30,000 per year to a total of 1.2 million. In fact, across the region, the rate of car ownership is growing faster than the growth rate of population. Translink speculates that this may have been partially a result of inadequate transit alternatives, something that they seek to address with their future transit plans (Translink 2003).

Nevertheless, the number of private vehicles in the region is projected to expand to some 1.4 million by 2013 (Translink 2003).

In contrast to the strong demand for automobile travel, in 1999, residents in Greater Vancouver used public transit for an average of 73 trips per year, compared with 102 rides per capita in Ottawa and around 120 rides per capita in Toronto and Montreal (Translink 2003) (Figure 3.9). And while the mass rapid transit system has been successful at catalyzing new mixed use development at certain nodes as described above, this has by no means been a universal process. At some suburban Expo Skytrain stations in New Westminster and Surrey, as well as along the majority of the recently completed Millennium Skytrain line, expected high-density development has so far failed to materialize. This suggests a presently saturated market for development-oriented to convenient access to mass rapid transit in certain parts of Greater Vancouver. Over time, market forces may change, however, and new rapid transit lines could increase development demand in parts of the region.

The overall result of the Vancouver region having the greatest supply of auto-oriented infrastructure and amongst the lowest demand of public transit services of any major city in Canada, is that in 2003, 74% of all weekday travel trips in the region are made by private automobile, compared to 13% walking, 11% by transit and 2% by bicycle. Moreover, between 1996 and 2001, although the City of Vancouver had the largest increase in the percentage of trips made by walking of any large municipality in Canada (+21%), it also led the nation as having the greatest increase in the proportion of trips made by automobile (+5%) and the greatest decrease in the percentage of trips made by public transit (-27%) (Federation of Canadian Municipalities 2004). The supremacy of the automobile in Vancouver is having a significant impact on the environment. It is estimated that 44% of all greenhouse gas emissions in the GVRD come from the transportation sector compared with some 25% in other Canadian cities, the largest portion of which is attributed to personal motor vehicles (Translink 2003).

Figure 3.9: Transit Supply and Demand in Large Metropolitan Areas, 1999

	Transit Supply (vehicle km/capita)	Transit Consumption (annual transit rides/capita)
Vancouver	6.42	72.9
Calgary	7.89	91.3
Toronto	8.81	118.5
Ottawa	9.52	101.5
Montreal	8.21	124.5

(Source: Translink, 2003)

As has been demonstrated, although planners and politicians in the Greater Vancouver Region have drafted policies that seek to manage population distribution by linking land use and transportation services, there are urban morphology and demographic factors that introduce challenges to the potential success of such a model. The overview provided above suggests that there are two concurrent trends occurring in Greater Vancouver. On the one hand, through careful management and coordination, the investment in public transit facilities has catalyzed the development of ‘complete communities’ in certain locations that fit within the ideals of the Livable Region Strategic Plan. On the other hand, market and demographic forces have led to considerable expansion of low-density residential and commercial development, and the provision of mass transit on its own has not been universally successful at catalyzing transit oriented development.

Politics in Paradise

Underlying the surface level calm embodied in British Columbia’s majestic natural landscape and orderly urban areas has been a culture of heated political contestation. The practice of politics in British Columbia is like nowhere else in Canada. Sequestered on the far side of the Rocky Mountains, away from the social and political conventions of central Canada, politics in British Columbia has exemplified a simmering ideological struggle over the future direction of this nascent bountiful province (Resnick 2000). As John De Wolf, a past British Columbia Progressive Conservative party leader wrote, politics in British Columbia ‘is a real and living thing, sometimes urgent, frequently

entertaining, usually important and, to its participants, deadly serious' (McGeer 1971: vii). More recently in 1991, past New Democratic Party Premier Dave Barrett, in an interview on the Canadian Broadcasting Corporation, echoed this vision of a bare-knuckle brand of politics:

What we are talking about in British Columbia is raw power. There are not the niceties that perhaps exist in other provinces, but power is indeed the game. They've always been up front about it...It is not sophisticated. It doesn't need university professors to explain it. It really boils down to British Columbia having the best politicians money can buy. (*The Journal*, 2 April, 1991)

A key feature of politics in British Columbia is the long periods of stable single-party domination, punctuated by wild ideological swings that have occurred over the past fifty-five years. At the provincial level, the political landscape in British Columbia experienced three main epochs. First, there was the nearly forty-year domination of the populist, free enterprise Social Credit Party from 1952 to 1991, interrupted only ever so briefly by a three year stint of the far left wing New Democratic Party in 1972. This was followed by the election of a more politically centrist New Democratic Party from 1991 to 2001. And third was the election of the neoliberal aligned Liberal Party in 2001 and its reelection in 2005 (Figure 3.10).

At the local level in Greater Vancouver, business friendly and pro-growth individuals and parties have largely dominated municipal politics. In the City of Vancouver, for example, the centre-right Non-Partisan Association party has controlled city council almost unabated for fifty years, with only brief interruptions in 1972 and 2002 when more left leaning coalitions took over the mayoralty and majority of council seats. However it is fair to say that in Greater Vancouver, many of these pro-growth groups have been relatively progressive with respect to land use and transportation planning as well as environmental preservation, social programs and urban livability in a way that centre-right wing councils have eschewed in other jurisdictions. A recent regional example of such activities includes the ratification of the Livable Region Strategic Plan by all municipal councils across the GVRD in 1996.

Figure 3.10: British Columbia Provincial Government and Premier, 1952-2005

Party	Year	Premier
Liberal Party	2001, 2005	Gordon Campbell
New Democratic Party	2000-2001	Ujjal Dosanjh
New Democratic Party	1999-2000	Dan Miller
New Democratic Party	1996-1999	Glen Clark
New Democratic Party	1991-1996	Michael Harcourt
Social Credit Party	1991	Rita Johnston
Social Credit Party	1986-1991	Bill Vander Zalm
Social Credit Party	1975-1986	Bill Bennett
New Democratic Party	1972-1975	David Barrett
Social Credit Party	1952-1972	W.A.C. Bennett

Today the fault lines in British Columbia politics are as stark as ever, and run along a number of axes that strike at the core of British Columbia society. First, is British Columbia an urban or a rural-based province? Does the political power reside in the vast rural hinterlands where wealth is generated through resource extraction, or does power reside in the urban areas that are rapidly adding a cosmopolitan, international, intellectual element to their traditional role as command and control centres? Related to this question, is British Columbia fundamentally a blue collar or a white-collar province?

Over the past 50 years, there has been a shifting political power base in British Columbia, from the provincial interior and hinterland under the first Social Credit government, to suburban Vancouver during the Social Credit Party's second stint in office, and finally into central Vancouver beginning in 1991 with the election of the NDP and carrying over into the Liberal Party mandate. In fact, since 1991, four of the five premiers of British Columbia were from the City of Vancouver, and two, including the present incumbent, had previously served as mayor of the City. This long-term pattern of power concentration in a tiny fraction of the province's spatial area is not surprising, when it is considered that 49.4% of the representatives in the provincial legislative assembly are elected from Greater Vancouver (Smith, P.M 2004). Accompanying the urbanization and centralization of the electorate has been an increasing weight placed on the dynamic potential of white-collar work and retail and wholesale industries, even though resource extraction remains a key pillar of the provincial economy. For example, while the overall

size of the labour force in British Columbia increased by 16% between 1994 and 2004, the labour force in professional occupations grew by 22% and retail and wholesale labour force grew by 30%, while the labour force related to resource extraction and processing grew by 18% (Statistics Canada Labour Force Survey, 2005).

Second, is the optimal development model for the province predicated on rugged individualism or more directly on strong government guidance? Again, the answer to this question has shifted dramatically with each successive government. The Social Credit Party in power promoted a strong rhetoric of free enterprise and monetary reform, accompanied by a populist streak that pitted the unaligned common person against the large, organized, impersonal forces that controlled their lives (Mitchell 1983). The New Democrats, which preceded Social Credit, had origins in the socialist Canadian Commonwealth Federation and were closely aligned to organized labour. Their governments favoured the use of state resources to shape growth, guide economic and social development, and create domestic employment directly through a large and active public sector. Finally, the current Liberal Party regime has followed a neoliberal governance model that has relied on outsourcing and big business to shape economic development. The Liberals have privatized crown corporations, slashed corporate and personal taxes and cut government social programs in a drive to make British Columbia an internationally competitive site for investment.

Despite ideological swings, governments in British Columbia have always played an important and proactive role in the development of the province. A favourite strategy for British Columbia governments has been to allocate massive amounts of resources towards large infrastructure projects, providing lasting legacies that dot the physical landscape. A survey of some of the largest public mega-projects in British Columbia over the past fifty years illustrate that these have taken place under governments of all ideological persuasions, even those with a stated aversion to public sector led economic development strategies (Figure 3.11).

Figure 3.11: A Selection of BC Mega-projects

Project	WAC Bennett Dam	Coquihalla Highway (Phase 1)	Expo 1986	Uni. of Northern BC	Island Highway	Fast Ferries	Vancouver Convention Centre Expansion	2010 Winter Olympics
Date Completed	1967	1986	1986	1994*	2001	1998	2008	2010
Initial Budget	\$321 million	\$250 million	\$800 million	\$137.5 million	\$1.3 billion	\$210 million	\$565 million	\$1.3 billion
Final Cost	\$430 million	\$415 million	\$1.5 billion	\$137.5 million	\$1.256 billion	\$466 million	?	?
Political Party	Social Credit	Social Credit	Social Credit	Social Credit	NDP	NDP	Liberals	Liberals

Source: Bohn, *The Vancouver Sun*, 2 February, 2005, B. 3-4

* While the University of Northern British Columbia opened when the New Democrats were in power, it was endorsed in 1989 under the Social Credit government.

A final important feature of the political landscape in British Columbia with particular respect to Greater Vancouver has been the antagonism between the province and municipal levels of government. Much of this struggle has occurred over decision-making autonomy and access to stable sources of funding for the municipalities. At different periods in time, the provincial government has used its financial and jurisdictional powers to supersede the will of the local authorities. Relations have been further strained in periods where the ideological position of the provincial and local governments were not aligned. To alleviate some of the friction and in anticipation of objections to future large-scale projects, the Liberal provincial government passed the Community Charter Act (Bill 14) in 2003 that provides local authorities with modest autonomy over revenue generation and jurisdictional responsibilities. Despite the protections provided by the Community Charter, the bill contains language to ensure that the provincial government can counteract any undesirable changes in local revenue generation, and the accompanying Significant Project Streamlining Act (Bill 75) passed in 2003 enables the province to trump local planning decisions (Smith, P.J. 2004).

As has been shown, politics in British Columbia is characterized by a frontier mentality: it is often rough, intensely personal and deeply ideological. The political culture has had a significant impact on the manner in which mega infrastructure projects are planned.

A Unique Urban Governance Structure

When decisions of planning are seen to reside in the political realm, the function of planning must be supported by an institutional structure that facilitates democratic and transparent decision making (Healey 1997). The case of transportation investment in Vancouver provides an interesting lens through which to examine the effectiveness of Canada's often-convoluted jurisdiction over urban issues to support investments in sustainable transportation alternatives. In the Canadian political structure as designated by the British North American Act of 1867, municipal governments are 'creatures' of the provinces that created them. They have no legal status. However this is largely incompatible with the primary purpose of municipal governments as an extension of the community, and the community desire for self-government (Tindal and Tindal, 2000).

As Canadian cities have grown and expanded, there has been a growing necessity to balance the local interests of citizens with the broader coordination issues of the region. Generally there have been two models for establishing regional urban governance in Canada. First is the two-tier metropolitan government model where local councils have jurisdiction for neighbourhood issues while a second directly elected regional council controls regional issues. This model of urban governance became increasingly dominated by infighting between the two levels of local government, and the result has been a growing trend towards amalgamation. Amalgamation eliminates individual municipal councils and replaces them with a single tier of government for the entire urban area. The contemporary trend in Canada is towards the formation of amalgamated, regional scale mega cities, which has been pursued in Halifax, Ottawa, Toronto, Hamilton, Calgary, Edmonton and Montreal (Smith, P.J. 2004).

In Vancouver, the Province's formation of the Greater Vancouver Regional District (GVRD) in 1967 was an attempt to create a third model that lies somewhere in between the two extremes. The GVRD emerged out of the sundering into four parts of the Lower Mainland Regional Planning Board, a regional planning body whose vast territory encompassed almost half of the province's population, and whose official regional plan

of 1966 was seen as a potential vehicle for criticism of the provincial land use and infrastructure decisions (Tomalty 2002).

The regional district model, which is unique to British Columbia, keeps directly elected municipal councils to meet the needs of local governance. At the same time, specific regional coordination functions, specifically utility provision and regional land use coordination, come from a district government that is not based on direct election. With respect to regional land use coordination, the authority's growth management strategies such as the *Livable Region Strategic Plan* are non-binding, and non-compliance by member municipalities or provincial policies that contravene the tenor of the plans are unenforceable (GVRD 1996).

Today the Greater Vancouver Regional District is comprised of 21 independent municipalities and one unincorporated electoral area. Each municipality has its own directly elected council. The regional governing board is composed of elected councilors from each of the member municipalities, appointed to the board by their respective council peers. The allocation of seats on the regional district board for each municipality and the relative weight of their vote are determined based on population size and land area (Bish and Swanson 2000). In this way the formulation of the GVRD is a pragmatic solution that attempts to promote regional coordination without creating excessive bureaucracy or limiting the power of local governments to directly represent the interest of their constituents.

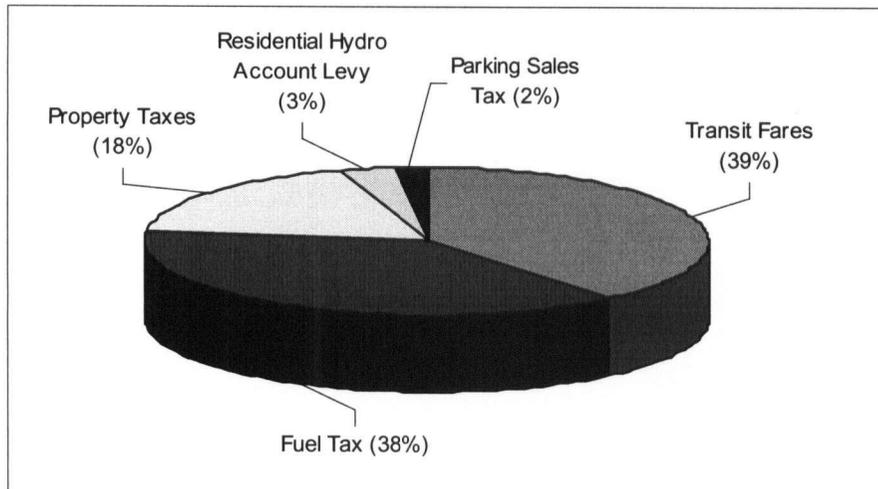
The effect of this institutional structure on urban transportation decisions is dramatic. In apportioning the responsibilities of governance between the federal and provincial levels of government, urban transportation is the responsibility of the provinces. From 1961 until 1998, the provision of public transit service in Vancouver was directly provided by BC Transit, a provincially controlled agency that received a portion of its budget from municipal money sources. This arrangement created a systemic antagonism between municipal and provincial agents in establishing transportation investment priorities, planning methods, and service levels.

Beginning in 1999, authority for the provision of urban transportation, including both public transit provision and management of the major road network in the GVRD, was wrested away from the provincial government and assumed by a regionally aligned transportation authority known as Translink. This new arrangement was seen to be advantageous, as it would facilitate greater synergy between transportation service provision, and land use planning which is a municipal jurisdiction. Operating at the regional scale, Translink would be able to make decisions that coordinated transportation services between the different municipalities of the region, and also was connected to land use objectives.

To enable suitable financial predictability and stability, Translink was granted a wide set of revenue generating powers, including the power to levy property taxes, set user fee levels, access to some gas tax revenue and a host of other measures such as vehicle levies, parking stall taxes, project benefiting taxes and road usage charges which are not currently being tapped (Figure 3.12). Finally, it was hoped that the empowerment of local officials through the formation of Translink would alleviate persistent political wrangling between the provincial and municipal governments that had plagued transportation investment decision making in Vancouver for decades (Puil 1999).

Translink is legally separate from the provincial government. It is also legally separate from the GVRD. The entire 35-member council of the GVRD must ratify only broad strategic plans and changes in revenue generation, such as property tax levels. The emphasis on local guidance is further reflected in the composition of Translink's Board of Directors, which consists of 12 mayors or councillors appointed from the GVRD and 3 appointed by the provincial government. Since being formed in 1999, no provincial appointees have sat on the Translink board. Transit service provision is provided through a series of wholly owned subsidiary companies, while the maintenance and improvement of the major road network is carried out in partnership with the 21 municipalities.

Figure 3.12: Current Translink Funding Sources



(Source: Translink, 2003)

Today, Greater Vancouver is seen by many analysts to have the most effective model of urban transportation planning in Canada, due to: the regional scale at which it operates; the integration of planning for public transit, roads, bicycle and pedestrian infrastructure into one agency; the mandate to link transportation and land use decisions; and the wide range of fundraising mechanisms available (Puil 1999). This has prompted some transportation experts and politicians to argue that the Translink governance model could be effectively transferred to other large Canadian cities (McGran, *Toronto Star*, 26 November, 2005, F01; McGran, *Toronto Star*, 22 November, 2005, B03).

An Economy for the 21st century

In addition to spatial and political characteristics, Vancouver has an economic history and contemporary structure that places particular stresses on the transportation network. Vancouver's economy has traditionally been predicated on being the command and control centre for British Columbia's vast resource extraction-based economy. This was accompanied by considerable industrial activity and warehousing, much of which

concentrated on the fringe of the city's urban core known as False Creek. Port activities along the Fraser River also featured as a prominent part of the Vancouver economy.

However, the largely under-populated hinterland of Vancouver meant that the city never fully developed a diversified manufacturing sector, such as the industrial cities of the early and mid-twentieth century (Hutton 1998). On the contrary, industry in Vancouver was predicated primarily on the processing and shipping of natural resources, and goods production for local consumption. As Hutton (2004) notes, the industries located in False Creek were obsolete in their production methods from an early period, leading to considerable soil, water, air, and noise pollution that made them increasingly objectionable to the city's residents. They were also prone to market forces that made these industrial spaces less viable, relative to other land uses.

Thus, while natural resource extraction and processing remains the backbone of the provincial economy, another process was taking place in the lower mainland region. As early as the period between 1945 and 1970, service sector employment in Vancouver became the fastest growing segment of the labour force, reflecting a transition towards the formation of a 'service city' (Barnes et al. 1992). By contrast, the obsolete industrial activities surrounding the urban core faced high rates of outright closure, while new business start-ups began locating in more peripheral locations. Replacing inner city industrial activity was the redevelopment of brownfield sites such as the southwest section of False Creek as medium density, mixed-use neighbourhoods. At the same time, in downtown Vancouver, an office building boom was about to begin, in which more than 8 million square feet of commercial space was completed between 1981 and 1990 (City Plans 2005).

In the face of a continued spatial process that has seen the conversion of industrial land to commercial and residential use, tertiary sector activity has become a more dominant component of the Greater Vancouver economy, as it has in other dynamic cities in Canada and the United States. Particularly strong employment growth has been observed in professional and technical fields. Smaller dynamic sectors have included the

biotechnology industry, which is now the seventh largest in North America, and the production of electronic games (Leading Edge BC 2005).

But again, Vancouver has not followed the pattern of many other North American cities. It is not a major centre of corporate head offices like Toronto, Montreal or more recently, Calgary. Nor is it a global hub of the information technology sector, such as Ottawa. Unlike Toronto or Montreal, Vancouver has a relatively small, if regionally significant and growing manufacturing sector. Vancouver is not a provincial capital like Quebec City, Victoria or Toronto, and as such does not have a large presence of public sector employment (Hutton 1998). Nor has Vancouver benefited from the dispersal of some federal bureaucratic functions. In April of 2005, the announcement that the Canadian Tourism Commission would relocate to Vancouver, along with its \$84 million annual budget and 100 jobs, represented the first major federal institution to move to British Columbia (Mickleburgh, *The Globe and Mail*. April 1, 2005, A4).

Instead, Vancouver's economic development has been largely predicated on rapid population growth, geographic location, and the physical beauty of the landscape. In particular, a survey of recent quarterly labour force bulletins put out by Human Resources Development Canada (HRDC) suggest that real estate, goods movement, tourism, and film production amongst other sectors have been central drivers of economic dynamism in Greater Vancouver, generating large employment growth in both construction and retail industries (Human Resources Development Canada 2005). The transportation sector was particularly highlighted as a growth sector due to dramatic increases in the volume of international trade with emerging markets in Asia. As sectors that are closely tied to trends in international trade and inter-regional competition, international and intra-national immigration patterns, currency exchange rates and climate patterns, exogenous forces have contributed to considerable recent performance fluctuations. Despite fluctuations, the region has not suffered a major recession for over 20 years, which has centrally shaped the local planning and policy context.

It bears noting that the HRDC conclusion that the transportation sector in Greater Vancouver is centrally important to regional economic prosperity was derived using figures and estimates from both public sources and private industry organizations such as the British Columbia Trucking Association, CN Rail and the Vancouver Port Authority, and may not be entirely substantiated by evidence from other sources. Specifically, an examination of Statistics Canada employment figures in Greater Vancouver reveals that the number of people working in the transportation and warehousing sector (66,000) was eclipsed by those working in manufacturing (107,500), professional, scientific and technical services (104,500), and health care and social assistance (116,300), to name just a few. Moreover, between 1996 and 2004, industries that were highlighted as being particularly dynamic by the HRDC study such as retail trade, transportation and tourism related sectors generally had slower rates of job growth than the regional average (20%), while sectors experiencing rapid employment growth included agriculture (95%), educational services (48%) and professional, scientific and technical services (45%) and construction (33%) (Figure 3.13).

At the very least, the employment trends in Greater Vancouver over the past decade raise questions about the impression of regional prosperity being closely tied to international trade and commerce, with employment strengths being registered in more locally based professional service industries and construction. Nevertheless, the perception of Vancouver as an emerging international hub of commerce and gateway to North American markets has taken hold - propagated by industries and individuals with a vested interest in seeing such sectors promoted - which has had a distinctive impact on the direction of public policy.

With an inability to generally affect the macro level forces that impinge upon the emphasized growth sectors of the Vancouver economy, local businesses and policy makers have set their sights inwards, constantly seeking novel ways to make Greater Vancouver an attractive site for industry to succeed. This has included the streamlining of the development permit application process in certain municipalities to expedite new building starts, the construction of major public infrastructure such as an award-winning

airport and a new convention centre to continue to attract visitors, and the approval of a provincial level tax concession to keep the film industry viable in the face of the rising value of the Canadian dollar.

Figure 3.13: Employment by Industry for Vancouver CMA
(employment in 000's – Grey Highlight's Industries that Outperformed the Average)

	1996	2004	% Change 1996-2004
<i>Goods-Producing Sector</i>	183.4	207.8	13%
Agriculture	5.9	11.5	95%
Forestry, Fishing, Mining, Oil and Gas	10.1	4.3	-57%
Utilities	5.4	5.4	0%
Construction	59.4	79.1	33%
Manufacturing	102.7	107.5	5%
<i>Service-Producing Sector</i>	765.1	932.6	22%
Trade	153.7	170.4	11%
Transportation and Warehousing	57.2	66.6	16%
Air Transportation	10.7	9.2	-14%
Truck Transportation	12.0	13.0	8%
Transit and Sightseeing Transportation	13.6	23.2	71%
Postal and Courier Services	11.1	11.9	7%
Other Transportation and Storage	9.8	9.4	-4%
Finance, Insurance, Real Estate and Leasing	78.1	90.3	16%
Professional, Scientific and Technical Services	72.3	104.5	45%
Business, Building and Other Support Services	37.8	49.1	30%
Educational Services	55.0	81.3	48%
Health Care and Social Assistance	88.5	116.3	31%
Information, Culture and Recreation	50.6	65.6	30%
Accommodation and Food Services	76.0	89.9	18%
Other Services	45.8	51.0	11%
Public Administration	49.9	47.5	-5%
All Industries	948.6	1140.4	20%

(Source: Statistics Canada Labour Force Survey, 2005 – Retrieved from <http://www.gvrd.bc.ca/growth/keyfacts/empbyind.htm>)

More broadly, there has been a particularly seductive quality to public investment initiatives that can stimulate job creation in desired growth industries in the city (of which transportation is one), bring outside capital into the local system, and increase the global competitiveness of the region as a site of investment. Investments in transportation mega-projects such as new roads and rail based mass transit systems fit this profile. These projects create many construction, manufacturing, engineering, consulting and service operation jobs over their lifespan; they cultivate a local private sector competency in the production of such projects that can then be marketed to other cities abroad; and the infrastructure itself can make the region more competitive by improving the movement of visitors, goods and commuters. In this sense, transportation projects are not only about moving people, they also take on an economic development component, through which job creation and economic diversification into sectors such as manufacturing can be encouraged. Similar to spending on transportation infrastructure, public sector involvement and investment in mega events such as Expo '86 and the 2010 Olympics have been used to stimulate construction (including major transportation systems) and keep the city in the consciousness of foreign tourists, migrants and investors.

Overall, then, Vancouver has taken the form of a classic transnational economy and society, which achieves productive diversity through immigration, entrepreneurship and connectivity. Real estate and property development have emerged as more than just industries that have supported rapid employment growth in the construction sector, becoming key driving factors in the city's internationally networked money economy (Olds 2000).

The economic composition of Greater Vancouver places diverse challenges on the local transportation network. Much of Vancouver's recent economic success has been a result of the city's livability and potential attractiveness to new residents and tourists alike. As employment, residential and recreational activities splinter away from a central hub into more dispersed locations across the region, this has necessitated a transportation network that can efficiently and comfortably move people throughout the region. At the same

time, the city's economic success remains closely tied to its attractiveness as a goods transportation hub, which in turn is facilitated by a transportation network that can efficiently move goods by road, rail, sea and air within and between regions. The efficiency of the transportation network has been particularly challenged by significant growth in goods movement by truck, which carries almost all goods movement within British Columbia, and has created major congestion on North-South routes between the port, the airport and the United States border (Delcan 2003). The need to reconcile these competing mobility needs rests at the core of Vancouver's past and future transportation infrastructure investment schemes.

The Making of a Mega Problem

Transportation has always featured prominently in the development trajectory of British Columbia, as a vast province situated at the edge of the North American continent. From the construction of the transcontinental railway that brought British Columbia into the Canadian federation, to the northern highway mega-projects and southern port facilities that opened up British Columbia's natural resources to world markets, emerging transportation infrastructure has helped to shape British Columbia's identity. The importance of transportation to the region is no less significant today. In Vancouver, the sense of opportunity and possibility, so central to the local identity as described by Douglas Coupland, is closely tied to unencumbered mobility. And the potential to capitalize on a perceived site of future prosperity in the emerging markets of China and India is predicated on Vancouver's role as a transportation gateway to North America. Yet worsening congestion threatens to dim the future economic, environmental, social, and livability prospects of 'lotus land'.

However, upon closer inspection, there appears to be a tension between the measured reality of urban congestion as a significant problem with diverse impacts, and the public perception of a crisis of epic proportions that is among the top concerns of city dwellers. This tension has been in no small part encouraged by the rhetoric of a set of special interest groups, whose individual positions may be enhanced by initiatives to ameliorate

urban congestion. Nevertheless, in a politically charged environment where public opinion can be instrumental in shaping policy decisions, uncovering the intersection between rhetoric and reality in the debate about urban congestion is central to understanding the types of infrastructure investments that are made at different moments of strategic choice. As such, this final section will grapple with the perceptions and realities that have surrounded the debate over urban congestion, as well as the underlying forces that have shaped public opinion.

The narrative of 'paradise lost' at the hands of increasing road congestion is by no means confined to Vancouver. Today, traffic congestion plagues urban areas around the world. Anthony Downs and Martin Wachs, among other transportation analysts, have argued that congestion is an endemic component of living in a modern society, where there are general conventions about hours of work and school, and where agglomeration is valued for certain business and recreation activities. Downs goes so far as to suggest that congestion is in fact a sign of regional growth and prosperity, rather than a cause of urban decline, since congestion is a by-product of being in a popular location where large numbers of people want to concentrate at the same time. As evidence, he shows that the cities with the greatest levels of congestion are also the largest urban areas with the most robust economic performance (Downs 2004).

This tendency is also found in the lower mainland. Along with rapid population and economic growth have come increasingly congested roads. However in Greater Vancouver, as in most other cities, Downs' advice to simply get used to congestion – or as he puts it (Downs 2004a) 'Get an air-conditioned car or truck with a stereo radio, a tape deck and CD player, a hands-free telephone, and commute with someone you really like!' - has been small consolation to the increasing legions who have seen their livelihood, time, and patience challenged by growing road congestion.

As such, in spite of invocations to take a stoic approach to congestion, the conditions in Vancouver have been ideal for transportation and congestion relief to become one of the most pressing issues in the minds of Greater Vancouver residents. A 2005 survey of

1800 Greater Vancouver residents commissioned by Translink found that the largest number of respondents mentioned transportation as the local issue deserving the greatest attention from politicians (28%), followed by health care (21%), crime and safety (10%) and social housing issues (9%) (Hansen, *The Vancouver Sun*, 8 September, 2005, B5). The findings of the 2005 Translink study mirror the results of a 2003 Ipsos-Reid poll published in the *Vancouver Sun* (Ramsey, 16 December, 2003, B1), which showed that 38% of Lower Mainland citizens felt that 'congestion and transit in particular should be a key focus among local politicians', well ahead of crime (19%), health care (13%), education (10%) and poverty (9%). And an annual survey conducted since 1997 for council of the City of Vancouver found that transportation, social issues and crime are consistently the top issues that local residents want addressed, ahead of the economy, taxation, the environment, urban growth and governance (Mustel Group 2005). Nor is this a recent trend. A review of newspaper coverage and provincial parliamentary debates suggests that transportation has been a defining issue for Vancouver dating back well into the 1960's and 1970's.

So how did transportation become the foremost issue on the Vancouver urban agenda, within a city challenged by serious social problems and a province where health care waiting lists have grown unabated and post-secondary education tuition nearly doubled in just three years between 2002 and 2005? The answer is seemingly two-fold. First, the desire to seek immediate solutions to road congestion resonates with a diverse range of constituencies in Vancouver, who experience the effects of constricted roads on a daily basis:

- Commuters who are finding themselves stuck in more frequent and persistent traffic jams.
- Business groups concerned about lost productivity estimated at anywhere from \$414 to \$1.5 billion annually, in an economy and job market that is increasingly dependent on ease of mobility for goods and people within a competitive global network (Delcan 2003).

- The local urban planning establishment that has seen worsening congestion as an opportunity to galvanize support for investment in public transit infrastructure, and a catalyst for motivating individual choice in favour of alternatives to the automobile (GVRD, 1993)
- Environmentalists concerned about the rising share of greenhouse gas and particulate emissions as a result of rising automobile congestion.
- Social justice activists concerned about unequal access to mobility and exclusion from employment and recreational opportunities for those unable to drive a car.
- An interventionist planning establishment that has designed a regulatory framework and operated within a paradigm of using investment in transportation infrastructure as a tool to shape future land use.
- Politicians of all stripes who operate within a highly competitive political culture, in search of projects that can deliver quick results to appeal to a restless electorate.
- 2010 Olympic organizers and civic boosters, who see the provision of efficient and modern transportation as critical to the smooth functioning of the games, and part of the lasting impression of Vancouver once the closing ceremonies are over.

There is little doubt that the prominence given to transportation issues reflects a genuine recognition among multiple publics that mobility is a central force shaping the current growth, livability and prosperity of the Greater Vancouver region. At the same time, transportation is an issue that is extremely accessible to members of the public. Anyone who travels a route regularly, whether by foot, bicycle, public transit or car, can have intimate knowledge of the usage patterns for that infrastructure, the bottleneck points, and also strong opinions on how the service could be improved. Furthermore, the lack of effective solutions to regional congestion to date exacerbates the concerns of worsening conditions into the future.

In concert with public concern over a very real urban problem, there is also little doubt that media representations of road congestion in Greater Vancouver have amplified the level of awareness and anxiety about the pernicious costs of not addressing transportation issues immediately. Under melodramatic headlines such as ‘Regional Traffic Reaches

Crossroads'(Boei, *The Vancouver Sun*, 7 September, 2004, B2), 'The Future is bad: More cars, more suburbs, bad air' and 'Here comes that transit bill'(Luba, *The Province*, 27 August, 2003, A3) the local media have closely scrutinized transportation issues in Vancouver, presenting the heated rhetoric that surrounds this contentious issue. The mainstream media has found particular traction in focusing on the notion embedded in recent regional plans that congestion should be purposefully allowed to worsen in order to encourage use of alternative modes of travel to the private automobile, which is presented as either a sign of progressive planning or a lack of leadership in providing solutions to a major concern of local residents. The *Province* even ran a ten part series on road congestion titled 'Gridlock: The Way Ahead', and the *Vancouver Sun* has also published numerous features on transportation issues, some of which have captured the front page (Figure 3.14). When combined with the municipal community based newspapers, rarely a day went by in the local press in the early years of the 21st century where a story did not appear about rising congestion and its potential cost to the economy, social welfare and the environment.

The national media have also taken notice of Vancouver's congestion problem, with the *National Post* running 'Vancouver's China syndrome: This year's 56% rise in volume has only worsened cargo, rail and road congestion at Canada's chief West Coast port' (Greenwood, *National Post*, 29 November, 2004, FP1) while the typically Ontario focused *Globe and Mail* published 'Unjamming Vancouver gateway should top BC's priority list.' On television, the Global television news segment *Money Wise* carried a feature story called 'Gridlock' that visually detailed the mounting costs of congestion in cities across Canada (Oliver, 2004), and the public Canadian Broadcasting Corporation and other television and radio outlets have also closely tracked transportation issues in Vancouver.

Figure 3.14: Front Page Media Exposure of Greater Vancouver Traffic Problem

Due to copyright restrictions, Figure 3.14 has been removed

The Figure presented an image of the front page (A1) of the *Vancouver Sun* from 8 October, 2005. Under the headline, 'WHY WE'RE IN A JAM WITH TRAFFIC' is a half page picture of a congested freeway

(Source: *Vancouver Sun*, 8 October, 2005, A1)

Amidst the rhetoric and public discourse surrounding the impending traffic nightmare that Vancouver faces is a conflation of reality and hyperbole. Both statistical and anecdotal evidence confirm that the level of congestion has been consistently worsening in Vancouver. And what may have once been a specifically downtown issue has now engulfed the entire region, even suburban communities where many residents and businesses moved to escape the costs of congestion. An increasing number of bottlenecks in the Vancouver region are a result of inter-suburban commuter trips and goods movement that neither have their origin or destination in the city centre. Instead, suburban connecting highways and bridges are the most congested parts of the transport network.

However, despite the imagery of traffic Armageddon on the streets of Vancouver, congestion is by no means universally pervasive across the entire region. Photos taken

on key arteries in the City of Vancouver during rush hour and mid day travel periods between February and November of 2005 suggest that while traffic volumes are high and location-specific bottlenecks exist, traffic often flows pretty well by the standards of some comparable inner cities such as Seattle, San Francisco and Toronto (Figure 3.15). The conclusions drawn from this photographic evidence are substantiated by a Translink study reported in the *Vancouver Sun*, which found that some 63% of all roads in Greater Vancouver experience only a low level of traffic congestion (Fowlie, 8 October, 2005, B1) (Figure 3.16).

And under closer scrutiny, there appears to be flaws in the way that the estimated figure of up to \$1.5 billion in annual lost productivity as a result of congestion in the Greater Vancouver region is being applied to support arguments about the economic cost of traffic congestion. Specifically, numerous local interest groups, such as the widely published head of the BC Trucking Association, Paul Landry, have used the \$1.5 billion figure as the present day economic cost of congestion. In a February 14, 2005 opinion editorial in the *Vancouver Sun*, Landry wrote, 'The economic cost of systemic congestion in the Lower Mainland is about \$1.5 billion per year and this will double by 2021.' And in a section titled 'Mobility Supports Competitiveness' on their web site used to justify the RAV project (RAVCO 2005), RAVCO, the public company overseeing the development of the RAV line states 'Transport Canada estimates that delays caused by congestion cost up to \$1.3 billion annually.' The figure of \$1.1 to \$1.5 billion was derived from a Transport Canada estimate, which was posted on their *Transport Trends* web page in October of 2001.

Figure 3.15: Observed Congestion on Key Transportation Arteries

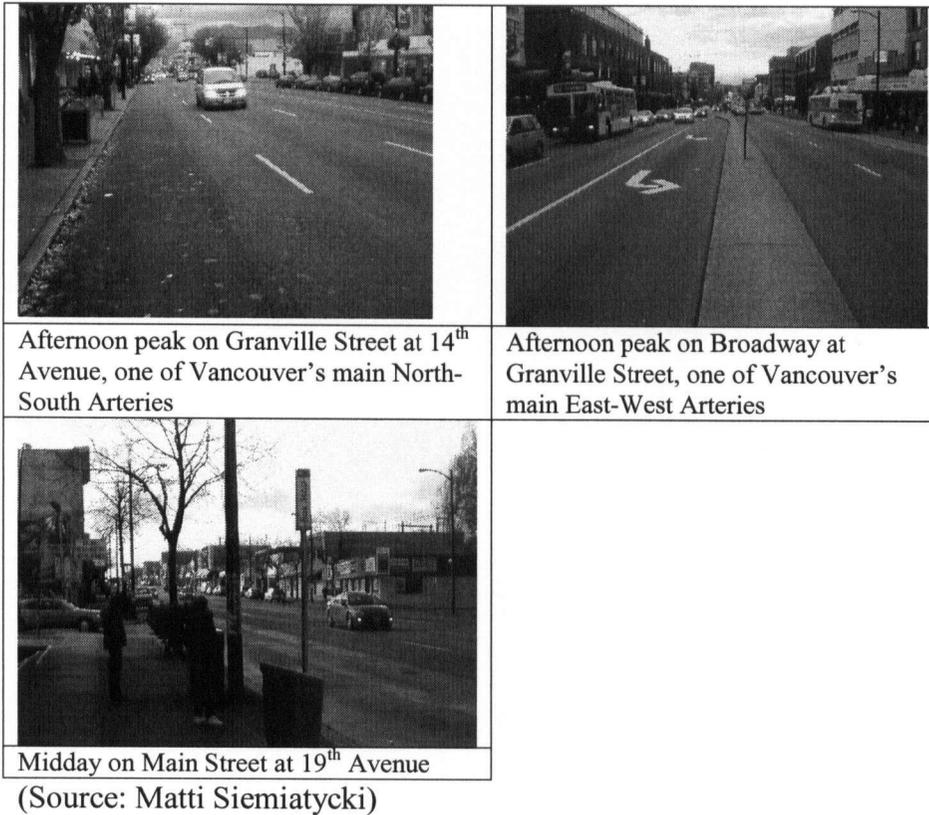


Figure 3.16: Translink Study of Regional Road Congestion

Due to copyright restrictions, Figure 3.16 has been removed

The Figure presented a map of Greater Vancouver's major road network, and highlighted the main locations of traffic congestion. While some heavily congested areas were located in downtown Vancouver, most of the roads in the City of Vancouver were shown to have only moderate levels of congestion. By contrast, the longest stretches of heavy congestion were depicted along suburban freeways, most notably in Surrey, Burnaby, and Port Coquitlam. Key river crossings in the eastern municipalities of the region were also flagged as locations experiencing heavy congestion. Additionally, the figure also contained a pie chart showing that 63% of the roads in Greater Vancouver experienced low levels of congestion, 17% are moderately congested, and 20% are heavily congested.

The original map was published accompanying an article by Jonathan Fowlie on page B1 of the October 8, 2005 issue of the *Vancouver Sun*.

(Source: Fowlie, *The Vancouver Sun*, 8 October, 2005, B1)

However, more recent studies commissioned by the Federal Ministry of Western Diversification in partnership with the provincial government of British Columbia and the Gateway Council business lobby group (of which both Mr. Landry and RAVCO board member Larry Berg are voting members) suggests a lower annual cost of congestion. Specifically, the 2003 study conducted by Delcan Economic Consultants, which is now widely reported as the most-up-to date congestion forecast for Greater Vancouver and the one used by Transport Canada officials, states: 'by the year 2021, a loss of Gross Domestic Product in excess of \$475 million/year is predicted (with an expected range of \$414 million to \$1.1 billion)' (Delcan Economic Consultants 2003: E-3) The study does proceed to mention a savings of up to \$1.5 billion dollars by 2021, yet this is an estimate of total savings of lost productivity if all elements of a proposed \$6 billion commercial transportation system are implemented in the region.

Since all the estimates put forward in the 2003 Delcan consultants study assume worsening congestion between the date of the study and 2021, current day congestion can be thought to cost the economy considerably less than the popularly reported \$1.3 - \$1.5 billion, although no exact number is specified. In light of more recent studies, the continued use of Transport Canada's \$1.5 billion estimate of lost productivity in Greater Vancouver by the BC Trucking Association and RAVCO, amongst others, at the very least represents a disingenuous use of quantitative data to shape public discourse. This point is not meant to imply that there is no economic cost to the present level of road congestion in Vancouver, but that there may be hyperbole in the way that quantitative estimates are being used in the popular press to shape public opinion about the need for specific large-scale infrastructure projects.

Finally a variety of trends suggest that existing market forces, transportation policies and investments are beginning to have an impact on the mobility patterns of the region. Public transit ridership across the region grew by 8.3% between 2003 and 2004, the second largest annual increase since 1986. The ridership growth was 7.7% greater than predicted in the budgetary allocations, and largely reflects the introduction of a low cost, mandatory pass program for university students (Translink 2005). Additionally, a recent

Translink study found that rising gasoline prices have led many drivers to begin to consider alternatives such as public transit (BCAA/Translink 2004). The number of registered motor vehicles in the City of Vancouver has actually declined for the first time in 20 years. Finally, the number of work-related trips between the City of Vancouver and the surrounding municipalities being carried out by public transit are growing twice as fast as those undertaken by private automobile. These figures suggest that local residents are willing to change their mode of choice for some trips from the private automobile to other options in parts of the region where viable alternatives are available at an affordable price, which could contribute to reducing the level of road congestion.

As the often-contradictory evidence presented in this section suggests, there appears to be an ongoing tension between the perception of worsening road congestion paralyzing the economic, environmental and social vitality of the Vancouver region, and the actual state of road congestion which is somewhat less dramatic, and generally isolated to a series of specific bottlenecks. Regardless of the actual current state or future prospects of traffic congestion in Vancouver, public perception of an impending crisis has become reality, and issues of urban mobility now captivate the public discourse. The perception of constricted mobility and road congestion as a major problem plaguing the region has made it a potent political issue with relevance to diverse constituencies from business leaders to suburban commuters, anti-poverty groups to environmentalists. With such a broad spectrum of interested constituencies, transportation has become an issue that can attract votes to politicians and political parties that are seen to be proactive in seeking transportation solutions. To generate the greatest level of political currency, there has been an inclination to promote transportation solutions that are highly visible to both users and non-users alike; provide immediate, easily recognizable benefits; and are not only seen as effective transportation projects, but are also modern and comparable to technologies being implemented in other regions and nations. As will be seen in the upcoming chapters, where there are mega problems, there are mega solutions.

PART II: EVOLUTIONS

Chapter 4: In Search of Solutions to Vancouver's Transportation Mega Problem

Introduction

For over one hundred years, urban transportation has been recognized as a critical issue shaping Vancouver's growth trajectory, and one that has consistently risen to the top of the public consciousness. Amidst the rhetoric of lost economic productivity, environmental degradation and social exclusion that have both local and national implications, transportation has come to be seen as a 'mega problem'. In response to the conceptualization of transportation as a mega problem, transportation has garnered considerable political attention and public investment.

In this and the following three chapters I will explore the local strategies and actions that have been undertaken since the city was established in 1886 to redress Vancouver's transportation problem. My intent is to trace the politics, processes and outcomes associated with Greater Vancouver's adoption of many of the state-of-the-art transportation solutions that were being attempted in other North American cities over the past century. In this chapter, I will examine the extended period from 1886 to 1975, with a focus on the shifting conventions that directed transportation investment in Vancouver as it evolved from tramways and trolley buses, to plans for urban highways, and finally on to land use coordination and the regional integration of transit services. In chapter 5, I will explore the initial rise and reaction to investment in urban public transit projects in Vancouver, which took place between 1975 and 1991, while chapter 6 looks at a second period of investment in urban public transit infrastructure that took place between 1991 and 2004.

By chronologically reviewing the processes for delivering solutions to Vancouver's transportation mega problem, I hope to illuminate the dense network of interconnected agents, institutional structures and politics that have been instrumental in shaping issues of mobility and accessibility in the city. As I will demonstrate, the path upon which contemporary transportation projects have ultimately proceeded can be seen to have

grown directly out of the city's historical experience with transportation planning and investment. Throughout this analysis, I will continue to question whether both the processes and infrastructure investments implemented to date have achieved the public interest of transparent and accountable decision-making, as well as sustainable and equitable mobility. Reflections on Vancouver's historical experience with transportation infrastructure investment will be the topic of this part's final chapter.

The Early Years (1886-1961)

Since the earliest European settlement in the mid-nineteenth century, transportation has played a significant role in defining Vancouver's urban fabric. The land use patterns that emerged as well as the local experience with different transportation technologies have formed the foundation upon which future decisions were made. In particular, the early provision of transportation services in the future metropolis is similar to the pattern of development in other North American and European cities, and provides insight into both the ownership structures of public transit and the types of infrastructure decisions that were made.

Within five years of incorporating as a city in 1886, Vancouver's population had mushroomed to 15,000 people. In 1889, the privately controlled Vancouver Street Railway company began laying tracks down Granville Street and, in 1890, the first electrified streetcar began operation in Vancouver. Over the next two decades, streetcar lines were extended across the city into neighbourhoods such as the West End and False Creek. The first electrified interurban railways in North America were also built, connecting the neighbouring municipalities of Point Grey, South Vancouver, Burnaby and New Westminster to central Vancouver. Within years, lines were set up in North Vancouver, connecting the ferry dock and the budding municipality's downtown core. The early proliferation of streetcars in Greater Vancouver decisively shaped the city's land use development, and to this day local commercial and residential districts can be seen to cluster around the location where early transit stops were made (Ewert, 1986).

Despite rapid expansion of the streetcar network and near monopoly as the sole motorized mode of transit in the city, the urban mass transportation industry in Vancouver was characterized by considerable volatility. In the first decade of operation, there were two bankruptcies of private urban rail firms, and corporate ownership was consolidated and restructured three times. In a refrain reminiscent of today's debates, directors of the Vancouver system bemoaned the fact that fares failed to cover operating expenses. Finally, some ownership stability was brought to the urban transportation industry when the British Columbia Electric Railway Company (BCER) was formed in 1897 (Ewert 1986).

In the 1920's, a new set of debates arose in Vancouver surrounding transportation technologies. Around the city's fringes and to the southeast, Vancouver was beginning to sprawl into lower density communities that were distant from existing transit service. Concurrently, innovations in diesel bus technology improved reliability and comfort, making buses a more favourable alternative for the private operator than investing in costly rail track infrastructure. In 1923 the first bus service began operating in Vancouver, followed by rapid expansion of the bus fleet. Around the same time, highway development began with the completion of the Pacific Highway down to the border crossing at Douglas, making the connection easier between Vancouver and Bellingham and Seattle in Washington State (Kelly and Francis 1990).

By the mid 1930's, buses had become the 'modern' face of the public transit industry, the most likely candidate to challenge the ascension of the private automobile. In particular, the hybrid trolleybus had begun to revolutionize the European and North American transit industry. A tram without tracks, a bus with electricity, trolleybuses provided the environmental benefit of emission-free operation in the city without the high fixed capital cost of track installation and maintenance. In 1945, BCER embarked on a 10-year program to convert their entire transit system from rail to rubber, and within nine years Vancouver had 327 trolley vehicles, the largest fleet in Canada. Yet at the same time as the transit fleet was being modernized, road infrastructure in the Greater Vancouver area was being expanded, most significantly with the opening of the Lion's Gate Bridge in

1938 which provided the first direct connection between downtown Vancouver and the North Shore (Kelly and Francis 1990).

In 1955, the streetcar made its last trip in Vancouver, relegated to history as an anachronism and a symbol of an old urban order. The weekly public transit newsletter, *The Buzzer*, commemorated the event with a special 'Rail to Rubber' edition, which concluded with a symbol of the future: a picture of a trolley bus crossing the new Granville Street bridge, part of a modern transportation system. The closure of the last interurban railway between Richmond and Vancouver followed shortly after, in 1958 (Kelly and Francis 1990).

Despite the conversion to more modern trolley buses, broader social trends of continuing suburbanization and rising car ownership challenged the economic viability of public transit, and in the 1960's transit ridership declined considerably. This decline in transit ridership together with declining residential densities coincided with the construction of more road infrastructure, including: the George Massey Tunnel for faster access to the southern part of the region; the Second Narrows Bridge as a second auto connection to the North Shore; and the Lougheed Highway and the Upper Levels Highway connecting the eastern part of the region (Davis 1997). In spite of the intense period of highway development, the final missing link was a direct highway connection into Vancouver's downtown. Nevertheless, this period of highway development stimulated a positive feedback loop whereby developers took advantage of greater highway accessibility to build more low-density car-oriented communities. The automobile was thus further privileged over other modes of transportation, such as the bicycle or public transit, and its supremacy appeared to be guaranteed.

Finally in 1961, faced with a persistent challenge from the private automobile that had undermined the financial viability of the private transit operators, the Social Credit provincial government of British Columbia purchased the B.C. Railway Company from its private owners, and began operation of the system as part of a public utility (Francis and Kelly 1990). This action followed the lead of other Canadian cities, such as

Edmonton (before 1915), Toronto (1921), and Montreal (1951). In British Columbia, the planning and delivery of urban public transit was placed under the jurisdiction of BC Hydro, a newly formed crown corporation that had the primary mandate of harnessing the province's vast hydroelectric potential. This obscure institutional location for public transit was in some ways reflective of a Social Credit party policy direction that was more interested in accommodating the private automobile than expanding public transit (Meligrana 1999).

The early experience of public transportation in Vancouver suggests that volatility in ridership and challenges to profitability are a defining feature of the public transit industry under private ownership; later, I will show that the same applies under public control as well. Moreover, it is important to note that in the case of Vancouver, the public sector assumed responsibility for urban public transit when it was no longer profitable for the system as a whole to be operated by the private sector, thus apparently recognizing the broad benefits that such services provide to the entire city. This is all the more noteworthy considering the Social Credit government's strong alignment to an ideology of free market competition (Mitchell 1983). When probed by a reporter about whether the takeover of BC Electric was a form of socialism, W.A.C. Bennett quipped 'Socialism when necessary - but not necessarily socialism!'

Nevertheless, even as the city was investing in public transit, the expansion of the highway network remained a consistent part of the urban landscape. Unlike cities in Europe and central Canada, Vancouver grew up during the period of the combustion engine, which dramatically shaped mobility patterns and land use development down to the present. Through a range of positive feedback loops described above, the early decision to invest in highways in Vancouver created the beginnings of a technological lock-in, which set the region on a policy path that required decision makers to choose how they would accommodate ever increasing car-oriented development and use.

Blacktop Politics: Paving the Way to Vancouver's Manifest Destiny (1961-1972)

During the second major epoch of transportation investment in Greater Vancouver, the region was forced to struggle with the implications of the earlier decision to begin implementing a highway network. In the face of rapidly expanding auto usage and sprawling land use patterns that were increasingly geared towards automobile accessibility, the 1960's decade became a defining moment for the Vancouver region. As had occurred in other cities across North America, decision makers were forced to decide whether to build ever-bigger highways to accommodate greater automobile usage, or devise alternative strategies to deliver the ease of mobility that the residents desired.

These decisions about transportation infrastructure were embedded in a larger competing discourse on how Vancouver should evolve, and what constituted a modern, livable city region. For those involved, there appeared to be a sense that a close relationship existed between the transportation decisions made during this period, and the question of whether Vancouver would rise to the level of a central hub within a global city hierarchy, or whether the city would retreat to its historical position as a second or even third tier command and control outpost of the Canadian urban hierarchy (Davis 1997). With W.A.C. Bennett at the helm of the provincial government, which monopolized the institutional jurisdiction over urban transportation, the direction was all but decided. Premier Bennett had staked his personal reputation and that of his Social Credit party as being visionary builders of a strong British Columbia, and to achieve this end Bennett had undertaken a series of massive infrastructure projects across the entire province (Mitchell 1983).

Bennett's vision for British Columbia was complemented in Vancouver by the strength of a pro-growth coalition led by downtown property owners and developers that were pushing for Vancouver to assume its 'manifest destiny' as a city on the world stage. In the face of what seemed like irreversible declines in public transit usage, the alternative to build larger and more imaginative highways gained momentum. A new generation of planning and engineering technocrats, confident in the progressive thrust of their

convictions, proposed massive schemes that would for the first time provide direct highway access into the city centre (Rankin 1971).

As noted above, the plans to blanket the city with a new layer of urban highways were about far more than simply providing better connections between the budding suburbs and the work centre of downtown Vancouver. In 1952 the GVRD's predecessor, the Lower Mainland Regional Planning Board, announced 'within perhaps 50 years the whole area will be, geographically and otherwise, a miniature New York area, with the Burrard Peninsula as its Manhattan' (Quoted in Davis 1997).

With this vision in mind, a young group of architects, planners and designers set out to reorder central Vancouver. In 1956, a teenaged Arthur Erickson (who would later go on to become Vancouver's leading modernist architect) drew up sketches that depicted the West End district as a single high-rise complex, anchored by a pair of twin 100 story towers on either side of downtown. And in 1963, the architecture firm Christiani and Nielsen revealed an image of Coal Harbour with a new island off Stanley Park (Davis 1997).

To achieve Vancouver's 'manifest destiny' as a mini Manhattan, a diverse coalition of growth oriented civic officials, downtown business interests, the development industry and elected local politicians recognized the importance of a high capacity transportation system (Punter, 2003). Suddenly, it was legitimate for planners, architects and designers to be audacious and dream at a mega scale that had not yet been seen in Vancouver. Planners at the provincial department of transportation drew up proposals for a hovercraft terminal on Deadman's Island just offshore from Stanley Park to ferry passengers between downtown and the airport (Davis 1997).

And a third crossing of the Burrard Inlet, this time a tunnel, between downtown and the North Shore was conceived as part of a new inner city highway travelling along the Vancouver waterfront that would serve as the transportation artery for Vancouver's urban densification. In 1967, engineering consultants Parson Brinckerhoff Quade & Douglas

based in San Francisco were commissioned to complete a new Vancouver Transportation Study for the local City government. On what was claimed to be the direction of the government commissioning authorities, the study largely ignored the question of rapid transit as a substitute for new roads (Parson Brinckerhoff Quade & Douglas 1968; Rankin 1971). This bias seems to reflect how City of Vancouver representatives intended to use the commissioning of a technical study to justify an existing desire to develop new freeway infrastructure.

The Parson Brinckerhoff Quade & Douglas study concluded that Vancouver would be best served by a highway into the eastern quadrant of the city that would require the levelling of 600 homes in the historic working class Strathcona neighbourhood along with the construction of a ten metre high overpass through the centre of Chinatown (Davis 1997). This would link with a north-south freeway down Main Street that would run to the edge of downtown (Figure 4.1). The idea of constructing a network of major downtown and regional highway connections matched the engineering solutions to congestion adopted in other Canadian and Australian cities, which were largely in imitation of American cities (Sandercock 1975).

Despite the justifications for the project on transportation grounds, Punter (2003: p24) suggests 'planning of the freeways proceeded on the basis of who could be made to pay for them rather than on strategic thinking about desirable patterns of new development.' The federal government might be willing to pay for a new crossing of a federal waterway. And the east-west alignment would be made possible by a right-of-way contributed from the Canadian Pacific Railway in order to gain better access to their extensive land holdings. While council did not immediately approve the findings of the study, a majority of the Vancouver city councillors began trying to implement the recommendations of an inner city freeway network (Rankin 1971).

Figure 4.1: Proposed Freeway Schemes (in dark black)

Due to copyright restrictions, Figure 4.1 has been removed

The Figure presented a map of an inner city freeway network as proposed in a plan commissioned by the City of Vancouver. The map shows a series of thick black lines representing a proposed freeway traveling north-south along Main Street in the City of Vancouver and then turning west along the waterfront towards a new crossing of the Vancouver Harbour. It also shows a proposed east-west freeway traveling through Chinatown eastern quadrant of the City of Vancouver to connect with the proposed north-south Freeway.

The Figure was reproduced from page 3 of Rankin, H. (1971). *Beat the traffic rush : the case for rapid transit*. Vancouver: Coalition of Progressive Electors.

(Source: Rankin 1971)

Opposition to the downtown freeway scheme was immediate and widespread, encompassing Strathcona and Chinatown residents and businesses, as well as a broader cross section of Vancouver citizens who were becoming increasingly disenchanted with the perceived pro-business orientation of planning in the city. When public meetings confirmed that the plan was widely unpopular, then Vancouver Mayor Tom Campbell made two major attempts in 1968 and 1971 to gain approval for scaled back versions of the highway project, both of which were rejected by council (Punter 2003).

The successful bid to halt the development of the downtown freeway in Vancouver was a defining moment for the local political scene, described in the local media by former city

councillor and urban commentator Gordon Price, as ‘the most important event that ever happened in the history of the city’ (Thomas, *Vancouver Courier*, 5 August, 2004). At both the civic and provincial levels in 1972, voters punished pro-development governments. In each case, the electorate selected left-of-centre parties, searching for a more measured approach to growth and redevelopment (Punter 2003). As recognition of its magnitude in the trajectory of Vancouver’s urban development, the freeway protests are commemorated as one of the local milestones of the 1960’s and early 1970’s permanently on display at the newly opened Vancouver Museum (Thomas, *Vancouver Courier*, 5 August, 2005).

While the downtown freeway project itself was overturned, four lasting legacies endured. First, without a regional transportation solution in place, Greater Vancouver continued to be plagued by a persistent urban congestion problem, which was only exacerbated by the rapid expansion of office space in the central business district, the realization of a high-density community in the downtown West End that increased the size of the local population, and continued sprawl into more distant suburbs that encouraged long distance commuting.

Second, transportation projects became intertwined in the competing civic ambitions of Vancouver’s businesses and residents and would be at the core of local politics for years to come. Thus while the downtown freeway plan was rejected, the search continued for transportation projects that would provide both improved mobility and benefits beyond the simple movement of people.

Third, the need for both inter-governmental and private support to finance major transportation infrastructure led to the prioritisation of projects that might be attractive to potential funding agencies, but may not have been embraced by the wider community. Finally, the repeated attempts by Mayor Campbell to gain approval for the proposed downtown freeway illustrates that a transportation mega-project is never completely scrapped just because it has been rejected by an elected council. When powerful interest

groups are in support of infrastructure projects, there is often great political incentive to persist in seeking project approval, even in the face of popular opposition.

Transportation for a Livable Region (1972-1975)

The defeat of the downtown freeway proposal in Vancouver in the early 1970's marked a shifting public appetite for solutions to Greater Vancouver's transportation problem. Shelved were the mega scale highway projects that served as the arteries of Vancouver's technocratic and developer-led densification schemes. What would fill the void was still not entirely clear, creating an ever so brief period of uncertainty that served as a potential branching point in the path of Vancouver's 90-year transportation infrastructure investment process.

While earlier epochs in transportation investment decisions had been strongly influenced by previous decisions and embedded positive feedback loops, the election in the early 1970's of progressive political parties at both the provincial and City of Vancouver civic levels created an opportunity to chart an entirely different policy program. The key constituencies for these parties were outside the traditional pro-growth coalition of developers, property owners, railway magnates and resource extraction company executives. On the horizon was the possibility of a new base of community power and the potential to reorder both the institutional structures, norms and traditions that had led to an antagonistic planning environment, and the types of projects that were selected.

What emerged at this juncture was a new emphasis on the regional integration of planning for the creation of livable communities at the neighbourhood scale, which was crystallized in the GVRD approved *Livable Region Plan* of 1975. More than a plan of action, however, the *Livable Region Plan* embodied a new way of planning in Vancouver that emphasized the importance of public engagement in the process as much as outcomes. As GVRD planning director Harry Lash later wrote of his experience in the development of the *Livable Region Plan*,

Our view of the plan and the process was different, a concept that was rather difficult to grasp. It is summed up in enigmatic statements like the one that serves as title to this chapter, 'The plan is the process'...When livability became the key word for our regional planning, we knew we would have to find effective ways to deal with many problems...we had to deal with long-term future livability, but also with people's ongoing satisfaction, their day-to-day experience of living in the region. (Lash 1976: 46)

Improving the ease of mobility in Vancouver became a central feature of creating a livable region. With the concept of livability at its core, Lash and his planning team set out to reinterpret how transportation benefits were conceived:

We rejected measures like 'total volume of passengers carried', so dear to the hearts of transportation managers, and devised instead measures like 'connectivity'; how easily and quickly could a citizen in any part of the region reach households and businesses in other parts of the region; measures like convenience and comfort of trips, frequency of service, and measures of the quality of service provided to people who had no cars. (Lash 1976: 50)

In 1971, GVRD Chairman Alan Kelly authored a report on the future prospects of transportation for a livable Greater Vancouver region. Kelly argued that the greatest immediate improvement to the system could be achieved through small-scale solutions such as expanding the bus network to parts of the region that were not being served, followed by the implementation of express bus services on heavily travelled routes. For the longer-term, Kelly did not propose a Toronto style subway system as was the aspiration of many residents in Vancouver, but instead a more cost effective network of light rapid transit and commuter rail using existing surface corridors as well as new ferry services that could connect the distant town centres throughout the region (Kelly 1971; Lash 1976).

When completed in 1975, *The Livable Region Plan* explicitly sought to provide alternatives to the private automobile through the creation of compact town centres across the region that would link residential and employment sites, thus limiting the need for long distance commuting. As had been proposed in the Kelly report, a regional network of light rapid transit was proposed to connect the distant town centres, which would have sufficient population and employment bases to support the transit service. The plan was

also meant as a growth management strategy that would protect existing agricultural land around the edge of the region that was increasingly coming under development pressure. The precepts of the *Livable Region Plan* were supported by provincial government land use policies, such as the formation of the Agricultural Land Commission that sought to regulate the conversion of farmland to urban uses (Garrish 2003).

In seeking to achieve the precepts established in the *Livable Region Plan*, public transit was returned to the government's urban agenda, both as a means of moving people and as a way to shape future land use development. In keeping with the findings of the Kelly report, the transit solutions favoured during this time period were smaller in scale and meant to fit within a network of transit service that was closely integrated across the entire region. On *the municipal scale*, the progressive coalition that controlled the City of Vancouver council approved the construction of a downtown transit-only mall on Granville Street. The mall idea was an attempt to both cultivate a transit and pedestrian hub, and revitalize the city's 'main drag' that had become increasingly seamy and unfriendly to business (Punter 2003).

At the provincial level, the left-of-centre New Democratic Party (NDP) had run on a platform that sought to formalize planning and government activities through centralization of decision-making and regulation, which was intended to replace the more ad hoc approaches to decision making that had been the norm in the earlier part of the 20th century. Ideas of regionally integrated planning and land-zoning were centrally presented as mechanisms to increase the rationality of decision-making (Garrish 2003). As such when they came to power in 1972, the NDP government set out to put their stamp on both the procedural and substantive transit landscape of the lower mainland.

Procedurally, there was a growing recognition that improved cooperation between the province and the GVRD would be necessary to successfully plan for an integrated transportation system, with links to shaping land use. In 1973, the provincial government formed the Bureau of Transit Services as part of the Ministry of Municipal Affairs to take over responsibility for province-wide planning and funding of expanded transit services.

The GVRD was assigned an advisory role to the Bureau, although the agency had no explicit decision making jurisdiction. BC Hydro retained control over transit service operations (Meligrana 1999).

Substantively, following the formation of the Bureau of Transit Services, the local transit service area in Vancouver doubled between 1973 and 1975, as transit was expanded to previously unserved municipalities including Coquitlam, Surrey, Delta and the eastern portion of North Vancouver. Bus fares, which had risen by 25% in 1971 under the Social Credit government, were frozen at 25 cents. And to meet increased demand on the buses in Greater Vancouver, bus orders placed under the NDP increased the size of the total fleet from 542 buses in 1971 to 835 in 1976 (Greater Vancouver Transit Staff Group 1980).

To help keep the existing trolley bus fleet on the road, 17 used trolley buses were purchased for spare parts from Saskatoon in 1973, which was switching its bus fleet from electric to diesel. The following year, plans were drawn up to purchase higher capacity articulated trolley buses from a firm in Switzerland. And plans were completed and construction began on a new SeaBus ferry service to connect downtown Vancouver with the North Shore (Kelly and Francis 1990). According to a 1980 report by GVRD transit staff, the expansion of the bus network implemented while the NDP was in office had a particularly strong impact on ridership, as overall transit ridership increased by 41% and transit's share of peak period travel increased from 21% to 24%, 'showing that public transportation can attract a large number of people who would otherwise drive their cars if service is not available' (GVRD 1980: 1).

The flagship project in the NDP provincial government's Vancouver transportation portfolio was the return of interurban streetcars to Greater Vancouver's transit system. Re-branded as modern light rail, streetcars were gaining in popularity the world over. Such is the fad driven nature of the urban transit industry, that yesterday's transport problem is today's miracle solution. In 1975, the provincial government (through BC Hydro) purchased a used DuWag light rail car for around \$250,000 that would run as a

demonstration project while a full-fledged light rail system was planned to operate along the old interurban rail line between Vancouver, Burnaby, New Westminster and then on to Surrey (Hansard, 17 March, 1981, p4538). Before the demonstration light rail line could be set up, however, an election was called and the New Democrats were swept from office, replaced by the Social Credit Party under leader Bill Bennett.

Overall, the results of the short experiment with applying a series of relatively small-scale transit solutions in Greater Vancouver have been decidedly mixed. Some of the projects have been quite successful, such as the SeaBus and the transit service area expansion (Greater Vancouver Transit Staff Group 1980; Kelly and Taylor 1990). Other initiatives have been less successful. The transit mall was functional in moving large numbers of people but failed to be a catalyst for neighbourhood improvement (Punter, 2003). And the proposed light rail project attracted criticism since the at-grade routing would create traffic tie-ups at level road crossings (Hansard, 17 March, 1981, p4577). Given more time to be implemented and have an impact, it is conceivable that the full suite of small-scale solutions (an expanded transit service network, frozen transit fares, the transit only mall and interurban light rail) proposed during this period could have proven to be a great success.

Perhaps more important from this period have been the lessons learned about the rhetoric and public perceptions of transportation planning and investment. To this day, the precepts guiding the 1975 *Livable Region Plan* about linking land use and transportation in the formation of complete communities remains a powerful narrative in Greater Vancouver (Berelowitz 2005). However, the idea of implementing small-scale transportation solutions to achieve this livable region has failed to capture the imagination of the British Columbia electorate, particularly at the provincial level. There is nothing particularly sexy about the purchase of used buses from Saskatoon, or plans for at-grade conventional light rail when other cities around the world are investing in flashy subways and monorails. In fact, many of these small-scale proposals became political liabilities for the NDP in the 1970's, as the Social Credit Party heavily criticized their lack of leadership or foresight in planning for the dynamic future of Greater Vancouver

(Hansard, June 12, 1978, p2205). In a snap-provincial election held in 1975, the NDP fell prey to a resurgent Social Credit party, who galvanized support from right-of-centre voters concerned about the poor handling of the province's finances, a theme that had been prominent in debates over transportation investment. From this period forward, no sitting provincial government in British Columbia would overlook the importance of public perception in transportation planning, which re-enchanted the currency of the popular mega-project development paradigm.

Chapter 5: The Rise of Rapid Transit

Introduction

When the Social Credit Party returned to office in 1975 under leader Bill Bennett, the transportation landscape in Greater Vancouver shifted again. During the previous four years, left-of-centre parties at the provincial and local level had taken their turn at filling the void left when the urban freeway projects were defeated in the early 1970's. Through the implementation of an integrated approach to transportation that sought to match public transit service and land use, the NDP and their local government counterparts were successful at increasing both the absolute ridership numbers on transit and the share of all passenger trips made by transit. Furthermore, the rhetoric of the *Livable Region Plan* was sufficiently powerful to create a lasting public narrative that linked compact development and reduced car usage with the overarching goal of urban livability (UTA 1980). The positive legacies of these earlier policies were enough to stave off the wholesale return of a policy package that focused on large-scale highway building, although some road building in Greater Vancouver was put back on the provincial agenda. Instead there was momentum for future governments to continue emphasizing the explicit goal of using public transit to reduce dependence on the automobile, and as a catalyst to encourage compact land use development (UTA 1983).

However, while public transit retained its high profile in the region, the Social Credit government brought an approach to its transit program that was more in line with their ideological approach to infrastructure development. Specifically, the province focused again on mega-projects, only this time around they would be public transit projects, to improve mobility while stimulating economic development and job creation. At the same time, the government stressed the need for fiscal responsibility. To facilitate its transportation initiative, a new institutional structure was needed to govern public transit, which evolved over the period during which Social Credit was in office.

Skytrain and the Politics of Transit Mega-projects (1975-1986)

Immediately after the Social Credit party took office, plans to purchase new articulated buses were cancelled (Kelly and Francis 1990). Furthermore, in 1976, bus fares were increased by 40% to 35 cents. As a result, the pace of the bus fleet expansion slowed considerably, so that by 1979 the fleet numbered only 52 more than it had three years earlier (Greater Vancouver Transit Staff 1980). It would be some years before an order was placed with Winnipeg-based Flyer to replace the entire aging trolley fleet with 245 new buses (Kelly and Francis 1990). As for the DuWag light rail car purchased for demonstration purposes under the NDP, it was sequestered out of public view in a BC Hydro warehouse in Burnaby (Hansard, 17 March, 1981, p4583). The same GVRD transit staff report that commented positively on the period between 1972 and 1975 was less rosy on the period between 1975 and 1980 when the system experienced little expansion and ridership growth slowed:

The bus system is generally overcrowded now during peak periods. Buses on a number of routes are so crowded that they must bypass bus stops where people are waiting. Sometimes buses are also forced into bunching together. This results in reduced service and increased cost. (GVRD Staff Transit Report 1980: 1)

In addition to substantive policy changes, the governance structure for transportation planning in Vancouver was transformed in an effort to further centralize some competencies for transit planning within the provincial government, while providing for ways to garner input from local officials. Senior bureaucrat Larry Bell was one of the key architects of the formation of the Urban Transit Authority (UTA). In 1978, the UTA, a provincial crown corporation charged with directing province-wide transit policy, planning and funding, was established and put under the Ministry of Municipal Affairs. Bell himself was a rising star within the provincial bureaucracy under Social Credit, and would later be involved in the privatization efforts of the Housing Corp. of B.C. (1979), B.C. System Corp. (1982), B.C. Hydro Gas (1988), and B.C. Hydro Rail (1988) (Shaw 2003).

The formation of the UTA was particularly contentious politically, for at the same time as it sought to address the municipal desire for participation in local transit decisions, it also downloaded more transit costs onto local levels of government. Specifically, the *Urban Transit Authority Act* empowered the GVRD with responsibility for deciding transit service levels and fares. It also made the GVRD responsible for a portion of the subsidy provided for transit operation, which could be raised directly through one or more sources: from property taxes; a surcharge on electric power bills; and a gas tax (Meligrana 1999). As Social Credit members of parliament saw it, the formation of the UTA enshrined their philosophy of empowering local decision makers but obliged the participants to be financially responsible. This barb was specifically aimed at Greater Vancouver, where the transit system was incurring annual deficits in the range of \$40-45 million annually (Hansard, 12 June, 1978, p2225).

The Pitch for Advanced Light Rapid Transit

Amidst the substantive and organizational changes that took place when the Social Credit Party returned to office, the idea of bringing modern rail back to the streets of Vancouver continued to have currency among the local population. As with the previous NDP government, the scheme would become the cornerstone of the Social Credit government's Vancouver transportation policy. Building on the earlier NDP plans, the provincial crown corporation responsible for transportation planning in Vancouver undertook a lengthy consultative process involving the provincial and municipal governments, community groups and property owners to determine the optimal technology, route and service integration into the existing network. Initially in the mid to late 1970's, the project was conceived as conventional light rail operating at-grade with overhead power wires (Ombudsman 1987).

Taking the provincial government seriously when they were invited to be partners in the planning and operation of public transit, the GVRD and locally affected municipalities in Greater Vancouver drew up detailed transit and land use integration plans to accommodate conventional light rail. A \$580,000 rapid transit study conducted by the

GVRD with participation of staff from the provincial UTA released in 1979 affirmed the findings of earlier reports that the first priority for investment in the region should proceed along the old interurban corridor between the City of Vancouver, Burnaby, New Westminster with branches to Surrey and the Lougheed area in the Northeast sector. This line would carry an estimated 10,000 to 15,000 people into the downtown core during the morning peak travel period. The second priority was a north-south alignment along an existing rail corridor beside Arbutus Street that would connect central Vancouver with the southern municipality of Richmond. The third priority was to extend the first line to Coquitlam town centre and deeper into Surrey. Using conventional light rail technology, the report estimated that all three priorities including vehicles could be implemented for between \$430 and \$558 million (\$707 to \$917 million in 1986 dollars) (GVRD 1979a). Despite being a report specifically focused on rapid transit, the GVRD study was explicitly clear that within the context of a regional transit strategy, investment in rapid transit was the third priority, behind the need to increase the bus fleet and provide transit priority measures such as bus-only lanes to improve the movement of buses in traffic. In fact, the report noted that regional transit service could be considerably improved by optimizing the bus network as an entire system, which had only been studied once before in 1972 (GVRD 1979b; Sullivan 1972). This emphasis on the relative merits of improving basic surface-level transit before undertaking the development of a rapid transit system would remain a recurring recommendation in regional transportation plans for decades to come.

However, as the 1970's ended and the 1980's began, the broader political context for transportation planning in Greater Vancouver was transformed. Suffering a 'crisis in political support' amid a growing economic recession (Ley 1987: 50) that had delivered a narrow election victory in the April 1979 campaign, Premier Bennett announced his 'vision for the future, a vision to build a great meeting place for all our people that we would call British Columbia Place.' British Columbia Place was conceived as a large new stadium, accompanied by parks, shops, offices and residences to showcase how British Columbians live, work and play. The British Columbia Place project was built in part to attract a major league baseball team to Vancouver to fulfill local aspirations to

compete on the North American stage with cities like Montreal, Toronto and Seattle, each of which had recently been awarded franchises. The construction of British Columbia Place stadium would be complemented by the hosting of Transpo '86 (which later became known as Expo '86), a world fair of the latest in transportation innovations that would celebrate Vancouver's centenary (Olds 2001: 100).

In the definitive site study co-written by then deputy minister for Lands, Parks and Housing, Larry Bell, the location for both British Columbia Place and the world's fair was chosen as a vast brownfield site owned by Marathon Realty on the southern tip of the central business district. Marathon Realty, the real estate arm of the Canadian Pacific railway company, had been trying for years to redevelop the site abutting the north shore of False Creek with high-density residential dwellings and offices, but had been repeatedly rebuffed by the City of Vancouver. Now the world's fair and British Columbia Place were front and centre on Vancouver's urban agenda, guided by an explicit government desire to stimulate development in both public and private infrastructure, attract economic activity through tourism, and retrench political support for Social Credit as a party that had the vision to lead British Columbia forward. With the Marathon lands selected as the site for Expo 86 and BC Place, Marathon Realty was in a strong position to sell their land to the province. Under the direction of Marathon Realty general manager and key negotiator Gordon Campbell, a well-connected professional who had started his career as a bureaucrat within Vancouver City Hall and had served for two years as executive assistant to Mayor Art Phillips (1974-1976), Marathon Realty sold 176 acres for \$30 million in cash and \$30 million in downtown building sites (Olds 2001).

The decision to host Expo '86 seemed to create a paradox for the Social Credit provincial government. Vancouver was set to invite the world to an exposition of modern transportation, but the city itself did not have any particularly modern transportation facilities (with the exception of the unique, high-speed, double-catamaran passenger SeaBus conceived under the NDP). Thus, despite local support for the at-grade conventional light rail option, in late 1979 and into 1980 then Minister of Municipal

Affairs Bill Vander Zalm (responsible for urban transit) began to publicly reflect on exploring other technological alternatives. Arguing the need for a complete public debate on the future of transit in Vancouver that would remove the final decision from a 'bureaucrats office,' Vander Zalm first talked about the potential for a monorail type system (Hansard, 25 June, 1980, p. 3031). Later his attention settled on advanced light rapid transit.

Advanced light rapid transit was a state of the art, intermediate capacity mass transportation technology just developed by the Urban Transit Development Corporation, an Ontario government-crown company. Unlike conventional light rail, advanced light rail was driverless and used a linear induction type motor, and thus could only run on its own fully segregated guideway. After spending years and millions of dollars developing the automated technology, the Urban Transit Development Corporation was critically in need of a city in which to showcase their innovative system, but was having difficulty finding a host (Wolinsky 2004). Executives from the Ontario crown corporation proposed the technology to planners in Edmonton who were working on Canada's first light rapid transit line, but the offer was declined in favour of conventional light rail amidst concerns about the high capital cost per mile of advanced light rail, and the difficulty of integrating a segregated rail line into the urban fabric.

The Ontario Urban Transit Development Corporation officials found a more receptive audience in the provincial government of British Columbia, that was searching for an innovative transportation project to anchor Expo '86. The ruling Social Credit Party in British Columbia was also closely aligned with the Conservative government in office in Ontario (Persky 1983).

The proposed automatic light rail system in Vancouver would run along the same route as that proposed for the conventional light rail system from central Vancouver to New Westminster and over a new bridge into Surrey. However the first phase of the newly proposed system was shorter than the line proposed by earlier studies, as it would not be extended to the Lougheed Mall area in the Region's Northeast sector nor would it cross

the Fraser River to Surrey. Due to the automatic technology, the entire system would be fully segregated from traffic with 13 kilometers on elevated guideways, six kilometers at-grade and two kilometers underground. Along with this proposal was a new set of cost estimates comparing conventional light rail with the automated system, which was estimated to provide 30% faster travel at higher service frequencies. A study released by the provincial UTA (1980) found that at the same time that annual operating costs were lower, the capital cost differentials between conventional light rail and what they thought to be a superior light rail technology were not as great as once anticipated (Figure 5.1).

Figure 5.1: UTA Cost Comparison Between Different Transit Alternatives in 1980 (Millions, 1986 dollars)

	Advanced Light Rapid Transit	Conventional Light Rail	Fully Grade- Separated, Automatic Conventional Light Rail
Capital Costs	476	381	509-526
Annual Operating Costs	10	13	N/A

(Source: UTA, 1980; Currency converted to 1986 rates using Statistics Canada rate of inflation)

The \$476 million estimated cost for the shortened automated light rapid transit line provided in the 1980 UTA report was considerably higher than the cost estimates just months earlier in the GVRD's Rapid Transit Project Report (1979). Specifically, the GVRD study had concluded that using conventional light rail technology, rapid transit could be provided from Downtown Vancouver to New Westminister with branches to Surrey and the Lougheed area for between \$435 and \$536 million (1986 dollars).

Despite this discrepancy, to sweeten the deal on their unproven automated technology that was more expensive than conventional light rail as earlier proposed, the Urban Transit Development Corporation offered a \$300 million performance bond backed by the government of Ontario (Smith, *The Toronto Star*, 26 January, 1986, G2). With the lobbying work of British Columbia Senator Ray Perrault, the federal government also committed to contributing \$60 million for the system in time for Expo '86 (UTA 1983).

With external funding for an innovative technology available, the Social Credit government committed to advanced light rail by making statements that they would only provide provincial funds for a rapid transit system using the new technology (Hansard, 4 June, 1982, p 8005). This early experience with the promotion of advanced light rapid transit in British Columbia highlights how transit planning and infrastructure investment decisions became closely connected with a local and national industrial development strategy, at a time when Canada was struggling with a deep economic recession.

The Costs and Benefits of Advanced Light Rapid Transit

When it became clear that the provincial government was serious about proceeding with an automatic light rail system, they became the target of criticism from a variety of directions. Some members of the GVRD branded Vander Zalm a bully for overriding their input into the decision making process and selecting advanced light rail technology before studies comparing the full range of alternatives were finished. As GVRD Chairman Alan Emmott stated in a quote read in the provincial legislature by NDP member James Gibson Lorimer (Hansard, 31 March, 1981, p. 4882), 'For the minister to make a categorical decision before this [study of alternatives being undertaken by the GVRD in cooperation with staff from the Urban Transit Authority] is completed is irresponsible.' This became a persistent criticism by some local politicians of the transit planning process, that it was autocratic and guided to suit the political wishes of the provincial government without consideration of municipal concerns.

One constant concern centred on whether there was sufficient ridership in the corridor to justify advanced light rapid transit. The automated rapid transit system was being built with 80 meter platform lengths which would be able to carry a capacity that was well publicized at 25,000-30,000 passengers per direction per hour with peak point capacities of up to 7,500 passengers per hour. This was considerably above the reported 5,000 per direction per hour for a bus route. However during the initial development phase, the system would be outfitted with enough rail cars to carry just 10,000 passengers per direction per hour. While the theoretical system capacities were well reported, the actual

expected ridership on the system was not widely reported (UTA 1980; 1983). This related to an apprehension voiced by some in the local planning establishment that despite the official rhetoric and public support for using rapid transit as an antidote to congestion (UTA, 1983), even massive investments in rapid transit infrastructure would not alleviate the region's levels of congestion. In the January 1980 issue of the City of Vancouver's Planning Department newsletter, *Quarterly Review*, Ted Droettboom (p.11) noted:

It is not likely that rapid transit will itself result in a decreased level of congestion. The universal experience appears to be that new traffic quickly fills in any momentary and partial vacuum resulting from a shift to transit. The best that can be expected is that congestion can be better managed at a growth rate lower than that which would result without transit. (Droettboom 1980: 11)

At the provincial level, the opposition NDP fiercely criticized the government for selecting a system that had significantly higher capital costs than conventional light rail, since it required the construction of a fully segregated guideway and more technologically advanced rail cars and signaling system. They argued that there was the chance of costly system performance shortfalls and unanticipated technological malfunctions since such a system had never been implemented in any other city. To bolster this argument, opposition members referenced San Francisco's recent experience with the high cost of correcting unanticipated technological problems on the Bay Area Rapid Transit System (Hansard, 20 June, 1978, 2474). Finally, the NDP argued that despite being designed in Canada, many of the components were to be sourced from outside the country, diminishing the magnitude of domestic employment benefit from the project (Hansard, 31 March, 1981, 4883).

Yet advanced light rail also had considerable benefits, which the government naturally promoted to the public. Advanced light rail was a state of the art technology that would fit well with the futuristic mission of Expo 1986 and make Vancouver an international transportation showcase. The system could travel at high speeds since it operated on a segregated guideway, and run reliably with very short headways, making it ideal for carrying both low and high passenger volumes. The faster travel speeds and ultra-

modern image associated with the automatic light rail system would be more effective than conventional light rail at stimulating mixed use transit oriented property development along the route, a key component of the livable region plan. And since the system was run on electricity it would produce less emission and be more energy efficient than either a diesel bus or private automobile.

To bolster its argument, the Ministry of Municipal Affairs sought to allay public concerns about physical and visual intrusion from the elevated guideway through the distribution of a glossy brochure (Ombudsman 1987). The brochure (Ministry of Municipal Affairs, 1980, p. 3) noted that in comparison with other rapid transit technologies, advanced light rapid transit is 'the world's quietest system', and due to its lightweight overhead guideway and stations, 'the system doesn't encroach on the present road, leaving it for cars and trucks' (Ibid: 9). This explicit desire to protect roadways for cars and trucks seems to weaken the credibility of the Social Credit position on transportation expounded on the first page of the same brochure: 'One of the most obvious transportation lessons of life in a modern city is that the private automobile is not the answer. More likely, it is the problem' (Ibid: 1).

Despite the anti-car rhetoric, promoting a balanced approach to addressing the region's transportation problem was critical as part of the complex promotional campaign for advanced light rapid transit (UTA 1981). By investing in advanced light rapid transit, the government could appear to be proactive in their efforts to redress what was popularly believed to be a worsening congestion problem (Greater Vancouver Transit Group 1980), while proceeding in a manner that would not alienate their core constituency of car driving suburbanites. To this end, the Social Credit provincial government began plans for a series of new suburban roads and bridges that would provide improved car accessibility throughout the region.

Advanced light rail also appealed to the fiscally conservative segments of the Social Credit power base. While capital costs were somewhat higher than for a conventional light rail system, the potential operating cost savings delivered by an automated system

were particularly timely since the early 1980's was a period when inflation in Canada was very high, and unions were rapidly driving up the wages and benefits of employees in the transit industry (in Vancouver the average wage for a transit operator had more than tripled in the 1970's) (Greater Vancouver Transit Staff 1980). As such the move to automate system operations appeared to fit within the ideological position of the Social Credit party, which was strongly anti-union and emphasized restraints on government spending.

Finally, the Social Credit government refuted NDP claims that the automated light rail system would not be significantly 'made in Canada.' In the legislature, Minister Vander Zalm argued that purchasing automatic light rail would provide strong economic benefits to both the region and the country through the development of manufacturing and construction jobs, thus effectively supporting an endogenous industrial development strategy:

The current estimate of the direct B.C. content - not Canadian content; the Canadian content is much higher - is 66 percent of the total. Therefore you're looking at approximately several hundreds of millions of dollars for this system alone. (Hansard, March 31, 1981, p. 4885)

Based on the economic benefit accruing within Canada, Vander Zalm continued that selecting automatic light rail was not only correct from a technical perspective, it was also the patriotic direction to proceed:

Not only is it truly Canadian; it will benefit our region and every other Canadian city eventually if they have the foresight that this government had to buy something Canadian. (Ibid, p.4885)

In sum, while the political debate over the direction of rapid transit investment in Greater Vancouver was characterized by sharply different visions about the optimal technology, there remained a number of key consensus points between the opposing sides. Both sides agreed that there was an urgent need for rapid transit investment; they agreed that the Downtown-New Westminster route was the top priority; and they largely agreed that

some type of rail system would be most optimal for the line. Even amid their differences, this general level of political consensus ensured that few public challenges were made directly against the merits of investing in rapid transit.

Building a Partnership for Project Delivery

Amidst all the competing political rhetoric about the project's specifications, public meetings in 1981 revealed general citizen support for automatic light rail. With repeated assurances about minimal noise levels and physical intrusion, even those living along the proposed route generally supported the proposal (Ombudsman 1987). In May of 1981, the prime contract for the automatic light rail line was granted to Metro Canada Limited, the contracting subsidiary of the Urban Transit Development Corporation, which was later sold to Lavalin (later SNC Lavalin) and then Bombardier (Sproule 2003). In a glossy advanced rapid transit brochure released to the public in 1983 by the UTA, the reported final cost estimate for the new automated light rail line was \$718.4 million adjusted for inflation to 1986 prices. This final cost estimate represented a \$242 million increase in 1986 prices (51%) over the estimate for the advanced rapid transit line provided by the UTA in partnership with the Urban Transit Development Corporation in 1980. It also suggested that the cost of building a single shortened line using advanced rapid transit technology was between 78% and 102% of what had been forecasted by the GVRD in 1979 to be the cost of building all three regional rapid transit priorities using conventional light rail technology.

In 1982, to showcase the advanced light rail technology to the public and evaluate system development techniques, a short public demonstration line was built with partial funding from the federal Government of Canada. The 1,100-meter demonstration line operated from June to November of 1983, and carried more than 300,000 riders. A survey of system users suggested that 80 percent of visitors conditionally or unconditionally supported the concept for rapid transit investment in Vancouver (Sproule 2003).

Construction on the main line of the new advanced rapid transit system began in 1983. With completion of the rail line intended for the start of Expo 1986, the project proceeded on an accelerated schedule. In an attempt to maximize the development efficiency of the project, BC Transit (the government agency in charge of the line) and Metro Canada Limited (the subsidiary of the Urban Transit Development Corporation charged with building the line) decided to integrate their staff in a Joint Project Office. This collaborative approach brought together often-conflicting architects, engineers and designers from both the government and private sector teams to strive for a single goal of developing the project on time. Lavalin provided the overall management of the Joint Project Office, which coordinated the work of 19 different consulting teams (Sproule 2003). Amongst the consultants were: John Eastman who provided pre-construction engineering and project management services; Barron Kennedy Lyzun & Associates Ltd (now BKL Consultants Ltd.) who were commissioned to carry out detailed predictions on the potential noise and vibrations at sites adjacent to the new rapid transit line; and architects Alan Parker and Allan Hart who helped with station design. In total, \$201 million (or 24% of the total Skytrain development cost) was spent on project management and administration as well as engineering and construction management (Sproule 2003).

The early experience with an integrated approach to mega-project planning cannot be overlooked in shaping both the procedural and physical direction of future transit investments in Greater Vancouver. As noted in the official retrospective *On Track: The Skytrain Story* produced by the B.C. Rapid Transit Company (Sproule 2003: 8), 'the valuable knowledge gained during the construction and implementation of this initial phase has enabled project management of future Skytrain extensions to be provided by a separate project management unit.' In particular, valuable knowledge accrued to those individuals and firms that had been involved in the initial Joint Project Office collaboration, which would make them ideally situated to be involved in the delivery of future rapid transit projects if the same lessons could be applied.

The Initial Experience with Developing Rapid Transit in Greater Vancouver

In January of 1986, service began on the new automatic light rail system between Vancouver and New Westminster, now called Skytrain, in time for the May 2nd opening of Expo '86 as predicted. According to the official retrospective document produced by the B.C. Rapid Transit Company (Sproule 2003), phase 1 of the Skytrain was delivered within its budget of \$854 million. My own comparison of the cost estimates established in the pre-project planning reports with the final project cost figures suggest that there was in fact a considerable cost overrun in the implementation of the Skytrain line. At \$854.4 million in capital costs and another \$161 million in interest payments (all in 1986 dollars) (BC Transit 1989; Hall 1987), the first phase of the Skytrain had cost \$1.016 billion. This amounts to 41% over the \$718.4 million cost (in 1986 dollars) that had been predicted by the UTA in their final 1983 cost estimates. My finding of a 41% construction cost overrun is in line with Flyvbjerg and his colleagues findings that rail projects are on average 45% over budget. While the largest portion of the cost escalation was as a result of interest payments, construction costs alone were 19% above initial estimates. The cost overruns on the development of Skytrain mirror the experience of other large Expo 86 related transportation mega-projects such as the construction of the Coquihalla Highway, which was completed 66% above its \$250 million forecasted budget.

More broadly, the initial experience with the development of mass rapid transit in Vancouver provides insight into the politics associated with transportation mega-projects. In spite of the official provincial government rhetoric of seeking to foster local-provincial cooperation and fiscal responsibility, an infrastructure mega-project that could appeal to a broad range of electoral constituencies proved extremely seductive for the Social Credit provincial government. As such, as has been confirmed through earlier survey work by Mackett and Edwards (1998), the advanced rapid transit project in Vancouver was primarily motivated by political factors other than those related to the movement of people. The need for transit to be about more than moving people and appeal to a broad range of constituencies may partially explain why the GVRD's low cost recommendation

to implement dedicated busways and traffic priority measures failed to galvanize support with the provincial authorities responsible for planning the transit system.

As a politically driven project, what mattered most were not the tangible transportation benefits that the project would deliver, but the perceived benefits. That during the short planning phase of the project, capital cost estimates escalated dramatically did not matter. What was important to the Social Credit provincial government was the perception that the project would be fiscally responsible and would control for rapidly rising inflation by sidelining pernicious unions and saving on operating costs, while creating jobs across Canada (Hilferink 2003). The fact that the input of local officials had been largely overruled was secondary to the fact that the provincial government was showing visionary leadership in selecting a project that would contribute to elevating Vancouver to the status of a world class city. In the face of a conflicting vision for Greater Vancouver's transit landscape, the provincial government took back control over fares and service planning which had been granted to officials of the GVRD just a few years earlier (Meligrana 1999).

The large-scale approach to planning and infrastructure development adhered to by the British Columbia Social Credit party had an immediate impact at the polls in the 1983 provincial election. In the provincial election of 1979, the Social Credit Party won a majority by just 5 seats. However, in their campaign four years later, alongside a platform that included typical election issues, the Party prominently featured investments in large projects such as Expo '86 and Skytrain as a symbol of their visionary leadership for economic, social and cultural development in British Columbia in the face of a deep national recession. Flying high on the excitement leading up to the completion of these projects, the Social Credit Party widened their seat majority to 13 in the 1983 election, capturing nearly 50% of the popular vote (Elections BC 2005). As I will show in the following section, the political and public reaction to Vancouver's initial experience with rapid transit investment had an important role in cementing the path upon which future infrastructure investment decisions have been made.

Responses to Skytrain: The Politics of Reacting to Mega-projects (1986-1991)

With the system finally operational, debate about Skytrain moved from the hypothetical discussions that had dominated the pre-construction discourse, to an assessment of actual experience with the new system. On the positive side, the Social Credit government immediately took credit for the success of Skytrain. Skytrain proved popular with both Expo visitors and residents alike, who marveled at the mountain views and driverless rail cars (Smith, *The Toronto Star*, 26 January, 1986, G2). In its first year of operation, the system carried 32.7 million people (BC Transit 1989). Following the success of Expo, Premier Bill Bennett resigned, and the Social Credit Party called an early election under its new leader Bill Vander Zalm. Vander Zalm had played a central role in the Expo proposal and the development of Skytrain as Minister of Municipal Affairs. In the afterglow of Expo and the punctual construction of Skytrain, the Social Credit government was politically rewarded for their visionary approach to economic development in British Columbia. In the 1986 provincial election, Social Credit again won nearly half the popular vote, and a far larger proportion of the seats in the legislature (Elections BC 2005). That Expo and related projects such as Skytrain and the Coquihalla Highway were vastly over budget did not seem to adversely affect public support (Olds 2001).

In the years after Expo, Skytrain remained popular with the general public, although ridership declined to 21.3 million boardings in 1987 and 23.2 million boardings in 1988. The project also acted as a catalyst for rapid redevelopment. Three years after service began, a BC Transit study found that more than \$5 billion worth of investment had been planned or already started within a 5-10 minute walk from a Skytrain station, with an expected economic benefit in the community of \$15 billion. The report was clear to point out that Skytrain may not have been the main cause for all developments. In addition to the Skytrain, many of the municipalities along the route enacted special zoning to encourage transit-oriented development, and invested further in local facilities such as parks, bicycle connections and walkways near the transit line to make adjacent locations more attractive to developers (BC Transit 1989).

The developer with the largest activities in close proximity to the new Skytrain line was Concord Pacific, which had acquired the former Expo lands on the north shore of False Creek from the provincial government and had plans to build 10,000 high-density residential units and other amenities at a cost of \$2 billion. Marathon Realty, whose former general manager Gordon Campbell had served as a city councilor (1984-1986) and was now the Mayor of the City of Vancouver, also had major development interests along the Skytrain line. Situated around the flagship transit hub of Waterfront Station in central Vancouver, Marathon Realty was seeking zoning changes to develop a site known as Coal Harbour with \$1 billion worth of upscale residential, commercial, hotel and marina developments (BC Transit 1989). The project was eventually approved, and today the Coal Harbour site has been nearly fully developed. Other major developers also had residential and commercial interests along the line in both the city centre and more suburban locations (Figure 5.2).

Figure 5.2: Selected Developments Near Skytrain Stations and Parking Allowances as Proposed in 1989

Development	Developer	Value (\$)	Station Location	Residential Units	Commercial Space (Sq. Feet)	Office Space (Sq. Feet)	Enclosed Parking Spaces
Pacific Place	Concord Pacific	2 Billion	Stadium	10,000	240,000	0	20,000
Coal Harbour (Phase 1)	Marathon Realty	1 Billion	Waterfront	1,400	60,000	0	N/A
Office Tower, 27 stories	Adams Properties Group	+100 Million	Granville/Burrard	0	269,537	336,252	492
Mixed Use Complex	Perkins and Cheung	200 Million	Main	400	64,765	77,420	850
Mixed Use Building	William Rhone	N/A	Joyce	60	N/A	0	88
Metrotown	Numerous	500 Million	Metrotown	+500	+1.5 Million	+500,000	2,900

(Source: BC Transit, 1989)

While many of these developments were high density and were motivated by improved transit accessibility provided by the Skytrain line, much of this land development remained at least to some degree oriented towards the automobile. One feature of many of the new developments within close proximity of the Skytrain line was the continued

provision of ample parking for automobiles, often free at shopping plazas. At the Concord Pacific site on the Expo lands, for example, plans were in place to provide two parking spots for every one residential unit. And in Burnaby around the Metrotown Skytrain station where a major new regional shopping mall, twin office towers and multiple residential towers were built, the local arterial road was widened to handle the increased car traffic volumes at an adjoining 2,900 spot parking lot (BC Transit 1989). The continued effort to accommodate cars at some areas along the Skytrain route has the potential to undermine the explicit goal of using public transit investment to reduce automobile dependence. Some ten years after the Skytrain opened, a study by Bunt and Joyce (1996) of new developments near rapid transit stations found that the rate of car ownership per dwelling unit was 9% lower for those living within a short walk to a Skytrain station (300 meters) as opposed to those in more remote locations (more than 1000 meters away), suggesting that future developments along the transit corridor could be built with lower parking requirements. However, the study concluded that regardless of proximity to a Skytrain station, household income had the strongest impact on car ownership (those earning more than \$70,000 had a 78% higher rate of car ownership per household than those earning less than \$30,000).

Despite the possible shortcomings of the Skytrain development experience, based on the rapid development of properties along the Skytrain route, there was a recognition by many local authorities that mass rapid transit could be an effective part of realizing the ideal of compact communities as put forward in the GVRD's *Livable Region Plan* (BC Transit 1989). Whether it was Skytrain technology in particular, or more broadly investment in any type of mass rapid transit that attracted development remained an ongoing debate.

Keeping the Trains Rolling

Buoyed by their perception that Skytrain was a widely successful transit project (which had been reinforced by the results of two previous elections), the Social Credit provincial government quickly began making plans for Skytrain expansion. In 1987, they approved

extending the Expo line across the Fraser River to Surrey, as had been envisioned in the initial rapid transit plans. This extension took place in two phases, which were completed in 1994 at a total cost of \$282 million (Sproule 2003). In an attempt to help stimulate development of a new Surrey regional town centre at the end of the Skytrain line, BC Transit began reviewing the relocation of its headquarters to a proposed new adjacent office tower, at a cost significantly greater than their existing premises (Hansard, 5 May, 1989, p. 6621). The new BC Transit head offices opened in Surrey in 1994 (Munro, *The Vancouver Sun*, 26 October, 1994, A1). The provincial government also began planning work on a new north-south Skytrain line through the Social Credit stronghold from central Vancouver to Richmond and symbolized their support for expanding the system in the months leading up to the October 1991 election by announcing funding so that BC Transit could purchase 60 new Skytrain Cars (Boei, *The Vancouver Sun*, 6 November, 1993, A3).

The Richmond to Vancouver rapid transit proposal was supported by widely reported opinion polling results, which showed that a strong majority of residents in each municipality supported a rapid transit connection. In both Richmond and Vancouver, Skytrain was the preferred technology over conventional light rail. An underground alignment was preferred to at-grade or above ground. And the favoured route was a vacant rail corridor beside Arbutus St. rather than a Cambie St. alternative. When asked about the long term merits of rapid transit versus a system-wide bus based solution using dedicated lanes and traffic priority measures (a proposal emanating from Vancouver city hall and then mayor Gordon Campbell), the poll found that the overwhelming majority of respondents favoured the rapid rail transit option. The poll did not ask respondents questions about the relative cost of varying alternatives. Nor did it survey people in municipalities where the line would not pass, who would derive less direct benefits, if any, from the new infrastructure but still have to pay for the system through their taxes (Morgan, *The Province*, 25 February, 1991, p16).

In 1990, BC Transit commissioned a series of reports by transportation engineering consultants N.D. Lea to establish the optimal route and technology for a new north-south

transit line in the Vancouver-Richmond Corridor. A key member of N.D. Lea's transit consulting team was John Eastman, who had worked extensively as an engineering consultant on the delivery of the Expo Skytrain line (Littlemore 2001a). Seven possible routes were examined, and rapid bus, light rail and Skytrain technologies were all considered. Rough cost estimates were allocated to each alternative. One of the central screening criteria derived from the terms of reference set out by the provincial crown corporation responsible for public transit (BC Transit) was that any route and technology selected must have minimal impact on automobile traffic flow on major arteries (N.D. Lea 1990: 2.2). This criterion was strongly criticized by the City of Vancouver council and Mayor Gordon Campbell as undermining the potential to achieve the regional objective of reduced car use, but it remained a central piece of the analytical framework (City of Vancouver 1991).

The report used an analytical technique whereby alternatives were individually compared in pairs in an iterative process to determine the one that was superior. After comparing over 200 alternatives, the N.D. Lea studies found that despite a slightly higher cost than some other alternatives, an alignment on Cambie using a combination of underground and elevated Skytrain was the optimal route and technology, since it would provide the fastest travel times, and attract the highest number of patrons with the least disruption to the existing automobile traffic. The City of Vancouver council had been widely opposed to an elevated system for many years, which partially explained the recommendation of long underground sections within the City. By contrast, both rapid bus and at-grade light rail fared less well in the N.D. Lea analysis, since each would require significant allocations of road space and provided slower service with less capacity. The N.D. Lea report never compared the relative impact of providing considerably less expensive rapid bus service on numerous streets within the corridor compared with a single more expensive Skytrain line (BC Transit and N.D. Lea and Associates 1992). This lack of a system-wide approach to analyzing rapid transit alternatives would emerge as a recurring feature of the way that alternative infrastructure projects were evaluated, a shortcoming that Richmond (2001) has identified as being central to the consistent selection of mega-projects over other alternatives.

As a final note, amidst the planning for an expansion of the Greater Vancouver rapid transit network, for the first time in 20 years the Social Credit government announced plans to dramatically expand the area road network. The plans were largely reminiscent of the proposals of the early 1970's that had been soundly rejected by the public. Using similar rhetoric of the need to alleviate congestion for the swelling suburban populations, the new plans included the twinning of bridges and roads as well as an expansion of the main highway connections into central Vancouver.

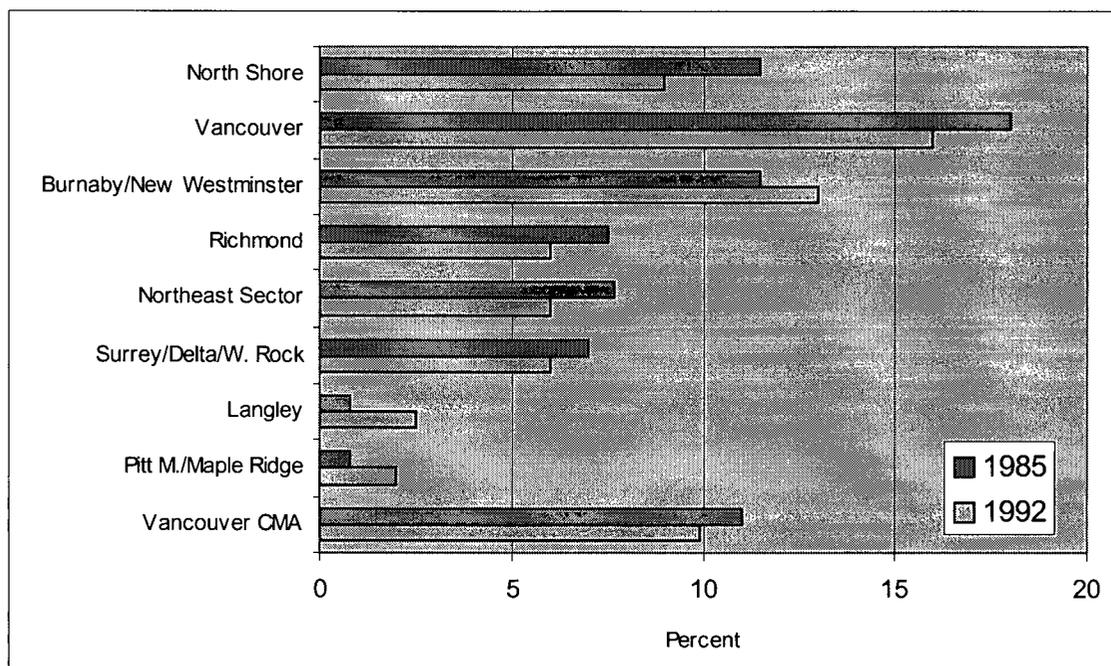
The Critics of Skytrain Have their Say

While the Social Credit party worked diligently to put a positive spin on the socially beneficial impact of their Skytrain investment, the project also had no shortage of critics. Most immediately, it was precisely the issue of Skytrain's high cost in relation to its effectiveness at alleviating Greater Vancouver's congestion problem that attracted the harshest disapproval. A vocal Skytrain detractor was NDP member of the legislative assembly for the Vancouver-Kingsway riding, Glen Clark, a former union organizer who held a master's degree in urban planning from the University of British Columbia and was rapidly becoming renowned for his fiercely ideological rhetoric (Macqueen, *Maclean's*, 9 June, 2003, pp. 32-35). In 1989, Clark argued in the legislature (Hansard, 4 April, 1989, p6589) that Skytrain was a poor investment for the region since, after spending over \$1 billion on a mass transit system, total transit ridership between 1983 and 1989 had increased by only 14 million trips per year to 107 million (15%), and the modal share of passengers traveling along the Skytrain corridor into downtown by transit remained unchanged at 50%.

A further look at the early ridership figures and projections for Skytrain seemed to support Clark's argument. At a regional scale between 1985 and 1992, the proportion of all personal trips in the region made by transit declined by 1.3% to a total mode share of around 10%, compared with a 2.4% growth in car driving. Within the individual municipalities, while the connection to the Skytrain supported an increase in the share of

trips made by transit to and from Burnaby and New Westminster, nearly every other municipality within the region (including Vancouver which had a small part of its territory connected by Skytrain) experienced a decline in the proportion of trips made by transit (GVRD 1992) (Figure 5.3). Finally, a study of the early impacts of Skytrain conducted in 1987 (Peterson and Glover 1987) found that when comparing annual regional transit ridership estimates for a system with Skytrain versus one in which Skytrain had not been built, there was only about a 10% difference in expected ridership, and the rate of growth would be almost the same. In sum, it appears that while Skytrain supported modest increases in transit ridership in the municipalities that were most successfully served, the small area covered in relation to the high project cost made it ineffective at encouraging increased transit ridership across the entire system.

Figure 5.3: Transit Trip Origin Mode Shares by Sub Region, 1985-1992



(Source: GVRD, 1992)

In addition to being critical of Skytrain as a people mover, Clark was critical of the way that the Social Credit government in British Columbia had financed infrastructure development, including transit:

This government does something that no other government in Canada does, and it's unacceptable. Hospitals, schools and the transit authority all require large amounts of public money to build capital works... Instead of recording that debt as a direct debt to the government, they pretend the debt is associated with other people: the hospital financing authority, the education financing authority or the B.C. Transit authority. (Hansard, 27 May, 1991, p.12231)

Clark and others also suggested that the high debt servicing charges were crowding out funding for other necessary parts of the transit system, such as the bus network. Some municipal politicians also voiced their disapproval of Skytrain on the grounds of the high capital cost. Then City of Vancouver Mayor Gordon Campbell, among others, was a vocal critic of high cost public transit projects, and widely opposed the province's proposal to build a Skytrain line to Richmond. In a 1991 interview, Campbell told a *Vancouver Sun* reporter:

If indeed we need a rapid transit line between Vancouver and Richmond, BC Transit should not be giving short shrift to LRT, which is about half the cost and a lot more neighborhood-friendly... I think it's no secret that BC Transit hasn't looked at other options besides SkyTrain, and that's unfortunate because I don't know why they have blinkers on. (Fayerman, 9 May, 1991, B6)

More broadly, municipal authorities were still smarting from the preemptive manner in which the provincial government had specified the technology and route for the first Skytrain line without legitimately considering local input. While Skytrain was popular with the general public, it had been roundly criticized by local residents along the line, who protested that the system as built was louder and more visually intrusive than had been contractually stipulated. In 1987, provincial Ombudsman Stephen Owen reviewed the case put forward by the residents, and found that BC Transit should take responsibility for coordinating and implementing mitigation strategies in the face of potential lawsuits. BKL Acoustic consultants, the same company that had been retained prior to construction to provide estimates of the levels of noise that the system would create, were hired to study the effectiveness of a new track lubricant. A trend of elevated criminal activity congregating around Skytrain stations had also emerged, in part due to the elevated station designs that had poor sightlines and fostered a sense of isolation from the street where other people were going about their daily business (Buckley 1996).

These community experiences with the Skytrain led some local authorities such as Mayor Campbell to be critical of both Skytrain and the broader mega-project paradigm of development:

In the '60s and '70s we were bold enough to break with the conventional transportation wisdom. We stopped freeways from destroying our neighborhoods. As a result, today some of the healthiest inner city neighborhoods in North America are found in Greater Vancouver. We cannot afford to fall into the trap of conventional wisdom in 1991 [building more Skytrain] any more than we could in 1971. (*Vancouver Sun*, 5 July, 1991, A7)

Conclusion

Overall, the initial experience of developing mass rapid transit in Vancouver was both highly partisan and polarized. Those in the provincial government who had favoured construction of the Skytrain publicized the line as an overwhelming success at providing high quality public transit and for catalyzing land use development along the route. Capitalizing on what they perceived to be strong public support for Skytrain, BC Transit hired some of the same firms that had worked on the first line to begin drawing up plans for a rapid transit system expansion.

For those in opposition, the Skytrain line had largely failed to achieve the predicted mobility benefits of reduced congestion, or dramatically higher public transit ridership. Opponents also saw the development of a mega-project as imposing considerable harm on the communities through which it passed, while drawing resources away from the regional transit system as a whole. In fact, despite being listed as a higher priority than spending on rapid transit in numerous studies, there was neither a considerable increase in the size of the bus fleet or the implementation of transit priority measures. Finally, the Skytrain line was a physical reminder of the power imbalance that had enabled the provincial government to impose a mega transit project over the wishes of some GVRD and municipal authorities, and a motivator to lobby for a reorganization of the governance structure of transportation in the city.

In 1991, as the full financial and social costs of the Social Credit government's adherence to a paradigm that promoted infrastructure mega-projects both in Greater Vancouver and across the province became more well known (Gunton 2005), conservative supporters began to lose confidence in the fiscal responsibility of the Social Credit party. In the provincial election that year, voters punished the Social Credit party by electing the left-of-centre New Democratic Party. In a more telling sign, for the first time in fifty years, the Social Credit party split the provincial conservative vote with the Liberal Party and lost its grip on suburban voters in Greater Vancouver (Elections BC 2005). The Social Credit party would never recover and has since slid into obscurity.

Meanwhile, as the provincial political tectonics shifted, automobile usage and road congestion in Greater Vancouver continued to increase (GVRD 1992). Although previous transit solutions had not redressed Vancouver's transportation mega problem, the public again seemingly rejected proposals to build more roads, and there remained widespread support to use investment in public transit to guide land use development and challenge the domination of the private automobile (Transport 2021 1993). The direction that this development path took is the subject of the following chapter.

Chapter 6: Skytrain, Redux

Introduction

In October of 1991, when the NDP took over from Social Credit as the provincial governing party, it appeared that those opposed to Skytrain as part of a mega-project paradigm of transit planning in Vancouver would finally have their way. For over a decade, the NDP as the official opposition had criticized the logic underpinning the development of Skytrain, and the autocratic manner in which the provincial government had undertaken such projects. This provided a key opportunity to empower the municipal authorities and follow their top recommendations of providing improved mobility through an expansion of the bus fleet along with the implementation of transit priority measures.

And yet as the story proceeds, I will highlight the politically seductive qualities of infrastructure mega-projects, which are reinforced by a series of policy lock-ins and positive feedback loops embedded in the planning processes and built landscapes. In particular, I will illustrate that the continuity of a small network of interconnected agents acting within an institutional structure that obscures transparency and accountability has created an environment in which rationalization and justification has largely replaced rational analysis.

However, this section will also seek to provide an explanation for the repeated investment in large-scale transit projects that progresses beyond the conventional focus on the self-serving role of special interest groups, be they political, corporate or community based. Instead I will seek to more centrally emphasize how mega-project development has been spurred by widespread public support for visible projects that are seen to address the pressing issue of urban road congestion, without challenging existing patterns of behaviour that may be precisely those contributing to the heavy state of traffic.

The Story Never Changes, Just (some of) the Names and Faces (1991-1999)

Almost immediately after taking office, the NDP government scaled back the order for new Skytrain cars. They also set out to put their own stamp on the management of urban transit in the province, hand picking former Social Credit appointed Deputy Minister of Native Affairs Eric Denhoff as chairman of BC Transit. Soon after his appointment, Denhoff's colleague from Native Affairs, Lecia Stewart, was appointed to the position of Vice President of Corporate Services at BC Transit. Stewart was well connected to the NDP, as daughter of the past president of the Canadian Communist Party and wife of the ex-president of the hospital employees union. Denhoff's tenure with BC Transit was turbulent, and he left the crown corporation in 1994 following a controversy over the improper dismissal of the organization's president. Denhoff would later take up a position as chairman of SNC Lavalin's BC advisory board. Stewart on the other hand was seen as a rising star, and the government paid \$32,000 for her to complete a semester of an executive Master's of Business Administration at Harvard University (Smyth, *The Province*. 6 November, 1998, A6; Littlemore, 1999; Lee, *The Vancouver Sun*, 2 March, 2002, A1).

The NDP also sought to empower local authorities for strategic transit planning in the GVRD through the creation of the Vancouver Regional Transit Commission, which took responsibility for setting fares, routes and service levels provided by the provincially controlled utility BC Transit. The board of the Commission included elected representatives from the member municipalities of the Vancouver region as selected by the provincial government, while the chairman was a member of the provincially controlled B.C. Transit (Meligrana 1999).

Finally, Glen Clark, who was now the minister responsible for urban transit, continued to be publicly critical of Skytrain and mega-projects. On July 14, 1993 in the legislature (Hansard, p.8733), he laid blame for the high level of provincial subsidy of transit in British Columbia on the 'unilateral decision of the previous government to proceed with a \$1 billion project [Skytrain] over the wishes of the municipalities', noting that the cost

of a single passenger trip on the Skytrain including debt servicing costs in 1991-1992 was \$9 to \$11 compared with \$2 to \$3 for a bus ride. As part of an integrated transit system, Clark suggested that Downtown Vancouver should follow the lead of Calgary and Seattle and implement free bus service, both for environmental reasons and to entice people out of their cars.

Charting a New Course for Transit Investment in Greater Vancouver

The empowerment of local authorities in Vancouver and the apparent shift in emphasis at the provincial level from mega-projects towards smaller scale projects dovetailed with planning activities taking place at the GVRD level. Vocal mega-project critic Gordon Campbell was still the mayor of Vancouver and now Chairman of the GVRD board. Under Campbell's direction in the early 1990's, the GVRD jointly with the provincial government engaged in the creation of a new medium and long-range transportation plan, known as Transport 2021, which would form the transportation component of the GVRD's concurrently updated *Livable Region Plan*.

Released in 1993, Transport 2021 recommended that with the explicit aim of reducing single occupancy vehicle use, the provincial and regional government cooperate to integrate the implementation of four key policy levers: land use controls; tailored transport service levels; transportation demand management measures; and increased transport infrastructure supply. Perhaps more significantly, the report explicitly reconceived road congestion from a mega problem, to a positive attribute of the transportation landscape that could be used to encourage changes in travel behaviour:

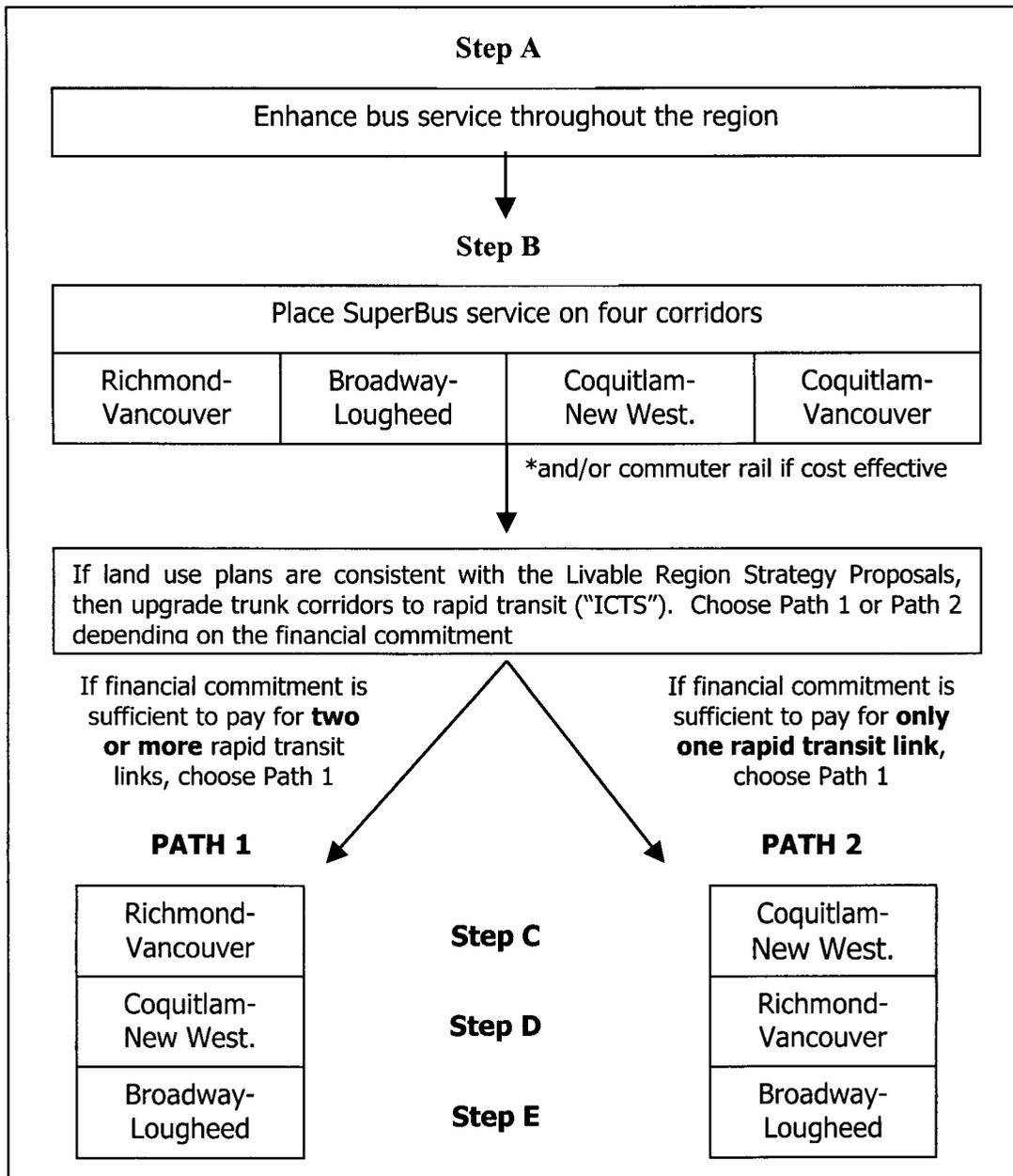
Congestion is usually considered an evil; however, allowing congestion to deteriorate for the single-occupant vehicle is a practical method of promoting transit and carpools. More congestion for single-occupant vehicles would magnify the impact of transportation demand management. (Transport 2021 1993: vi)

With particular respect to public transit, the reports were explicit about the order of investment priorities between 1993 and 2006 (Figure 6.1). First, improve the existing bus

service across the entire region and provide low-cost transit priority measures on major corridors. The GVRD subsequently estimated that fully supporting this goal would require an increase in the bus fleet from around 950 in 1996 to 1900 by 2006. Second, provide fast, frequent, comfortable, limited stop bus service (called SuperBus) on key corridors by implementing more aggressive transit priority measures such as bus-only lanes and queue jumpers at bridges, as well as possibly implementing commuter rail on an existing Canadian Pacific Railway right of way between Coquitlam and Vancouver. Third, once the first two priorities are achieved, expand the intermediate capacity transit system with a technology to be determined through detailed study of all available options (which at the time included rapid bus on dedicated lanes, conventional light rail or automatic light rail). This order of priorities precisely mirrored those proposed over a decade earlier in the GVRD's Conceptual Transit Plan of 1980 (Greater Vancouver Transit Staff).

The specific order of rapid transit investment priorities was also established. If financial commitments were available for two or more intermediate capacity transit systems, then the first priorities would be the Richmond-Vancouver corridor (which was seen to have the highest transit efficiency benefit) followed by the Coquitlam-New Westminister (which had the greatest potential to shape land use). However, if money was available to invest in only one corridor, then the Coquitlam-New Westminister corridor was to be the top priority due to the potential to best shape land use as directed in the *Livable Region Plan*. In each scenario, the Broadway-Lougheed corridor was seen as a third priority (Transport 2021 1993).

Figure 6.1: Transit Staging in the Transport 2021 Medium Range Transportation Plan



(Source: Adapted from Transport 2021, 1993)

NDP Transit Policy in Action: A Return to the Mega-project

Despite the anti-mega-project rhetoric and talk of regional empowerment being delivered by the provincial government, there were ominous signs that the NDP in power may not

be very different from their Social Credit predecessors. In the years immediately following the introduction of the Transport 2021 plans, bus service was increased by 8% but the size of the regional bus fleet grew by just 40 buses to 967, making it difficult to achieve all of the desired service additions as proposed by BC Transit (City of Vancouver 1996a). Furthermore, as had occurred over the previous decade, phase two transit priority measures proposed in the medium range transportation plan such as dedicated bus lanes were not implemented.

This is not entirely surprising since transit priority measures remove lanes of traffic from automobile use and thus have the potential to alienate numerous mobilized constituencies, including car drivers, goods movers and local merchants. Yet there was also another likely explanation for the failure to implement transit priority measures in a community where they had already received high-level support from both the provincial and municipal levels of government. Within certain parts of the planning bureaucracy, there was considerable concern about the traffic Armageddon that could be caused by turning entire traffic lanes over to public transit that carried less than 15% of all passenger trips in the region (GVRD 1992). This may explain the consistent clause in the terms of reference for many official transit studies that possible solutions could not take away road space, a requirement that led to findings justifying the exclusion of dedicated bus lanes or other at-grade transit alternatives (Parson Brinckerhoff Quade & Douglas 1968; N.D. Lea 1990, 1994; Delcan 1994).

Thus instead of focusing on smaller scale priorities to address Vancouver's growing congestion problem, major efforts were directed towards the planning of new transit mega-projects. Under the project direction of Lecia Stewart, BC Transit proceeded with a \$180 million commuter rail line from Vancouver to Coquitlam town centre and beyond into the Fraser Valley, which was to be operated using 28 rail cars purchased from Bombardier for \$55 million (Lee, *Vancouver Sun*, 2 March, 2002, A1). It was predicted that the commuter rail line would carry between 9,000 and 11,600 daily trips within 18 months of opening (Bohn, *The Vancouver Sun*, 20 February, 1997, B1).

And in the summer of 1994, BC Transit hired consulting firms N.D. Lea and Delcan to update the financial, technology, operating costs, and ridership forecasts for the Richmond-Vancouver, Coquitlam-New Westminster and Broadway-Lougheed rapid transit alternatives as laid out in the GVRD's Transport 2021 (Figure 6.2). Both of these engineering firms had considerable experience in the transit sector in Vancouver, and members of the ND Lea consulting team had been instrumental in the planning and delivery of the first Skytrain line and its extensions (Littlemore 2001).

As before, the consultant reports had embedded assumptions that supported an infrastructure mega-project paradigm to solving Vancouver's transportation mega problem. First, the consultants' reports again used the foundational assumption that road capacity should not be adversely affected, which had the impact of discounting the viability of surface transit alternatives such as light rail or buses in dedicated lanes (N.D. Lea 1994; Delcan 1994; Gardner and Leicester 1995). As well, the public transit advocacy group Transport 2000 BC (1995) argued that the studies had been biased by using downgraded capacities and relatively high costs for conventional light rail compared with those used for Skytrain. Finally, while the lifecycle cost per ride on Rapid Bus on each corridor was less than half the cost of any other alternative technology, none of the studies examined the impact of using this technology on more than one route within a given corridor (Gardner and Leicester 1995).

Based on this new information, there was a need to reassess the order of priorities for investing in new rapid transit infrastructure in the region. In 1995, BC Transit in partnership with the office established by the NDP to oversee all provincial crown corporations, the Crown Corporation Secretariat, evaluated the rapid transit technology and route alternatives using a detailed multiple accounts evaluation process. Again the report began with an explicit policy objective for rapid transit investment to promote regional land use goals, reduce automobile usage, and deliver positive environmental impacts (Crown Corporation Secretariat 1995).

Figure 6.2: Comparison of Intermediate Capacity Transit System Options

	Vancouver-Richmond					New Westminster-Coquitlam			Broadway-Lougheed			
	RapidBus	Basic LRT	Enhanced LRT-1	Enhanced LRT-2	ALRT (Cambie)	RapidBus	Enhanced LRT	ALRT	RapidBus	Basic LRT	Enhanced LRT	ALRT
One-Way Travel Time (mins)	33	32	30	24	19	40	26	22	40	37	35	25
Capital Cost (\$m, 1994)	103	547	820	1,078	1,042	62.3	558.7	812.9	82.3	561.9	588.1	945.4
Operating Cost (\$m, 1994)	8.0	15.2	18.6	17.5	15.5	4.8	14.5	17.3	9.5	15.9	16.2	23.1
Daily Ridership (2006)	30,000	34,500	50,000	56,600	67,300	14,300	40,750	55,000	57,500	69,200	71,900	96,000
Cost/Ride	\$2.05	\$5.90	\$5.82	\$6.35	\$5.10	\$2.60	\$5.02	\$5.18	\$1.04	\$3.03	\$3.03	\$3.56
Cost per Ride on Rapid Bus Compared with other Technology	/	35%	35%	32%	40%	/	52%	50%	/	34%	34%	29%

(Source: Gardner and Leicester, 1995)

A comparison of the three corridors using what was determined to be the preferred intermediate transit capacity option is provided in Figure 6.3 below. The report, authored by Alan Greer, a contract employee of the Crown Corporation Secretariat, found that contrary to the order of priorities laid out in the Transport 2021 reports from 1993, the most effective corridor for rail rapid transit was an enhanced light rail link between central Broadway and Lougheed with an extension to Coquitlam town centre. This link provided the highest ridership, the best possibility to contribute to regional land-use goals, and the lowest lifecycle cost per boarding. By comparison, the Richmond to Vancouver link was seen to have lower ridership potential, a lesser chance to widely shape land use because of the municipality's situation on a flood plain, and higher project capital costs, which made the alignment a lower priority (Crown Corporation Secretariat 1995).

Figure 6.3: Comparison Between Alternate Rapid Transit Corridors

	Broadway-Lougheed	Coquitlam-New Westminster	Richmond-Vancouver
Preferred Technology	Enhanced LRT/ALRT	Enhanced LRT/ALRT	Cambie Street ALRT
Contribution to Regional Land Use Goals	Medium to Medium/High	Medium to Medium/High	Low/Medium
Transit Ridership: Boardings in 2006	High 21.6 to 28.8 million	Low/Medium 12.2 to 16.5 million	Medium/High 20.2 million
Emission Reduction as Percent of Regional Total	0.1 to 0.2	0.02 to 0.18	0.05 to 0.6
Cost-Effectiveness Cost per Boarding Net Social Costs (PV)	High \$3.26 to \$3.89 \$274 to \$484 million	Low \$5.39 to 5.60 \$424 to \$547 million	Low \$5.54 \$447 million

(Source: Crown Corporation Secretariat, 1995)

Despite being explicitly charged with the mandate of reporting on the route and technology that should be the next priority for intermediate capacity rapid transit

investment (ICRT, which included a range of convention light and advanced light rail option), the Crown Corporation Secretariat report was critical of the potential viability of any rail-based rapid transit alternative within a 10-year time horizon. Due to the high net social costs associated with a line in any corridor, no rail-based alternative could be justified as a cost effective means of providing public transportation service. Only through the potential to considerably shape future land use could the development of a rail line in any of the three corridors be justified, however,

the potential revenues from taxes or charges levied on development surrounding rapid transit station are relatively small compared to the high costs of ICTS...they are not sufficient to justify ICTS alternatives with net financial costs in the range of \$400 to \$700 million [which were all of the projects, except the low estimates of the Broadway-Lougheed line]. (Crown Corporation Secretariat 1995: 32)

The Crown Secretariat report was also critical of the popular contention that investment in rapid transit would significantly contribute to environmental amelioration, noting that the development of any single line (regardless of technology) would lead to emission reductions that were at best 0.6% of the projected annual emissions for the entire region. Thus, the Crown Corporation Secretariat report concluded, 'Rapid Bus would provide the most cost-effective transit service in each corridor, but it would be the least effective in promoting compact development' (Crown Corporation Secretariat 1995).

A potential justification of this recommendation in favour of rapid bus in the short term is that without exception, the Crown Corporation Secretariat study estimated the lifecycle cost of the rapid bus option to be a smaller fraction of the lifecycle cost of the rail-based alternatives than had been estimated in the 1994 studies conducted by the N.D. Lea and Delcan consultants. In each of the corridors, a comparison of the lifecycle costs shows that the private sector studies had a higher cost estimate for the Rapid Bus and lower cost estimates for the rail based alternatives than the figures derived by the Crown Corporation Secretariat Study. The source of this systemic discrepancy is not immediately evident; however, the implication is that the Crown Corporation Secretariat study presents the Rapid Bus alternative as being considerably more favourable relative to the other rail-based options than had previously been suggested (Figure 6.4).

Figure 6.4: Crown Corporation Secretariat Estimates of Cost Per Boarding Using Alternate Technologies

	Broadway-Lougheed				Coquitlam-New Westminster			Richmond-Vancouver				
	Rapid Bus	Basic LRT	Enhanced LRT	ALRT	Rapid Bus	Enhanced LRT	ALRT	Rapid Bus	Arbutus Enhanced LRT	Cambie Basic LRT	Cambie Enhanced LRT	Cambie ALRT
Net Social Cost (Millions)	\$41	\$302	\$274	\$484	\$70	\$424	\$547	\$89	\$405	\$335	\$532	\$447
Boardings in 2006	17.3	20.8	21.6	28.8	4.3	12.2	16.5	9	15	10.4	17	20.2
Lifecycle Cost per Boarding	\$0.98	\$3.26	\$3.26	\$3.83	\$2.41	\$5.39	\$5.60	\$1.88	\$6.30	\$6.29	\$6.94	\$5.54
Lifecycle Cost per Boarding Reported in the 1994 ND Lea/Delcan Studies	\$1.04	\$3.03	\$3.03	\$3.56	\$2.60	\$5.02	\$5.18	\$2.05	\$5.90	\$5.82	\$6.35	\$5.10
Rapid Bus Compared with other Technology	/	30%	30%	26%	/	45%	43%	/	30%	30%	27%	34%
Rapid Bus Compared with other Technology based on the 1994 ND Lea/Delcan Studies	/	34%	34%	29%	/	52%	50%	/	35%	35%	32%	40%

(Source: Crown Corporation Secretariat, 1995)

At a considerably lower lifecycle cost than rail based alternatives, the rapid bus option began to capture attention from the local media, some transit experts and politicians such as Glen Clark (Munro, *The Vancouver Sun*. 17 March, 1995, A.1). Conversely, for the Broadway-Lougheed Corridor, Skytrain carried a net social cost premium of around 45% over enhanced light rail (Crown Corporation Secretariat, 1995). In 1995, the first rapid bus service was inaugurated along the Coquitlam-Burnaby-Central Broadway Corridor, although without any traffic priority measures such as dedicated bus lanes. Plans were in place for similar service implementation on the corridors between Vancouver and Richmond, and Coquitlam and New Westminster (City of Vancouver 1996a).

In 1995, in spite of some favour for rapid bus expansion by transit experts, Premier Harcourt and Minister Glen Clark announced plans for the development of a light rail line from Coquitlam to Central Broadway by 2005, and from Lougheed Mall to New Westminster by 2008 (See Figure 6.5, p. 175). The 'T-line' as it became known was estimated to cost \$1.5 billion (Greer 1999). The decision to proceed first with the T-line was not only technically substantiated by the Crown Corporation Secretariat report on rapid transit alternatives, but it was also politically pragmatic. The line as planned would pass through constituencies that largely supported the NDP, compared with the Richmond-Vancouver corridor that had long been a stronghold of the NDP's more conservative opposition (Littlemore 1999).

In 1996, BC Transit under Chairman Derek Corrigan, released a promotional video showcasing the positive benefits that light rail would have along the Broadway-Lougheed corridor (BC Transit 1996). Corrigan had served as a city councilor in Burnaby since 1987, a municipality that had been at the forefront of advocating in favour of investment in conventional light rail to shape land use across the region. Corrigan was on record as a supporter of the proposed new light rail line that would pass through Burnaby. Corrigan was also a strong supporter of organized labour (City of Burnaby 2005), which could give his views added credibility with the governing NDP.

Rhetoric and Reality in the Partnership Approach to Infrastructure Delivery

The recurring theme of partnerships remained a central component of the NDP's plan to develop light rail in Vancouver. The provincial government strategy for developing the light rail plan was to involve the GVRD and affected municipalities directly in the project planning and financing, in part to limit requests for unexpected scope changes, a trend which had been identified as driving up the cost of public works projects (Walker and Smith 1995). Given that the success of the T-line largely hinged on the transformation of land uses along the transit corridor, a two-year planning process was designed to include the provincial government, local municipalities, and affected stakeholders (Greer 1999).

In 1996, British Columbians went to the polls in a provincial election that by all accounts appeared to be a win-win situation for those who favoured investment in public transit as a means of addressing Vancouver's transportation problems. In the run up to the election, Mike Harcourt resigned amidst allegations of a party kick-back scandal that dated back to the 1970s, and was replaced as leader of the NDP by the more ideologically driven Glen Clark. Clark had a clear record of opposing transit mega-projects which he saw to be driven by political not mobility motivations. Clark also favoured greater cooperation between the provincial and local levels of government. The NDP's main opposition in the election came from the right of centre Liberal Party, who were now led by former City of Vancouver Mayor Gordon Campbell. From his experience as a municipal politician, Campbell too was intimately familiar with the need for transit projects that directly addressed mobility issues and planning procedures that empowered local authorities. Although they won a smaller share of the popular vote than their Liberal Party opposition, the NDP held on to a majority of seats in parliament and formed the government (Elections BC 2005).

Under the leadership of Glen Clark the provincial government took control of the T-line project planning, contrary to efforts by the NDP during their first term of office to foster a provincial-local partnership in the planning of the new light rail line. In 1997, the NDP provincial government formed the Rapid Transit Project Office as a limited crown

corporation (which later became known as Rapid Transit Project 2000) to undertake strategic planning, public consultation and project management of the proposed rapid transit line. Premier Clark appointed Lecia Stewart to head Rapid Transit Project 2000. Stewart had been serving as President of the poorly performing West Coast Express commuter rail line, a project for which she had been hand-picked by the NDP to deliver. After around two years of operation, the commuter rail line was carrying less than 75% of its expected ridership, and was being subsidized by some \$15 per ride (Lee, *The Vancouver Sun*, 10 November, 1997, A1).

Stewart staffed the Rapid Transit Project 2000 with people who had experience building mega-projects and shaping mass communications, some of whom were also friends of the NDP. There was former West Coast express planner Teresa Watts; former press secretary to Glen Clark Trish Webb; former Ministry of Employment and Investment spokeswoman Maureen Murphy; Blair Fryer, son of former B.C. Government Employees Union chief and current assistant deputy minister in charge of Crown Corporations; John Fryer; and another former Clark communications chief and former BC Federation of Labour official Bill Tieleman, whose new public relations company, West Star Communications, was contracted primarily to Rapid Transit Project 2000. Private sector proponents also hired public employees to join their Vancouver project team. Bombardier, for example, made former West Coast Express planner Rick Lee a project director (Littlemore 1999).

Planning by Rapid Transit Project 2000 proceeded quickly, and by the end of 1997 they had already begun to explore tenders for some of the preliminary engineering work for the LRT line (Greer 1999). Finding suitable funding for the new \$1.5 billion light rapid transit line was proving difficult, and despite their left wing ideology and close union ties, the minister responsible for urban transit Joy MacPhail (Hansard, 3 July, 1997, p5159) stated in the legislature that 'P3 [private-public partnership] arrangements can be considered.'

Concurrent with their consideration of private financing options, the provincial government was in negotiations with the GVRD over a new arrangement for transportation governance and financing in the lower mainland, which resulted in the formation of the regionally autonomous Translink (Meligrana 1999). The Translink structure was novel for two reasons. First, in recognition of the interconnection between planning decisions made for different modes of transport at a regional scale, Translink was to be responsible for the regional planning and provision of local public transit, roads, bicycle and pedestrian facilities. This idea seems intuitively quite simple, and yet it is largely unique in North America where various autonomous planning organizations have been resistant to relinquishing control over their own jurisdiction in favour of a single centralized planning organization. Second, the Translink structure explicitly sought to empower local decision-makers, by providing the regionally aligned planning body with secure sources of revenue from the provincial government that were not tied to specific projects. It was hoped that giving local officials control over their own purse strings would reduce the possibility for 'meddling' by senior level governments, a trend which had become ingrained in the British Columbia planning context.

The formation of Translink was about more than simply empowering local decision makers with responsibility for regional transportation planning. According to George Puil (1999), a Vancouver City councilor, Chair of the GVRD and one of the architects of Translink, the organization was particularly designed to promote competition, marketization and cost recovery in the provision of transportation services in Vancouver. This was meant to redress what the Auditor General of British Columbia (1997) had found to be low labour productivity and poor management of the Greater Vancouver public transit network under provincial control. To this end, Translink was structured as a strategic planning organization with service provided by subsidiary crown and private sector corporations. Dividing the provision of bus, Skytrain, and disabled transit service between different operating companies reduced the size of the collective bargaining unit and minimized the impact on the overall transit system if employees from any one subsidiary went on strike. It is significant that an institutional structure to challenge the strength of organized labour was negotiated by a left of centre provincial government,

whose party received the majority of their campaign finances from unions, and that counted on organized labour as their largest electoral constituency.

In February of 1998, after tough discussions, the provincial government and the GVRD agreed that capital infrastructure on the new light rail line would be funded 60% by the provincial government and 40% by Translink, after which time operating costs and future capital expenditures would be borne entirely by Translink. This averted the need for private financing of capital costs on the new light rapid transit line (Simpson, *The Vancouver Sun*, 18 June, 1998, B6). Even as a cost sharing agreement was reached between the provincial and regional levels of government to fund the new light rail line, the provincially subordinate Rapid Transit Project 2000 maintained a monopoly over strategic planning and project delivery.

Changing Tracks

Despite what appeared to be a decision to proceed with the development of a new light rail system for the T-Line, the provincial position on rapid transit investment in Greater Vancouver was in the midst of a publicly imperceptible sea change. This move would become another prime example of the well documented relationship between rationality and power (Flyvbjerg 1998; Gunton 2005), highlighting the way knowledge is shaped by the interests of those in power and information is used as a means of justifying pre-existing ideas.

Despite considerable planning for a light rail line, the provincially controlled Rapid Transit Project 2000 had quietly begun carrying out studies on the feasibility of developing the T-line using Skytrain technology (Greer 1999). The scheme to use Skytrain for the T-line had earlier been found to deliver insufficient benefits to cover its costs by the Multiple Account Evaluation carried out by Alan Greer of the Crown Corporation Secretariat in 1995. And the NDP government had already rejected Skytrain technology for the T-Line when they decided to proceed with conventional light rail along the corridor. Yet over a period that lasted less than three months in the spring of

1998, two separate firms were hired by Rapid Transit Project 2000 to review the feasibility of light rail and Skytrain for the T-Line: Parsons-Brinkerhoff Quade & Douglas for LRT and SNC Lavalin for SkyTrain (Greer 1999).

When the two studies were combined, Rapid Transit Project 2000 concluded that Skytrain technology was in fact better suited than light rail for the Broadway-Lougheed transit corridor. In April 1999, a scathing report reviewing Rapid Transit Project 2000's documentation supporting the Skytrain alternative was sent to top bureaucrats in charge of the Crown Corporation Secretariat. Alan Greer, the same person who had written the 1995 Secretariat study on rapid transit investment priorities in the region, authored the report. In it, Greer documented a long list of problems with the studies that ultimately favoured Skytrain, concluding 'Cost comparisons appear to have been contrived to put SkyTrain over LRT.' Upon receipt, the report was marked 'CONFIDENTIAL' and not declassified until it was obtained through a Freedom of Information request in January of 2001 and posted on the internet, long after construction on the new transit line had already begun.

Many of the problems outlined by Greer stemmed from the role that Rapid Transit Project 2000 played in guiding the analysis towards a desired outcome. The two companies commissioned to review the project feasibility of either Skytrain or LRT operated using fundamentally different implicit assumptions, making it difficult to compare the merits of the two systems. SNC Lavalin had been centrally involved in previous Skytrain projects in Vancouver, and had also quietly signed a deal with the NDP government in 1995 that would see the company receive at least 25% of any engineering contracts for future Skytrain projects in British Columbia in exchange for letting contracts to BC Transit on their Malaysian Skytrain project. Furthermore, when the NDP provincial government was facing accusations of an insider trading scandal related to a power project called Raiwind that they planned to build in Pakistan, SNC Lavalin was central in alleviating the problem. Specifically, SNC Lavalin with the help of their west coast advisory board chairman Eric Denhoff, the former Glen Clark appointed head of BC Transit, brokered a deal to purchase the government's remaining \$2.4 million worth

of shares in the project. This capped the public sector losses at \$6 million and effectively eliminated the scandal for the government and premier Glen Clark. Four months later, SNC Lavalin's exclusive Skytrain deal with the provincial government was extended (Smyth, *The Province*, 6 November, 1998, A6; Daily Commercial News and Construction Record 1999; Littlemore, 1999).

The events may be unrelated, and SNC Lavalin never did exercise their option for 25% of the Skytrain contracts. Vancouver-based SNC Lavalin Vice President Robert Tribe noted in a 1998 interview with *Province* reporter Michael Smyth that the company 'didn't think we were going to gain that much over and above what we get on our merit anyway' (6 November, A6). Nevertheless, Smyth's story raised questions about whether SNC Lavalin was an impartial consultant, the strength of the ties between the company and the NDP government in office, and the degree to which SNC Lavalin had a vested interest in reporting the lowest possible price for Skytrain.

To this end, Alan Greer's confidential report argued that the SNC Lavalin Skytrain feasibility study had used figures for Skytrain vehicles that were heavily discounted, while overestimating the financial savings that would accrue from being able to use the existing operations and maintenance yard in Burnaby. Additionally, the SNC Lavalin report compared the high-end capacity of Skytrain with the low-end capacity for conventional light rail to contend that Skytrain provided around three times greater capacity than light rail. Such claims were made even though Rapid Transit Project 2000 suggested that Skytrain capital costs would be reduced by shortening the length of station platforms, thus limiting system capacity by reducing the number of cars that can be linked into a single train (Greer 1999). In fact, according to the SNC Lavalin report's author, the imposed completion deadline of around just three weeks meant that the figures in the study were based on 'conceptual' engineering and not detailed study (Rees, *The Province*, 12 November, 1998, A4).

Conversely, Parsons-Brinkerhoff Quade & Douglas was given nearly twice as long to complete their study, and their findings were far more conservative about the estimated

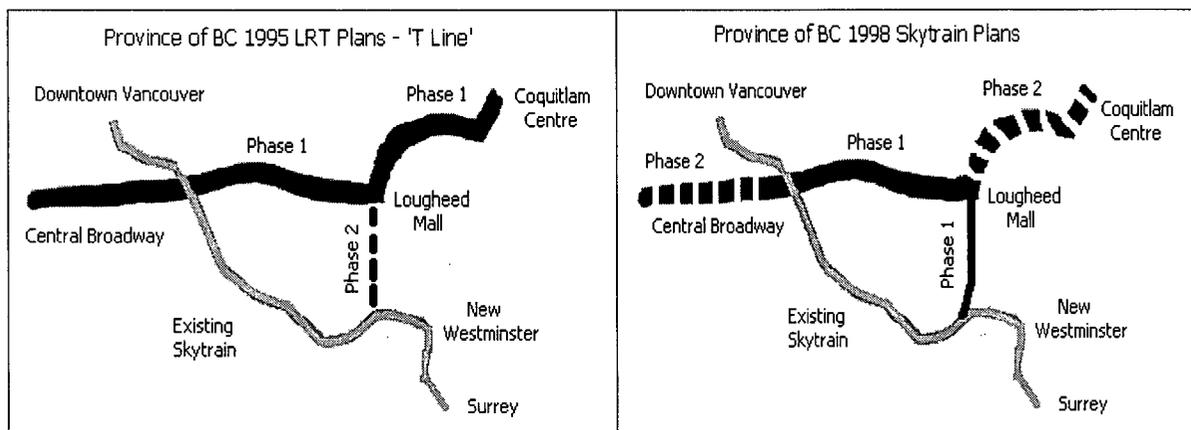
costs of LRT (Rees, *The Province*, 12 November, 1998, A4). While there is no certainty, the root of Parson Brinckerhoff Quade & Douglas' more conservative estimates may stem from the fact that unlike SNC Lavalin, they were an engineering consulting firm that did not have a vested interest in the development of a particular technology in Vancouver. Additionally, according to Greer's analysis, the firm received specific instructions in their terms of reference from the Rapid Transit Project 2000 that would inflate the cost of light rail.

For example, Greer (1999) pointed out that the cost of train cars was estimated using the top range of prices with no analysis of the potential for discounts or local construction. Rapid Transit Project 2000 instructed the consultants to build in about ten extra segregated grade crossings than were in the 1995 LRT study at a cost of \$15 million each, claiming that these were not technically but politically necessary to make the project viable for the affected municipalities. These contentions have been widely contradicted by municipal staff and politicians, and remain uncorroborated. Thus the new reports commissioned by the Rapid Transit Project 2000 concluded that the cost premium for using Skytrain technology instead of LRT was estimated at just 8%, down from the 45% figure estimated in the 1995 Crown Corporation Secretariat report (Greer 1999).

More of a problem was the fact that the cost of undertaking the project using Skytrain technology was only estimated for part of the full T-line (18 of 33 km), called phase 1. Phase 1, which would connect Broadway and Commercial drive with Lougheed Mall and a spur on to the existing Skytrain line in New Westminster, had never been discussed previously as a rapid transit corridor (Figure 6.5). The routing largely missed the primary source of new riders that were in Coquitlam, and omitted the key destinations along central Broadway at Cambie, Granville and Arbutus. Therefore while the cost of phase 1 of the new line using Skytrain was estimated at some \$1.2 billion, which was comparable to that of the LRT system, the cost of completing the entire T-line using Skytrain remained much higher. The exact cost of the completed T-Line was not initially released as Rapid Transit Project 2000 claimed they did not have time to undertake such estimates

(Greer 1999). Independent transportation analysts later suggested that this could be as high as \$3.2 billion (Raad and Boothroyd 1999). Furthermore, no official ridership studies for phase 1 were released at the time that the decision about technology was made. Rough estimates by affected municipalities and the GVRD suggested that patronage would be 5,000 per peak hour, well below Skytrain's maximum capacity of 20,000 – 30,000, and more in line with that of a rapid bus system (Greer 1999).

Figure 6.5: Shifting Rapid Transit Plans, 1995-1998



(Source: Adapted from Greer, 1999)

Despite the many noted flaws in the analysis process directed by Rapid Transit Project 2000, the technical rationalization for Skytrain quickly captivated the imagination of Premier Glen Clark and Joy MacPhail, the minister responsible for finance and public transit. Thus the plan to proceed with Skytrain quickly gained momentum. On June 24th 1998, in a high profile ceremony, Premier Clark announced that the LRT line had been scrapped in favour of plans for the development of what was now being called phase 1 of the Skytrain proposal. This was mere months after study of the Skytrain proposal had first begun, and called into question many of the collaborative decisions reached between the province and municipal levels of government.

The provincial government approved a \$1,166.5 billion budget for phase 1 of the new transit line from Vancouver Community College (Figure 6.7). An additional \$171

million was allocated for upgrading the existing Expo Skytrain line, integration of the new line into the urban landscape, and preliminary planning on the next two phases of the Skytrain line between New Westminster and Coquitlam, and the western extension of the line along central Broadway to Arbutus Street. Finally, another \$68 million including interest was approved for 20 new Skytrain cars for the existing Expo line, amounting to \$3.4 million per car (RTP2000 2004).

Figure 6.6: Skytrain Extension Budget

Budget Item	Cost (in Millions of Dollars)	Percentage of Total
Direct Costs, including cost of guideway, stations, operating system, vehicles and land	831.4	71
Design, management, public consultation and communications	122.3	11
Borrowing costs	212.8	18
Total Estimated Cost	1,166.5	100

(Source: RTP2000, 2004)

The announcement to proceed with the Skytrain proposal was accompanied by plans of a new business partnership that reflected the explicit role of transit investment as not only a way of improving urban mobility but also a local industrial development strategy – a recurring feature of transit mega-projects in Vancouver. At the announcement ceremony, Premier Clark averred that Bombardier had agreed to build a state of the art Centre for Advanced Transit Systems in the lower mainland of British Columbia that would produce 60 Skytrain rail cars for the new Vancouver line, as well as the future global market for the Skytrain systems as promoted by the Government of British Columbia. The agreement committed Bombardier to investing \$175 million in British Columbia, benefiting the local propulsion, communications, and transit power industries (RTP2000 1998a).

Bombardier's new Centre for Advanced Transit would also conduct research on future system improvements, and be the central hub for training worldwide Skytrain maintenance workers and system operators. Clark predicted that the agreement with Bombardier to locate the Centre for Advanced Transit in Greater Vancouver would result

in the creation of hundreds more high paying local jobs and hundreds of millions of dollars being infused into the local economy. This was Bombardier's first production facility west of Thunder Bay, Ontario, and would provide a significant boost to the manufacturing sector in Vancouver. Accompanying the contract to build new rail cars, Bombardier was also awarded the contract to upgrade the existing Skytrain control centre and install the electrical and mechanical equipment for the new line. A press release by the Rapid Transit Project 2000 dated June 24, 1998 reported that the project would create 740 permanent, full time manufacturing jobs (RTP2000 1998b).

However, reviewing the details of the arrangement between Bombardier and the Provincial government, the memorandum of understanding signed on the day that the Skytrain project was announced specified that Bombardier would create just 165 jobs in manufacturing (RTP2000 1998c). It also gave the company the option to bid on the operation and maintenance of the line with the guarantee that if they did not receive the contract the provincial government could be required to buy back the manufacturing facility. Finally, the June 24, 1998 memorandum of understanding stated that the province and Bombardier would work jointly to further the success of Bombardier's Centre for Advanced Transit Systems by:

examining methods, in cooperation with the Vancouver International Airport Authority, the Vancouver 2010 Olympic Committee and local authorities, to accelerate the construction of a **Skytrain-type System** that will link the City of Richmond, the Vancouver International Airport and the downtown core of the City of Vancouver. [emphasis added] (Ibid: 5)

The partnership arrangement between the Provincial government and Bombardier illustrates the early formalization of a policy lock-in to proceed with future transportation projects in Vancouver using Skytrain technology. While this clearly supports the interests of Bombardier and other firms that build 'Skytrain-type' systems, it provides little room for unbiased analysis about whether investing further in Skytrain technology would best meet the public interest. The merit of this policy decision seems all the more questionable when it is considered that SNC Lavalin performed the definitive analysis upon which Skytrain technology was selected. As noted above, SNC Lavalin had worked

previously on Skytrain projects in Vancouver and around the world, and could thus be ideally positioned to benefit directly from any future system expansions. In fact, as I will show below, due to the way that the project was delivered, SNC Lavalin began to benefit financially almost immediately after Skytrain was selected for the T-Line in Vancouver in June of 1998.

A Partnership Approach to Project Delivery

The approach to delivering the project was based on what Rapid Transit Project 2000 (1999: 16) termed 'a spirit of cooperation and partnership.' To achieve this end, Rapid Transit Project 2000 itself was in fact a collaboration of employees seconded from public office and private firms. This followed the model that had been successfully used to punctually deliver the first phase of the Skytrain system in the early 1980's. In addition to seconded provincial employees, the Rapid Transit Project 2000 contracted with a variety of engineering, management, and construction firms to form the team required to deliver the project. Such an approach was promoted as bringing together the best experts to deliver the project, as members of the team had considerable experience working on Skytrain projects both in Vancouver and in the few international locations where the technology had been selected. The core team (RPTO 1999, 2004) included:

- ND Lea Consultants Ltd. – responsible for construction management of fixed facilities and provided overall project manager. Led by John Eastman, who had been involved with the development of the earlier Expo Skytrain line, and assisted by Meiric Preece who had been involved in SNC Lavalin's endeavor to build Skytrain in Kuala Lumpur, Malaysia. ND Lea had written three earlier studies between 1990 and 1994 that were supportive of Skytrain in Vancouver.
- SNC Lavalin Inc. – responsible for design management of all electrical and mechanical systems components, including automatic train control, power supply and distribution, track work, CCTV and communications. Led by Jim Burke and Robert Bowman. SNC Lavalin had been the author of the definitive study in the spring of

1998 that had shown Skytrain to be financially and technically superior to light rail for the Broadway-Lougheed Corridor. The company also had extensive experience working on Skytrain projects in Vancouver, having been one of the lead firms in the partnership to deliver the first phase of the Skytrain system.

- SAR Transit. – a consortium of construction companies, including firms with experience building the first Skytrain line and developing pre-cast concrete structures.
- Allan Hart – project chief architect. Hart had worked on station designs for Vancouver's first Skytrain line, which was experiencing safety problems in part as a result of poor sightlines provided on the station platforms and stairwells.
- DKL Consultants – responsible for estimating the noise levels of the new Skytrain line. DKL Consultants had provided estimates for the first Skytrain line in Vancouver, which was widely criticized when it opened for being louder than expected.

The use of a partnership approach to delivering the new Skytrain project in Vancouver brought together many of the leading experts in Skytrain development, to try and deliver the project in a professional way that met the public interest of limiting timed delays and cost overruns. This approach is perfectly sensible as it takes advantage of the experiential learning that these firms and their employees have acquired through their previous work on Skytrain projects.

However, looking back over the recent history of rapid transit planning and project delivery in Vancouver, it appears that such an approach completes the cycle of one entire positive feedback loop that has guided the direction of investment in the city. In the early 1980's, a series of individuals and firms were hired to plan and deliver a rapid transit project using Skytrain technology. In the late 1980's and into the 1990's, based on the knowledge and extensive experience they acquired from working on the previous Skytrain project, some of these same individuals and firms were now contracted by

government planning agencies to provide 'impartial' advice on the optimal routing and technologies for future rapid transit projects in Vancouver. Then in the late 1990's, when this advice persuaded decision makers to proceed with a Skytrain-based system, some of these same firms were hired to deliver the project on the grounds that they had extensive experience working with Skytrain technology and mega-projects in Vancouver.

This historical analysis seems to suggest the presence of strong path dependence in the decision to use Skytrain technology, based on what Pierson (2000b) has termed a learning effect. The continued dependence by government on the collaboration of a small core group of transportation engineering and consulting firms reinforced the early decision to continue transit development using Skytrain technology. This attraction to Skytrain technology has persisted even when alternate evidence suggested that other technologies and investment priorities might be more appropriate.

Opposition Response to Skytrain Announcement

Reaction to the government's decision that it would proceed with the project using Skytrain technology was immediate and polarized. At the provincial level, the opposition Liberal Party expressed outrage at the hypocrisy of an NDP government proceeding with Skytrain despite their persistent criticism of the technology when they had been the opposition. In the legislature, Liberal transit critic Doug Symons irreverently read from a 1984 statement by Glen Clark to remind the Premier of some of his earlier views on Skytrain:

'It really was a dumb decision to build that thing' -- referring to SkyTrain -- 'in the first place. It's a toy train. . . . This is a crazy, expensive, outrageous system; it doesn't carry any people, hardly.' (Hansard, 29 June, 1998, p.9371)

Liberal party leader Gordon Campbell echoed Clark's earlier criticism's of the Skytrain system in the legislature:

Why on earth would the Premier think it makes sense to spend \$3.2 billion for a Lamborghini that won't work...Taxpayers want a transit system that they can afford, which will get them where it's supposed to - which is the northeast sector - in the most affordable possible way. Light rail transit is the way to do that. Every

expert knows that; every community knows that. The only people that don't know it are the NDP, and they're wasting more taxpayer dollars. (Hansard, 3 May, 1999, p.12160)

Campbell was correct that numerous local transportation experts expressed negative sentiments about the merits of Skytrain. For example, Clive Rock, a senior transportation planner for the GVRD, noted that the project was neither an effective people mover nor job creation vehicle since there was little international market for the system. With the exception of small stretches in Toronto, Detroit and New York, and complete lines in Bangkok and Kuala Lumpur, cities across the world had persistently turned down Skytrain in favour of conventional light rail (Littlemore 1999). If the trend of slow international sales of Skytrain persisted, this would limit the potential for the new Bombardier manufacturing plant to create stable lasting jobs beyond the construction of the new rail cars for the Vancouver line.

University of British Columbia urban planning professor Peter Boothroyd and transportation consultant Tamim Raad criticized the Skytrain project from another angle, showing in a study that the completion of the full T-line using Skytrain technology could cost as much as \$3.2 billion. They further found that Skytrain 'carries a cost premium of 52 per cent to 113 per cent over LRT, not the eight per cent previously claimed by the province of British Columbia's Rapid Transit Project Office,' reinforcing their claim that light rail would be a more optimal technology for the route T-line (Raad and Boothroyd 1998). This line of argument was followed by the Coalition for Skytrain Review, a citizens group that was highly critical of the planning process that had led to the selection of Skytrain technology (Andrews 1999).

Perhaps the most vociferous objection to the decision to switch from light rail to Skytrain came from local politicians. From the time the province assumed the lead role in planning the new rapid transit line, many municipal officials felt that their concerns were no longer being fully considered. Now with the province's unilateral switch to a more expensive system, the nascent regional transit authority, Translink, was under pressure to add extra money to cover their earlier commitment to pay 40% of capital costs for a new

transit line. Seeing the need to contribute more money to Skytrain as a direct threat to the fiscal viability of Translink, as well as their ability to provide other local transit services, local officials resisted.

The strongest voice of opposition came from Vancouver city councilor, GVRD Chairman and Translink board Chairman George Puil. Puil publicly resisted the provincial government request for more money from Translink, and was also critical of the side agreement with Bombardier for the operation and maintenance of the system without a full tender process. Some municipal mayors around the region were also concerned that the high cost of phase 1 of Skytrain would overburden the provincial government budget and delay necessary rapid transit from being delivered to their communities. These included Coquitlam mayor John Kingsbury, whose municipality was to be connected with the Skytrain during the project's second phase. It also included Richmond mayor and former GVRD Chairman Greg Halsey-Brandt, who had been promoting the merits of a Richmond to Vancouver connection for many years. Halsey-Brandt believed that 'If the Skytrain goes over-budget, it could affect the whole idea' of rapid transit to Richmond, further suggesting that cost and design specifications made light rail more optimal for both the Broadway-Lougheed and Richmond-Vancouver rapid transit corridors (Hansen, *Richmond News*, 8 February, 2001, p1). At the time, planning of a SuperBus line linking Richmond and Vancouver was already underway.

After six months of tense negotiations a tentative détente between the provincial government and the GVRD was reached in the fall of 1999. The provincial government agreed to put up \$1.25 billion for the capital cost of phase 1 and phase 2 of the new Skytrain line, while Translink would pay \$650 million, ensuring that rapid transit would be built out to Coquitlam. Translink and the local authorities would be responsible for covering the new line's operating costs, half of the \$60 million capital costs associated with integrating the new Skytrain into the affected communities, most of the capital costs associated with extending the line along central Broadway, as well as all of the Skytrain vehicle fleet replacement that would be necessary in the first decade of the 21st century (RPT2000, 2004). Given their responsibilities for covering capital and operating costs

associated with the existing transit system, allocating such a large financial commitment to rapid transit appeared to place a considerable stretch on the financial capabilities of Translink.

Holding firm on the Skytrain Decision

Despite all the criticism, the NDP provincial government maintained their resolve to proceed with the project, buoyed by what they saw as widespread public support for the new Skytrain line. Rapid Transit Project 2000 hired high profile local businessman Arthur Griffiths (who had risen to prominence as owner of the Vancouver Canucks hockey team) as the head spokesman for the new Skytrain line, and undertook a series of public consultation activities to gauge community support and more widely promote the project. Public meetings were held which more than 3,000 people attended. Door to door surveys of some 3,500 people along the proposed route were also conducted which found that 91% of respondents favoured investment in rapid transit throughout the region, although 88% of them were not transit users. The main reason noted by half of respondents for supporting the Skytrain project was the belief that building rapid transit would result in reduced congestion with the added benefit of contributing to environmental amelioration (RTP2000 1998b).

Front and centre in the community consultation program was the use of ongoing opinion polling which suggested that some 75% of Greater Vancouver residents were in favour of the new line being constructed as Skytrain, and there was a widespread belief that the project would alleviate congestion, improve the overall regional transit system and reduce air pollution. It was of little concern to those planning the system that the survey did not address the identified public concern about project costs and the possible burden on taxpayers, or that questions were not specifically asked about the relative merits of investing in an expanded Skytrain over other transportation alternatives (Greer 1999). Nor did it matter that some of the technical studies produced for the Rapid Transit Project 2000 showed that the potential for the project to achieve the publicly perceived benefit was minimal, for example with respect to improving air quality: 'In itself, the proposed

Skytrain extension project can only help to achieve a small part of the air quality goals' (Cirrus Consultants 1999: ii).

Instead, summaries of the opinion survey results that highlighted the widespread public support for the Skytrain expansion and its perceived benefits were broadly released by Rapid Transit Project 2000, and became the basis for positive media coverage of the project. The importance of positive media coverage in further shaping public opinion and discourse about the planned Skytrain expansion cannot be underestimated. A region-wide poll conducted for the Rapid Transit Project 2000 in 1999 revealed that the majority of respondents became aware about the project from the media (newspapers were by far the largest segment) while only 2% became informed through the City of Vancouver or the GVRD. The influencing of public opinion by Rapid Transit Project 2000 through the selective release of polling data highlights the significance of the way an issue is framed to the public, where one organization with a vested interest in Skytrain proceeding has consciously set out to enhance its position by presenting a large-scale project as the most viable solution to Vancouver's transportation problems (Market Explorers, 1999).

Emboldened by the perception that public opinion was in favour of the Skytrain expansion, the NDP faced their critics. Whenever pressed on the Skytrain issue, the NDP turned to what the party saw as the overwhelming success of the Expo line, even in spite of their party's earlier criticism of the decision to proceed with Skytrain. Moving some 28 million passengers per year, the system had one of the highest operating recovery rates in North America and had been a strong catalyst for the development of mixed use, mixed income, transit oriented developments (Wolinsky 2004). Moreover, the rapid transit project was supported by one of the NDP's largest single electoral constituencies, organized labour. A deposition by Barry O'Neil, president of the British Columbia branch of the Canadian Union of Public Employees stated that the union favoured Skytrain over conventional light rail, but also favoured a plan for the immediate expansion of the bus network, and was against the proposal to contract out the operation of the system. This position reflected the desire of organized labour in general to see public transit improved for their members and the wider community, and also reflected

their preference for large infrastructure projects that would create thousands of unionized construction and system operation jobs (O'Neil 1999).

With their electoral power base intact, the NDP consistently fell back on the rhetoric of progress and favourable public views of Skytrain. As Premier Clark retorted in response to probing about the financial viability of Skytrain by transportation critic Doug Symons in one legislature debate:

This Liberal opposition doesn't have a good thing to say about anything. They are negative, negative, negative. They'll blame me for everything. Next thing you know, they'll blame me for Geri leaving the Spice Girls... I want to be clear to members of this House and to the public: we are going to expedite rapid transit in the lower mainland with or without the Liberals' support. (Hansard, 3 June, 1998, p.8299)

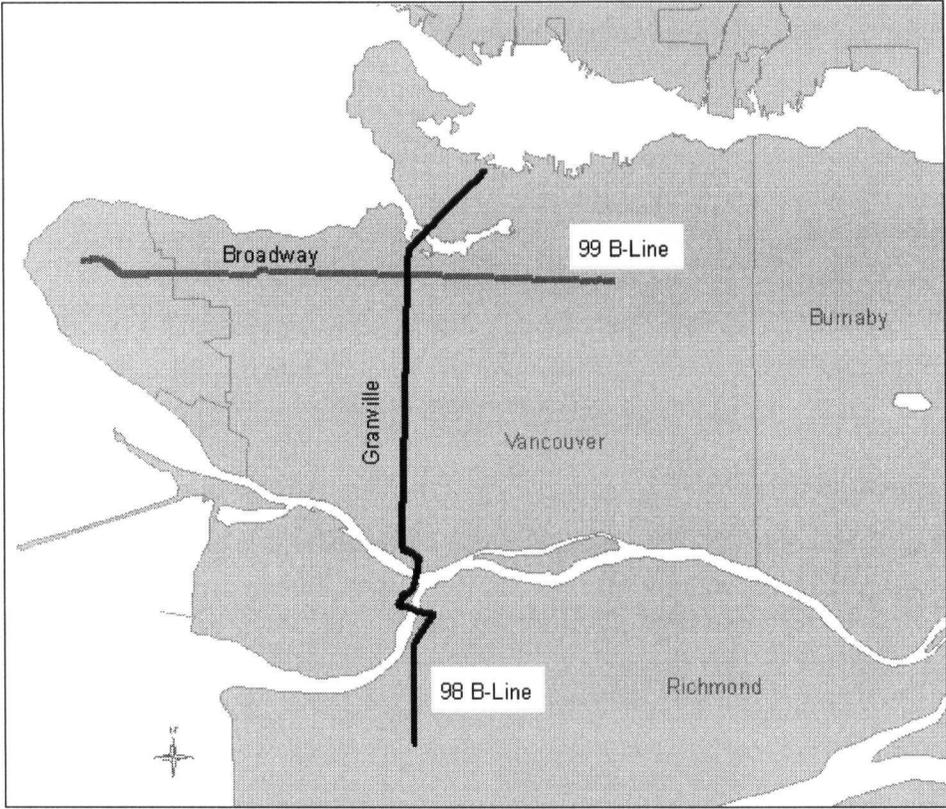
Invoking the need to proceed expeditiously on a highly popular project to alleviate a congestion problem in Vancouver that had reached a perceived crisis level, the provincial NDP government fast-tracked the approval of the Skytrain expansion project. This move was supported by an optimistic ridership forecast commissioned by Rapid Transit Project 2000 in the summer of 1999 which was conducted by consultants T. Partridge and Associates (1999), whose principle consultant Terry Partridge was a former Vancouver city planner. The study estimated a 47% increase in transit ridership on the corridor as a result of the rail line, contributing to considerable air quality improvements and congestion relief as commuters switched from car to emission free electrified transit. The study also concluded that, once completed, the average cost per ride on Skytrain, including both capital and operating costs, would decrease from \$4.37 on the existing Expo line in 1997, to \$3.62 in 2003 and \$2.68 in 2006. Both the ridership and financial cost figures put forward in the new ridership study were considerably more favourable than those produced some three years earlier in Alan Greer's Crown Corporation Secretariat study of the rapid transit alternatives. In spite of the discrepancy, planning and construction of phase 1 of the new Skytrain system, now called the Millennium line, proceeded on an accelerated schedule, with plans for the new line to open in late 2001.

Surface Transit Wars

From the narrative presented above, there is little doubt that the decision to invest in the Millennium Skytrain Line had its opponents, and was surrounded by a considerable degree of controversy. Yet the level of conflict over the Millennium line paled in comparison to the public outcry that surrounded the planning of a Rapid Bus line between downtown Vancouver and Central Richmond, which occurred during the same period. Telling this story, if ever so briefly, is important as it provides insight into the challenges faced by alternatives to transportation mega-projects. Although the Rapid Bus line was some 15 times less expensive than the new Skytrain Millennium line, the level of controversy surrounding this surface level transit project became so great it would reinforce the political supremacy of the mega-project paradigm in Vancouver for years to come.

In late 1997, BC Transit proposed the introduction of a new limited stop Rapid Bus service along Granville St. connecting downtown Vancouver with the city centre of Richmond (Figure 6.8) (McCune, *The Province*, 10 December, 1997, B1). The new Granville St. Rapid Bus line would operate similarly to the existing Rapid Bus on Broadway, and was projected to carry 30,000 riders per day (Bula, *The Vancouver Sun*, 4 March, 1998, B1). The new line, known as the 98-B Line, would be equipped with a number of new features to improve operational efficiency and user enjoyment. The buses would be outfitted with traffic signal priority technology so that approaching buses could automatically hold or change the upcoming traffic lights. Bus shelters would be electronically wired to provide real-time information on the next arriving bus. Luggage and bicycle racks would be installed on the buses. And on both Granville St. in the City of Vancouver and Number 3 Road in Richmond, the bus would run on a dedicated lane that would require the removal of some 200 parking spaces. The 98-B Line was expected to begin operations in 1999 at a capital cost of \$75 million (Bula, *The Vancouver Sun*, 4 March, 1998, B1).

Figure 6.7: Greater Vancouver B-Line Rapid Bus Network (as of 2001)



(Source: Adapted from Translink, 2005)

The idea of some form of north-south rapid transit between central Vancouver and Richmond was not new, and as noted above had been a feature of the regional transit plans for over two decades. More recently Rapid Bus had gained support from top planning staff at BC Transit, who saw the 98-B Line as a cost-effective way to meet rider demand for fast and efficient transit service (Strachan, *Vancouver Sun*, 21 April, 1994, B1).

Nevertheless, once announced by BC Transit in the fall of 1997, the proposed Granville Rapid Bus line catalyzed public opposition so intense that it dwarfed the level of any resistance that had mobilized against the new \$1.16 billion Skytrain Millennium Line. Loud and organized opposition came from both merchants and community-led associations along Granville St in the City of Vancouver. These were amongst the most affluent residents in Vancouver and some of the strongest supporters for the right-of-

centre civic Non Partisan Association party, which controlled the mayoralty and all eleven seats on Vancouver City Council (Cunningham 1998).

The merchants claimed that removing parking along Granville St. would be a deterrent to visitors and the buses would be loud and dirty, making shopping on Granville less attractive. To bolster their claim, they polled 2030 people along South Granville, of whom a reported 96% opposed the proposed Rapid Bus (Luba, *The Province*, 3 March, 1998, A9). Additionally, opponents were concerned about the speed of the buses, and also that shorter traffic light cycles induced by the B-Line's traffic signal priority system would make it difficult for pedestrians, especially seniors, to get across the street (Bula, *The Vancouver Sun*, 4 March, 1998, B1). Some further argued that implementing the B-Line bus service was a clandestine form of social engineering, as the removal of traffic lanes for buses would make travel by car on Granville so bad that it would force drivers to take the bus (Lamb, *The Vancouver Sun*, 5 April, 1995, A3). A final concern was that the implementation of a Rapid Bus line on Granville was an intermediate measure in a longer-term plan to develop a far more intrusive elevated Skytrain type system along the street (Staff Reporter, *The Vancouver Sun*, 5 June, 1998, B1).

Listening to the discourse presented by those opposing the Granville Rapid Bus, stopping the implementation of the new B-Line service was literally a matter of life and death. Indicative of this position were comments made to *The Vancouver Sun* by Karen Hall, the general manager of Meinhardt's Fine Foods: 'I'm quite certain that people are going to be killed, and I'm quite certain that this district will be wiped out' (Bula, 4 March, 1998, B1). In this climate of fear for lives and livelihoods, business owners and residents along Granville St. in Vancouver packed three days of public hearings to tell their local councilors to reject BC Transit's proposed 98-B Line service (Fong, *The Vancouver Sun*, 21 July, B4). At the final council meeting, in the face of heckles and jeers from the opposition in the public gallery that repeatedly interrupted the meeting, Vancouver City Council dropped the dedicated bus lane but unanimously approved the Rapid Bus proposal on Granville (Foden, *The Province*, 29 July, 1998, D28). The provincially

controlled BC Transit supported the Vancouver city council recommendation, and only a stretch on Number 3 Road in Richmond was planned with a bus only lane.

While a compromise solution was agreed to that preserved all but 37 on-street parking spaces, it did little to lessen the fallout from the decision to approve the Rapid Bus line on Granville. In the days that followed, some of the NPA's most ardent supporters spoke of feeling betrayed, and seeking retribution at the ballot box. As one South Granville resident threatened in a front page article in *The Vancouver Sun*:

I don't think that the first rapid bus that tries to proceed down Granville Street will have an easy time. And if all this means campaigning to make sure these people are never elected again, we'll do it. (Bula, 29 July, 1998, A1)

The experience of planning Vancouver's Rapid Bus line was a sobering lesson for all those involved, as it highlighted the strong opposition that could be mobilized against a proposal that was perceived to challenge local livability and the supremacy of the private automobile. 'I don't think any of us in our worst nightmares imagined it would generate this kind of reaction,' reflected BC Transit's Director of Strategic Planning Glen Leicester in an interview with the *Vancouver Sun* 'What we were surprised at was that this is not about developing a nuclear-waste dump. This is a bus service on one of the most heavily used streets in the city' (Bula, 30 July, 1998, B4).

While the contestation over the Granville Rapid Bus did not have an immediate impact on Vancouver's local political landscape, this antagonistic experience with the implementation of a surface level rapid transit line has had a lasting impact on the direction of future infrastructure projects in the city. Vancouverites, it appears, were relatively passive in their opposition to rapid transit mega-projects that would dramatically increase their tax bill but have minimal impact on their existing lifestyle, in contrast to the outcry surrounding projects that may have much lower financial costs but were perceived to have lifestyle-altering externalities.

Perpetuating the Infrastructure Mega-project Paradigm

The experience of planning the Millennium Skytrain line, especially when contrasted with the antagonistic process associated with the approval of the Granville Rapid Bus line, provides an illustration of the politics of transportation planning that has led to the repeated selection of mega-project solutions to Greater Vancouver's growing congestion problem. Although the provincial NDP and their leader, Glen Clark, were on record as being vehemently against the first Skytrain project that had been delivered by the previous Social Credit Government, once they came to power, they were equally seduced by the potential benefits of undertaking a transit mega-project. In this sense, despite ideological differences, Clark appeared to be a throw back to the spirit of past British Columbia premiers such as W.A.C. Bennett, whose conception of visionary leadership was encapsulated in the ability to deliver large infrastructure projects.

To be certain, the appeal of building another Skytrain project in Vancouver remained rooted in what Altshuler and Luberoff (2003) found to be the broad electoral appeal of a pro-transit message. For Clark and the provincial NDP, the decision to invest in Skytrain was about more than moving people, and could be presented as attractive to diverse constituencies such as: suburban car drivers and the goods movement industry, who could be shown that attracting motorists to an off road mode of public transit would leave more road space for them; local merchants, since implementing Skytrain would not threaten the availability of on-street parking; environmentalists, for the potential to reduce harmful auto emissions; trade unionists seeking job creation; and public transit advocates in search of improved urban mobility. The potential to achieve electoral reward was greater for a highly visible mega-project such as Skytrain, than could be delivered by a policy program that incrementally increased the size of the bus fleet and implemented transit priority measures such as bus-only lanes.

In comparison to the fully grade-separated mega-projects, the implementation of a Rapid Bus line was only about moving people since it was not seen to be a catalyst for growth or a major public amenity. However, since the Rapid Bus operated on the road, many

highly mobilized constituencies including local merchants and community groups viewed it as challenge to their allocation of road space. To this end, while at-grade rapid transit lines certainly had their supporters, they also had vocal opponents that made them politically more difficult to implement.

Yet reaching the decision to invest in another Skytrain line and the perpetuation of a pro-mega-project development approach was not simply based on a calculation of reaping maximum political reward. It was also based on the skillful marshalling of information on the part of the planning bureaucracy to support a mega-project development solution. In Greater Vancouver, the transportation planning milieu consisted of a stable group of individuals in both the public bureaucracy and private practice that had been involved in the first Skytrain project, and could benefit directly if another similar project were undertaken. This coherent group of individuals with experience and an interest in the Skytrain project created an institutional memory that was supportive of infrastructure mega-projects in general and Skytrain technology in particular. In contrast to the smooth experience with mega-project planning in Greater Vancouver, at key moments, this group had also observed the heated public criticism of both politicians and technocrats that proposed at-grade transit alternatives. This appears to have reinforced the bureaucratic instinct to undertake studies that began from the assumption that mobility by automobile would not be made worse off in order to improve the flow of public transit.

As such, the foundations for a path-dependent process were in place that would reinforce the decision to invest in another transit mega-project, the Millennium Skytrain Line. This included the decision to create a special purpose crown corporation, Rapid Transit Project 2000, to deliver the new rapid transit line that was staffed by individuals and firms that had previously worked on Skytrain projects in Vancouver. It included the decision to repeatedly commission studies of alternative investment options by firms that had previously worked on Skytrain projects in Vancouver, and could have a financial interest in seeing future Skytrain projects developed. It also included the strategic use of positive public consultation and opinion research, which both supported the political decision to

invest in the Skytrain line and further strengthened public opinion by quantifying the ephemeral impression that there was widespread support for a mega project.

When viewed in this way, one cannot discount the role of the institutional structure and the individuals comprising the bureaucracy in reinforcing the political decision to invest in another Skytrain mega-project. Conversely, the institutional structure and agents that dominated the transportation planning landscape in Greater Vancouver had a proclivity to downplay the potential benefits of small-scale transportation investment ideas.

The Knock-On Effect of Capital Intensive Public Transit Investments (2001-2004)

Even before construction of phase 1 of the new Millennium Skytrain line was complete, nasty skirmishes continued between the province and local authorities over financing and planning of the Skytrain line. There were disagreements over the size, location and number of stations that would be situated along phase 1 of the transit line. And in 1999, it was widely reported that the cost of building infrastructure such as bus loop exchanges, park and ride facilities, street improvements, improved lighting and adjoining parks to integrate the Skytrain line into the surrounding communities was going well over the capped \$60 million budget. As Translink Chairman George Puil conceded in an interview with *Vancouver Sun* reporter Harold Munro, this was a result of a piecemeal planning process and the project proceeding 'without an accurate assessment of the costs' (15 December, 1999, A1). Translink requested the addition of some \$25 million in provincial funding to achieve the entire necessary Skytrain integration infrastructure. The provincial government response was for the municipalities to reduce their list of infrastructure integration features (Munro, *The Vancouver Sun*, 15 December, 1999, A1). This had the potential to make the new Skytrain line a less desirable feature of the urban landscape, to limit the interest in transit oriented land development around the stations, and to challenge the ridership viability of the system.

Festering under the surface was the fact that a final cost sharing agreement for the Millennium line had yet to be signed between the provincial government and Translink.

In January of 2000, the provincial government raised the stakes by threatening in writing to 'draft and pass legislation to repatriate revenue from Translink in the event that Translink does not ratify the cost-sharing agreement that both Translink and the province agreed to last spring' (Munro, *The Vancouver Sun*, January 27, 2000, B1).

Puil countered that the nascent Translink did not have sufficient resources to meet all of their capital and operating expenditures, and would call the province's bluff (Munro, *The Vancouver Sun*, January 27, 2000, B1). In 2000 Translink introduced plans for a \$75 annual levy on all motor vehicles in the GVRD. The plan was met with widespread criticism, most publicly from Surrey mayor and Translink board member, Doug McCallum, who favoured an increase in the gas tax. Gauging the negative public reaction to the vehicle levy and citing inter-municipal disagreement on the plan, the NDP government refused to provide the necessary legislation to enable Translink to collect the vehicle levy, a stipulation that was required under the Act of parliament that had formed Translink (Skelton, *The Vancouver Sun*, 22 January, 2001, A1).

The rejection of the vehicle levy left a \$100 million shortfall in Translink's expected revenue, which had immediate consequences across the entire system. Transit service levels across the entire region were slashed by 4%, which eliminated some suburban and all late night services (Translink 2001). Transit fares were raised, and the Translink board voted to withhold \$26 million in Millennium SkyTrain start-up costs and \$14 million in SkyTrain operating costs to avoid further cutting existing transit service (Luba, *The Province*. 8 February, 2001, A16).

A Political Shift in Direction

On May 17, 2001, the broader political climate for transportation in Vancouver shifted when Gordon Campbell's right of centre Liberal Party trounced the NDP in the province's election, capturing 77 of 79 seats (Elections BC 2005). Under a right of centre Liberal government, the tight financial situation at Translink legitimized a wider focus on restructuring Translink's operations with an emphasis on financial

responsibility. Following the election, Translink Chief Executive Officer Ken Dobell departed the organization to take the job as Campbell's top bureaucrat in Victoria, the Deputy Premier. Replacing Dobell was Pat Jacobsen, whose mandate partly consisted of addressing Translink's 'funding issues,' which consisted of costs escalating more rapidly than revenue (Translink 2001b). Jacobsen was also charged with allaying public concerns of poor fiscal management that pervaded government institutions after 10 years of provincial rule under the NDP.

Jacobsen's public and private sector work experience made her ideally qualified for this role. She had been the deputy minister of transportation in Ontario responsible for the implementation of the public-private partnership that produced Canada's first privately operated toll road, Highway 407 in the Greater Toronto Area (Translink 2001b). She had also presided over the pruning of the Ontario Ministry of Transportation workforce from 10,000 when she started to 4,000 three years later, with plans to further reduce the workforce to 2,000 employees (Littlemore 2002). Ms. Jacobsen had served as a top executive in the private sector, and had been a member of the board of directors for the Canadian Council of Public-Private Partnerships, which is an organization that seeks to further the proliferation of private-public partnerships in Canada (Public-Private Bulletin 2001).

Immediately, under Jacobsen, Translink proposed plans for extensive use of part time workers and service contracting out, which led to a four-month bus drivers strike in the summer of 2001. Subsequently, Translink announced that it no longer had the resources available to pay its share of the Millennium line's second phase extension to Coquitlam, attracting outrage on the part of Coquitlam's Mayor Jon Kingsbury (Luba, *The Province*, 26 March, 2002, A12).

By the time the bus strike was over on August 1st and in the months that followed, public opinion polls suggested that Translink had largely lost credibility as an effective manager of Vancouver's transportation system (Lee, *The Vancouver Sun*, November 14, 2001, B6). In fact, according to Littlemore (2002), a BC Business/Ipsos-Reid poll from 2001

found Translink to be the least respected company in British Columbia. Later that same month, the previously contentious Vancouver-Richmond Rapid Bus line opened for service with little fanfare (Mills 2004). Despite dire predictions during the project planning phase, life on Granville as the merchants and residents had come to know it did not markedly change: businesses (including Meinhardt's Fine Food) continued to flourish and the street remained crossable by residents of all ages and physical abilities. Additionally, the Granville Rapid Bus has been a transit success in moving some 20,000 riders per day – 31% of which are considered new trips to transit - and was recognized by an award for innovation and exceptional performance from the Canadian Urban Transit Association (Translink, 22 June, 2004; Mills 2004). In spite of the success of the 98-B Line, which could have been used as a step to build on towards implementing further surface transit improvements, deep rifts were exposed between the member municipalities of the GVRD over which future transportation priorities should take precedence, as well as the most appropriate governance model for planning transportation in the region (Luba, *The Province*, 26 March, 2002, A12).

With the provincial Liberal government less interested in completing the NDP's pet Skytrain project along the Broadway-Lougheed corridor, the final two phases of the project lost momentum and were usurped by other investment priorities. A review conducted by the Ministry of Transportation signaled that planning for the Millennium line extension to Coquitlam had been under-budgeted by as much as \$100 million and the provincial government would not cover the extra cost (*Vancouver Sun*, 30 August, 2002, B6). And a review of the earlier ridership study released by Translink in late 2001 suggested that phase 1 of the Millennium Skytrain line would carry a disappointing 9.7 million riders per year, only 4.4 million (45%) of whom would be new users of public transit. This meant that the total cost of each ride on the new Skytrain line would be \$16, when both operating and capital costs were included. By comparison, the study found that it cost \$6.75 per ride on the 15-year old Expo Skytrain line that carried 28 million people per year, while the average cost per ride on a bus was around \$3.00 (Lee, *The Vancouver Sun*. 19 October, 2001, A.1). Faced with these numbers, Translink Director of Implementation Planning Glen Leicester conceded to *Vancouver Sun* reporter Jeff Lee

that the Skytrain line would be a candidate for cancellation if it were a bus route, while Translink CEO Pat Jacobsen noted that under the direction of the previous provincial government, 'there never was a business case for this line' (19 October, 2001, A.1).

In December of 2001, the first parts of the Millennium Skytrain line opened for revenue service, on time and some \$60 million under budget (Preece 2005). The stations on the Millennium Skytrain line have been noted for their emblematic design and attention to minimizing the feeling of insecurity by providing clear sightlines. Also to date, noise has not been the major concern that it was when the first Skytrain line opened. As the final station is being completed at Vancouver Community College, the Millennium line development has remained punctual and under budget, attracting national accolades for high achievement in engineering and project management (RTP2000 2004).

Despite the success in keeping to time and budget, the final sign of the Liberals' shifting direction was the removal of Lecia Stewart as director of Rapid Transit Project 2000 in 2002. Stewart was quickly hired on as a vice president at Bombardier, a company that had received some \$425 million in contracts from public companies that Stewart had run over her 10-year career managing crown transit corporations in Vancouver (Figure 6.9) (Lee, *The Vancouver Sun*, 2 March, 2002, A1). As well, in late 2002, as the last of the 60 Skytrain cars were completed at the Bombardier train car manufacturing plant in Burnaby, no new orders were in the pipeline and the company laid off some 100 production line employees over the next year, thus limiting the long term benefits that were to accrue locally from the production deal. Finally, in spite of detailed negotiations with Bombardier, analysis by Translink staff found that a public sector subsidiary of Translink could operate the Skytrain system at a savings of between \$4 and \$5 million of what could be offered by Bombardier. However, by choosing not to tender the operations of the Vancouver Skytrain system to Bombardier, Translink risked invoking a clause in the original Millennium line contract with Bombardier that could force the provincial government to purchase the local factory (Enchin, *The Vancouver Sun*, 7 September, 2002, E1). To date, this issue has not been resolved.

Figure 6.8: Contracts Awarded to Bombardier by Crown Companies Led by Lecia Stewart

Date	Source	Stewart Position	Contract	Amount
1994	Government of British Columbia for West Coast Express	General Manager, West Coast Express	28 State-of-the-Art Commuter Rail Cars	\$55 million
October 1998	Rapid Transit Project 2000	President and Project Director, Rapid Transit Project 2000	60 Mark II Skytrain Cars	\$165 million, or \$2.75 per car
1999	Rapid Transit Project 2000	President and Project Director, Rapid Transit Project 2000	Supply of electrical and mechanical equipment for the Millennium Skytrain line	\$205 million

(Source: Lee, *The Vancouver Sun*, 2 March, 2002, A1)

Initial Performance on the Millennium Skytrain Line

In terms of the effectiveness of the new Skytrain line as a mass mover of people, the failure to complete the entire Millennium line as proposed has made its initial effectiveness limited. Patronage on the Millennium line in 2005 was 21% below the 74,700 riders that were forecasted to use the system daily by 2006, leading Translink Chair Doug McCallum to remark that it will take a few more years for the line to meet its expectations (Leicester, 2005) (Figure 6.10). The current level of patronage on the Millennium Skytrain line has necessitated a Translink subsidy of \$17 million per year simply to cover operating losses (Luba, *The Province*, 18 June, 2004, A4). And an on-board survey in 2003 suggested that only 17% of Millennium line riders were new public transit users, 28% less than had been predicted in the 1999 ridership study prepared for Rapid Transit Project 2000 (Leicester 2003).

Figure 6.9: Predicted and Actual Ridership on Millennium Skytrain Line

	AM Peak Hour	Daily Ridership
RTP2000 Forecast for 2006	7500	74700
Millennium Line in 2005	4800	59100
Millennium Line in 2003	3400	35892
Percent Difference between 2006 forecast and actual 2005	36%	21%

(Source: Leicester, 2003, 2005)

With such a low rate of conversions to public transit, the Millennium line has removed few cars from the roads, making it unsuccessful at both relieving congestion and improving air quality. In fact, based on energy usage per passenger mile traveled, Vancouver's electric trolley bus system was slightly more efficient than the Skytrain (Poudex 2004). And despite the more than \$2 billion in capital expenditure on Skytrain in Greater Vancouver over a 15-year period, while the total number of transit trips increased significantly, the share of all trips remained relatively unchanged at around 12%. Furthermore, buses continued to carry more than 75% of all transit trips in the region, even though the fleet now numbering some 1200 buses was well below the 1900 envisioned in earlier plans (Translink 2004). Finally, since its inauguration in December of 2001, the stimulation of development along the Millennium line route has been much slower to occur than on the earlier Expo Line, which was the key motivation for prioritizing Skytrain technology and the Broadway-Lougheed corridor over other alternatives (Leicester 2003, 2005).

Major public transit infrastructure projects are long term investments, and there is considerable evidence that it takes time for ridership to 'ramp up' to expected levels (Leicester 2003). For example, on the Expo Skytrain line it took almost 15 years for ridership to meet predicted levels. Land use change, a key goal of transit infrastructure mega-projects in Vancouver, also takes time to develop. Nevertheless immediate validation for an infrastructure project is important in a political environment that is guided by five-year election cycles. The immediate results of the Millennium line were not promising, both in terms of ridership on the system, or in terms of the strains it placed

on the region's planning establishment and the negative impact that financing the new line had on the availability of resources for other transit services.

Conclusion

The recent experience with the development of the Skytrain Millennium line suggests that the local planning establishment and project management teams have learned from their experience with developing the first Skytrain line. By comparison, they have become considerably more proficient at meeting their budgets, and delivering complicated Skytrain projects to their technical specifications. The significance of this accomplishment should not be underestimated in a field of mega-project development where Flyvbjerg and his colleagues (2003) have found that 90% of transportation projects are over budget, the average cost overrun being 45 percent for the rail sector.

However, transit infrastructure planners and developers in Vancouver have been considerably less successful at delivering transit systems that achieve their ridership projections, and by extension, these systems have not delivered the expected level of congestion relief or air quality amelioration. This pattern may be precisely the result of a polity that sees the potential of electoral reward in the development of transit systems that are about more than moving people, but also about job creation, economic development, shaping land use and the fostering of an internationally positive reputation. At the same time, the controversy surrounding the implementation of the Granville Rapid Bus line provides a stark reminder of the political challenges to implementing transit infrastructure projects that negatively affect mobility by automobile.

Feeding into the perpetuation of a mega-project paradigm for infrastructure development has been the cultivation of a transportation project planning structure that turned over the planning, promotion and administration functions to a dense network of individuals and organizations with experience and a vested interest in promoting specific types of large-scale projects. To this end, many of the proposals for smaller scale solutions to address congestion that had been the top regional priorities for decades, but had the potential to

upset the status-quo supremacy of the private automobile, were again passed over. This includes the dramatic increase in the size of the bus fleet and the implementation of transit priority measures such as bus-only lanes.

When the NDP had taken office in 1991 it proceeded to reverse its previous opposition to transportation mega-projects, as the above narrative has demonstrated. Now history was about to repeat itself. In 2001, a new Liberal government came to power – and though similarly critical of the development of mega-projects – it too would proceed to change its stripes.

Chapter 7: All Aboard: Reflections on the Persistence of Transportation Mega-projects

In Part II of this thesis, I have examined the local strategies and actions that have been undertaken since Vancouver was first formed in 1886 to redress the city's transportation mega problem. The findings of this chapter add to the growing body of evidence that infrastructure mega-projects in British Columbia, as in jurisdictions around the world, consistently fail to achieve the expected benefits that were forecast prior to their development (Flyvbjerg 2003; Gunton 2005). In light of the overwhelming evidence, I have tried to understand why officials in a single location where this phenomenon has already occurred would continue to invest in similar large-scale projects. The complexity of this analysis is embedded in the interwoven geographic and temporal scales of analysis, as well as a focus on both processes and material outcomes.

The Political-Economic-Institutional Support for a Mega-project Paradigm

At the smallest scale, in the dense detail of Vancouver's historical experience with transportation investment, I have shown that a tightly interconnected network of individuals and organizations has guided the transportation investment decisions that have been made. And while politics and special interests play a large role in the specific decisions and each project has had its own micro-elements, in Vancouver there is an overriding logic that has perpetuated a paradigm of mega-project development, regardless of which party is in power.

Much of the continual support for a paradigm of investment that emphasizes mega-projects relates to the ever-present, yet evolving role of the private sector from that of an external consultant to being internally involved in the decision making framework as a partner in the planning and delivery of infrastructure projects. It also relates to the dynamics of a political system that has repeatedly rewarded those who are seen to have a visionary outlook for Vancouver, an outlook that uses infrastructure mega-projects to attract international attention and stimulate economic development and job creation.

In following the types of response (both political and community) that have surrounded transportation projects in Vancouver, I have shown that no project can be characterized as an unequivocal success or failure. To the contrary, the perceived success or failure of a mega-project is situated in the eye of the beholder, and is highly dependent on the scale of observation, timeframe and criteria upon which judgment is being based. Vancouver's Skytrain, for instance, can be seen on the one hand, as a story of ridership success by international urban rail standards, a catalyst for dense urban development, and a positive community amenity, but also a vehicle for encouraging criminal activity, a financial burden for taxpayers, and a draw on scarce resources that could have perhaps more appropriately been used to improve transit across the entire region.

Due to the potential for diverse opinions about a given project, both the planning and early operational phases of a large project are surrounded by immensely partisan public relations efforts and political rhetoric designed to shape public perception, but views may change over time as the longer term impacts of a facility become clearer. The public perception of a certain transportation investment paradigm is important, as it influences the types of project alternatives that will be judged politically viable in the future.

As the level of government with the strongest financial and jurisdictional control over transportation, the provincial government was the key force behind nearly all transportation infrastructure projects in Greater Vancouver since they assumed control over public transit in the early 1960's. In the public transit sector, the provincial government's persistent success at promoting the merits of high profile mega-projects may explain why, despite being recommended by the GVRD for over 30 years, neither dedicated bus lanes nor transit priority measures have been widely implemented across Greater Vancouver. Another necessary component of the explanation is that the general public remains unconvinced that a series of small-scale public transit infrastructure projects could viably redress the city's mega congestion problem. On the contrary, while popular in concept, actual proposals for small-scale measures to improve public transit such as bus only lanes have become lightning rods of controversy and thus politically unpalatable, precisely because of the potentially adverse impact they could have on the

existing urban landscape. Moreover, small-scale solutions are less likely to captivate the public imagination for the intangibles that have become enmeshed in the production of large-scale transportation projects, which include narratives of progress and urban modernity as well as the potential to enhance interregional competitiveness (Siemiatycki 2006).

Institutionally, the arrangement for delegating responsibility for transportation planning has been far from uncontested. Nearly every major epoch in the history of transportation planning in Greater Vancouver has been punctuated by the persistent antagonism between local and senior government officials and bureaucracies, even as the governance structures related to the administration of urban transportation have been consistently rearranged to redress this conflict. This lack of stability has made it difficult for different levels of government to form lasting partnerships to effectively challenge the status quo preference for large-scale projects.

The Path Dependence of an Infrastructure Mega-project Development Paradigm

When all the micro-level storylines are woven together and chronologically displayed over the long term, transportation policy and investment decisions appear to be both historically contingent and highly path-dependent. Strategic choices made at critical moments in the decision-making process have resulted in a series of positive feedback loops and policy lock-ins that have been extremely durable. The boldest example of a technological lock-in was the selection of Skytrain technology in the early 1980's. The selection of Skytrain for Vancouver's first mass rapid transit line encouraged future rapid transit lines to use the technology, so as to capitalize on system interoperability and production economies of scale. Other technological lock-ins have included the ongoing expansion of suburban highways, which have encouraged a sprawling, low density regional land use pattern that reinforces the supremacy of the automobile.

Politically, the historical experience of transportation infrastructure investment in Vancouver illustrates the potency of mega-project developments to deliver voter support,

which has reinforced future transportation investment decisions. In British Columbia at the provincial government level (which until 1999 largely controlled transportation infrastructure investment decisions), the only party in the past fifty years to be voted out of office after just one term was the NDP between 1972 and 1975. During these three years, the NDP government was also the only provincial administration in the second half of the 20th century that did not either have plans for or construct a major fixed transportation link in Greater Vancouver, be it a new highway or public transit mega-project.

By contrast, as evidence of the political potency of such a message, both the Social Credit Party in 1983 and the NDP in 1996 respectively won third and second term provincial elections shortly after announcing plans to begin developing new rapid transit lines in Greater Vancouver. In both cases these were mega transit investments complemented by plans for other major infrastructure building schemes both in Vancouver and across the province. While not a causal relationship, the historical correlations between the image of investing in infrastructure mega-projects and electoral support in British Columbia has helped to reinforce the preference for developing large-scale infrastructure projects. The presence of what Pierson (2001) has termed a 'learning effect' may thus explain why, since 1975, provincial politicians in British Columbia from all parties have approved transportation mega-projects in Greater Vancouver, even if they themselves were strong critics of similar projects earlier in their careers.

In addition to bold examples of technological lock-ins, positive feedback loops and learning effects in the political system, more minute decisions have been important in supporting the perpetuation of a mega-project paradigm to solving Vancouver's transportation problems. Most important has been the continued adherence to an engineering approach to project evaluation, whether in the analysis of highway projects in the 1960's or rapid transit projects in the 1980's and 1990's. In most cases, the small group of prominent engineering consulting firms hired to provide recommendations have failed to analyze Vancouver's transportation system as a network, and so to search for solutions that maximize the benefits at a regional scale. Instead, they have used their

technical expertise to suggest specific engineering solutions to solve particular localized problems.

Of course, the root cause of this shortcoming cannot be placed entirely with the engineering firms. It also rests with the commissioning government agencies that have repeatedly hired the same firms and imposed narrow and often leading terms of reference on the studies. The Greater Vancouver planning establishment has been characterized by considerable stability of the individuals in upper management (Punter, 2003), and has maintained a steady trust in the findings of engineers.

In this sense, the engineering firms are in many ways like mercenaries for the government bureaucrats, who hire out their persuasive services for a price. With a sound methodology predicated on the foundations of science and technical rationality, and a reputation based on work done on earlier projects, those at the top of the government bureaucracy have consistently depended on the production of knowledge by external engineering firms to reinforce the credibility of both their transit and road infrastructure preferences. However, the competitiveness of the tendering process for hiring an engineering consultant is questionable, as the engineering consulting industry is characterized by an oligopolistic structure whereby only a relatively small number of firms have the capability and experience to tackle large and complex problems, while smaller firms are more often used on a subcontracting basis. As illustrated in this section, these large firms can be depended upon to work strictly within the terms of reference for the projects that they are assigned, elevating the probability that their findings will support the desire of their hiring agencies.

To this point, the engineering approach to project evaluation and delivery has remained successful, as official reports continue to set the terms of reference for public discourse about the merits of particular projects. This approach to project planning and the creation of knowledge empowers the stable bureaucracy, which has been able to promote largely persuasive arguments in support of large infrastructure projects regardless of the position of the government in office. The cost to those in power of continuing to use engineering

firms is both financial and material, since these firms have a clear interest in supporting decisions that reinforce the perpetuation of further engineering work.

At the same time, the Greater Vancouver planning establishment has consistently avoided allocating contracts to undertake technical studies to groups that may use evaluation techniques other than those employed by engineers, or who may not be as dependent on consulting or infrastructure project delivery as their primary source of income. The most conspicuously absent group from the official infrastructure planning process in Greater Vancouver has been the academic community. While there are both local and international academics with considerable expertise in transportation project evaluation, and some jurisdictions have gone so far as to use academics to create and/or peer review technical studies, the academic community in Vancouver has been largely marginalized from taking part in the official transportation planning process. Instead, major engineering firms have played a central role in creating the documentation used to shape public discourse concerning transport investments.

This small example highlights what Lovallo and Kahneman (2003) have called 'decision anchoring', where a decision is initially fixed and then information is collected to support the merits of the given choice. In the face of asymmetrical relations of power and strongly ingrained interests, project rationalizations and justifications are often presented as unquestionable rationality (Flyvbjerg 1998). When viewed as a coherent story, the dense details presented in Part II of this thesis suggest that the procedures that have repeatedly encouraged the outlay of massive amounts of resources for large transportation projects have not been transparent enough to facilitate public accountability.

Mega-projects and the Public Interest

The persistence of the mega-project paradigm in transportation investments raises a question about whether such an approach is broadly congruent with the public interest of achieving sustainable and equitable mobility as well as the fostering of transparent and

accountable planning. As I have shown in the three chapters above, despite a century of state-of-the-art transportation infrastructure development, Greater Vancouver's transportation mega problem keeps shifting and remains largely unsolved. Even with the construction of a regional highway network, a large surface transit system, two fully grade-separated light rapid transit lines and a heavy rail commuter line, evidence suggests that Vancouver's transportation network falls short of the public interest in terms of both material outcomes and procedural expectations. Increased road congestion and associated financial costs, continued degradation of the environment through auto emissions, and rising transit fares which disproportionately impact low-income travelers provide support for the assertion that the Vancouver transportation network has delivered neither sustainable nor equitable mobility.

Additionally, the consistent use of sympathetic consultants and the gerrymandering of public opinion polls to obfuscate the potential merits of a particular proposal reinforces the suggestion that the transportation planning decision making process in Vancouver has not been suitably transparent to facilitate the accountable expenditure of public resources. In fact, over the past century, the procedures used to plan transportation infrastructure projects in Vancouver have embodied some of the features that according to Healey (1997: 10) 'threaten to make a mockery of a democratic planning process,' including the misrepresentation of cases, improperly invoking authority, making false promises, or distracting attention from key issues.

To be clear, this does not mean that the transportation mega-projects as constructed in Greater Vancouver have been unsuccessful, or that these projects have been undertaken against the will of the local citizens. For instance, the highways in Greater Vancouver are part of a provincial surface transport system that carries over 25% of the goods moved within British Columbia and 60% of goods conveyed between Canada and the United States, providing considerable direct employment and forming the underpinnings for the region's economy (Delcan 2003). The Expo Skytrain line provides frequent transit service for those who use it, and has been recognized by transit experts as one of the most successful systems in North America for catalyzing dense development along

the route. And Vancouver was awarded the American Public Transit Association award for the best public transit system in 1996, in recognition of the system's service efficiency and regional integration. Procedurally, in addition to the planning processes, those ultimately making decisions about transportation infrastructure investments remain directly accountable to the public through the electoral system. Through this mechanism, the voters of British Columbia have been able to punish those politicians who have made decisions that fail to please the voting electorate – and backlashes against poorly conceived or executed mega-projects have proved central in the downfall of numerous governments in the province over the past half-century.

Instead my key point is that in spite of all the benefits these transport investments provide, the perceived congestion problem that over the decades has been consistently identified by Greater Vancouver residents has not been resolved through the development of mega-scale solutions, irrespective of whether these are bigger roads or bigger public transit lines. In this light, part of the reasoning behind continued adherence to such a strategy is that the public has been repeatedly convinced to support such projects without being presented with complete information to properly engage in debate. Moreover, planners and project promoters have strategically used the creation and release of technical information as rhetorical devices to shape the larger public discourse that supports the development of transportation mega-projects (Throgmorton 1996).

But there is also a larger explanation for the perpetuation of mega-project developments than one which hinges on the public being repeatedly duped by opportunistic politicians, developers, private firms and bureaucrats. The public has repeatedly supported large scale projects because they provide hope of delivering tangible goals for a better place to live, as well as an intangible set of symbolic meanings that are rooted in pride of place, regional competitiveness and visions of modernity.

**PART III: THE MAKING OF A MEGA-PROJECT IN
THE NEOLIBERAL CITY**

Part III: Introduction

In the preceding analysis in Part II, I have illustrated that throughout the first century of transportation planning in Greater Vancouver, there has been a general inability to achieve the public interest of procedurally transparent and accountable decision making, or infrastructure investments that have resulted in more sustainable or equitable mobility. The general shortcomings of past projects and processes to achieve the public interest in terms of procedural or material outcomes has contributed to the contemporary search for a more effective approach to transportation project delivery.

The most prominent recent approach to transportation planning, under the banner of neoliberalism, has attempted to reengage the public interest by emphasizing partnerships within and between the private and public sectors as well as an investment paradigm that favours a balance between major public transit and major road investments. Such an approach implies that the root cause for failures of past mega-projects to achieve the public interest is embedded in procedural flaws in the way they were planned, and not in the preferred paradigm of seeking to solve mega congestion problems with mega solutions. Put another way, infrastructure mega-projects can be successful in achieving the public interest if more rational decision-making processes are designed. Examining the potential for success of a neoliberal approach to transportation infrastructure development will be the topic of Part III.

Here I will seek to fill the gap for academic research on the impacts of neoliberal approaches to planning and project delivery in the Canadian transportation sector, using the contemporary case of transportation infrastructure planning and investment in Vancouver. Vancouver has been at the Canadian forefront of experimenting with private involvement in the provision of transportation services, as well as the integration of public and private sector planning functions to establish infrastructure investment priorities. As Ley (1987) and Olds (2001) have suggested, the planning and delivery of provincially directed infrastructure mega-projects in Greater Vancouver have been guided since the early 1980's by a market mandate of profitability.

These provincial infrastructure initiatives have been directed by 'a new breed of planner', that more closely associate themselves as private sector actors in search of efficiency and value-for-money than public sector civil servants seeking to further the public interest (Ley 1987: 51).

In 2005, the most ambitious effort in Canada to involve the private sector in the development, financing and operation of public transit infrastructure was approved for development in Vancouver. Specifically, the approved proposal calls for the delivery of a new mass rapid transit link between the municipality of Richmond, the Airport and Downtown Vancouver using a design-finance-build-operate-transfer style of private-public partnership. At the same time as government is leading a major investment in public transit in Greater Vancouver, Translink and the provincial government are spearheading a major expansion of the road and bridge network, which is similarly intended to be delivered by using the private-public partnership approach. The partnership approach to planning has been central in fostering and delivering a regional transportation strategy that seeks to balance investment in public transit and road building initiatives.

With so much development occurring in the city, this case provides an ideal opportunity to explore the contemporary neoliberal processes that have led to an investment program that seeks to address Greater Vancouver's ongoing congestion problem through a balance of public transit and new road building. It also facilitates an exploration of the potential for such a 'balanced' approach to achieve urban mobility in a sustainable and equitable way.

Neoliberalism and Transportation Planning in Canada

This exploration fits within the contemporary debate surrounding the merits of applying a neoliberal transportation policy in Canada and around the world. Until recently, urban public transit systems in Canada experienced their greatest capital expansion as a result of planning, financing and system operation under a public ownership structure. As a

result, Canadian cities are widely recognized for their effective provision of public transportation. Both Montreal and Toronto are often cited as models of public transit provision, with system performance and ridership figures comparable to the best in the world, including Europe, the United States and Australia. The busway network in Ottawa is internationally acclaimed as an innovative and successful alternative to capital-intensive urban rail systems (Cervero 1998). In 1996, the American Public Transit Association acknowledged Vancouver as the North American Transit System of the Year. And, with few exceptions, the major highway network has also been planned, financed and operated by the public sector.

Yet at the beginning of the 21st century, infusing free market competitive processes into the planning, financing and operation of urban transportation infrastructure has become an increasingly popular idea in Canada. Seen as latecomers in experimenting with a neoliberal approach to urban transportation planning and service delivery, public agencies in some Canadian cities have begun to outsource the operation and maintenance of bus or rail services to private firms, as well as privately financing and delivering new roads, bridges, and public transit facilities. Having observed the shortcomings of outright privatization of transportation infrastructure in cases such as the British urban bus system in 1985 and the Highway 407 Electronic Toll Road in Toronto, Canadian policy makers have now settled on a more collaborative model of neoliberalism known as the private-public partnership.

The partnership model of providing public infrastructure, with an emphasis on greater efficiency derived through competition and market accountability, fits well within a neoliberal policy framework. At the individual project scale, private-public partnerships are promoted as an appropriate means of collaborating with multiple stakeholders to deliver infrastructure in sectors that have often experienced extended periods of under-investment, at less cost and risk to the public sector (Savas 2000). There is a widespread expectation that recourse to the private sector to plan, finance, build and operate infrastructure will improve initial screening and monitoring of projects, since private firms are driven by the profit motive. Furthermore, it is thought that as private firms

strive to meet their competition, they have greater incentive to deliver more innovative and efficient solutions than those that would be delivered under non-competitive monopoly conditions (Debande 2002). Thus, within this neoliberal partnership approach, improved efficiency, productivity and innovation are not seen as the result of an inherent superiority of the private sector over the public sector. Contrarily, they are rooted in a belief in the superiority of a competitive delivery process over one guided by either a public or private monopoly (Lave 1985). In this sense, the private-public partnership seeks to divide the responsibility of both public and private sectors into roles that each is best at fulfilling: the public sector assumes responsibility for strategic planning and designing investment plans that meet the public interest; while the private sector - through mechanisms of a presumably competitive market - is called upon to plan and deliver specific services. Specific risks, such as the potential for construction cost overruns, timely delivery of services, changes in interest rates and ridership shortfalls, are separated and allocated to the partner that can most appropriately manage them with the least potential costs.

At a larger strategic scale, the neoliberal development approach supports the public policy of investing in high quality urban infrastructure as a means of developing a competitive advantage over other jurisdictions, which can then be used as a catalyst for economic growth. To achieve this end, strategic planning partnerships have emerged in order to better determine which projects should be given priority. In this sense, a neoliberal planning framework has been employed to foster collaborative partnerships between multiple stakeholders.

Despite the increasing prevalence of a neoliberal transportation planning framework in Canada, little domestic academic analysis of this framework has been done on either the selection of strategic investment priorities or the delivery of specific projects through greater private sector involvement. In other words, little is known about the degree to which a planning model guided by neoliberal imperatives of competition contributes to the public interest for planning processes that foster accountable decision making, or

investments in infrastructure that further the public interest in sustainable and equitable mobility.

Situating the Debate on Neoliberal Transportation Policy

To date, the international debate on the merits of subscribing to a neoliberal policy program in urban planning has been highly polarized, characterized by Banerjee (1993) as a conflict between state regulatory and free market ideologies. Adherents to a neoliberal approach celebrate its market-driven precepts as a cure for inherently inefficient resource allocation under the public sector, while opponents criticize the neoliberal reliance on unfettered markets as antithetical to the redistributive purpose of planning. Within this context, Richardson and Gordon (1993) have suggested that each camp has an entrenched position, and neither the state-supporters nor the marketeers are likely to budge far from their staked-out positions.

In this polarized academic and public discourse, I do not believe it is particularly helpful to produce another study that argues dogmatically for a given ideology, with the underlying intention of converting opinion from one position to another. As the philosopher Joseph Heath (2001: 363) has asserted, undertaking social criticism beyond ideology reduces the tendency of the group being criticized to “reassert their autonomy precisely by rejecting the critical theory that impugns their rationality.”

My goal is thus to try to diffuse some of the ferocity of the partisan arguments on both sides of the debate by demystifying the origins, processes and implications of a neoliberal economic growth model in the transportation sector. In this vein, it seems important to remember that while the concept of neoliberalism elicits a considerably polarized reaction, at its core it is simply a model that posits a set of precepts to maximize economic growth and efficiency. By viewing neoliberalism as part of a rational approach to managing an economy, one is better able to examine the potential benefits and costs, the winners and losers of planning through such an approach.

Cutting through the rhetoric that surrounds the discussion of neoliberalism and the application of free market policies in urban planning, I intend to use the case study of Greater Vancouver to directly address some of the central meta-narratives that I believe contribute to polarizing the positions of both the soldiers for the state and the missionaries for the market. First, I will counter the foundational myth of some supporters of the state, what Lakoff (2002: 164) has called the 'cynical liberal response to conservative government', which posits that conservative policy is merely a conspiracy of the ultra-rich and big multinational corporations to protect their wealth and power and to enrich their profits. Instead I will show that the rise of a neoliberal planning framework was rooted in a genuine desire to alleviate the failings of previous transportation planning processes and investment decisions, and not solely the result of an opportunistic cabal of profit hungry businesses and ideologically minded politicians. This account will be complemented by an evaluation of the institutions and actors involved in promoting alternative transportation planning approaches.

Second, I will debunk a foundational myth of supporters of the market who believe that resources are allocated in the most societally beneficial manner when individuals and firms compete to fulfill their own self-interest. I will illustrate this point by showing that the adherence to a neoliberal approach to transportation planning in Greater Vancouver has had highly unequal impacts, and may be only somewhat successful at achieving the public interest for more accountable processes or sustainable, efficient and equitable urban mobility.

Carrying Out the Analysis

To carry out this analysis, I will turn my attention to an examination of the latest chapter in the transportation planning saga of Greater Vancouver. I begin in chapter 8 by undertaking a historically contingent institutional analysis to explain why neoliberal precepts came to guide the contemporary transportation planning framework in the region. This will be carried out by exploring how the institutionalization of a neoliberal agenda has impacted the set of habits, norms, routines, established practices and rules

that, in turn, have patterned individual behaviour and directed the specific projects selected for prioritization. In chapter 9, I shift focus from the strategic planning level to the planning of a specific project. Through a case study of the planning of the RAV line, I will explore the specific implications that a private-public partnership procurement model has on the planning processes as well as the potential material outcomes that such projects may deliver. In concluding Part III, I reflect on the ongoing experience with a neoliberal approach to transportation planning in Vancouver, highlighting the potential for a paradigm based on neoliberal precepts to redress some of the identified procedural and material shortcomings of previous approaches to transportation planning in the city.

Chapter 8: The Rise of a Balanced Transportation Policy in Greater Vancouver

Introduction

This chapter seeks to explain the rise of neoliberalism in British Columbia and a transportation policy that tried to balance road and public transit investment in Greater Vancouver. Since the early 1970s when intense public protests led to the cancellation of the last major effort to build urban freeways in Greater Vancouver, regional transportation policy largely eschewed highway expansion in favour of investing in major transit infrastructure projects – primarily the Skytrain Expo and Millennium lines discussed in previous chapters. These projects were supported by successive strategic development plans, including most recently the 1996 Livable Region Strategic Plan, which centrally endeavored to reduce automobile usage by limiting road expansion and concentrating development around public transit facilities.

This strategic approach of linking public transit and land use development with the explicit goal of reducing automobile use was in principle supported by consecutive provincial and municipal governments, including Gordon Campbell. When mayor of Vancouver, Campbell had been a strong opponent of road expansion and mega transit projects, famously noting that "I know this: You can't ever build yourself out of a transportation problem. You have to design yourself out" (quoted in Price 2005).

To this end, Campbell favoured investments in smaller-scale solutions, such as expanding the bus fleet and implementing dedicated bus lanes, in combination with a charge on vehicles and fostering a strong linkage between land use, public transit and the fostering of walkable communities. All of these ideas were supported by the Livable Region Strategic Plan, which Campbell was instrumental in developing as Mayor of Vancouver in the early 1990's. Campbell continued to uphold this position when he moved to provincial politics and became leader of the official opposition as part of the Liberal Party.

And yet, when the right-of-centre Liberal Party came to power in 2001 under Campbell as Premier, there was a shift in focus towards what was being termed a 'comprehensive' approach to transportation infrastructure investment. For a region that had purposely undertaken only limited road capacity expansion since the mid 1980's, the idea of developing a comprehensive transportation system was now being used to support continued investment in large public transit infrastructure projects, while concurrently beginning a new program to dramatically expand the province's major road network. As the Provincial Transportation Minister noted in a speech to the Vancouver Board of Trade, 'we are undertaking the most massive investment in transportation infrastructure than we've seen since the glory days of W.A.C. Bennett [Social Credit premier from 1952-1972]... because we have a Premier and a government that recognized that there is a direct correlation between transportation and the economy' (Falcon, 8 March, 2005).

This new focus on a comprehensive transportation strategy with an emphasis on large-scale infrastructure projects represented a complete turn-around from Campbell's earlier strategies for redressing congestion in Greater Vancouver, and in some instances contradicts the letter and intent of the regional strategic plans that Campbell himself had spearheaded as Mayor. Pieces of Campbell's comprehensive transportation strategy further came under criticism from leading urbanist Jane Jacobs. On the subject of a proposed transit mega-project connecting central Vancouver with the Airport and the southern municipality of Richmond (RAV), Jacobs noted in a speech at the University of British Columbia: 'I think it's a black hole into which limited amounts of traffic funds, and transit funds, will be poured, and other ones neglected, other ones very much needed' (2004, May 19). With respect to highway expansion, Jacobs (2005) is quoted on the web site of the Vancouver-based Citizens Concerned with Highway Expansion as saying: 'I've heard many bad ideas in my time, and expanding Highway 1 ranks with the worst of them. The scariest part is that Mr. Campbell actually knows better.'

In the face of Campbell's past positions on transportation as well as the pointed criticism from a leading urban commentator, how can we explain this change in direction from adherence to a strategy of public transit investment combined with land use management,

towards a 'comprehensive' transportation approach that primarily sought to build infrastructure mega-projects to alleviate congestion? In this chapter I will argue that the change in the direction of transportation policy under Campbell's Liberal provincial government reflected a turn to a neoliberal partnership approach to planning and project delivery.

As I will try to show, the partnership approach to planning contributes to overcoming three key objections to transportation infrastructure mega-projects and justifies a comprehensive investment strategy. First, at the widest scale, the rhetoric of inter-regional competition within a global economic system that rests at the core of a macro neoliberal economic paradigm was used to support a comprehensive transportation program that would see investment in both high-quality public transit and new road projects. Second, the use of a partnership approach was employed to surmount deficiencies in the way that past infrastructure projects had been planned to better account for the diverse interests of the community, a concern for those promoting responsible public investment. And third, private financing for transportation projects has provided a mechanism to reduce the immediate financial burden on the general taxpayer of building infrastructure mega-projects, a considerable source of opposition for conservative governments.

Out with the Old

In May of 2001, the Liberal Party of British Columbia swept into office with a strong mandate for change, winning 77 of 79 seats in the legislature. The reason for this electoral landslide was based on a number of trends that had occurred under the ten-year NDP tenure from 1991 to 2001, and would significantly influence the policy direction of the incoming government.

Economic Decline

During the NDP tenure, the provincial economy had gone from one of the strongest in Canada to amongst the weakest in the nation, and there was considerable public sentiment that this was the result of excessive government involvement and regulation that made the province uncompetitive for private sector investment. The excesses of government had been characterized by the opposition as a 'bureaucracy run amok,' symbolized by the nearly 10,000 pages of new regulation that had been drafted during the NDP term of office (Palmer, *Vancouver Sun*, 27 April, 2001, A16).

The Special Interest Connection

There was also a widespread belief that the NDP had become too dedicated to meeting the wishes of their largest constituency, organized labour, to the detriment of the wider public interest. Furthermore, the administration was criticized for the perception of having granted a large number of patronage appointments and contracts without a competitive tendering process, to the detriment of public accountability and transparency (Tielman, *24 Hours*, 26 July, 2005, A3).

In particular, infrastructure mega-projects, with their massive costs, diverse impacts and intense media scrutiny, became the focal points for public ire. The dealings with SNC Lavalin and Bombardier with respect to the awarding of contracts on the Millennium Skytrain line as detailed in Chapter 6 provides a stark example of the lack of transparency that pervaded the planning of infrastructure projects under the NDP. These issues were not isolated to infrastructure planning under the NDP. A similar lack of transparency or public accountability pervaded the planning of the first Skytrain under the Social Credit Party.

Tax and Spend Policies

The strongest criticism of the left-of-centre NDP government was based on their management of the province's finances. Under the NDP between 1991 and 2001, the province's debt had nearly doubled to \$33 billion, proof to their critics - in parliament, the business community and the newspaper editorial boards - of fiscal mismanagement. To many, expenditures on grand transportation infrastructure projects such as the Millennium Skytrain line and the fabled fast ferries served as visible reminders of the extent that the NDP had been willing to go to in order to create high-paying unionized jobs (McMartin, *The Tyee*, August 9, 2004).

Of course, the NDP was not the first government in British Columbia to run up a massive public debt. In fact, since the province joined confederation in 1871, no government has left office with a lower public debt than when they entered. And proportionally, the NDP had not run up a larger public debt than any other party in office, all of who had spent lavishly on infrastructure mega-projects as a means of stimulating the economy and attracting political support (Figure 8.1). This suggests that despite consistent claims to the contrary, the propensity to increase the public debt in British Columbia was not a matter of ideology. Nevertheless the image of the NDP as a 'tax-and-spend' government seemed to stick, encapsulated in a discourse related to public finances in British Columbia that was primarily driven by politics. To this end, a large motivation for voting in an alternative government in 2001 was to restore order to the fiscal management of the province (McMartin, *The Tyee*, August 9, 2004).

A Failure to Address Road Congestion

Finally in terms of the material standards of living for residents of Greater Vancouver, one of the most prominent symbols of the failings of the NDP in office was their inability to address Greater Vancouver's growing congestion problem. Between 1996 and 1999 for example, traffic volume grew by some 8%, approximately twice the rate of population and employment. Growing congestion had caused average travel speeds to slow by 7%

percent since 1989. The fastest growth in vehicle movement was occurring between the suburban communities of the Northeast Sector of the city, which include Burnaby, New Westminster and Surrey. This led to longer journey times and a greater number of traffic bottlenecks in the system, many of which were occurring at highway interchanges and bridges (Translink, 1999a). Despite approving the addition of one lane on a considerably congested suburban bridge and undertaking a series of localized highway widening projects, the NDP had built no new major roads in Greater Vancouver during their term in office. In the face of growing congestion, which contributed to depreciating regional air quality that caused a spike in the incidence of respiratory disease (Ministry of Environment, Lands and Parks 1998), respondents to public opinion surveys consistently ranked traffic and transportation issues among the top issues requiring policy attention.

Figure 8.1: The History of Provincial Debt in British Columbia, 1871-2005

Date	Party	Provincial Debt When Leaving Office	Percent Change	Percent Debt Accumulated Per Year in Office	Major Spending in Greater Vancouver
1871-1903	N/A	\$10 million	N/A	N/A	Cariboo Wagon Road
1903-1916	Conservatives	\$18 million	80%	6%	N/A
1916-1928	Liberals	\$85 million	372%	31%	N/A
1928-1933	Conservatives	\$131 million	45%	9%	Great Depression
1933-1941	Liberals	\$148 million	13%	2%	N/A
1941-1952	Liberal-Conservative Coalition	\$222	50%	5%	Post-war expansion
1952-1972	Social Credit	\$2.7 billion	1116%	56%	Highways, tunnels, bridges, roads, schools, hospitals
1972-1975	NDP	\$4.5 billion	66%	22%	Social programs
1975-1991	Social Credit	\$17 billion	278%	17%	BC Place, Expo 86, Skytrain
1991-2001	NDP	\$33 billion	94%	9%	Fast Ferries, Skytrain
2001-2005	Liberals	\$40 billion	21%	5%	Skytrain, Roads, Bridges

(Source: McMartin, *The Tyee*, August 9, 2004)

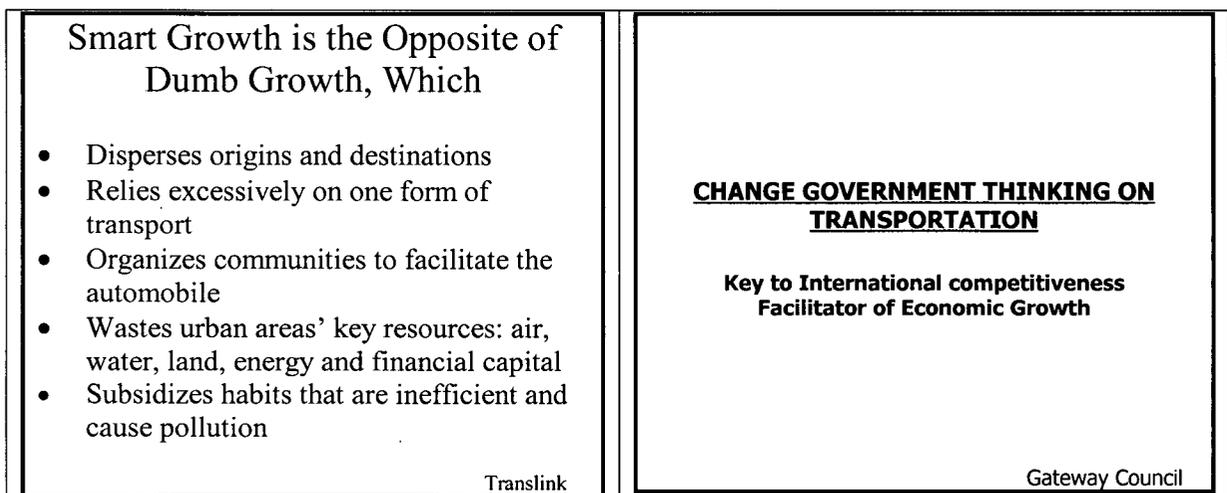
In 1999, the first study of regional truck movement since 1988 revealed that the frequency of daily truck trips was up about one-fifth, with 75% of these trips being generated in suburban communities. This situation gave rise to a growing concern amongst the goods movement industry about the ability of the regional transportation network to efficiently handle increased traffic flows, especially as the Port of Vancouver and the Vancouver International Airport were in periods of expansion (Translink 1999b). At the same time, Canada was seeking to increase trade with the United States through the border in Southwestern British Columbia. Most of this trade was carried by truck (75% from Canada to the U.S., and 95% from the U.S to Canada), bolstering the argument for improved roads in the province to accommodate this economic activity (Whatcom Council of Governments 2004). In response to this situation, the goods movement industry in Greater Vancouver formed the Gateway Council in 1994 to lobby government to make goods movement a larger component of the broader transportation agenda, of which expanding the road network was to be a major component.

To promote their interest in getting road improvements onto the urban agenda, the Gateway Council, along with other pro-road lobby groups including the Vancouver Board of Trade, the British Columbia Trucking Association and the British Columbia Automobile Association aggressively lobbied Translink officials and the provincial government. At its core, the argument in favour of improving facilities for goods movement, a major feature of which was building more roads, was predicated on the economic benefit of Gateway functions to the local, provincial and national economy. The Gateway Council estimated in 1998 that the goods movement industries in Greater Vancouver employed 65,000 people, paid over \$860 million in taxes to all three levels of government in Canada, and generated a total economic output of over \$8 billion (Wilds 1998).

In this sense, the arguments in favour of a comprehensive transportation policy became intermingled with the neoliberal approach to planning and economic development. The private lobby groups undertook a concerted effort to change the rhetoric and perception surrounding transportation investment in Greater Vancouver from promoting livability

and sustainability as established in the 1996 Livable Region Strategic Plan, which largely regarded building new roads as the least desirable alternative, to promoting competitiveness and efficiency of movement as central to regional economic growth. In this new conceptualization of transportation, expanding the road and bridge network could be better justified as critical to the economic vitality of the region, and thus become a high priority (Figure 8.2).

Figure 8.2: Variations in the Perception of the Core Purpose of Transportation Between Translink and the Gateway Council



(Source: Adapted from Puil, 2001; Wilds, 1998)

To this end, when the Gateway Council released their list of transportation Infrastructure Priorities in 1998, four of their top six priorities were road expansion projects, and their entire list of 16 priorities contained just two passenger public transit projects and three freight rail projects. The infrastructure priorities of the Gateway Council were not entirely antithetical to those laid out by the Greater Vancouver Regional District in the 1993 Long Range Transportation Plan, which recognized the need for road upgrades and expansions to improve passenger and goods movement. However, the Gateway Council placed far more emphasis on road expansion to address congestion rather than system wide improvements to the public transit network along with the strategic addition of high occupancy vehicle lanes and new roads (Figure 8.3). The only passenger transit project in their top tier of priorities was a fully grade-separated rapid rail connection between

central Vancouver, the Airport, and the southern municipality of Richmond, known as the RAV line.

Figure 8.3: Gateway Council Infrastructure Priorities

Current Gateway Infrastructure Priorities
FIRST PRIORITY PROJECTS:
Trans-Canada Highway (Vancouver to Chilliwack)
South Fraser Perimeter Road
North Fraser Perimeter Road
Massey Tunnel on Hwy. 99
New Westminster Rail Bridge replacement
Rapid Transit – Downtown to the Airport and beyond
SECOND PRIORITY PROJECTS:
Low level road – North Shore to Burrard Inlet
Highway 15 from Trans-Canada Highway to Border
New Link-Pacific Border Crossing to Highway 99
Highway 17 from Tsawwassen Ferry Terminal to Highway 99
THIRD PRIORITY PROJECTS:
Bridge from Maple Ridge to Surrey/Langley
New Sea-to-Sky Highway
Improved Transit to Abbotsford Airport
Pitt River Rail Bridge
Fraser Canyon Rail Route
Third Crossing Burrard Inlet

(Source: Wilds, 1998)

In addition to lobbying government, the pro-road organizations undertook a campaign in the media to shape public opinion about the importance of road-based goods movement to the economy, writing opinion editorials and letters to many of the local newspapers throughout Greater Vancouver. The urgent tone of this debate was amplified by Transport Canada's estimates of the \$1.3 to \$1.5 of annual lost economic productivity in Greater Vancouver (Transport Canada, 2001).

In the face of heavy lobbying by both suburban auto drivers and the goods movement industry, there was a growing perception that with the lack of spending on highway upgrades and new roads and bridges, the NDP was failing to fully respond to concerns about the need to address road congestion. Despite spending billions of dollars on public transit infrastructure including the Millennium Skytrain line, the West Coast Express commuter rail service, and the Richmond to Vancouver Rapid Bus line as well as the implementation of high occupancy vehicle lanes on some local area highways, these projects were seen to fail to address the reality of the regional transportation landscape in

which 74% of all trips were by car, a large proportion of which were made with just a single occupant (Translink 2003). Nor did the existing solutions address the growing levels of congestion that were frustrating car drivers and costing the commercial transportation industry money.

The NDP Legacy

In sum, as the NDP left office in 2001, there was considerable public sentiment that both the methods and outcomes of past planning processes had not been working particularly well. This led to the desire for a new government to increase public input and accountability in planning processes, restore order and prudence to the management of the province's finances, and begin investing in projects that would immediately address some of the major problems inhibiting economic growth, one of which was urban congestion in Greater Vancouver. In the face of public dissatisfaction with the status quo, neoliberal precepts of competition and partnership provided a recipe for the incoming Liberal government to balance the desire for an accountable planning program that delivered new infrastructure, while still promoting an image of fiscal restraint, a balancing act that every other government in the history of British Columbia had failed to achieve.

The preceding account of the antecedents leading up to the election of the Liberal Party in 2001 is largely reflective of a public choice approach to political and decision-making analysis. With a particular emphasis on transportation policy, it suggests that through a rational evaluation of available information, the voting public concluded that both the processes and projects selected by the NDP administration were not maximizing their personal utility or the public interest in efficient, equitable and sustainable mobility. Consequently a new government was selected with a mandate to deliver a wholesale change of approach to transportation planning.

This type of historically contingent, public choice-based analysis challenges one of the central narratives of left-of-centre scholars and activists. It suggests that the rise of

neoliberalism in the transportation sector was not solely the result of what Lakoff (2002) has called a 'conservative conspiracy' but more closely based on public displeasure with the past governance and investment decisions made by the left-wing NDP in British Columbia. While the shifting perception of transportation was not a conspiracy, it is difficult to discount the role that private lobby groups had in shaping both government and public opinion in favour of road projects. This is largely reminiscent of elite and growth machine theories of urban power and political decision making, in which a small cadre of well-connected business leaders seek to maximize their personal gain through rational bargaining about the costs and benefits of specific projects (Lorimer 1978; Dye 1986).

In with the New: The Rise of a Neoliberal Transportation Planning Framework

As presented in the analysis above, the conventional approach to transportation planning as practiced by the NDP during their ten-year term of office had not been particularly successful at achieving the public interest in transparent planning processes or sustainable and equitable investments. Under the Liberal government, it appeared that the approach to transportation planning was set to change towards a model that more centrally embodied neoliberal precepts.

At its core, neoliberalism is an economic growth model predicated on competition through an open market. Cities managed under a neoliberal ideology have become increasingly guided by a constellation of policies that include:

- An increasing entrepreneurial spirit amongst local governments that use tax cuts, development grants, internationally recognized mega events and the provision of high quality infrastructure to attract investment and promote international competitiveness (Brittain 2002; Satya 2003; Florida 2002).
- An evolution in the role of the state from directly managing the economy and providing public services, to being responsible for establishing and maintaining the

preconditions for fair and competitive enterprise (Brenner and Theodore 2002).

- The search for collaborations between government, business and the non-profit sector to formulate public programs that will be mutually beneficial in terms of reduced service costs, and increased efficiency and service quality (McQuaid 2000).
- The use of strict financial criteria such as cost recovery to assess the viability and necessity of public services (Deakin 2003).

The Liberal Party's adherence to a neoliberal transportation planning model may have been in some part a logical decision in a province where neoliberal precepts had been used for some time to deliver large infrastructure projects. However, in order to fully understand why the Liberal Party adopted the neoliberal approach to transportation planning instead of some other alternative, it is necessary to explain the foundations upon which conservatives critiqued the conventional transportation planning experience as practiced under the left-of-centre NDP and their conservative Social Credit predecessors. At the same time, it is necessary to explore the emerging contestation over the base of political power in British Columbia that was influencing both the way that transportation projects were delivered and the rise of a comprehensive infrastructure investment strategy.

A Neoliberal Critique of Conventional Transportation Planning in Greater Vancouver

While transportation planning in Greater Vancouver has been roundly criticized for decades, in the 1990's it came under the most intense political attack from conservative opponents of the NDP. A brief review of Premier Gordon Campbell's past perspective on transportation planning in Greater Vancouver provides a window into the conservative critique.

Since his days as Mayor of Vancouver, Campbell had been critical of the processes through which the regional transportation strategy was being planned. In his 1991

opinion editorial article while the Social Credit Party was still in control of the province, Campbell bemoaned the lack of collaboration between the provincial and municipal levels of government in making decisions about a rapid transit alternative for the proposed Vancouver-Richmond corridor:

We need transit decisions that help meet regional as well as municipal objectives. B.C. Transit (a provincial responsibility) should work with municipal councils. The Vancouver-Richmond advisory committee should report to Vancouver and Richmond councils. The councils should then submit a joint report to the Vancouver Regional Transit Commission for inclusion in a Regional Transit Plan. This plan should then be discussed by the GVRD as part of the Regional Transportation Plan which is currently being undertaken with the province. (Campbell, *The Vancouver Sun*. 5 July, 1991, A.7)

Campbell proceeded to argue that the lack of a collaborative planning process was leading to decisions to invest in a transportation program of road and transit mega-projects that would fail to meet the livability interests of the region. Years later, as leader of the official opposition, Campbell criticized Glen Clark and the NDP for the seemingly arbitrary process that had been used to select Skytrain technology for the new transit line that was being planned.

Amidst Campbell's clear position about the need to develop plans to foster livable communities through the undertaking of collaborative planning processes, he exhibited a deep concern about the way such projects were financed. As a fiscally conservative politician, Campbell's comments on transportation infrastructure consistently focused on the high cost of mega-projects to the general taxpayer, primarily through property taxes. This argument was rooted in his position as Mayor of the City of Vancouver, where high property prices relative to other municipalities meant that using property taxes to pay for regional transit would disproportionately affect his constituents.

Campbell was also critical of the impact that a proposal to build Skytrain between Central Vancouver and Richmond would have on the general taxpayer:

Taxpayers have had it. They want more convenient, more flexible, faster, and more comfortable public transit. They want fewer taxes...We must challenge our assumptions if we are to succeed where so many others have failed. Otherwise we can expect an unprecedented assault on our property tax by the provincial government. (*Vancouver Sun*, 5 July, 1991, A7)

Eight years later when Glen Clark and the NDP announced plans to develop the Lougheed rapid transit line using Skytrain, Campbell questioned why taxpayers should pay for "a Lamborghini transit system" when light rail would cost only half as much (Hauka, *The Province*, 4 May, 1999, A8).

Campbell subscribed to the philosophy that transportation infrastructure should be funded through taxes that provide individuals with incentives to make sound decisions in favour of non-motorized and public transit options, while charging those who desired to continue using the automobile. "Governments can't coerce people to do the right thing" Campbell noted in a February 1 interview with *The Province* (Morgan, 1991, p45), "you have to create the framework to allow people to make the right decision." To this end, he derided the fact that Greater Vancouver had the highest transit fares in the country, arguing that transit should be funded by charges on automobile users including a rise in the provincial gasoline tax and an 'automobile enviro tax' (*The Province*, 24 January, 1993, A.35).

So overall, Campbell's critique of transportation planning in Greater Vancouver hinged on both the lack of accountability in the way projects were planned, and the inequality in infrastructure financing mechanisms which placed too large a burden on the local property tax payer. However, as I will show in the following section, Campbell's past position was largely out of touch with the conservative perspective in one key area: His general opposition to road building which was seen by the business sector and suburban residents as central to regional competitiveness and economic growth.

The Shifting Politics of Transportation Planning in Greater Vancouver

Despite Campbell's consistent stance opposing major road and public transit projects due to concerns about potential performance shortfalls and the overall financial burden on the general taxpayer, his position on infrastructure mega-projects began to evolve to fit an emerging political power base in Greater Vancouver and across British Columbia. As leader of a provincial political party, Campbell's Greater Vancouver transportation strategy could no longer be concerned primarily with the livability of central Vancouver, unlike his time as mayor of the City, when he garnered political support by strongly opposing road expansion.

In his new position, Campbell was forced to broaden his perspective to account for the interests of suburban residents in Greater Vancouver, who were largely car drivers experiencing greater congestion and seeking solutions that would provide them with improved mobility. He also had to address the issue of highway goods movement in the region, which faced persistent bottlenecks in certain suburban locations. In each of these constituencies, addressing mobility and congestion issues was a politically potent issue, and balancing investment in road as well as transit expansion was seen as having the potential to deliver immediate congestion relief.

This need to seriously consider the interests of suburban auto drivers as well as the goods movement industry was embedded in a contestation over the shifting centre of political power in the Lower Mainland and more broadly in the Province. In the past half century, the hub of political power in the Province had shifted from the hinterland under W.A.C. Bennett, to suburban Vancouver under Bill Vander Zalm, to central Vancouver under the NDP. More recently, as in other Canadian cities such as Toronto, rapid population and employment growth in the suburban municipalities surrounding the downtown core made these important electoral districts (Walks 2004). In Greater Vancouver, Surrey to the east of the city had become the fastest growing municipality in the province and was projected to become the region's largest city by 2025 (Smith, P.J. 2004). This strong population and economic growth gave Surrey considerable clout to shape the political agenda.

And despite signing on to the 1996 *Livable Region Strategic Plan*, leaders from Surrey as well as other suburban municipalities had no intention of being constrained in how they should develop their land base. In particular, there was some resentment that as the city of Vancouver profited from skyrocketing property prices and a booming residential development industry, suburban municipalities were being forced to accommodate both families and businesses that could no longer afford to remain in the central city (Ritcher, *The Vancouver Sun*, 8 August, 2005, A9).

In this sense, both Surrey and other suburban municipalities within the region wanted to shape their own development form in ways that would best attract future private investments and increase the local tax base (Spencer, *The Province*, 1 March, 2005, A21). This included transit-oriented development that would fit within the growth concentration zone established in the *Livable Region Strategic Plan*, and also highway-oriented, low-density residential and commercial developments primarily serviced by the automobile (City of Surrey, 2005; Zytaruk, *The Now*, 24 January, 2005). In conjunction with the precepts of neoliberal economic theory, the economic competitiveness and potential to attract future development was closely tied to the provision of high quality transportation and accessibility.

To achieve the desired level of future development and accommodate the needs of existing residents for improved mobility, politicians in Surrey became some of the strongest exponents of a comprehensive transportation policy that would balance both transit and road building projects. This was in sharp opposition to more coercive and aggressive policy measures restricting road development to a minimum. At the municipal level in 2002, right-of-centre Surrey politicians replaced City of Vancouver officials as Chair of both the Greater Vancouver Regional District Board and the Board of Translink, the two most important positions in regional politics. In their leadership positions, the Surrey officials spearheaded initiatives to redirect the strategic direction of regional planning in Greater Vancouver. This included a Greater Vancouver Regional District review of the growth concentration principles underpinning the *Livable Region*

Strategic Plan, with an emphasis on lessening the stigma attached to undertaking low-density development. It also included a new Translink strategic investment plan that would combine major investments in both road and public transit infrastructure.

And provincially within the Liberal Party, there were many members who were in favour of both transit and road infrastructure mega-projects as a means of addressing urban congestion, while facilitating improved commercial goods movement. Signaling the primacy of this approach, Campbell appointed Surrey Cloverdale Member of the Legislative Assembly Kevin Falcon as Minister of Transportation, following a stint as Minister of State for Deregulation. In representing his suburban community, Falcon had once noted (Ferry, *The Province*, 24 June, 2004, A3), 'There's nobody who understands congestion better than I do, because I'm in it all the time.' Based on his understanding of congestion, Falcon echoed Premier Campbell's sentiments when he told the Vancouver Board of Trade in April 2005, 'I'm one of those people that actually believes that you cannot build your way out of congestion.'

Nevertheless, Falcon made road building one of the top priorities on his campaign platform, and he was also a strong supporter of the role of the private sector in the provision of public services. While it is difficult to argue a conclusive connection, the local media in Surrey (Bucholz, *Surrey Leader*, 28 August, 2005) reported that Kevin Falcon's political campaign had gained large financial contributions from major firms in the property development industry (the largest for \$15,000), who could benefit from improved accessibility provided by new roads. At the same time, the *Georgia Straight* reported that the British Columbia Liberal Party had received their largest single campaign finance donation of \$150,299 from The New Car Dealers Association of BC, an organization that would benefit from policies that supported the proliferation of automobile driving in the province (Smith, 25 August, 2005).

Overall, the shifting centre of political power in the Province of British Columbia from central Vancouver to the city's surrounding suburbs reinvigorated the electoral currency of a transportation investment program that highlighted highly visible road and transit

projects. Supported by large campaign finance contributions from special interest groups, new life was breathed into large-scale transportation projects that had been a staple of the British Columbia political landscape for as long as the province had been part of Canada.

Reconciling Differences: The Allure of a Neoliberal Planning Approach to Transportation

For Premier Gordon Campbell personally, the position of the Liberal Party and its suburban and business supporters in favour of large-scale transportation projects appeared to pose a considerable contradiction with his previous views on transportation infrastructure. First, while politically popular, infrastructure mega-projects of any type are extremely expensive, and can place a serious burden on the finances of the government as has occurred under previous provincial administrations (McMartin, *The Tyee*, August 9, 2004).

Second, while the idea of expanding the road network fit within the rhetoric of providing expanded transportation alternatives, Campbell himself had forcefully argued earlier in his political career that building new roads would not provide a solution to the region's congestion problem. This precept, engrained in the *Livable Region Strategic Plan* which Campbell himself had been centrally involved in developing, and which was now under attack by local politicians from some suburban municipalities, specifically sought to limit the spread of low-density automobile-oriented development that was linked to highway expansions. Finally, Campbell had been consistently critical of the general lack of accountability and intergovernmental collaboration that had been a feature in the planning of previous infrastructure mega-projects in British Columbia.

Gordon Campbell was not alone in voicing these criticisms of past infrastructure projects or the methods through which they were planned. During previous administrations, many members of British Columbia's Liberal Party, as well as many municipal politicians, business, taxpayer and consumer interest groups had all voiced similar concerns over the

burden that high-cost transportation infrastructure projects placed on the government budgets, as well as the lack of public input in the decision making process.

Faced with these persistent challenges, a neoliberal approach to transportation infrastructure planning provided Campbell and the Liberal government with the opportunity to deliver infrastructure projects that were seen to be popular, while addressing the key fiscal, procedural and effectiveness criticisms of past investments. An approach that infused competition and market forces directly into the planning and delivery process through the formation of private-public partnerships became a central feature of neoliberal planning.

Specifically, employing a partnership approach to infrastructure provision that relied on private sector financing and delivery through a competitive process allowed the Liberal Party to recognize the importance of state-driven transportation mega-projects as economic stimulants and potent political pump primers, without challenging their image of fiscal prudence that was central to their conservative platform. Up-front private financing was an opportunity to remove some of the large capital costs of infrastructure from the liability side of the public ledger, making it possible for the Liberal government to cut taxes, spend on new projects and still present a balanced budget to the public, something that was achieved in 2004. It also enabled them to leverage private sector expertise and market accountability without resorting to outright privatization, a policy that remained politically sensitive in Canada.

Intriguingly, while the private-public partnership had become a mainstay of conservative governments in jurisdictions as far away as Australia, and endorsed by neoclassical economists at the World Bank, it had also become popular with left-of-centre and centrist governments in Britain and other countries and was endorsed by prominent liberal academics such as Bent Flyvbjerg (2003). In this sense, the private-public partnership was in many ways presented as a project delivery tool that was above the left-right ideological divide, and instead was part of a pragmatic approach to realizing better accountability and 'value for taxpayer money' than had been achieved in the past. At the

same time, a partnership approach to planning enabled the Liberals to present infrastructure planning as a more participatory and inclusive endeavor than under previous regimes.

Finally, broader neoliberal economic theory, with its focus on the presence of intense inter-regional competition, made it politically viable for Campbell and the Liberal Party to justify evolving the Province's transportation agenda from emphasizing sustainability and building complete communities, to more centrally highlighting the economic importance of transportation investment. This new emphasis on economic competitiveness derived from transportation investment was central in the argument in favour of a comprehensive transportation program that for the first time in a decade included a major expansion of the road network.

In sum, despite strongly criticizing previous projects, a neoliberal approach to transportation planning made it ideologically consistent and politically tenable for Gordon Campbell and his right of centre Liberal Party to promote the further development of transportation infrastructure mega-projects in Greater Vancouver. Once in office, the Liberal Party set out to institutionalize neoliberal precepts within the governance structures and take decisions with the explicit intention of furthering the competitiveness of the region.

Greater Vancouver and the Neoliberal City

Having sought to provide an explanation for the political motivations underlying the rise of a neoliberal planning framework in Greater Vancouver, I would like to reinforce this argument by showing how neoliberal precepts have been institutionalized in the Greater Vancouver planning framework, and the impact that this has had on the types of projects that are prioritized.

With respect to Greater Vancouver, my characterization of the region as one guided by a neoliberal growth model is certain to raise some objections, especially amongst those

who have observed detailed examples of strong public management or third sector involvement in the provision of public services (Punter 2003; Sandercock 2005). To clarify my position, neoliberal precepts have not been universally applied throughout the polity in the Greater Vancouver Regional District. Instead of portraying Vancouver as being dominated by a wholly neoliberal regime, I would prefer to view Greater Vancouver as being guided by a variety of context specific growth models and planning paradigms.

Neoliberal precepts, however, have been enthusiastically applied in regional transportation planning and infrastructure investment. This has occurred at different scales, encompassing the inter-related actions of local, provincial and federal governments, as well as private interests. In this sense, through the institutionalization of a neoliberal approach to transportation planning, the Liberal provincial government in British Columbia has sought to address their fiscal, procedural and effectiveness criticisms of past infrastructure investment programs. When viewed in its entirety, the institutionalization of a neoliberal approach to transportation planning reinforces an infrastructure strategy that supports spending on large projects, financed and delivered through a partnership model. The following eight points highlight how neoliberal precepts have been specifically applied to transportation planning in the Greater Vancouver area, and the influence on the types of planning processes and projects that have been encouraged.

- 1. Infrastructure investments respond to both local demand and a desire to have facilities that are internationally competitive.*

Transportation infrastructure investment is a wealth-creating industry in Greater Vancouver in its own right, and is central in situating Greater Vancouver within an increasingly integrated trade network between North America, Europe and Asia. In British Columbia the transportation and warehousing sectors employed 114, 000 in 2003, or 5.3% of the province's total labour force, and accounted for 6.1% of the province's gross domestic product in 2002 (Goldberg 2004). Some 58% (66,000) of those employed

in the transportation and warehousing sector were based in Greater Vancouver, which accounted for 5.8% of the region's total employment (Statistics Canada 2005).

In addition to local benefits, there is an increasing recognition that improving traffic flows in gateway cities such as Vancouver will improve both local and national competitiveness within a global economy. Greater Vancouver has become a major hub for international trade. According to the Port Authority, the Port of Vancouver is large by North American standards: ranking first in total foreign exports, second on the West Coast in total cargo volume, and first in Canada for total container throughput. China, Japan and South Korea are the three largest trading partners for the Port of Vancouver, which as a whole handles more than seven times more outbound than inbound cargo. The majority of goods exported through Greater Vancouver are raw materials extracted from the hinterlands of British Columbia and Alberta, while inbound traffic that is destined for the entire continent of North America is comprised of more processed goods including consumer products, home and building products, furniture, industrial machinery and textiles (Port of Vancouver 2005).

Based on both the local and national importance of Vancouver as a goods movement hub, British Columbia Premier Gordon Campbell recently remarked in *Surrey Now* (Zytaruk, 2005), 'Really, the transportation congestion problem (in Vancouver) is a Canadian problem because the Canadian Pacific opportunity comes through British Columbia all the time.' And yet as China's economy and Asian trade linkages with North America continue to grow, there is growing competition amongst ports along the West Coast of North America to attract business. For example, between 2003 and 2004, the number of containers moved through the Port of Seattle increased by 19%, compared with an 8% increase in Vancouver (Port of Seattle 2005; Port of Vancouver 2005). While each port has a unique import/export profile that provides some insulation against direct competition, rapid growth of neighbouring ports has increased pressure in Greater Vancouver to invest in transportation infrastructure and streamline the regulatory landscape in order to maintain the competitiveness of Vancouver as a dominant Gateway for trade on the West Coast.

2. *Attraction of international mega-events, complemented by the development of mega-projects to raise the local profile and generate new business opportunities*

In 1986, Vancouver hosted the Expo fair, which was used as a catalyst for public investment in large-scale developments such as BC Place stadium, the urban rapid transit system known as Skytrain, and a new highway from Greater Vancouver into the interior of British Columbia. The international exposure provided by hosting Expo '86 and the considerable public sector investment also served as a trigger for private investment in Vancouver from around the world, delivering large public amenities for the local community (Olds 2001).

Nearly twenty years later, Vancouver's successful bid to host the 2010 Olympic games has been guided by a similar aspiration to spur broader development throughout the region. With respect to transportation, as Vancouver prepared to welcome the world, the Olympics provided a sense of urgency to fast-track a number of transportation projects. As Translink Chairman Doug McCallum has noted, the Olympics created a unique availability of finances and attention from multiple levels of government for transportation infrastructure projects (Bula, *The Vancouver Sun*, 31 January, 2003, B1).

However, while the Olympics were a stimulus to improve the overall transportation system, certain types of projects were more highly profiled than others. In particular, the Olympics encouraged the construction of showcase infrastructure mega-projects, such as a rail connection to the airport, which would show the world that Vancouver was a modern, up-to-date city like London, Sydney and San Francisco, all of which had rapid transit connections to their respective airports. The Olympics were also used as a motivation for the Provincial government to advance controversial road projects. This included the expansion of the Sea to Sky highway between Vancouver and Whistler. Opponents argued that this expansion could violate the Olympic organizers' pledge to host the first 'sustainable' games by bisecting an environmentally sensitive habitat in West Vancouver, but this claim was successfully refuted by the provincial government in

their Canadian environmental assessment review (Lee, *The Vancouver Sun*, 27 March, 2004, B1).

As with Expo '86, the transportation improvements associated with the Olympic games are expected to catalyze private investments. To date, new property developments have already been initiated in Richmond and the City of Vancouver to take advantage of increased accessibility provided by the proposed transportation infrastructure improvements. However in another apparent parallel with Expo '86 which had a cost overrun of 87%, just three years into the planning of the 2010 Olympics, officials from the Vancouver Olympic Organizing Committee have cited labour shortages and rising commodity prices as contributing to as much as a 50% increase in the expected price of delivering the games (Kingston, *The Vancouver Sun*, 26 November, 2005, B1).

3. *Public services will be delivered using a strict business model based on cost recovery*

While not universally applied to the provision of all services in the region, the landscape within which transportation investment decisions are made in Vancouver has been dominated by a desire to promote neoliberal precepts. To begin with, the structure of Translink was particularly designed in 1998 to promote a neoliberal agenda of competition, marketization and cost recovery in the provision of transportation services in Vancouver. In a paper presented to an international conference on *Competition and Ownership in Land Passenger Transport*, Councilor George Puil, one of the architects of Translink's new governance structure and the organization's first Chairman wrote:

Concepts such as competition, subsidy elimination and private service delivery have transformed the national and international transportation industries in recent decades, but their implementation in urban transportation markets has been slow and limited. The new urban transportation governance and funding arrangements in Greater Vancouver represent the most comprehensive effort to date to apply these concepts in an urban setting (Puil, 1999, p1).

More recently, the political leadership of Translink has continued to emphasize the importance of providing transportation services based on a neoliberal model. As the current Mayor of Surrey and Translink Board Chair remarked in an interview,

I always run for office on the principle that I want to run this city as a business. Not as a politician, I want to run it as a business. And I believe that. So I said the same thing to Translink. It's got to be run as a business (Personal Communication, 27 July, 2004).

In seeking to achieve these goals, user fees have risen dramatically, with most transit fares increasing by 20% over the rate of inflation between 1999 and 2003. Top managers such as CEO Pat Jacobsen have extensive private sector experience. Increased flexibility has been sought in the relations with the workforce. And private sector involvement has been increasingly sought in the planning, financing and operation of transit services. In sum, a neoliberal approach to the provision of regional transportation services has become dominant in Vancouver.

4. Wide variations in the development models being practiced by the 21 member municipalities of the GVRD

Despite its mandate to coordinate land use planning at a regional scale, plans devised by the GVRD are non-binding. Instead, local councils can decide how they choose to follow the GVRD guidelines. This has had a particularly acute impact on the adherence to the *Livable Region Strategic Plan*. For some municipalities such as Vancouver and Burnaby, recent left-of-centre civic councils have used strong planning frameworks to guide development. In other municipalities such as Surrey, right-of-centre pro-growth councils have been more willing to allow market forces to guide development. This has led to building patterns that often fall outside the growth areas designated by the *Livable Region Strategic Plan*, with low population densities making them difficult to effectively serve by transportation alternatives other than the private automobile. This has exacerbated the pressure to expand existing and build new bridges and highways across the region.

5. Planning and regional transportation priority setting involving interest groups

In a bid to invest in facilities that meet the needs of local industry and improve the competitiveness of the region, private interest groups have been increasingly granted official status within the planning framework. From the private sector, the most involved

organization to date in the transportation sector has been the Gateway Council, a lobby group comprised of senior executives from industry, government and the academy who subscribe to the common vision that Greater Vancouver should become the Gateway of Choice for North America. The CEOs of crown corporations such as Translink, the Airport Authority, and the Port Authority share voting rights on the organization's board of directors with leaders of the B.C. Trucking Association, private railway and shipping company executives (Greater Vancouver Gateway Council 2005).

In seeking to achieve their mandate, the Gateway Council and its members have been involved in major government-funded studies to assess the transportation needs of the region. Studies such as *Economic Impact Analysis of the Major Commercial Transportation System* (Delcan 2003), funded in partnership with the Federal and Provincial governments, have promoted transportation infrastructure investment as a continued driver of British Columbia's economic competitiveness and efficiency. These studies have gained official status through their promotion by Members of Parliament such as Minister of Western Economic Diversification Stephen Owen, and have been used to justify investment in specific projects to increase the economic competitiveness of the region (Owen 2003).

Another industry group, the Western Transportation Advisory Council, which includes membership from the freight movement sector, unions and all three levels of government, has released an influential report titled *Opening The Arteries For Growth, Transportation In The Economic And Social Lives Of Canadians* (Parsons 2003). The report promotes the need for investment in large-scale projects as a way to maintain the country's relative competitiveness and high quality of life.

Interestingly, despite the Western Transportation Advisory Council's broad mandate of 'strengthening the Western Canadian economy through improving the region's transportation system using a 'cooperative approach to resolving issues,' their organization includes no members from the passenger movement industry (eg. public transit, private long-distance bus, interurban rail). At the same time, these studies, which

did not involve broad public consultation, have been used as the basis for shifting the local discourse away from earlier priorities as set out in the *Livable Region Strategic Plan*, such as the development of dense town centres and the promotion of social equity of mobility. Instead the studies released in consultation with the Gateway Council and the Western Transportation Advisory Council have placed a greater emphasis on competitiveness and efficiency, issues that are central to the interests of their membership (Delcan 2003).

The legitimization of private sector involvement in the planning of public infrastructure can be seen in the way that the RAV project was promoted to the public. On the web site of RAVCO, the subsidiary of Translink that was specially formed to plan the rail link, the 'Need for the Project' is explained using the following section headers: Challenges Facing our Region, Mobility Supports Competitiveness, Greater Vancouver: Economic Engine for Region and Province, Addressing Regional Challenges (RAVCO 2005). On the entire page, there is no mention of the potential for the project to further the goals laid out in the *Livable Region Strategic Plan*, even though the document establishes the preeminent regional planning framework that was adopted by the board of the GVRD with the full support of all member municipalities in 1996, and recognized through legislation enacted by the Province of British Columbia. Instead, the page has a text box outlining the Gateway Council's justification for the project, which is the only interest group to be given space on the official project web site (Figure 8.4).

Figure 8.4: Gateway Council Justification for the RAV Project on RAVCO Web Site

Greater Vancouver Gateway Council

The Greater Vancouver Gateway Council is an industry organization comprising senior executives of companies directly tied to Vancouver's gateway transportation business. The gateway refers to the collection of transportation and shipping terminals and networks that serve the Lower Mainland, markets across B.C. and western Canada, and the US Northwest.

These key stakeholders are working to strengthen Vancouver's competitive position as the transportation tourism and shipping gateway choice for North America. They recognize the RAV line as a way to increase transportation activity through the region, making Vancouver a more efficient and strategically attractive gateway. The RAV line is one of the Council's top four infrastructure priorities in the region, because:

- The Vancouver Gateway is one of the most important generators in the country, and a crucial element in the member companies' own operations, generating 75,000 direct jobs in the region and paying \$3.6 billion in wages
- Over 145,000 jobs in the four western provinces rely directly on Greater Vancouver's transportation system, underlining the need to maintain and increase traffic at this Gateway to western Canada
- Downtown Vancouver, where the RAV line would terminate, is a critical hub for commuters and tourists, featuring a number of services and facilities, including Canada Place, the SeaBus, HeliJet, seaplanes and other rapid transit services

(Adapted from RAVCO, 2004)

The *Livable Region Strategic Plan* is noted in other places on RAVCO's web site as part of the context that informs the RAV line, but its core precepts are not cited as key justifications for the project. From the perspective of the Gateway Council, an off-road rapid transit connection for the Richmond-Airport-Vancouver transit corridor while potentially more expensive, is advantageous since there would be the potential for a reduction in cars on the roads without a reduction in the number of lanes along a significant goods movement corridor. This may explain why the RAV line was the only project recognized by the Gateway Council as a top infrastructure investment priority (Wilds 1998).

While private-sector lobby groups have been successful at shaping the transportation policy agenda in favour of goods movement, collaborations between government and non-government organizations have also played a part in guiding transportation policy in Greater Vancouver. Most prominent has been Better Environmentally Sound Transportation (BEST), a sustainable transportation lobby group that has worked with all levels of government to promote alternatives to the automobile such as walking, cycling

and public transit. In particular, the partnerships fostered by BEST have contributed to the realization of new bicycle lanes throughout Greater Vancouver.

Despite the involvement of organizations such as BEST, the arguments put forward by the goods movement lobby groups have in most instances prevailed. The blurring of the distinction between public sector planning and the promotion of private interests has had the effect of relocating economic competitiveness and efficiency more centrally at the core of the regional transportation agenda. Through collaborative processes of dialogue, advisory committees and visioning with government officials, these groups have been successful at directing the transportation agenda towards government investments in large-scale highway, bridge, seaport, airport and public transit facilities as a way to alleviate congestion in key freight corridors. At the same time, the involvement of private and non-governmental interest groups in official planning capacities has the potential to make the public voice secondary to those of organizations that have a direct forum to interact and persuade elected officials of their positions. The increased prominence of private interest groups in the planning process may lead to the development of projects that challenge the potential to realize a transportation network that balances the public interest for efficiency and competitiveness with equitable and sustainable urban mobility.

6. The Intellectualization of a Neoliberal Growth Model

Under the Liberal government, there was an effort to broaden stakeholder involvement in setting the policy direction for the province. In July 2001, soon after gaining power, Premier Gordon Campbell established the BC Progress Board, an independent panel of 18 senior business executives and academics. The BC Progress Board had two primary objectives: to benchmark and measure changes in British Columbia's competitiveness relative to other jurisdictions; and to identify future issues that could impact on the province's economic prosperity, and recommend strategies, policies and actions to improve the province's economy and the accompanying social policy supports. According to the terms of reference, the BC Progress Board was not about balancing

interest group politics, but instead was charged with the neutral quest for methods of improving the economy and social policy (BC Progress Board 2005).

From early on in their mandate, transportation was identified by the BC Progress Board as an issue critical to the future prosperity of the province. A 2002 Progress Board report found that during the 1980's and 1990's the province had experienced a systemic under-investment in the road network, with annual investment decreasing from \$181 per capita in 1981 to \$110 per capita in 2001, despite increased usage. Later in 2004, the Board tabled a report by University of British Columbia professor Michael Goldberg titled *Transportation as an Economic Growth Engine: Challenges, Opportunities and Policy Suggestions*.

In the report, Goldberg highlighted the importance of transportation as a driver of economic competitiveness and a means of shaping future land use development and urban livability. Viewing the transportation network as an integrated system, he recommended an investment package that largely mimicked the one put forward by the Gateway Council. Primarily it called for a comprehensive investment in large-scale road, bridge, public transit, seaport and airport facilities, with less mention of smaller-scale investments. To finance and deliver these initiatives, Goldberg recommended increased partnerships between the public and private sectors, a reduction in the tax and regulatory environment in certain transport sectors in order to provide greater investment incentives, and the introduction of user fees over the entire road network. Goldberg's comments on the investment damper put in place by British Columbia's stringent regulatory environment were echoed in a 2005 Progress Board discussion paper, which focused on the potential to achieve economic growth through regulatory reform.

Overall, the formation of the BC Progress Board which combined the 'best and brightest' from business and the academy served as a way to intellectualize a neoliberal approach to economic development, and present the mantra of heightened competitiveness as a universally agreed upon approach to improving the prosperity of the province. While the Progress Board itself was a non-political entity, the reports produced were used by the

Liberal Government to substantiate and add credibility to their neoliberal investment policy. This was particularly the case in the field of transportation, where the Liberals faced potential public opposition as they proceeded with a policy package that challenged the status quo in two ways: by reintroducing road building onto the urban agenda, and by encouraging greater private sector involvement in a sector seen to be dominated by public management. To this end, references to Goldberg's BC Progress Board report appeared on the Ministry of Transportation web site in sections where they laid out the province's upcoming road building and private financing policy.

7. Encouraging Neoliberalism through Policy Reform

Transforming public policy served as an important part of the Liberal Government's effort to advance their agenda of encouraging collaborative and accountable governance, and improving the economic competitiveness of the province. Responding to the desires of civic politicians to have local councils recognized as a distinct level of government, the provincial government in 2003 passed into law the Community Charter. This was accompanied by a separate charter agreement for the City of Vancouver. The Charter laws sought to empower local governments with greater autonomy over revenue sources and decision-making authority, an issue complicated in Canada by the fact that local governments are not officially recognized in the constitution but are instead creatures of the provinces. In commenting on the Charter laws in a *Beyond the Numbers* magazine article, the responsible Minister Ted Neibling highlighted the linkage between local decision-making and economic vitality:

Municipalities are in the best position to make local decisions for their citizens and for their communities...With the community charter, they are now active leaders in shaping the destiny of their communities. Innovative local governments are key to a solid economic base for our entire province. Strong local governments are key to the revitalization and economic growth of British Columbia. (Nicholson, May, 2003, p14)

During the same period that the Community Charter was being passed in order to protect the autonomy of municipal governments in British Columbia, the provincial government also passed the Project Streamlining Act. This was aimed at reducing regulations

surrounding major infrastructure projects. It enabled the provincial government to designate selected projects as being of significance to the economic, environmental and social vitality of the province, and would allow for exemption from costly regulatory and municipal review processes (Bill 75, 2004). This could be particularly useful for delivering large-scale public transit links, highways and mega events such as the Olympics, which notoriously divided local governments leading to time consuming and expensive delays.

For Deregulation Minister Kevin Falcon, the Project Streamlining Act provided an opportunity to further the economic competitiveness of the province: “This bill is an important tool in our efforts to encourage more investment in British Columbia, which will ultimately lead to greater economic diversification, more investment in the province and, more job opportunities for all British Columbians” (*Nanaimo Daily News*, 27 November, 2003, A.6). Echoing these sentiments, Surrey Mayor and Translink Chair Doug McCallum argued that the Project Streamlining act would stimulate investment by encouraging local and provincial authorities to work together in order to deliver important infrastructure projects in a timely fashion (Beatty, *Daily Commercial News and Construction Record*, 6 November, 2003, p 2).

Of course, neither the Community Charter nor the Project Streamlining Act was written into law without contestation. Concerns were voiced about the effectiveness of the Community Charter to guide decision-making in a timely fashion and the potential for the Project Streamlining Act to override the autonomy of local authorities (Rudd, *Times-Colonist*, 13 March, 2003, C3; Smith, 2004). Nevertheless, the policy reforms implemented by the Liberal Party were intended to institutionalize better collaboration between local and provincial levels of government. The law changes were also explicitly meant to support a neoliberal approach to economic development that highlighted the importance of private sector spending on infrastructure mega-projects to further the competitiveness of the province, while maintaining the provincial government’s ultimate control.

8. *Trickle Down Ideology: The Institutionalization of Private-Public Partnerships in the Transportation Sector*

The international economic environment has been a central impetus for changing views on the role of the state in the provision of public services in Canada (Tupper and Doern 1989). In conformity with the neoliberal position of many international economic regulatory bodies and industrialized nations such as Britain, the federal Liberal government under finance minister Paul Martin imposed more than a decade of budgetary cuts beginning in 1993 (Bradford 2000). Similarly, the provincial Liberal government in British Columbia that came to power in 2001 implemented austerity budgets. As the level of government directly responsible for the provision of costly services such as urban transportation, child and family service and employment insurance, the provincial Liberal government saw the opportunity to achieve dramatic savings by reducing spending on such programs (BC Provincial Government 2004).

The budgetary cuts at the federal and provincial levels had a particularly acute impact on Canadian cities by downloading responsibility for the provision of necessary services onto urban municipalities without providing commensurate increases in revenue generating capabilities. Between 1994 and 2004, transfer payments as a percentage of municipal revenue declined by 37% (MacLean 2004). And despite municipal spending of between \$12-15 billion annually across the country, the Government of Canada estimates a \$57 billion deficit in finances for the provision of new and upgraded urban infrastructure, including public transit facilities (InfraGuide 2004). The resulting fiscal crisis forced local governments to actively explore the possibility of private sector involvement to finance, operate and maintain decaying urban infrastructure such as public transit, highways and bridges.

Simultaneously, senior level governments were ramping up programs to induce the private sector to become involved in the provision of public services. At the federal level, this culminated in the 2003 formation of a specially dedicated Private-Public Partnership Office as part of Industry Canada, the department responsible for promoting a

competitive, efficient and dynamic economy. As stated in their mandate, the Private-Public Partnership Office was established to cultivate an institutional and business culture in Canada that encourages private involvement in the provision of public services (Industry Canada 2004). Accompanying Industry Canada has been Infrastructure Canada. In fulfilling their role as the central agency responsible for financing major development projects, Infrastructure Canada has a specific mandate to foster competitiveness, as well as build, share and cultivate connections between public and private partners (Infrastructure Canada 2004).

Greater private sector involvement in the financing of infrastructure projects has also received support from David Dodge, the head of the Central Bank of Canada. In a keynote speech to the Canadian Council of Private Public Partnerships in November of 2005, Dodge noted: 'Financing through markets provides a mechanism by which we can better assess the economic merits of an investment, and hence use our scarce infrastructure dollars more wisely.' Market driven mechanisms such as public-private partnerships can contribute to making up for 'a decade or more than a decade of under investment' (Norris, *The Ottawa Citizen*, 29 November, 2005, F3).

Provincially, the Liberal Government has been a staunch supporter of a neoliberal approach to economic development that promotes the proliferation of private sector involvement in the planning, financing and delivery of public infrastructure. This effort has been channeled through the formation of a special government owned company called Partnership BC to promote and support the undertaking of private-public partnerships in the province. To achieve this mandate, officials of Partnership BC have been active in promoting the merits of private-public partnerships. For example, in a speech to the Vancouver Board of Trade in May of 2003, Partnership BC CEO Larry Blain proclaimed that the benefit of a private-public partnership is the opportunity to apply strict business principles to infrastructure investment decisions which are based on rigorous risk assessments, cost-benefit analyses and value for money, not interest group pressure or political maneuvering (Ladner 2003).

To date, Partnership BC has been involved in a number of transportation projects that are in various stages of the approval process. This includes road and bridge projects in Greater Vancouver, as well as the RAV project in which Partnership BC provided advice to the provincial government (Blain 2004).

Finally at the regional scale, officials at Translink embraced the narrative of partnership and private sector involvement in the provision of public infrastructure. For example in a February 2001 lecture to the Vancouver Board of Trade titled *Private money, public assets: Building a better transportation system through private/public partnerships*, then CEO of Translink Ken Dobell was featured prominently promoting partnerships alongside keynote speaker Alan Stockdale, executive chairman of Macquarie Bank. Macquarie Bank is a world leader in creating private-public partnerships, and was looking to gain a foothold in the emerging Canadian industry. The event was sponsored by Translink, illustrating an official institutional preference for private-public partnerships in the provision of public transit infrastructure.

With an institutional structure in place that clearly promoted private-public partnerships, senior levels of government set out to ensure that this would be the delivery method of choice for future infrastructure projects in British Columbia. Their mandate was achieved by explicitly making their financial contributions to local projects contingent on the project being carried out as a private-public partnership. For instance in a letter to Translink CEO Pat Jacobsen from June 19, 2002 clarifying the province's position on financing the RAV line, Deputy Minister of Transportation Dan Doyle wrote:

Any project constructed using provincial funding will be a public-private partnership... Operation of the existing line will be offered as part of the public-private partnership.

In spite of repeated requests by local officials to examine a more traditional public delivery mechanism during the analysis and tendering phase of the RAV planning

process, the provincial government was unyielding in their demand for a private-public partnership.

The federal government also reinforced their preference for private sector involvement in infrastructure delivery when they introduced the New Deal for Cities and Communities in the spring of 2005. The New Deal for Cities and Communities sought to redress past federal government under-investment in Canadian cities by providing money to upgrade deteriorating infrastructure and facilities. In describing the spending program in a Federal Government investment brochure (Fry 2005), Transportation Minister Jean Lapierre stated: 'Government and industry achieve great things when they work together. These relationships are critical to promoting sustainable transportation that balances our national economic and social goals with environmental responsibility.'

Thus at both senior levels of government, the neoliberal planning framework promoting infrastructure provision through partnerships between the private and public sectors has been institutionalized. Specifically, by making funding offers contingent on greater private sector involvement in planning and financing, senior levels of government have been able to entice many cash-strapped municipalities and their subordinate crown corporations to implement entrepreneurial models of project delivery. Similar to the findings of Li and Wachs (2004) and Taylor (2000) from American jurisdictions, the availability of senior government funding in Greater Vancouver has contributed to shaping local transportation investment choices.

The Institutionalization of a neoliberal planning framework: Big Projects, Many Partners

As shown in the preceding eight points, the institutionalization of a neoliberal approach to economic development and transportation planning has occurred at all relevant scales and was driven by the reconfiguration of norms, policies and traditions of interconnectivity between different levels of government and the private sector. Moreover, the institutionalization of neoliberalism provided an opportunity for the

Provincial government to address fiscal, procedural and effectiveness criticisms of past investment approaches.

At the smallest of scales, the partnership approach to planning fits into a narrative that celebrates cooperation between diverse shareholders as a means of achieving more than any one party could on its own. In this narrative, the private sector becomes a valued part of the team, willing to stand shoulder to shoulder with the public sector and assume a degree of risk in order to plan, finance and deliver the infrastructure necessary to enhance the quality of life for all citizens. Through strategic partnerships, infrastructure investment priorities can be established that are more accountable and better meet public expectations.

At a larger scale, the institutionalization of a neoliberal growth model in Greater Vancouver has encouraged investments in infrastructure that support regional competitiveness within a globally interconnected economy. Emphasizing infrastructure investment as a driver of economic competitiveness and growth has legitimized spending on highly visible projects that are guided by a desire to alleviate congestion (seen primarily as a drag on the economy with environmental side effects) and attract private investment. The public benefit from such programs is two-fold; both in terms of providing access to better local infrastructure and the trickle down effect where investment leads to new jobs, incomes for families and tax revenue for governments of all levels.

Unlike the investment strategy of the 1990's under the NDP provincial government which largely sidelined road building in the name of promoting sustainable development, a focus on competitiveness and economic growth has reinvigorated the call for a balance between public transit and road spending. When viewed in its entirety, the institutionalization of a neoliberal approach to transportation planning reinforces a strategy that supports spending on large projects, planned, financed and delivered through a partnership model.

Conclusion: A Neoliberal Transportation Program

In this chapter, I have sought to document the rise of a neoliberal approach to transportation planning in Greater Vancouver. As I have illustrated, the emergence of this approach was not the result of what Lakoff (2002) has called a 'conservative conspiracy,' but instead was rooted in a conflation of politicians seeking to accommodate genuine public choice, intermingled with the influence of urban elites openly promoting their interests. This observation is important to the way that the analysis of a neoliberal growth model proceeds, as it makes free market precepts a topic that can be legitimately studied as a potential solution to real problems of the past, instead of an approach that should be discounted as a ploy by the super wealthy to line their own pockets (Miraftab 2004).

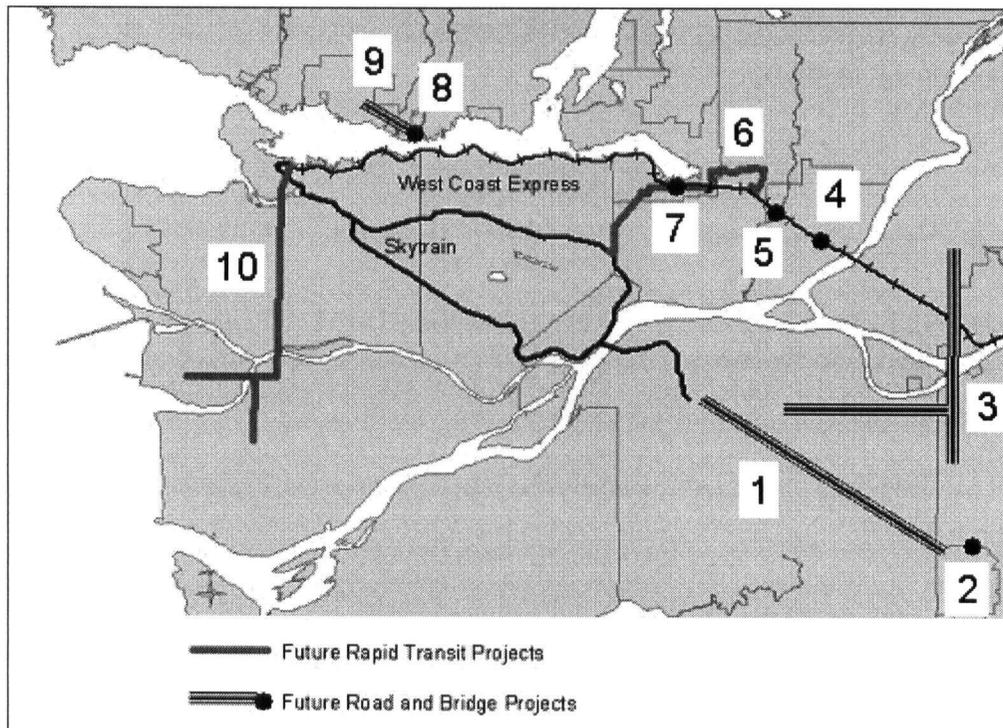
When the Liberal Party came to office in British Columbia in 2001, neoliberal precepts provided an opportunity to reconcile concerns with the planning models of the past, and deliver infrastructure projects that met public concern for improved personal mobility and the goods movement industry's desire for faster freight movement. Through the interconnected actions of all three levels of government, private interests and the non-governmental sector, structures, traditions, norms and habits were institutionalized within the Greater Vancouver polity that reinforced the supremacy of a neoliberal growth model.

The institutionalization of a neoliberal planning framework has contributed to two concurrent trends in Greater Vancouver. First, it encouraged a shift in regional infrastructure investment priorities from an emphasis on sustainable/livable community development to an emphasis on prioritizing economic development. Second, there has been a growing focus on evaluating projects based on individual cost recovery, and involving the private sector in the planning, financing and operation of urban transportation infrastructure. This can be observed in the recent infrastructure investment strategies and plans being forwarded in Greater Vancouver.

In February of 2004, a new 10-year regional transportation plan was ratified by Translink, which called on the private sector to collaborate with all three levels of government in the financing of some \$3.9 billion worth of infrastructure investment over a ten year period. During the first three years of the plan for which detailed financial allocations have been established, 70% of Translink's projected capital expenditure on transportation in Greater Vancouver is to be allocated towards road upgrades and infrastructure mega-projects, including new bridges, highways, and rapid transit lines (Figure 8.5). Smaller capital expenditures include replacing around a third of the existing bus fleet (16% of budget), expanding bus and rapid transit maintenance facilities (11% of budget), providing new bicycle amenities (1% of budget), and the implementation of transit priority measures at existing bridges (2% of budget) (Translink 2004).

Translink's new strategic plan largely reflected the infrastructure priorities put forward by the goods movement lobby group, the Gateway Council, for a major period of infrastructure expansion. At the same time it generally overlooked proposals for lower cost alternatives such as at grade transit priority measures along heavily traveled transportation corridors, which had been a central feature of the Greater Vancouver Regional District's Long Range Transportation Plan. For this reason and the large amount of proposed spending, the plan was not without controversy. The board of the Greater Vancouver Regional District approved the plan by just a single vote after one of the longest and most heated meetings in the council's thirty-seven year history.

Figure 8.5: Major Capital Projects Proposed in Translink's 10 Year Strategic Plan



Number	Project	Projected Cost
1	Fraser Highway Widening	\$45 Million
2	204 Street Overpass	\$18 Million
3	Fraser River Crossing	\$600 Million
4	Coast Meridian Overpass	\$60 Million
5	David Avenue Extension	\$15 Million
6	Evergreen Rapid Transit Line	\$800 Million
7	Murray-Clark Connector	\$25 Million
8	Dollarton Bridge Twinning	\$8 Million
9	Main Street Widening	\$5 Million
10	Richmond-Airport Rapid Transit Line	\$2 Billion

(Source: Translink, 2006)

Not to be outdone by the regional authority Translink, the provincial government also announced plans for transportation investment in Greater Vancouver. In their Gateway Program announced in the Fall of 2004, the provincial government publicized plans to spend some \$3.9 billion on twinning an existing bridge and highway between Langley and the City of Vancouver that is considered to be the most congested area in Greater Vancouver, and build two new perimeter roads along the north and south banks of the

Fraser River (Figure 8.6). The Gateway Program also proposed large capital expenditures on new urban rail mega-projects that would increase the reach of the rapid transit network by 40%, as well as smaller spending to purchase new buses. The Gateway Program was intended to address congestion; improve goods and people movement throughout the region; provide better access between key economic hubs such as the seaport, the airport, railway yards, industrial areas and border crossings; reduce vehicle emissions by reducing congestion related idling; and facilitate better on-street public transit (Ministry of Transportation 2005).

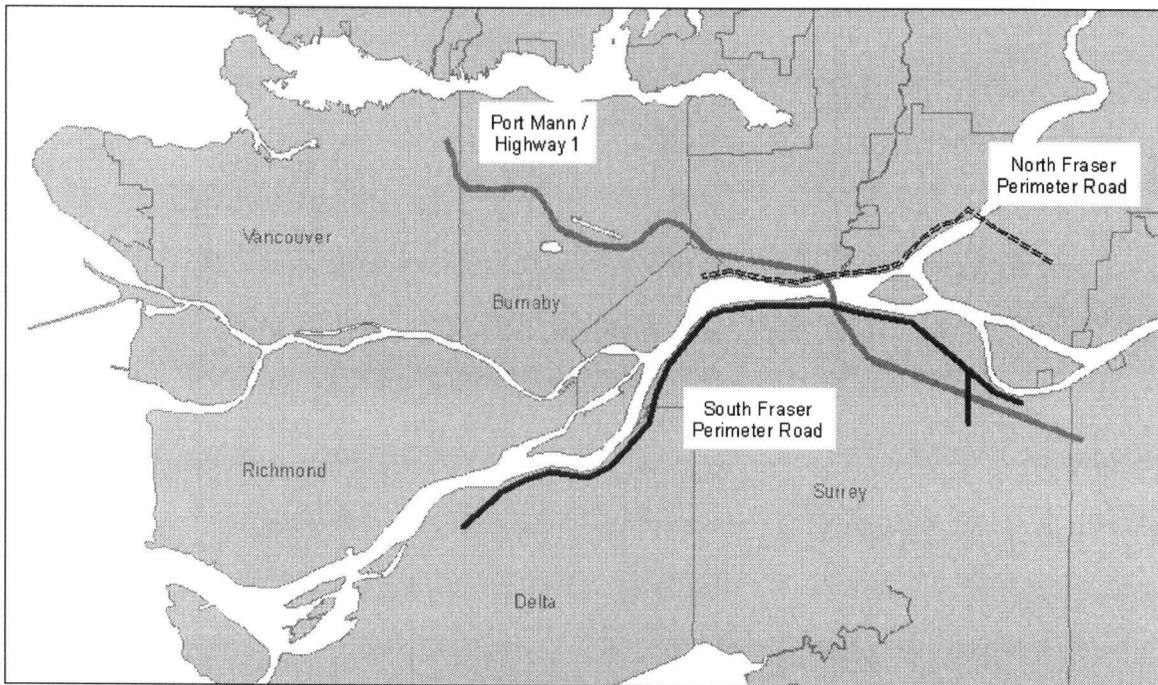
The Provincial government's program proposed proceeding with three of the Gateway Council's top transportation infrastructure priorities. Combined with investments outlined in Translink's 10-year regional transportation plan, four of the Gateway Council's top six priorities were highlighted for implementation.

Since the recently produced transportation plans are currently in the planning and implementation stages of development, the case of Greater Vancouver does not provide an opportunity to examine the material outcomes of a neoliberal-inspired transportation policy based on major road and transit building projects, delivered through private-public partnerships. In other words, it is too early to tell whether the plans proposed by the Liberal party in combination with those forwarded by Translink will actually be implemented in their entirety, and whether they will actually provide the proposed benefits for reduced congestion, stimulation of economic growth and ameliorating of environmental degradation. Moreover, prior to the release of more specific details about the proposed road projects that contain information about the possible inclusion of dedicated bus or truck lanes, high occupancy vehicle lanes, bicycle lanes and road pricing, it is difficult to assess how Translink and the Provincial government's contemporary infrastructure investment programs conform or conflict with the precepts established in the *Livable Region Strategic Plan*.

Needless to say, despite the apparent intention of the provincial government to build their way out of road congestion and its attendant negative externalities, recent research by

Downs (2004) and Wachs (2005) suggest that congestion is an inherent feature of a vibrant city that can be at best mitigated but never eliminated. If and how the findings of this research will be incorporated into future infrastructure investment plans is still an open question.

Figure 8.6: The Gateway Road and Bridge Program



(Source: Adapted from Ministry of Transportation, 2005)

Nevertheless, there is one project that has recently reached the conclusion of its planning process. In the summer of 2005, the planning of a rapid rail connection between Richmond, the Airport and central Vancouver (RAV) was approved for construction. Planned, financed and produced through a private-public partnership, a review of the RAV project provides an ideal opportunity to examine some key questions about the neoliberal planning framework. These include the impact that private sector involvement has on the specifications of the project that gets approved; whether such collaborations actually improve public accountability and fiscal responsibility as proposed by their promoters; and, based on a review of official planning reports, how successful the project is likely to be at achieving public interest benefits such as reduced congestion, improved mobility, reduced automobile emissions and economic development. With a desire to

uncover whether the private-public partnership approach to infrastructure planning provides the potential for reconciling shortcomings observed with earlier methods of project planning in Greater Vancouver, I will now turn my attention to the case of the RAV project.

Chapter 9: New Project Delivery Model, Same Old Story: The Case of the RAV Line¹

Introduction

In this chapter, I will turn my attention from the broad institutionalization of a neoliberal approach to planning, to an examination of the impacts that such an approach has on a specific project. Across Canada and around the world, neoliberal theory promoting competition and free market accountability have become increasingly popular in the delivery of public services. Most recently, the design-finance-build-operate style of private public partnerships has become the delivery mechanism of choice within a neoliberal planning framework, gaining popularity with both right and left of centre governments and international development agencies.

In theory, the private-public partnership model of project delivery seeks to balance the advantage of government control over the strategic allocation of scarce resources in the protection of the broad public interest, with the benefit of infusing competitive forces into the delivery of public service in order to increase efficiency. Proponents contend that a collaborative approach to project planning, which encourages cooperation between different levels of government and the private sector, creates 'win-win situations' that marry community mobilization and local economic development (Miraftab, 2004). In particular, the private-public partnership is seen to provide benefits in three main ways:

1. Increases the rationality of the projects that are selected for development, particularly with respect to technical specifications
2. Contributes to improved procedural accountability and financial responsibility of the projects that are chosen for delivery
3. Facilitates the delivery of projects that better meet the public interest

¹ A version of this chapter has been published. Siemiatycki, M. (2005). The Making of a Mega Project in the Neoliberal City: The Case of Mass Rapid Transit Infrastructure Investment in Vancouver, Canada. *City*, 9(1), pp. 67-84. City can be viewed online at <http://www.tandf.co.uk/>

(For a more in depth review of the theoretical benefits and costs of private-public partnerships, please see Chapter 2).

Here I would like to briefly highlight the theoretical work of one of the most prominent researchers of infrastructure mega-projects, Bent Flyvbjerg. Flyvbjerg has recently come to international prominence because of his statistical analysis of infrastructure mega-project performance. Most notable has been the bold conclusion that systemically underestimated development costs and overestimated benefits are the result of purposeful misrepresentations and political and financial rent seeking on the part of project promoters. However, while Flyvbjerg's statistical findings have reached the pages of the popular press (Palmer, *Vancouver Sun*, August 10-11, 2005, A3; Wilson, *New York Times*, 11 July, 2002, A14) and city council chambers, what has been less reported are his suggested solutions for achieving more honest mega-project evaluation and delivery.

In *Megaprojects and Risk*, Flyvbjerg and his colleagues (2003) suggest that improving the rationality of investment appraisal and development should be based on increased accountability, delivered through a rearrangement of the public and private sector responsibilities. One alternative delivery model to increase project accountability, they argue, is to introduce a greater role for the private sector directly into the planning, financing and delivery of infrastructure mega-projects through a private-public partnership approach. In this model, greater accountability of decision-making is expected through four basic instruments:

Transparency: public scrutiny is the main test of accountability in public sector investments. Professional expertise should be employed to achieve transparent and accountable processes. All documents should be made available to the public in a timely manner. Citizens and stakeholder groups should be encouraged to participate from an early stage and in a meaningful manner. Independent peer reviews should be encouraged at significant moments in the project appraisal process. These should be carried out by professionals within the field and outside bodies such as the Auditor General.

Performance Specifications: project requirements should be decided up-front based on policy objectives to meet the public interest. Once performance specifications are determined, then concessionaires can be called on to use their innovation and suggest technological alternatives that would most effectively meet the performance specifications. Through competition and the profit motive, private firms will make proposals that are the most cost effective in order to win the competition to develop the project. This is in contrast to the public sector planner, who may have expertise in only one technology and also has no direct incentive to provide a cost effective project, and public sector planning agencies that may have their own internal mandates and agendas that minimize their objectivity.

Explicit Formulation of the Regulatory Regime: the rules that will govern an infrastructure project during the development and operation phases should be clearly delineated at the outset of the planning process. This includes potential new investments, user fee levels, and infrastructure connections that will be provided, all of which contribute to determining how successful a project will be and also the level of risk associated with a project. By examining the regulatory regime, it is possible to assess the full cost of a project before any decisions are made.

Risk Capital: The decision to proceed with a project should be contingent on private financier's willingness to contribute at least one third of the capital costs without a sovereign guarantee. Private contributors of risk capital have a greater incentive to monitor and encourage tight financial controls during the project development and operation phases, which could lead to more accurate appraisals and realistic decisions about whether to proceed with a given project.

Moving from theory to practice, a summary of the broader literature on the implications of private-public partnerships that was presented in Chapter 2 reveals a wide range of potential benefits but also costs to delivering infrastructure mega-projects using such an approach (Figure 9.1).

Figure 9.1: Potential Benefits and Costs of Transportation Infrastructure Delivery Through Private-Public Partnerships

Assertion	Source
<i>Benefits of Private-Public Partnerships</i>	
Evidence from Britain has shown that projects delivered using private-public partnerships have reduced development cost overruns.	National Audit Office, 1998
Financing infrastructure through private sector capital lowers the financial burden and potential risk on the general tax payer	Savas, 2000
Strict contracting with the private sector to plan and develop a project can help control the urge of government officials to add expensive scope changes during the development phase, which contribute to project cost escalations following the final cost agreements.	Smith and Walker, 1996
<i>Costs of Private-Public Partnerships</i>	
The structure of the private project company means that it has few assets. As such, should cost overruns during the development phase force the company into bankruptcy, the public sector may be required to assume financial responsibility for project completion.	Sclar, 2000
Public transit systems operated through a concessionaire agreement with a private firm are no more efficient than those operated by the public sector	Pina and Torres, 2001
In situations where service costs have been reduced as a result of private sector involvement, these have often resulted from reduced employee wages and benefits, and the use of more flexible labour policies. This reflects an economic transfer as opposed to an improvement in operational efficiency	Black, 1991; Richmond, 2001
Private-public partnerships can increase the cost, complexity and time of planning an infrastructure mega-project	Walker and Smith, 1995; William Spurr, President, Bombardier, quoted in Dougherty, The Gazette. 3 November 2004, A14.
Public sector monitoring of contract compliance can considerably add to the cost of a private-public partnership	Sclar, 2000
A study conducted by the Association of Certified Chartered Accountants of road projects delivered through private-public partnerships in the United Kingdom found that a disproportionate amount of risk remained with the public sector, while there were 'serious' breaches in the ability of current accounting methods to provide adequate public transparency of resource allocations.	Edwards et al., 2004

Guided by promoters in the public and private sectors as well as the academy, the narrative of collaboration is now so pervasive that, as I illustrated above, private-public partnerships have become institutionalized as the project delivery mechanism of choice within Canadian and British Columbian political structures.

And yet to date, little academic research has been conducted in Canada to assess the implications of undertaking infrastructure delivery using a collaborative partnership approach. This is partly because private-public partnerships are a relatively new phenomenon in the Canadian urban transportation planning landscape. It is also because as MirafTAB (2004) suggests, studies of private-public partnerships have generally focused on typological and logistical issues such as contract design and risk transfer, while minimizing dynamics of power relations and distributional implications.

As such, despite the altruistic claims of private-public partnership supporters and the theoretical benefits proposed by prominent academics such as Bent Flyvbjerg, it remains an open question whether this delivery mechanism is a panacea for cash-strapped governments, a Trojan horse for the private sector to advance their own agenda at the expense of wider public interest, or something in between. Moreover, in practice, does the private-public partnership approach to project delivery actually contribute to redressing issues of political influence, interest group lobbying, poor transparency and organizational memory that were embedded features of earlier rapid transit planning processes in Greater Vancouver?

In addressing these questions, I will now turn my attention to the case of the Richmond-Airport-Vancouver (RAV) urban rail project. Approved for construction in the summer of 2005, the RAV project represents the largest design-finance-build-operate private public partnership for an urban public transit project ever implemented in Canada, and the first of many that are currently on the drawing board (Campbell 2004). As such, an examination of the RAV project planning process provides an ideal opportunity to explore both procedural and equity issues that underpin the application of private-public partnerships in the public transportation sector.

In order to facilitate this analysis, I will begin by examining how the specifications of the RAV project were shaped. Second, I will explore the processes through which the project was approved. Finally, through a review of the official planning documents, I will suggest some hypotheses on the potential distributional benefits and costs of the new rapid transit line in Greater Vancouver.

Defining the Project Specifications: Partnerships and Priority Setting

For over 30 years, planners and decision makers in Greater Vancouver have been engaged in an ongoing process to establish priorities and deliver projects as part of a program to produce a modern mass rapid transit system in Greater Vancouver. Dating back to 1975, all major strategic transportation plans in Greater Vancouver have included proposals for a north-south rapid transit connection between the growing municipality of Richmond and central Vancouver (Ladner 2004). And yet in consecutive analyses, and at repeated moments of investment, rapid transit between Richmond-Vancouver was passed over in favour of other alternatives – first for the Expo Skytrain line that ran east from Vancouver to Burnaby and New Westminster; and later for the Millennium Skytrain line that ran east from Broadway along the Lougheed corridor.

Moreover, the most recent regional transportation plans from the Greater Vancouver Regional District as well as Translink proposed a rapid transit connection from Central Vancouver to Richmond as a mid-level priority, following increases in the size of the bus fleet and the implementation of transit priority measures on key corridors (RAVCO 2003a). Even among the various rapid transit alternatives on the table, there remained some ambiguity in the plans about whether Richmond-Vancouver would be the top investment priority, or whether a connection to the Northeast Sector municipality of Coquitlam should take precedence. In the meantime, the contentious Granville Rapid Bus connection between Richmond and Vancouver, inaugurated in 2001, had received national accolades for system innovation and operational efficiency, and was effectively carrying more passengers per day than many light rail lines in the United States.

At the turn of the 21st century, however, developing a fixed rapid transit connection between central Vancouver and Richmond with a spur to the airport became the top transit investment priority in Greater Vancouver. The application of neoliberal precepts stressing market forces and competitiveness within a collaborative investment landscape was central to the rise in priority of a Richmond-Airport-Vancouver rapid transit connection.

Getting the Richmond-Vancouver Rapid Transit Onto the Agenda

As the scale and cost of transportation infrastructure mega-projects has escalated (Flyvbjerg 2003), it has become increasingly difficult for any single level of government or private sector entity in Canada to proceed with a transportation project on their own. Instead, financial and regulatory partnerships have become central to the realization of major transportation projects (McQuaid 2000). Within this context, amidst the cacophony of voices calling for increased transportation spending on specific initiatives, the prioritization of the RAV project over other alternatives was rooted in its appeal to the interests of a broad range of potential funding partners.

Local Authorities: developing the RAV line provided an opportunity to realize a high capacity rapid transit line on a corridor that had been recognized in the regional transportation plans for decades, and was seen to provide benefits for the entire region. The commitment to develop an intermediate capacity transit system along the RAV corridor was seen as an opportunity to attract commuters from their cars, which would reduce road congestion and pollution levels, and contribute to the desirable densification of land use along the route (GVRD 1996; Translink 2000). In February of 2002, Translink approved a rail connection between Richmond and Vancouver as one of five regionally significant capital project candidates for federal funding (Figure 9.2). The accompanying Translink staff report noted that availability of funding should be a central driver of regional investment priorities: 'The region has many transportation capital needs for both the roads and transit. It is concluded that the GVTA should treat all of

these as a priority and adopt an approach of taking advantage of circumstances as they may arise to advance each project' (Rock and Plewes 2002: 3).

Figure 9.2: Translink's Ranking of Major Capital Projects: Candidates for Federal Funding

1. Fraser River Crossing / South Fraser Perimeter Road;
2. Port Moody / Coquitlam rapid transit;
3. Broadway West rapid transit;
4. Trolley Bus replacement
5. Richmond Airport Vancouver rapid transit

(Source: Rock and Plewes, 2002)

At the municipal level, segregated rapid transit was seen as a top priority for the municipality of Richmond, as the municipality's 1999 Official Community Plan outlined the objective of providing a viable travel alternative to the private automobile for commuters to central Vancouver. There was also a desire to use investment in high quality public transit as an opportunity to stimulate development and attract jobs to Richmond's somewhat stagnant community town centre along Number 3 Road (City of Richmond 1999; Royal LePage Advisors Inc. 2001). This vision for Richmond's town centre potentially created a conflict between regional and municipal goals, as the municipality had been omitted from designation as a growth concentration zone in the Livable Region Strategic Plan because of the municipality's location on a flood plain.

For the City of Vancouver, a high-capacity RAV line was supported in successive transportation plans as an opportunity to provide an alternative to automobile commuting into and out of the downtown core, and to major attractions in the north-south corridor including Vancouver General Hospital, City Hall, Oakridge Mall, and Langara College. Investment in rapid transit was also linked to a motivation to stimulate higher density development along the route in both the urban core and at some south Vancouver locations. Finally, as a rapid connection to the southern municipalities in the region, developing the RAV line was a chance to remove some of the commuter diesel buses from the north-south arterial roads within the city, which were blamed for contributing to congestion, noise and air quality problems (City of Vancouver 1991, 1997, 2002).

Although the Vancouver Transit Strategy completed in 2002 highlighted the RAV line as a 'longer term need,' the most important initiative was considered to be the replacement of the aging trolley bus fleet, with completion of the Millennium Skytrain line to Granville Street noted as the highest rapid transit priority (McAfee and Pledger, 2002).

Overall, a key attraction for local officials such as Vancouver Mayor Larry Campbell was the prospect of leveraging significant project funding from senior levels of government. That the money was tied to investing local funds on a specific project that had not been the top priority within the regional or the local plans of some municipalities was of less concern. On its own the project was seen to be a worthwhile endeavour that would help fill the need for massive infrastructure investment across the entire transportation network (Bula, *The Vancouver Sun*, 31 January, 2003, B1).

Provincial Government: the RAV line was a chance for the newly elected Liberal party to present an image of being concerned with sustainable urban development, while meeting the desire of supportive business lobby groups, such as the Gateway Council, for a transportation alternative that would reduce congestion along a critical north-south transportation corridor. The RAV line was also a first opportunity to advance the private-public partnership approach in the delivery of a major public transportation project in British Columbia. In a December 2, 2004 speech to the BC Road and Heavy Construction Association, Premier Campbell presented the private-public partnership for the RAV line as a novel mechanism for leveraging funds and delivering projects that improve the provincial economy and environment. Finally, investing in the RAV line was a chance to reward loyal conservative voters in Richmond, who had supported the Liberal Party in the provincial election.

Federal Government: investing in the RAV line was a chance for the Federal Liberal Party to bolster support in British Columbia, a part of the country that was increasingly becoming a swing province in the tight national electoral competition between the Liberal and Conservative parties. For the Liberals, spending money in British Columbia on high profile projects was an opportunity to redress the widespread public perception that

during their tenure in office, the federal government had under-invested in the Western provinces while spending lavishly in central Canada. At the same time, providing money for a major urban public transit project was part of a federal government initiative to get back into the business of directly funding urban infrastructure which, after years of senior government neglect, was seen to be in a general state of decay across the country. Finally, providing capital grants for fixed urban transit systems in particular was part of the federal government's strategy to achieve sustainable community development and, particularly, to meet its commitment for reduced greenhouse gas emissions under the Kyoto protocol (Fry 2005; Jacobs 2004).

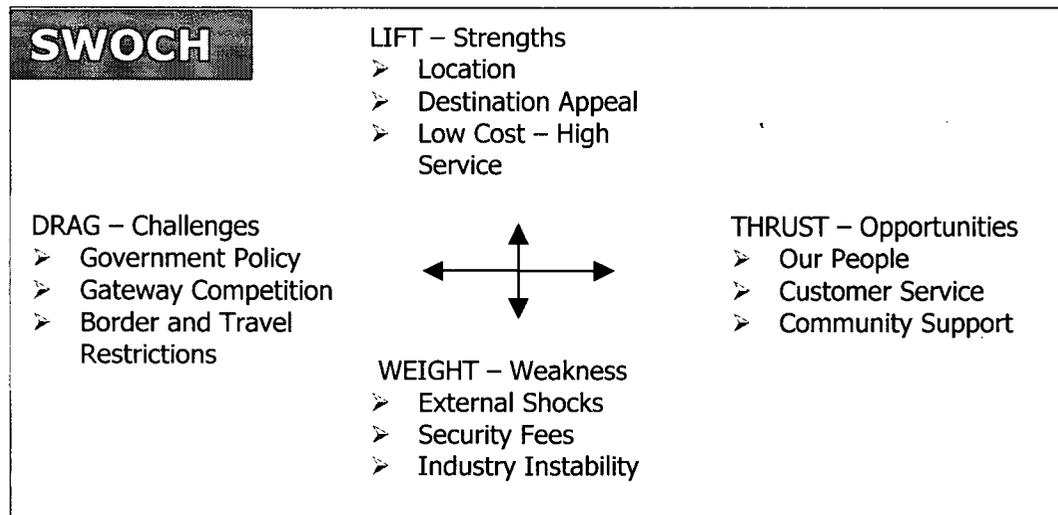
Vancouver International Airport Authority: formed in 1992 as the independent body responsible for the management of the airport, the Vancouver International Airport Authority has overseen the growth of the Vancouver airport (YVR) into the second largest in Canada, and the second largest international passenger gateway on the West Coast of North America. In addition, YVR is also a large hub for goods movement (Vancouver International Airport Authority 2005). By 2040, the Airport Authority projected revenue passenger to increase more than fivefold.

Amidst this expected growth, the Airport Authority has adopted the explicit mandate of converting British Columbia's strategic geographic gateway location into a generator of economic activity and job creation for the province. In order to most effectively manage growth, the Airport Authority was structured with its own revenue streams and strategic planning functions. According to the Airport Authority's strategic plan, the key challenges facing the Vancouver International Airport are related to external competition and industry instability ascribed to external forces (Figure 9.3).

Investing in a rapid transit connection from its facility to central Vancouver and the municipality of Richmond provides the Airport Authority with an opportunity to remain competitive with other gateways along the Pacific Coast including Seattle, San Francisco and Portland by providing convenient passenger and employee access. At the same time, having fixed transit infrastructure in place could also potentially make available land

surrounding the airport attractive for commercial development, which would fit into the Airport Authority's mandate of generating economic activity. This would contribute to diversifying the Airport Authority's revenue streams beyond travel related sources, and would help mitigate against fluctuations in the air travel sector.

Figure 9.3: Strategic Analysis of the International Airport Growth Potential



(Source: Adapted from Vancouver International Airport Authority, 2005)

In sum, the RAV corridor became a top transportation investment priority in Greater Vancouver because of the confluence of interests it met for a variety of potential funding sources. The prioritization of the RAV line was presented as a pragmatic compromise to meet the desires of a diverse set of interest groups, within a political framework that necessitated collaboration in order to realize large-scale investment projects.

However, the line between pragmatism and political opportunism is thin indeed. In her 2004 book *The Dark Age Ahead*, Jane Jacobs shows how senior government politicians in Canada have recently furthered an agenda of investing in fixed urban rail projects with poor results because the projects were guided by political concerns, and not by the tested practice of investing first on flexible bus services and only upgrading those routes that had demonstrated ridership. In the case of the RAV line, opportunistic behaviour, presented as political pragmatism, triumphed over priorities for spending on more buses, transit priority measures and other rapid transit alternatives that were established in the

earlier regional plans. Instead, the RAV line was included as a primary component of Translink's updated 10-Year Outlook Plan ratified in 2004.

Nevertheless, while each partner had their own driving interest in supporting a rapid transit line along the RAV corridor, the bid to host the Winter Olympics in 2010 provided the overriding motivation and urgency to get the project on track (McAffee and Pledger 2002). The completion of a RAV line was not officially part of the Vancouver Olympic Organizing Committee's bid book. But when the games were awarded to Vancouver in the summer of 2003, it solidified interest from potential government funding sources for a modern rapid transit connection between the airport and central Vancouver that would provide a smooth first experience for the masses of visitors coming to the city for the event. Investing in the RAV line would also associate participating political parties with the legacy of community improvements left behind once the games were over.

As illustrated by a Translink report comparing the region's major capital project priorities, the RAV line most comprehensively addressed the region's strategic issues, the interests of involved stakeholders, and the potential for senior level government and private sector funding within a full cost recovery framework (Figure 9.4). In this sense, it fit best within British Columbia's emerging neoliberal planning framework, which encouraged international competitiveness, collaborative project delivery partnerships and decision-making based on a strict evaluation of value for money. As will be seen in the following section, the interests of the multiple funding agencies had a considerable impact on the scale and technical specifications of the RAV line.

Figure 9.4: Translink Comparison of Major Capital Projects Based on Suitability and Potential Financing Sources

Project	Road			Transit			
	Fraser River Crossing/ South Fraser Perimeter Road	North Fraser Perimeter Road	NRN Major Capital Projects	Broadway West Rapid Transit Expansion	Port Moody/Coquitlam Rapid Transit Extension	Richmond/Airport Vancouver Rapid Transit Line	Trolley Bus Replacement
Issues Addressed							
Goods Movement	■	■	■				
International Mobility	■	?	?			■	
GHG/Environment	?			■	■	■	■
Olympics						■	?
LRSP	■	■	■	■	■	■	■
Stakeholder Interest							
Federal Government	■	■	■	?	?	■	?
Provincial Gov't.	■	■	■	■	■	■	?
GVTA/GVRD	■	■	■	■	■	■	■
Municipalities	Pitt Mead., M. Ridge, Surrey, Langley, Delta	Coquitlam, New Westminster	Various Munis	Vancouver	Burnaby, Port Moody, Coquitlam	Richmond, Vancouver	Vancouver, Burnaby
Potential Funding Sources							
Fed	Infrast. Fund	■	■	■	■	■	■
	Olympics					■	
Prov	Partnership	■	■		■	■	
	Olympics					■	
GVTA Budget			■	■		■	■
Other (e.g. Muni.)		Pitt Mead., M. Ridge, Surrey, Langley, Delta	Coquitlam, New Westminster	Various Munis	Vancouver	Burnaby, Port Moody, Coquitlam	Richmond, Vancouver
Cost Recovery (Users)		■	?	?	■	■	■
P3 Potential		■	?	?	?	?	?

(Source: Adapted from Rock and Plewes, 2002)

Shaping the Project Specifications

With the interest of multiple levels of government aligned to prioritize the development of the RAV line, attention turned to designing a process to shape the technical specifications of the project, based on the various objectives of the contributing shareholders. In 2000, the four public shareholders that agreed in principle to fund the RAV project - Translink (as the representative of the regional government); the Provincial Government; the Federal Government and the Vancouver International Airport

Authority - formed a special project office known as RAVCO as a subsidiary of Translink in order to coordinate the procurement, design, financing and implementation of the RAV project. The City of Vancouver, the City of Richmond, the Greater Vancouver Regional District and the Port Authority were given stakeholder privileges in RAVCO since they would be directly impacted by any investment decisions. To achieve its mandate, RAVCO was committed to 'the highest standards of due diligence and a fair, effective and professional procurement process in order to achieve the most appropriate transit system and the best value for funding agencies and residents in the region' (RAVCO 2005d).

RAVCO was structured similarly to the project planning offices that had been used to deliver the earlier Skytrain projects, and populated with contracted staff seconded from a variety of public and private sector organizations. A number of RAVCO's staff had been integral members of the planning and delivery of past Skytrain projects. This included Chief Engineer John Eastman of ND Lea consulting, who had personally been involved in both the Expo and Millennium line projects, and whose firm had been central in conducting studies that supported Skytrain development in Vancouver. It also included RAVCO board Chair Larry Bell, who had been a key advocate for using investment in a transit mega-project to stimulate high-density development under the Social Credit provincial government in the early 1980's.

Upon forming RAVCO, Translink appointed lawyer Jane Bird as the organization's CEO on a contract basis at a rate of \$1000 per day. At the time, Translink's CEO was Ken Dobell, an influential bureaucrat who had served as City Manager of Vancouver when Gordon Campbell was mayor, and was subsequently appointed as the top civil servant in the province when Campbell became premier. During Dobell's tenure as city manager, he had worked closely with Bird when, in 1997, she served as the Volunteer Chair of the Vancouver Planning Commission. When Bird's term with the Vancouver Planning Commission expired in 1999, she was hired to manage the City of Vancouver Rapid Transit Office that was studying alternatives for phase two of the Millennium Skytrain line extension along Broadway.

As one of the first orders of business, RAVCO under the direction of Jane Bird hired project finance specialist and broker Macquarie Bank to examine the viability of delivering the RAV line as a private-public partnership. Macquarie's research showed that a design-build-operate-transfer style private-public partnership could be successfully employed to transfer risk between the private and public sectors and cover operating costs of the RAV line, while a large portion of the project capital costs would require government or other sources of funding (Rock and Plewes 2001).

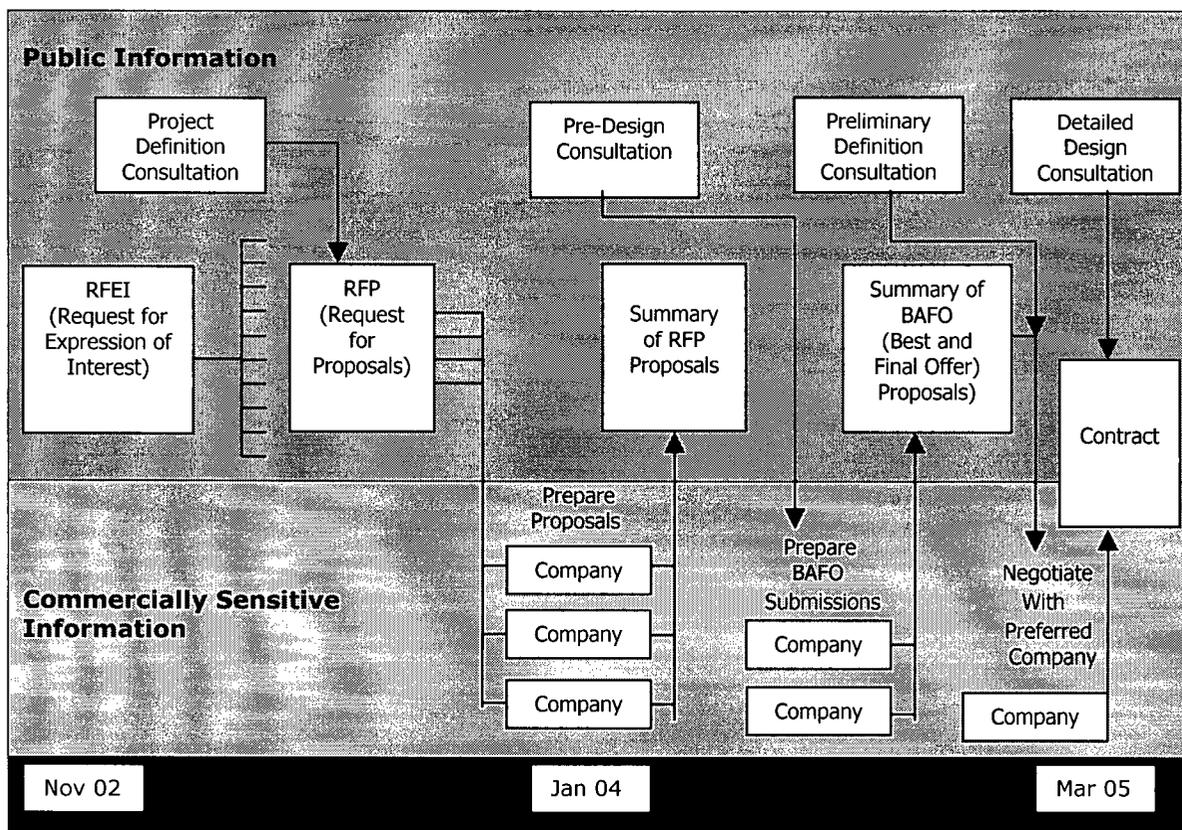
With the favourable results from the Macquarie Bank study, Bird and Dobell alongside Macquarie executive chair Alan Stockdale began promoting the merits of a private-public partnership for delivering the RAV project to the business community in Greater Vancouver. Bird also had a connection with Macquarie Bank that was separate from her work with RAVCO. When she was retained by the City of Vancouver to examine the viability of a private-public partnership for the operations of a heritage streetcar in July of 2001, Bird had subcontracted the technical work to Macquarie Bank (Rudberg, July 24, 2001).

Based on the findings of Macquarie Bank's RAV study, RAVCO proceeded to design their planning and procurement strategy in order to accommodate the project being delivered as a private-public partnership. Specifically, RAVCO established a competitive procurement process to select the specifications of the RAV project that combined public and private sector collaboration (Figure 9.5).

As advocated by Flyvbjerg (2003) and other researchers, the first phase of the procurement model established by RAVCO was to define a set of performance specifications for the project that were based on the policy directions and individual interests of the involved public agencies, as well as consultations with the general public. This approach to project delivery was intended to provide room for private sector innovation to deliver the most effective system technology at the lowest cost, while maintaining government control to establish the direction of the project in the public interest. As stated in RAVCO's documentation describing the procurement process, 'no

technology choice' was made, 'leaving the opportunity for a supplier to propose a system that meets the Performance Standards and is financially feasible' (2003: 26).

Figure 9.5: Competition and Selection Procurement Model for the RAV Line



(Source: Adapted from RAVCO, 2003)

In practice, however, the collaborative approach to defining the performance specifications for the RAV line was dominated by a desire to establish the criteria so that the project ultimately selected would meet the interests of each of the participating agencies. As illustrated in Figure 9.6, which is a synthesis of information from official planning documents and media reports, key areas of interest for the involved parties included the route alignment, the amount and type of grade separation from traffic, the technology and the project financing mechanism.

Figure 9.6: Summary of Interests for RAV Stakeholder and Shareholders as of Summer 2003

	City of Van.	City of Richmond	Translink	Province of British Columbia	Federal Government of Canada	Airport Authority
Alignment	Cambie to access largest trip generating facilities and stimulate development at certain new hubs.	No. 3 Road to catalyze development in the city's town centre	Cambie/ No. 3 Road to target access largest trip generating facilities	Cambie/ No. 3 Road to avoid angering affluent residents along Arbutus who were loyal liberal supporters	Cambie/ No. 3 Road	Cambie
Elevation	Must have underground segments in parts of the city	At-grade for best integration with new municipal town centre	Underground in order to make the line conducive to delivery as a private-public partnership and integrate with existing and future infrastructure	Subway to avoid disrupting residents in affluent communities along the route, and to support as a PPP	Subway or elevated system that could be compatible with Skytrain technology	Elevated on site to best integrate with the existing facilities
Amount of Segregation	Fully Segregated	Partially Segregated	Fully Segregated to make the line attractive to a private sector proponent	Fully Segregated	Fully Segregated	Fully Segregated
Travel time	Fast	Fast	Fast	Fast	Fast	Fast
Technology	Rail	Light Rail	Rail	Automated Rail	Automated Rail	Automated Rail
Delivery Mechanism	No PPP	No stated preference	PPP	PPP	PPP	PPP
Key Motivations for Supporting the Project	Stimulate property development along the route and provide a transit alternative for North-South commuters into downtown Vancouver	Fulfill a longstanding priority to have rapid transit access between Richmond and City of Vancouver	Leverage funding from external sources for a transit line that had been one of the region's top priorities for over three decades	A legacy project for the Olympic Games and an opportunity to deliver a project that was one of the top government and private sector investment priorities	A legacy project for the Olympic Games, an opportunity to invest in Western Canada and a chance to strengthen inter – governmental cooperation	Leverage funding for a rail link that would make the airport more competitive with other destinations on the West Coast of North America
Key Demand upon which funding was contingent	Line had to be on Cambie St., and have underground sections to avoid major car traffic disruptions	No outright demands, but strong favour for an at-grade system	Support from external funding sources, including a private sector proponent	Project delivered as a private-public partnership	Public support for project	Project had to use rail technology that could connect quickly between airport and downtown

Of particular attention was the explicit inclusion of private sector interests in directing the consideration of the project specifications and public policy. In their early discussions, Translink, the Provincial Government and the Airport Authority agreed that private sector financing would be critical to the realization of the project. The provincial government went so far as to make their financial contribution contingent on the project being delivered as a private-public partnership, which had a reflexive impact on public policy decisions and the overall technical specifications of the RAV line. Most notably in 2001, based on the preliminary findings of the business advisory consultant, Macquarie Bank, Jane Bird and Translink CEO Ken Dobell (in his final days before taking up his new job in the premier's office) brought a recommendation to the Translink Board that at-grade options for the RAV line be 'excluded from any further analysis' as they fail to meet the requirements for private sector involvement. The basis for this recommendation appears to be rooted in the perception among private sector investors that achieving expected levels of patronage is the most significant risk associated with public transit projects, which is best mitigated by building systems that can deliver fast and reliable service by being segregated from traffic (Bowman, 2002). The recommendation to limit further analysis of at-grade alternatives was approved by the Translink board. This shows that while not directly involved in the definition phase of the RAV project planning, the attractiveness of the project to a private sector concessionaire was explicitly considered in establishing the performance criteria that would shape future design, and considerably influenced the direction of public policy.

Overall, through the collaborative approach to project delivery, each partner was able to provide their own criteria upon which their financial contribution and jurisdictional approval was contingent. However, not all of the partners had equal influence over the final performance specifications. In particular, a paramount concern was designing a project that would meet the criteria for funding from sources outside the financially constrained regional level of government, which included senior levels of government, the Airport Authority and the private sector (RAVCO 2003a: 25; Bula and Fong, *The Vancouver Sun*. May 16, 2003, A4).

For these participating organizations, the paramount concerns were building a transit system that would be a positive legacy of the Olympic games, be relatively unobtrusive to the surrounding community, and induce financial and other involvements from the private sector. Ongoing public consultations conducted by RAVCO in Richmond and Vancouver between 2001 and 2003, and supported by a regional telephone survey, consistently found support ranging from 75 to 85% for the development of a RAV rail line as a subway type system under Cambie (RAVCO 2005a). The effect of this collaborative visioning process was that it had a reflexive influence on the firms hired, the terms of reference and the conclusions of the technical studies commissioned by RAVCO, the strength of political support for the projects, the tenor of the media coverage, and public opinion of the project more widely.

In April of 2001, RAVCO released the results of a Multiple Account Evaluation produced by IBI Group in association with PriceWaterhouse Coopers, with work subcontracted to firms that had been involved in the study and delivery of earlier Skytrain projects in Vancouver such as Delcan, ND Lea, and Baker McGarva Hart. A number of firms involved in the production of the Multiple Account Evaluation were members of the Canadian Council of Private-Public Partnerships (IBI group, Delcan, PriceWaterhouse), making them responsive to exploring projects that would be conducive to project delivery through this method.

The Multiple Account Evaluation concluded that replacing the existing rapid bus with rail rapid transit in the RAV corridor was already warranted by 2010, rather than by the later cut-off date of 2021. It suggested that significantly elevated net benefit levels could be achieved by running the line along Cambie rather than an alternative routing along Arbutus, while eliminating delays at at-grade intersections that would enable higher speeds at less cost. It was also suggested that a fully segregated transit line could be built for some \$1.5 billion while a partially segregated line could be built for 44% less at around \$842 million, but that the difference in capital costs would be overcome by the enhanced benefits of a line on an exclusive right of way (Figure 9.7).

The conclusions from the multiple account evaluation were supported by a favourable ridership study subsequently produced by the IBI Group in association with Delcan and TSi Consultants. The study, using best-practice forecasting methods later proposed by Flyvbjerg, Holm and Buhl (2005) and Lovallo and Kahneman (2003) to guard against inflated outlooks, confirmed earlier findings that a system operating on an exclusive right of way would attract significantly higher ridership than a partially separated system. In particular, it was found that ridership on a fully grade-separated RAV line would increase to 100,000 boardings per day from the existing 65,000 daily transit made in the corridor, a sufficient level of ridership to cover the operating costs of the new system (Boei, *Vancouver Sun*, 11 August, 2004, B5).

Figure 9.7: Comparison of Transportation Alternatives for RAV Line

	Existing B-Line	Shared Right of Way Rapid Transit	Exclusive Right of Way Rapid Transit
Capital Costs Excluding Vehicles (millions)	60	842	1,536
All-day Boardings 2010	32,500	66,000	104,000
All-day Boardings 2021	37,500	90,000	134,000
Annual Subsidy to Cover Capital and Operating Expense (millions) over project lifetime	N/A	36	70
Total Net Benefits (2021)	N/A	453	1021

(Source: IBI Group, 2001)

Later in the summer of 2002, new studies by IBI Group and Delcan as well as SHMMG engineering consultants confirmed the findings of ND Lea's RAV reports from the early 1990's, that the optimal rapid transit alignment for the corridor was a subway under Cambie Street. The terms of reference provided for the corridor studies largely predisposed this conclusion: 'COV [City of Vancouver] council has endorsed a 'subway' system, accordingly a tunneled system downtown to SW Marine Drive was the 'base case' option (SHMMG 2002: 1-1).

Critics of the RAV line highlighted shortcomings with the technical studies. Some argued that insufficient analysis had been carried out to compare a Cambie Street alignment with an Arbutus routing, while there were claims that the costs of conventional light rail had been considerably inflated compared with those of automated rail systems (Smith, *Georgia Straight*, 27 May, 2004). Others questioned whether the ridership forecasts had been overestimated by studies that had placed too great an emphasis on the attractive power of a system that could deliver rapid travel times, while overlooking other important factors such as perceived safety which were seen to be lower for fully segregated underground systems (Kurucz, *The Record*, 7 September, 2005, p1). Still others wondered whether the focus on developing a single line had led to the prioritization of a mega-project without giving due evaluation to the comparative benefits of investing in smaller scale service quality improvements across the entire transit network (Siemiatycki 2005b).

Despite these criticisms, and based on the converging interests of the multiple stakeholders, the measurement of widespread public support, and the consistent findings of the numerous technical studies produced, in February of 2003, RAVCO released their performance specifications for the RAV line. Despite a mandate not to predispose the findings to any particular technology, some of the criteria for the RAV line appeared particularly limiting in their degree of detail.

First, it was explicitly stated that the RAV rapid transit line was to be completed using an existing rail technology: conventional light rail, automated light rail (of which Skytrain is one design) or a heavier subway technology. Cambie street was also specified as the alignment of the RAV line in the City of Vancouver, and it was stated that any system must be located underground at least along key stretches of the route. These standards inhibited private sector proponents from exploring a range of innovative and potentially more efficient alternate technologies, including burgeoning rapid and guided bus technologies as well as cutting edge personal rapid transit systems. It also excluded a private proponent from exploring the merits of providing a less expensive surface rapid

transit technology on multiple routes within the Richmond-Vancouver corridor, or segregating the system from traffic by using a dedicated surface lane.

Second, commensurate with the expected size of the RAV investment, the performance standards demanded that a new rail line would have to deliver considerably faster, more reliable service than the existing rapid bus. As such, the performance standards established that any system must deliver extremely fast terminus-to-terminus travel times of no more than 30 minutes from Vancouver to Richmond Centre and 25 minutes from the airport to Vancouver Centre, with minimal variation. The present rapid bus system provides travel times between 42 minutes and 60 minutes to Richmond. The implication of establishing such a fast travel time and requiring high reliability was that it favoured an automated type system that was fully separated from traffic, either underground or on an elevated guideway.

Third, the system had to be able to carry a maximum capacity of 5,800 passengers per hour in the peak direction by 2021, at headways as short as every 5 minutes. While both light rail and automated light rail technology could handle these headways, automated technology running on a fully segregated track provided the opportunity to minimize operating costs, a key concern for a private concessionaire that would be involved in both the construction of the project and its operation over a 30 to 35 year period. This fit with the overall conclusion of the RAVCO report defining the project definition, which stated that the new line must be delivered through a private-public partnership that would include system design, construction, financing and operations on a concession basis.

When viewed in their entirety, the combination of each performance specification for the RAV project largely overrode the potential for creativity by the private sector, and locked in a fairly narrow range of alternative solutions. Based on the individuals and corporations involved in the planning processes, the terms of reference and conclusions of the early planning reports commissioned by RAVCO, the prevailing political interests both regionally and nationally, and the performance specifications that would be used to solicit requests for proposals, it appeared clear to those who followed transportation

issues in Vancouver most closely that the RAV line would be delivered using automated rail technology in a tunnel under Cambie Street. As early as August of 2003, even before the preferred consortiums had been selected by RAVCO, articles began appearing in the local newspapers proclaiming the inevitability of the final outcome. As architect and urban affairs writer Trevor Boddy wrote in an August 9, 2003 feature in the *Vancouver Sun*:

The spin management that is RAV planning has deigned to not select the train technology until after core funding is in place, lest this politically-loaded foregone conclusion haunt the current debate. Reviewing their technical reports, it seems that the RAV dice have been twice loaded: once to favour a Cambie alignment, and again to select those pricey driverless cars from sole-source Bombardier. (F14)

This perspective was not only held by newspaper reporters and conspiracy theorists. John Mills, Director of Transport Canada's Pacific region policy coordination branch, who had been involved from an early stage with RAVCO's planning of the RAV line as a representative for the Federal Government, largely confirmed this position in an interview with Dutch Master's student Shanna Hilferink:

No alternative analysis was done....Before a very high-level analysis was done decisions were made that discounted the Arbutus corridor and focused primarily on the Cambie corridor. So you then are stuck trying to do a multiple account evaluation basically on one corridor, that has been ordained that it must be a subway, so right off the back [sic] you are constrained in your analysis as to options (2004: 145).

Despite the procedural criticisms by close observers of transportation projects in Vancouver, the design of the RAV line as defined by the performance specifications were supported through the findings of a community consultation process commissioned by RAVCO that attracted 1,500 participants following the release of the performance specifications. The month long consultation found that 82% of those involved somewhat or strongly agreed with the project proceeding at an estimated cost of \$1.5 to \$1.7 billion. Top reasons for supporting the project included the desire for a direct rapid transit

connection between central Vancouver and Richmond and a preference for improved travel times that favoured an underground alignment (Kirk and Co. Consulting 2003).

The strength of this widespread support was questioned by those who noted that meetings were primarily held in the municipalities through which the system would pass, thus minimizing input from the majority of Greater Vancouver residents who would not benefit directly from the RAV project but would pay for it through their local taxes (Corrigan 2004). As well, while the public information package did contain information on the relative financial and community impacts of different rail alternatives, it only selectively covered the costs and benefits of alternative routes or technologies other than rail (RAVCO 2003b). Notwithstanding the potential shortcomings in the public consultation process, regional opinion surveys found support for the project nearing 80% (Kirk & Co. Consulting 2003). Thus as in earlier mega project planning processes in Vancouver, the positive findings of the public consultation process were used by the funding agencies to solidify ongoing political support for the RAV line, and also to strengthen the public perception that the project was broadly popular.

Transit Priority Setting in Practice

A central plank of the neoliberal approach to transportation planning has been to suggest a revamped model of service provision that charges the state with deciding on the need for services that meet the public interest, and then invokes a competitive process to decide how most efficiently to provide the desired level of service (Sclar 2000; Savas 2000). To achieve this end, the recent literature on infrastructure planning has suggested that the use of performance specifications as part of a collaborative infrastructure procurement process provides an opportunity to improve investment innovation while delivering projects that more efficiently meet the public interest (Flyvbjerg 2003).

Moving from theory to practice, this section has shown significant fissures in the theoretical arguments about the benefits of a neoliberal approach to infrastructure investment planning, particularly the degree to which competition and private sector

involvement can contribute to increasing the rationality of investment decisions. At the widest scale, the emphasis on competitiveness and intergovernmental collaboration within the planning framework has continued the observed trend of infrastructure projects being selected for development based on their potential to achieve financing from different sources, and not necessarily the delivery of the largest public benefit (Taylor 2000; Li and Wachs 2004). In Vancouver, the potential for the RAV project to sufficiently meet the political interests and qualify for funding from three levels of government, the Airport Authority and a private sector proponent contributed to its prioritization, even though the line was not the highest investment project on the regional agenda.

And once the RAV project was selected for development, a desire to embed competition, market forces and private sector involvement into the procurement process through the use of performance standards failed to alleviate the problem of opportunism or political partisanship that had plagued decision making surrounding earlier transit projects in Vancouver. Regardless of the competitive and collaborative process designed by RAVCO to select a project concessionaire, ingrained special interests and asymmetrical relations of power between the government shareholders continued to direct decision-making, an observation made in previous studies of infrastructure mega-projects (Wachs 1988; Flyvbjerg 2003; Altshuler and Luberoff 2003).

To use Flyvbjerg's language (1998), power trumped rationality in the setting of the technical specifications of the RAV project, even when a delivery process was explicitly designed to control against such actions. Yet this would not be the only shortcoming caused by the reliance on a procurement model based on competition and market forces. As I will show in the following sections, the neoliberal approach to transportation planning had a large impact on the potential transparency and accountability of the planning process, and led to a project design that may not achieve the desired benefits for the transit system as a whole.

The Tangled Webs We Weave, When We Set Out to Plan a Mega-project

Given the institutionalization of a neoliberal partnership approach to planning, it is pertinent to ask how this structure impacted on the habits, norms, routines, established practices and rules that patterned behaviour within the RAV project planning process. In this section, therefore, I will turn my attention to the political process of gaining approval for the RAV line, by picking up the narrative in the spring of 2003 following the completion of the project definition report.

Intense political and interest group contestation has always characterized the planning of large infrastructure projects, in Greater Vancouver no less than elsewhere (Altshuler and Luberoff 2003). Despite being planned through a collaborative private-public partnership approach that was meant to minimize open confrontations between the participating stakeholders, the process of gaining approval for the RAV project was no exception to this trend. In fact, RAV planning became so controversial that one newspaper editorial (*Coquitlam Now*, 3 July, 2004, p10) called the entire process a 'political soap opera.' As such, the case of the RAV project is an opportunity to explore how adherence to a private-public partnership approach to transportation planning impacts on the potential to achieve accountability in planning processes as defined by Flyvbjerg and his colleagues (2003) to include procedural transparency, cost certainty and risk transfer through private sector financing, and a clear specification of the regulatory regime.

A defining source of conflict in the RAV planning process was directly embedded in the private-public partnership approach to project delivery. In order to maintain the integrity of the competitive tendering process to select the winning private sector concessionaire, a planning model was established in which two parallel processes were taking place simultaneously with only limited interaction between them. Including the competition to select the winning private sector concessionaire and the public process of gaining political approval and financial support, this separated project planning structure created what RAVCO officials acknowledged was a tension between 'the public interest in

disclosure and the public interest in a vibrant competitive process to procure the RAV line' (RAVCO 2004a).

The Competitive Selection of a Private Sector Concessionaire

Based on the collaborative procurement model designed for the delivery of the RAV project, the design phase of the project was being guided by a competitive process to select a private sector concessionaire that would offer the best system design and financial package. The evaluation criteria upon which the winning bidder would be selected were established in RAVCO's 2002 Request for Expressions of Interest document, and included depth of experience in the design, construction and maintenance of a transit system; the capability to raise considerable finances on a non-recourse basis and to manage/absorb certain financial risks; a demonstrated competence in the delivery of private-public partnerships (RAVCO 2002).

The process to select the winning bidder was led by an evaluation committee of ten people appointed by the RAVCO board, which consisted of six RAVCO affiliates and four external consultants with engineering, transit system operation, and private business experience. Two of the evaluation committee members had been previously involved with the development of automated light rail in Vancouver. Larry Miller, currently Vice President of Gannett Fleming engineering consultants, had been brought on as general manager of British Columbia's Urban Transit Authority in the early 1980's (which became BC Transit under his control) to manage the delivery of the Expo Skytrain system (Hansard, 30 March, 1981, 4835), and his firm had provided project management oversight in the planning of the Millennium Skytrain Line (Gannett Fleming 2002). And John Eastman, RAVCO's technical director, had provided contract project management and engineering services for both the Expo and Millennium Skytrain lines in Vancouver, which had involved corporations bidding for the RAV line contract such as SNC Lavalin and Bombardier.

At least two other evaluation committee members reported potential conflicts of interest to the RAVCO appointed fairness auditor, former judge and Queen's Court member Ted Hughes. Larry Bell, the Chairman of the RAVCO board, was concurrently a director for Shato Holdings Ltd., a company that according to details released at a RAVCO board meeting and reported in an article appearing in the *Georgia Straight* (RAVCO 2004; Smith, Smith, *Georgia Straight*, 11 March, 2004), owned land on the northeast corner of Cambie and King Edward. Prior to Bell's involvement with RAVCO, the corner of Cambie and King Edward was identified as the location for a future RAV station, providing the potential for a significant increase in the value of Shato Holding's property should a new rail system be completed. And Sheri Plewes, Translink Vice President of Capital Management and Engineering and RAVCO board member, disclosed that her spouse is an employee of an engineering consulting firm that is part of one of the selected proponent teams (RAVCO 2004a). While specific details supporting his decision were not released to the public, fairness auditor Ted Hughes (2003) reviewed disclosure statements by each member of the evaluation committee and certified that none were in a conflict of interest based on their previous position or current interests.

Five subcommittees supported the evaluation committee, involving more than 60 professionals from Translink, the Cities of Vancouver and Richmond, the International Airport Authority, and independent evaluators and advisors from the private sector. Neither the evaluation committee nor its subcommittees contained any political representatives, or representatives from the general public or transit user groups (RAVCO 2004b).

Between the summer of 2003 and the spring of 2004, RAVCO whittled down potential candidates from a field of ten consortia led by some of the largest rail developers in the world to four that were invited to submit proposals. One consortium subsequently dropped out, and applying the performance specifications to the remaining contenders, two final bidders were short-listed: SNC Lavalin/Serco and RAVexpress, led by Bombardier. Both consortia proposed developing lines that were fully underground in the City of Vancouver and elevated in Richmond and on the airport lands, using

automated rail technology. SNC Lavalin/Serco also proposed a system that would operate at grade in Richmond as desired by the local council, which would combine manual and automated rail technology (RAVCO 2004c). Each firm had extensive experience working in Vancouver, having collaborated on the development of the Millennium Skytrain line.

While RAVCO went to some lengths to release information about the two final bids and it was now widely reported that the expected capital cost of the project would be between \$1.5 and \$1.7 billion, the selection process required a high degree of secrecy about the specifications of the various proposals, which contained proprietary and commercially sensitive information (See figure 9.5 on p.275). Confidentiality was also needed to maintain the integrity and fairness of the competition between the bidders. This meant that no information was released to the public about the exact terms of the two proposals, including the technical and design specifications of the line, the total cost of the line, the terms of the financing package or the apportioning of risk between the private and public sectors, or the construction methods that would be used to build the line (van den Hemel, *Richmond Review*, 29 January, 2004).

Instead RAVCO released a series of reports written by consultants, constrained by confidentiality clauses, that confirmed the integrity of the bid process, and claimed that the final proposals both met the standard of 'value-for-money' as demanded by the public sector. Requests by some local politicians and members of the public to have the entire process reviewed by the Auditor General of British Columbia, the agency charged with protecting the public interest with respect to government spending, were repeatedly denied.

Many of the consulting firms that were hired to conduct key assessments and audits were firms that explicitly supported the delivery of public services through private-public partnerships, and many had donated considerably to both the provincial and federal Liberal parties. Of particular interest was that firms associated with each of the two final

consortia were amongst the largest contributors to the Federal Liberal Party (for a longer discussion of this topic, see Siemiatycki, 2005b) (Figure 9.8).

Figure 9.8: Political Donations to Provincial and Federal Party in Power by RAV Proponents

Company Name	Project Involvement	Support for Private-Public Partnerships	Publicity of Report	Provincial Contribution 2001/2005	Federal Contribution 2000/2003*
Bombardier Inc.	RAVxpress final proponent team member	Involved in private-public partnerships around the world	Bid details not made public	\$5,000/ \$2,900	\$100,503**/ 139,795.22**
AMEC Inc.	RAVxpress final proponent team member	Involved in private-public partnerships around the world	Bid details not made public	\$12,500/ \$15,000	\$27,326**/ \$9,491**
SNC-Lavalin	SNC-Lavalin/Serco final proponent team member	Involved in private-public partnerships around the world	Bid details not made public	\$10,000/ \$897	\$36,450**/ \$91,465**
Macquarie Bank	Business advisor that supported private delivery	A sponsor member of the Canadian Council for Public-Private Partnerships, Macquarie Bank would be well positioned to bid on future private-public transport projects in the province of British Columbia if the funding model was more widely adopted.	Full financial advising reports were never made public	\$350/ \$750	No Contribution
KPMG Consultants	Conducted independent review of public sector comparator	Widely promote themselves as leaders in privatization services, and are members of the Canadian Council for Public-Private Partnerships.	Neither the public sector comparator nor the KPMG analysis was ever made public	\$5,000/ \$3,450	\$65,796**/ \$18,926**
Price Waterhouse Cooper Consultants	Conducted financial review validating P3 delivery	Has been involved in many private-public partnership projects, and is a sponsor member of the Canadian Council for Public-Private Partnerships.	Entire report never made public, and some parts were withheld from local councils.	\$1,500/ \$4000	\$58,518**/ \$15,784**

(Source: Elections BC, 2004, 2005; Elections Canada, 2000,2005)

* 2003 was the final year before federal campaign finance legislation was introduced that limited corporate donations to \$5000

**Also donated money to other political parties

It would be misleading to suggest any type of corruption or malfeasance from this pattern of campaign finance donation or corporate support for a specific mode of project delivery. However, as Witko and Newmark (2005) have found, it is reflective of a densely interconnected network of corporate and political elites, who use official campaign finance contributions, indirect contributions such as attendance at political party fundraisers, and non-financial means to guide the government policy agenda in favour of business interests. At the very least, the presence of significant campaign contributions from bid proponents reduces the transparency and public trust in the chain of accountability for those ultimately responsible for allocating billions of dollars in public funds. The potential to erode public trust is exacerbated by a project evaluation framework that privileged the role of technical experts, some of whom had pre-existing professional experience delivering specific technologies and working with certain corporations in Vancouver, while marginalizing the voice of elected officials, transit users and the general public. Although fairness auditor Ted Hughes certified the integrity of the competitive selection process and agreed that none of the evaluation committee members were in a conflict of interest, Richmond city councilor Bill McNulty voiced unease in an interview with the *Richmond Review*, 'I have some grave concerns about the consultative process. It seems the stewards of the city are being pushed aside' (van den Hemel, 29 January, 2004).

The Public Approval Process

The need for secrecy in the private bidding process had a considerable impact on the political process of arranging capital funding and jurisdictional approval from the multiple public sector shareholders, which was occurring simultaneously. Unlike the selection of the winning consortium that took place largely behind closed doors, the political approval process was playing out in the public arena, and required a high level of information to render decision-making accountable. Moreover, the entire political approval process had to be accelerated. The race was on to have the RAV line approved as early as possible so that it would come on stream by the 2010 Olympic games. This

was a central criterion imposed by senior levels of government to obtain funding contributions to the project

Within the context of a collaborative approach to project delivery, there was immense pressure on each level of government to provide approvals that fit within the RAV development plan, since any level of government that refused funding would be seen as the one that scuttled a popular and necessary infrastructure project. In some cases this constrained the course of due diligence being done in project review. As well, the desire to have the private concessionaire partially finance the infrastructure created a sense of urgency for the public sector to solidify their financing agreements, since this would influence the assessed risk of the project to private lenders, which in turn impacted the interest rates that they would offer to the concessionaires, and ultimately the final price of their bids (Bula, *The Vancouver Sun*, 4 October, 2004, A.1).

For the federal government, a confidential document leaked to the media in the summer of 2003 highlighted concerns about elements of the RAV proposal, mainly the potential for significant cost overruns, ridership shortfalls, the minimal level of risk being transferred between public and private sectors, as well as the 'limited' potential for the line to reduce greenhouse gas emissions (O'Neil, *The Vancouver Sun*, 19 July, 2003, A1; Palmer, *The Vancouver Sun*, 19 July, 2003, C6). These were not merely 'extremely dated' sentiments which had been resolved through intergovernmental discussions as claimed by Premier Campbell and others close to the project such as Jane Bird and Ken Dobell, but were characteristic of lasting reservations felt by some senior federal bureaucrats (Palmer, *The Vancouver Sun*, 9 August, 2003, C6). As stated by John Mills, Director of Policy Coordination for Transport Canada in Greater Vancouver in a 2004 interview:

I do not think this [the RAV line] should be built. I think the costs are way too high, I do not think that it is necessary to build a rapid transit system in the City of Vancouver that is mostly, for 80% in subway...and even though the RAV project is reported to be a P3 (private-public partnership), in reality it is not a P3 because the private sector has very little risk in this project (Hilferink 2004: 147)

Despite reservations from bureaucrats within Transport Canada about the merits of the RAV line, the significance of this opinion was given less credibility as responsibility for more detailed intergovernmental negotiations shifted to another ministry, Infrastructure Canada which, as described above, had an institutional preference for promoting widely collaborative projects between both different levels of government and the private sector (Siemiatycki 2005b). Under the direction of Infrastructure Canada, the federal government agreed to contribute \$450 million to the capital cost of the RAV line, the largest single public sector contribution. This decision was largely seen to be politically motivated, as the Federal Liberal government sought to shore up electoral support in a western Canadian province where voters perceived considerable under-investment from Ottawa (Boddy, *The Vancouver Sun*, 9 August, 2003, F14).

Municipal decision makers also faced consternation as the RAV project came before them for approval. One example was the City of Vancouver Council, which in the spring of 2003 faced a vote about whether to proceed with the RAV line. In the Vancouver civic election the preceding year, 9 of the 11 council seats including the mayoral position were won by members of the Coalition of Progressive Electors (COPE), a grassroots left-of-centre party that had campaigned on a platform to oppose private-public partnerships in public transportation projects. To quote COPE Councillor David Cadman (COPE, 2004), 'COPE's views on privatization are clear: we want to keep the public in public transit by operating all our systems, including RAV, in the public sector.' Even councillors from COPE's more business friendly opposition, the Non-Partisan Association, expressed concern about the RAV project being carried out as a public-private partnership (Ladner 2003).

Yet, when it came time to vote on the RAV project which was to be undertaken through a private-public partnership arrangement, the lure of external financing for a rapid transit connection that would deliver considerable benefit to the City was too enticing to turn down. Thus in spite of their party's ideological objections, in a decision that has fractured the COPE caucus and the party's membership, the mayor and enough COPE

councillors supported the RAV project as a public-private partnership to have it approved by Vancouver City Council as a whole.

In the winter of 2004, approving financing for the RAV line came before the Greater Vancouver Regional District board as part of a \$4 billion regional transportation strategy. Supporting the decision to proceed were the findings of a three month public consultation process involving some 12,000 people who shared their opinions in a variety of formats, as well as public opinion polls which found that around 70% of respondents supported the overall plan (Translink 2004). While an array of information about the relative benefits and costs of different alternatives was made available to the public, the range and depth of the discussions were limited by a lack of details about the flagship RAV project since these were kept confidential as part of the competitive tendering process.

During the GVRD board of directors meeting, a similar split to that which occurred at the City of Vancouver played out between proponents and opponents of the RAV line. Again proponents highlighted the unprecedented level of external cooperation for the line, which was too much to turn down. Speaking in favour of the RAV line, Surrey Mayor and Translink Chair Doug McCallum noted at the meeting that the project had broad support from a variety of often adversarial constituencies: 'We have the support of a lot of the public, the business people, the unions, the students.' This claim was substantiated by consistent surveying by RAVCO which found support for the RAV line around 80%, as well as comments made during four hours of public depositions, although it represented a simplification of the public and special interest group positions (RAVCO 2005).

The business community supported proceeding with the RAV line, but was largely opposed to the introduction of a regional tax on all parking stalls in order to pay for transportation infrastructure improvements. And the decision on the RAV line had fractured the local labour movement. The BC Federation of Labour and the Building Trades Council opposed the private-public partnership but supported the project for the jobs and social benefits it would provide. But the Canadian Union of Public Employees

was more critical of the entire project as a poor investment of public resources, which overlapped with the opinion of other transit advocacy groups such as the Vancouver chapter of the Bus Riders Union activist group, which felt that transit riders would be best served by improvements in the bus network.

As for the general public, there were concerns that the highly favourable public opinion survey results had been biased by over-sampling populations along the proposed line and within Richmond and Vancouver. Supporting this claim, an alternate regional survey commissioned by the Canadian Union of Public Employees that provided wider disclosure of the RAV project costs suggested considerable public concern about the potential financial burden on taxpayers and the implications of delivering the project as a private-public partnership, although 74% of respondents remained in favour of developing a light rapid transit system in the Richmond-Airport-Vancouver corridor if costs could be controlled (Viewpoints Research 2004). Similarly, a survey of City of Vancouver residents by Robbins Sce Research (2004) found that while respondents were concerned about the cost implications of the RAV project as planned, 81.5% of respondents favoured the development of rapid transit if the total cost of the project could be limited to under \$1.2 billion, even though 49.2% of respondents reported that they were not very likely to ever use the system. The results of the Union and the Robbins survey were widely distributed in press releases, but did not get published by any of the main news organizations.

The position of the Canadian Union of Public Employees and their allies was echoed by some GVRD directors, who worried that local governments were the only partners in the project with an uncapped liability, meaning they would be responsible for making up the difference in any revenue shortfall. Exacerbating the divisiveness of the debate, part way through the meeting, it was discovered that the Translink Board had discussed confidential information that was not available to the elected directors of the Regional District. This revelation sent the meeting *in camera* so that board members could be caught up on the full range of information before making a decision.

When public deliberations resumed over an hour later, some directors appeared visibly shaken by the information that they had heard, while director and finance committee chair Victor Durman commented that it was irresponsible to make a decision of such magnitude when so much financial information was missing. Nevertheless, a motion to defer a decision to a later meeting was defeated on the grounds that any delay would threaten the potential for the project to be delivered in time for the Olympic Games. Local financing for the RAV line was ultimately approved by a single regionally weighted vote of 57 to 56.

The same divisiveness was repeated at the Translink board in the spring of 2004, when a motion to proceed to the final stage of the tendering process was brought before the board for final approval. Among dissenting directors, there was a pervasive concern that the private-public partnership structure had left the entire process shrouded in secrecy. As Translink director Barbara Sharp noted in a newspaper story, 'That's part of the problem with P3s, there's a whole lot of things we can't tell the public [about] what's going on...A lot of what we had to do was on faith' (McMartin, *The Vancouver Sun*, 12 May, 2004, B1). Another concern was that since the process had begun, the expected capital cost of the project had escalated to a reported 1.559 billion, greater than the necessary amount covered by the approved public sector financial contributions (Figure 9.9).

Figure 9.9: Capital Funding Sources For RAV

Source	Approved Funding (hundred millions)	Approximate Percentage of Total
Translink	\$300	19
Provincial Government	\$300	19
Federal Government	\$450	30
Airport Authority	\$300	19
Total Public Contribution	\$1,350	87
Expected Private Contribution	\$200	13
Total Capital Funding	\$1,550	100

(Source: Lee, *The Vancouver Sun*, 24 June, 2004, A1)

Amidst these concerns, the majority of directors rejected proceeding with the RAV proposal. Despite rejecting the RAV line, there remained a sentiment that the project could be resurrected for approval. In subsequent weeks, Translink board members along with officials from RAVCO and private consultancies undertook *in camera* negotiations to see whether the RAV line proposal could be resurrected. One suggestion was to save money by reconsidering the idea of an at-grade light rail line. However, this idea was dashed by a hastily prepared report by the top bureaucrats at the City of Vancouver, which maintained their decade old position that surface rail would be un conducive to urban development and traffic flow within the city boundaries (McMartin, *The Vancouver Sun*, 12 May, 2004, B1).

As Translink board members struggled with their decision, the Provincial government applied pressure on the local officials to reassess their decision. Provincial officials lobbied individual directors directly to change their vote, while the Minister of Transportation publicly mused about taking over control of the project (which they had the authority to do through the Project Streamlining Act) or removing the Province's financial contribution for RAV and reallocating it to major road projects throughout the province.

At the same time, RAVCO amplified the pressure on the Translink directors by commissioning and releasing the results of an opinion poll which found that 81% of respondents agreed the RAV line should proceed. The poll had specific characteristics that challenged the degree to which it represented public opinion within the entire Vancouver region, the geographic area that the Translink directors were responsible for overseeing. First, the sample was drawn exclusively from residents living in the municipalities of Richmond and Vancouver who would derive the greatest direct benefit from the proposed rapid transit system, and the potential for bias was exacerbated as the survey deliberately used an 'over sample' of residents living along the proposed north-south transit corridor. Second, respondents were presented with background information that positively portrayed the economic and environmental benefits of the project, with only limited information about the financial costs and no information about the potential

risks (Synovate 2004). Despite the shortcomings, the poll was reported in the media as a further sign of community support for the RAV line, and became part of the public discourse calling for a reconsideration of the project (Greenwood, *National Post* 1 May, 2004, FP1).

Ultimately all of the varied forms of lobbying paid off, and in May it was announced that the Translink board would officially reconsider the decision to approve the RAV line. In a second meeting, directors again rejected the RAV line in a 6-6 vote, amidst continued reservations about potential cost overruns as well as the role of the private sector. Following this meeting, still more political pressure was aimed at the Translink directors by the provincial government to reconsider their decision. And the two local daily newspapers (owned by the same company that was a major financial and ideological supporter of the provincial Liberal Party) further raised the level of local discussion to a feverish pitch by running daily stories about traffic chaos as well as the political theatre that had besieged the RAV approval process (Lee, *The Vancouver Sun*, 24 June, 2004, A1). In *The Province*, a daily newspaper with a circulation of around 150,000, the headline ran: 'Leftist ideology helped kill off much-needed RAV' (Ferry, *Province*, 9 May, 2004, A8).

Following more *in camera* sessions, claims that two previously opposed directors wanted to reconsider their votes led to a third meeting to deliberate on the RAV project, leading some Translink employees to dub the project 'Count RAVula' because the board had twice driven a stake through its heart but it still was not dead (Lee, *The Vancouver Sun*, 24 June, 2004, A1). The key to breaking the deadlock was a newly introduced clause in the motion which explicitly stated that Translink reserved the right to reject any private sector bid that required more than the \$1.35 billion in available public funds. In a third vote on June 30, 2004, the Translink board of directors approved proceeding to the final stage of the bidding process for the RAV project in an 8 to 4 vote.

The Intersection of Public and Private: Cost Creep, Risk Transfer and Scope Changes

The seal of approval from all the necessary levels of government and the arrangement of \$1.35 billion of public financing for a project that was expected to cost \$1.559 billion should have signified the end of the RAV controversy. But it was not. In November of 2004, RAVCO announced the result of the competition between the consortiums led by SNC Lavalin and Bombardier to design, partially finance and operate the RAV line. The winning bid that most closely met the performance standards at the lowest cost was from the consortium headed by SNC Lavalin, which came in at \$1.899 billion, \$343 million above the available public and private sector funding (Boei, *The Vancouver Sun*, 20 November, 2004, E1).

The bid proposed an automated rail line that would travel underground for nearly the entire distance in the City of Vancouver, conforming to the official position of the City of Vancouver, but would contravene the desires of Richmond city council by bisecting their town centre with an elevated guideway. The risk for the project was split between the private sector taking responsibility for the majority of risk associated with construction and system operation, while the public sector assumed 90% of the risk for ridership shortfalls as well as ensuring that the necessary land and permits were acquired in a timely fashion (Boei, *The Vancouver Sun*, 20 November, 2004, E1). In light of the historical experience of rapid transit development in Vancouver, it appeared as though the private sector had achieved a favourable risk profile. While rapid transit builders in the city had learned how to control the cost of construction between the Expo and Millennium Skytrain lines, ridership forecasts remained considerably overestimated. Details of the second place bid from the Bombardier-led consortium were not released, but it was reported that it was considerably more expensive (Boei, *The Vancouver Sun*, 20 November, 2004, E1).

Proponents of the private-public partnership planning approach had always maintained that competition between market-driven firms would lead to the lowest possible price. However, in the intervening period between the selection of the two bid finalists and the

selection of the winning bids, market forces had potentially undermined the competitiveness of one of the bidding consortiums. In the fall of 2004, Bombardier had gone into a corporate freefall that resulted in Moody's lowering their credit rating two notches to 'junk status,' a move that would make it considerably more expensive for the firm to finance their component of the RAV line capital costs (Boswell, *Victoria Times-Colonist*, 2 December, 2004, A1).

At the same time, there were reports that Bombardier had to drop out of bidding on a monorail project in Seattle amidst instability in their consortium, while an urban rail system the company had built in Las Vegas experienced repeated technical difficulties in which the wheels were literally falling off the train cars (*Engineering News Record*, 2004; Marois, *National Post*, 11 September, 2004, FP.5). All of these problems experienced by Bombardier were publicly available knowledge, reported widely in all of the major Canadian daily newspapers, and could have influenced the bidding behaviour of the SNC Lavalin consortium. The uncertain future for Bombardier would also have made it difficult for RAVCO to select the firm as a reliable, financially stable, long-term partner, necessary qualities for the winning bidder as established in the selection criteria (RAVCO 2002).

Returning attention to the SNC Lavalin proposal, an excerpt from a column by *Vancouver Sun* columnist and RAV skeptic Pete McMartin captures the position of those concerned with the high cost of the winning bid:

The bid was not only breathtaking in size, but troubling, too, because the huge gap between TransLink's cost projections and the builder's low-ball estimate suggested -- to me, anyway -- either alarming incompetence at Ravco and TransLink, or misdirection. Surrey Mayor Doug McCallum, the TransLink chair, pleaded unforeseen costs, such as rising costs for concrete and steel -- rising costs which No-voting members on the TransLink board warned repeatedly were inevitable in the super-heated North American construction boom, and which McCallum always dismissed. (*The Vancouver Sun*, 29 November, 2004, B1)

Despite the significant cost escalation that may have necessitated more public funding in contravention of the motion to limit public financing for the RAV line to \$1.35 billion,

hope was extended that a compromise could be achieved to salvage the project. Project planners were given two weeks to try and reduce the cost gap so the entire project would fit within the available funding envelope, a timeline that, as RAVCO CEO Jane Bird noted was imperative so that the project could be completed in time for the 2010 Olympic Games (Boei, *The Vancouver Sun*, 20 November, 2004, E1). In order to make the project more affordable, components of the system that had been preferences of the different public sector partners were cut, while different risks and responsibilities were reallocated between the private and public sectors.

Specifically, a walkway between the terminus of the RAV line and the cruise ship terminal was eliminated which would make it less likely for cruise passengers to use the new line to make the journey from the Airport to their port of departure. A station was eliminated in Richmond and the line through the municipality would be built with a single track, a move that would limit the profile of the overhead guideway and save money, but also reduce the potential frequency at which the trains could be run. The development of two more stations in Vancouver was delayed to a later date, including one that would provide access to the proposed location for the Olympic athletes village. The airport segment of the line was changed from the preferred elevated design to an at-grade alignment, and it was decided that the trip to and from the airport would cost a premium fare of between \$5 and \$6. Translink took responsibility for replacing trolley wires that would be removed during construction, as well as paying for fare dispenser machines and system security once the line opened. And the provincial government agreed to add \$65 million to their contribution (Boei, *The Vancouver Sun*, 20 November, 2004, E1; Bula and Beatty, *The Vancouver Sun*, 1 December, 2004, A1).

Between the project scope reductions and the added provincial government money, by the time the Translink board was set to vote on the project on December 1, 2004, the final cost was estimated at \$1.72 billion, 12% higher than the \$1.536 billion estimated that had been put forward for a fully grade separated rail line in the 2001 multiple account evaluation.

The components of the RAV line that were eliminated had a disproportionate impact on the private and public sector partners. The majority of the scope changes would specifically reduce the development costs, a responsibility of the private sector once the final contract was approved. However the agreed scope changes would also reduce the public benefit of the new transit system, while also increasing the risk that the project would not achieve its ridership targets, a risk that was being borne almost entirely by the public sector. Despite concerns from some directors, the Translink board gave their final approval for the RAV line, and gave their consent for RAVCO to negotiate a binding contract with the SNC Lavalin consortium, now called InTransit BC.

The Surprises Continue Following Project Approval

With the project now achieving final approval by the Translink board, this should have been the definitive end of the drama surrounding the RAV planning process. But again, it was not. In mid December 2004 as city life began to slow down for the winter holidays, without fanfare or a media release, RAVCO posted the details of documents on their web site that would be contained in their environmental assessment submission. While the documents were largely technical, one point stood out: 75% of the underground portion of the line – including in both downtown Vancouver and through a business district in South Vancouver - were going to be constructed using a cut and cover construction method (RAVCO 2005).

Cut and cover construction is an open pit style of building a tunnel. As the name suggests, it is a method of tunnel construction whereby a trench is opened up along the given route, the necessary rail equipment is sunk into the trench, and then the trench is recovered. The SNC Lavalin consortium favoured cut and cover tunneling as it is the least expensive, lowest risk and fastest method of building an underground rail line. It also allows the stations to be located close to the surface, a benefit for users as it limits the amount of time necessary to walk to the train platforms (RAVCO 2005).

However, cut and cover tunneling is more invasive than the alternative deep bore tunneling method, in which a large machine works entirely underground to bore the tunnel in which the rail equipment is built, and surface cutouts are only necessary at the beginning and end of the line as well as in the station locations. In busy areas, this means that traffic and commercial activity is less disrupted by the construction.

When news of the degree to which the line was going to be built using cut and cover tunneling hit the media, it raised public alarm. Business owners along the Cambie route who once supported the line formed a coalition called Do RAV Right to oppose the use of cut and cover construction, and residents in the neighbourhood became worried about the preservation of a tree lined central median on Cambie that had been designated a heritage boulevard by Gordon Campbell when he was mayor of Vancouver. After exhausting all the possibilities or a negotiated settlement with RAVCO, Do RAV Right challenged the legitimacy of the decision to build the RAV line using a cut-and-cover method on the grounds that the public had not been properly informed of this alternative during the consultation process (Greenwood, J. *National Post*, 18 June, 2005, FP.7). The legal action was unsuccessful.

Nevertheless, according to one Translink director, David Cadman, even the Board members responsible for making the final decision on the \$1.72 billion transit line had been unaware of exactly how much of the tunneling would be constructed by the cut-and-cover method. 'We were told that was proprietary to the bidder, and therefore could not be revealed' Cadman told the *Georgia Straight* newspaper (Smith, 3-10 February, 2005, p11). One City of Vancouver staff member who did know the details of how much of the line InTransit BC intended to construct using cut and cover was City Manager, Judy Rogers, who represented Vancouver on the RAVCO board of directors. However Rogers was bound by a confidentiality agreement that inhibited her from sharing any proprietary information with the Vancouver City Council, even if there were parts of the plan that could potentially be to the detriment of their constituents.

The level of secrecy required to maintain the integrity of the private-public partnership delivery model calls into question whether the RAV project governance structure threatened the fiduciary responsibility of the civil service, or provided the necessary accountability to the elected officials who were responsible for deciding whether to approve the project. It also raises questions about whether the RAV line as designed would have received such widespread public and business sector support if all the details had been known during the planning and consultation process. The fact that the Do RAV Right coalition proceeded with a court challenge to the cut and cover method of construction, even if unsuccessful, suggests that public opinion about the project may have been somewhat different had important details been made more readily available earlier in the process.

The issue of the construction method was not the end of the surprises for the RAV project. Despite the use of a less expensive cut and cover construction method and the reduced scope of the project (both of which would reduce the public benefit of the project), another surprise came in July of 2005 when details of the final contract were announced. Instead of the \$1.72 billion capital cost that had been expected when the project was approved by the Translink Board in December of 2004, the final price-fixed cost of the project came in at \$1.9 billion, an escalation of some \$180 million or 10% from when the Translink board approved the project in December of 2004 and a 22% increase over the early cost estimates being used until 2003 (Boei, *The Vancouver Sun*, 3 August, 2005, B1).

Apart from increases in labour and material costs, some of the cost escalations for the RAV line came from negotiations to return features that had earlier been cut from the project, including the proposed station near the site of the Olympic athletes village and the use of a double instead of single track in Richmond so that the trains could be operated more frequently (Boei, *The Vancouver Sun*, 3 August, 2005, B1). This contradicts the assertion by proponents of private-public partnerships in the academy such as Walker and Smith (1995) who suggest that the presence of private sector financing will create a financial discipline that limits costly scope changes late in the

development process, a problem blamed for cost escalations when projects are planned and managed by the public sector. As the contract was now price-fixed, RAVCO CEO Jane Bird assured the public that any further cost escalations would be borne by the private sector concessionaire (Boei, *The Vancouver Sun*, 3 August, 2005, B1).

While this may be the case, the trickle of financial information released to the public in the summer of 2005 following the announcement of the final contract raised questions about precisely how much the RAV line would cost the public sector, and how much risk was actually being assumed by the private sector. Figure 9.10 shows the final contribution of each of the public sector agencies adding up to a total of 1.247 billion, or \$76 million under the \$1.35 billion approved by Translink. The InTransitBC financial contribution to the RAV line was up from an expected \$200 to \$250 million in early 2004, to \$657 million in the final contract, which would be repaid over a 35 year period (Siemiatycki 2005b; RAVCO 2005b). This contribution exceeded Flyvbjerg and his colleague's suggestion that one third of infrastructure capital costs should come from private financing in order to increase accountability (2003, 2005).

Yet a closer examination of the project financing for the RAV line reveals that in addition to their initial contribution, the provincial government is also paying a \$152 million performance bond that will be awarded to the private concessionaire as certain milestones are achieved over the life of the contract, as well as a series of deferred contingency fees. When these long term public sector contributions are added to the \$1,274 billion being paid up front, the total public sector expenditure for the capital costs of the RAV line rise to \$1.474 billion, or 9% above Translink's approved limit (RAVCO 2005b). A report written by Lewis Auerbach, a former director of the Audit Operations Branch of the Auditor General of Canada who was commissioned by the Canadian Union of Public Employees, challenged the motives, accountability and long-term financial prudence of the deferred payment method:

What appears attractive about option four [deferred payment] from the province's perspective is that the performance payment mechanism allows it to convert half of the province's contribution to the RAVRT into a future operating expense,

thereby reducing current capital and operating expenditures, although increasing them over the long term (because of the higher cost of private borrowing over public borrowing). In other words, it will look like the province has lower debt than in the other options. (Auerbach 2004: 6)

Figure 9.10: Funding Agency Contributions for RAV (\$2003 millions)

Source	December 2004	July 2005	Percent of Total	Notes
Government of Canada	\$421	\$419	22	Or 450 million in 2003 currency
Province of BC	\$235	\$235	13	The Province is contributing an additional \$152 million through performance payments that will be made over the life of the contract as InTransit BC reaches certain milestones. When the province's initial \$235 plus the \$152 million performance payment, plus a conditional contingency fund are added up, the total contribution of the provincial government is \$435 million (\$nominal)
Vancouver International Airport Authority	\$271	\$245	13	The changes to the Airport line represent a net savings of approximately \$26 million
Translink	\$303	\$321	17	Cost increases due to project changes including addition of pedestrian/bicycle path over Fraser River and dual track in Richmond for an added cost of 18 million
City of Vancouver	---	\$27	1	Construction of station at 2 nd Avenue to serve False Creek
Total Public Agency Contribution	\$1,230	\$1,274	66	Public agency contribution is 76 million or 6% below the borrowing limit of 1.35 billion approved by Translink
Private Sector Contribution	Not Available	\$657	34	In the short term, the private sector is borrowing an additional \$152 million at higher rate of interest to cover long term Provincial government performance payment
Total Contribution	Not Available	\$1,931	100	If the Province's conditional contingency contribution and the long-term performance bond are added to the stated public contributions, the total public expenditure rises to \$1.474 billion, or 9% above Translink's approved limit.

(Source: RAVCO, 2005b)

Moreover, while InTransitBC had made a greater financial contribution to the RAV line than previously expected (which had higher debt servicing charges than those for the public sector) under the pretense that this would transfer risk from the private to the public sector, it appeared that the consortium had undertaken measures to spread their risk back onto the public. In August of 2005, InTransitBC announced that their

consortium of SNC Lavalin and Serco had been joined by two new financial partners: B.C. Investment Management Corporation, 'an independently-managed crown corporation,' that mostly manages public sector pension funds; and Caisse de Depot, the principal investing agent for public sector pension plans in Quebec. Pension funds, and in particular large publicly managed pension funds, are notoriously conservative investors, suggesting that the potential risk on the private investment was very small indeed. Furthermore, as Vaughn Palmer wrote in a scathing *Vancouver Sun* column as these details were made public:

if RAV produces less than optimum returns, then public sector pension plans in B.C. and Quebec will presumably have to eat any financial downside along with the one remaining, genuinely private, risk-taker. Not for nothing is SNC-Lavalin known as one of corporate Canada's most experienced practitioners in partnering with government. So much for the construction risk. (10 August, 2005, A3)

Private-Public Partnerships: Less Private, More Public

For the public, this brought to a conclusion the often murky, secretive process that has encompassed the planning of the RAV project. With all the approvals in place, construction was set to begin in late 2005. It bears noting that a report by former Justice and Queens Court member Ted Hughes (2003) found that the competition/selection process led by RAVCO was conducted fairly and with integrity. Furthermore, the overall process was structured in line with the best practices for procurement using a private-public partnership delivery model, and a wide range of technical studies were made available to the public on the Internet and at public libraries throughout the region. Finally, the private-public partnership contract for the RAV line may provide excellent long term value-for-money to the public.

However, broader concerns remain about whether the necessity for secrecy embedded in the private-public partnership delivery model undermined the potential for transparent and accountable public decision-making. The secrecy surrounding the project financing and detailed system design made it all but impossible for the public and elected officials to weigh the full costs and benefits of the RAV line. Even in the months following the

establishment of the final contract, the necessary information needed to assess the merits of the deal was not released.

In particular, the financial terms of the operating contract between Translink and InTransitBC were not made available, which is the information necessary to assess the rate of return for the private sector on their investment as well as the total long-term cost of the private public partnership for the public sector. This dearth of information is tantamount to an individual taking out a mortgage to finance 34% of the price of a house, but not being informed of either the size of the monthly payments or the rate of interest being charged by the lender. How many average citizens would enter into that deal?

If evidence from other jurisdictions where information is beginning to trickle out is any indication, the rate of return for the private sector may be extremely high, challenging some of the public benefit that is derived from private-public partnership arrangements. For example, a study of eight private-public partnership road projects carried out by the Association of Certified Chartered Accountants in the United Kingdom found that the average operating profit for the road company was 68%, and that even this was likely an underestimate since numerous revenue sources were not disclosed to the public (Edwards et al. 2004).

While RAVCO promised that the Auditor General would carry out a full financial review and more specific financial details of the concession agreement would be released to the public, this information was not available when it was needed, during the planning process. And the timing of the release coincided with the period that shovels were set to break ground on construction, making it all but impossible to stop development if any irregularities were uncovered.

Private-Public Partnerships: Implications for Mass Rapid Transit

In the previous section, I laid out the roller coaster ride that the RAV project took to gain approval, and noted how this challenged the tenets of a transparent and accountable

decision-making process. In this section I will turn my attention to the potential implications of a project planned through a private-public partnership. In particular, I will examine how such a delivery method impacts on the potential for the project to achieve the public interest for sustainable, efficient and equitable urban mobility. Since the project is still in the development phase, this analysis will be based on the official documentation for the project that has been made publicly available by RAVCO.

1. Meeting Congestion and Environmental Objectives

The RAV Project Definition Report officially promotes the development of the RAV line as a means of delivering 'significant' environmental amelioration, particularly with respect to reduced fuel consumption and, the production of atmospheric greenhouse emissions and particulates. It is also meant to provide considerable relief from road congestion (RAVCO 2003a). However, in spite of all the money spent on this expensive rail investment, questions have arisen about the potential for the new RAV line to meet the environmental objectives of the region.

Official estimates predict that the new line will remove up to 18,000 daily car trips from the corridor's roads, or 6% of the 288,000 daily car trips that used the roads in 1999, and this proportion will decrease between now and the day RAV opens, as the number of car trips on the corridor increases. Economically, it has been estimated that the RAV line will save just \$54 million per year in lost productivity in a region that some suggest loses over \$1 billion a year to road congestion (RAVCO 2005c).

Furthermore in the regional context, the number of cars is expected to grow from 1.2 to 1.4 million between 2003 and 2013. Viewed in this way, the \$1.9 billion RAV plan appears to be an expensive strategy to gain such a small reduction in car traffic, and achieve air quality improvements assessed at a net present value of only \$16.5 million (IBI Group 2001).

Finally, while the RAV line has been promoted as providing long-term congestion relief by attracting automobile drivers from their cars, both the expectations on the part of the project planners and the actual efficacy of the system to handle large numbers of users may be limited by elements of the project design. Specifically, the planned length of the station platforms is between 25% and 50% shorter than those on the Expo Skytrain line, some of which are already becoming extremely congested during rush hour. Shortening station platforms is significant as it limits the number of cars that can be included in each train and hence the number of passengers that can be carried per hour. This might make the line less expensive to build for the private sector consortium and not be of particular concern during their 35-year operating contract, but it might limit the long-term viability of the system to accommodate large numbers of passengers should property development along the corridor, rising gas prices or other factors drive transit ridership growth beyond current expectations. It bears noting that details of the station length were not available to the public during the planning of the RAV project, as this information was proprietary to each private sector proponent.

The ineffectiveness of the plan to make a serious dent in car usage may be foretold by the absence of protest from two major interest groups that would be potentially threatened by a transit line that attracted many new users. First, automobile industry representatives have been largely silent and did not oppose the RAV project. Instead, they have repeatedly focused their marketing efforts on denigrating bus riders, which seemingly pose a larger threat to their market share (Figure 9.11).

Second, representatives of the taxi and limousine industry have not been vocal and did not oppose the proposed airport link. The silence of these interest groups may seem strange, until it is recognized that only half of travel time benefits will be derived by transit users, while the other half will accrue to car drivers because of less road congestion. This would undoubtedly benefit taxi drivers, who may get more patrons as the journey time by car from the airport to downtown Vancouver is reduced. In a corridor with 1.36 cars per household, the phenomenon of induced demand might make any reductions in congestion short lived. Finally, plans to build new roads and highways

across the region signal that the regional authorities have not switched to a policy thrust that will directly challenge the supremacy of the automobile, which currently accounts for 74% of all weekday travel trips (Translink 2003).

Figure 9.11: General Motors Advertisement Targeting Bus Riders

Due to copyright restrictions, Figure 9.11 has been removed

The Figure presented a reproduction of a Chevrolet Cavalier car advertisement, which appeared in the *Georgia Straight* newspaper in March of 2003. The advertisement depicts a city bus pulling up to a stop in rainy weather. On the front of the bus where the route sign is usually displayed is the caption: 'CREEPS & WEIRDOS'. Underneath the picture of the bus is a caption that reads 'LUCKILY, THERE'S AN AFFORDABLE ALTERNATIVE', above a picture of a white Chevrolet Cavalier with the financing details.

The original advertisement was published in the 27 March, 2005 issue of the *Georgia Straight*.

2. A Catalyst for Land Use Change

Another explicit motivation for the undertaking of the RAV project is to leverage improved transit accessibility to catalyze land use densification along the route. There is already evidence that this process has begun, as a story in *Business in Vancouver* reported that in the days following the final approval of the RAV line, intense trading activity on properties in the area began and prices were already rising (Tjaden 2004). Subsequently, the *Richmond News* reported that the RAV line was set to catalyze a 'construction boom' in the municipality's town centre, with council approving proposals for 34 downtown residential towers, many within walking distance of the new system (Hoekstra 18 August, 2005). All this talk of development in Richmond seems to have influenced the findings of a recent report by PriceWaterhouseCoopers, which found that Richmond was one of the few municipalities in Greater Vancouver in which future supply of high-rise

condominiums outstripped forecasted demand (Anderson, *The Vancouver Sun*, 16 September, 2005, H1). Oversupply of property in the market could slow the pace of development around the RAV line, limiting the developmental benefits of the system.

Nevertheless, even if the RAV link does successfully stimulate development along the line, how much of this added value will be captured by the public through property and development taxes remains an open question. As well, there is no guarantee that new residents along the RAV line will be transit riders. This is particularly possible if new buildings are built with a large number of parking stalls as was the case in places along the earlier Expo Skytrain line, or if employment in the region continues to fragment into scattered office parks that will remain largely inaccessible by transit even with the implementation of the RAV line. In such cases, while increased residential density reduces the pressure for urban sprawl onto the highly productive agricultural land surrounding Vancouver, it may worsen local traffic congestion and its associated negative externalities.

In Richmond, while municipal officials are intent on using the realization of public transit access to stimulate the revitalization and densification of their town centre, the area is located on a flood plain that past soil studies have shown to be seismically unstable, and could experience some liquefaction or flooding in the event of a major earthquake (City of Richmond 2005). Despite widespread acknowledgement of the potential hazards caused in the event of an earthquake, this has not deterred recent medium and high-density development in central Richmond. However impending lawsuits faced by the District of North Vancouver for allowing development too close to a cliff which collapsed under the weight of heavy rains causing one death in the winter of 2004 could be a precursor for Richmond if the geological concerns are subjugated to the pressure of development.

3. Regional Transit Service

The RAV line is a transportation link that will complement the existing network, and provide a faster, more reliable and more comfortable connection for passengers traveling in one of the busiest traffic corridors in Greater Vancouver. Richmond is a growing municipality, and the RAV corridor is the site of one third of the region's jobs (RAVCO 2005c). In this light, the addition of a fully segregated rail line will provide a marked improvement for the ethnically and economically diverse population that use public transit within the corridor, both as a commuter line between Richmond and central Vancouver, and as a circulator within both municipalities.

However, the approved RAV line is only one link in a transit system that has achieved success through regional integration. In Vancouver, the vast majority of transit riders use the bus. And it is expected that many RAV riders will reach the new system by bus. In this light, the fact that a private company that is guaranteed payment for a certain level of ridership will operate the completed RAV line poses two potential concerns.

First, the regional transportation authority plans to aggressively redesign the surrounding transportation network so that it integrates with the north-south running RAV line. In addition to cutting the award winning B-Line rapid bus system which currently runs on a parallel route, commuter bus service from geographically distant yet surrounding municipalities will now feed into the RAV line instead of travelling directly to downtown Vancouver. This has raised questions for at least one of the Translink Directors about whether the regional transit system is being redesigned to improve mobility or to ensure the financial viability of the RAV project (Corrigan 2004). Specifically, some north-south journeys that were previously made on a single vehicle may actually become longer as riders are expected to transfer onto the RAV line.

Second, should the RAV line fail to meet its ridership targets, the local transit authority, Translink, will still be responsible for paying the private rail operator's full concession.

Faced with a financial shortage, bus service cuts would almost certainly be a source of cost savings, as has already occurred in Vancouver in the lead-up to the inauguration of the Millennium Skytrain line.

4. The Airport Connection

The construction of airport rail connections has become part of an urban prestige project that has spread to cities around the world. However, behind the glamour and rhetoric of improving regional competitiveness and international image, airport rail projects in the majority of North American and Australian cities have not captured a considerable share of travelers nor have they been particularly financially viable. In San Francisco, within months of the inauguration of a new \$1.2 billion rail line to the airport, the transit authority implemented service cuts on certain days and proposed station closures along the line amidst reports of low ridership and massive financial losses for the airport link (Murphy, *San Francisco Chronicle*, 11 August, 2005, B2). And in Australia, airport rail lines planned and financed by Macquarie Bank, an advisor to the planners of the RAV project, have been plagued by low ridership and even bankruptcies, sometimes receiving large government bail-out packages to remain in operation. These experiences in other jurisdictions suggest a considerable risk associated with the development of the airport branch of the RAV line.

5. The Labour Force

Private-public partnerships are widely celebrated for providing lower cost service delivery than comparable public sector organizations. However, the fundamental logic underpinning these cost savings is rarely questioned, namely that it is beneficial to reduce the cost of public goods and services by forcing down employee wages and increasing labour flexibility (Walker and Smith 1995). RAV project proponents such as Jane Bird readily confirm that savings on transportation mega-projects come from reduced labour costs (Bird 2004).

Overall, this strategy contributes to a more economically fractured city, where jobs in the public sector paying a 'living wage' are now subjected to the downward pressures of the international labour market. Simultaneously, the importance of organized labour is reduced, even in situations like the RAV project where it is believed that unions will exist. Recent reports by the Federation of Canadian Municipalities have highlighted Vancouver as having the fastest growing and largest income gap between rich and poor of any city in Canada, which widened by 65% between 1990 and 2000 compared to the national average of 23% for urban centres. Additionally, between 1991 and 2001 in Vancouver, the increase in rents on low-end properties (bottom 20th percentile) outpaced the increase in low-end incomes (bottom 20th percentile) by some 45%, the second largest difference after Toronto and its surrounding municipalities (Federation of Canadian Municipalities 2004). The incursion of the private sector into the provision of public transportation may exacerbate of this trend.

6. Fare Changes

It could be expected that as a result of lower transit operating costs associated with private system operation, actual fare levels would decrease. However, there is no indication that this will actually take place. In fact, following a fare increase in 2001, another fare increase was approved in 2005 to pay for capital investment initiatives such as the RAV project. This is in spite of the fact that Greater Vancouver currently has the highest transit fares in the country for certain segments of the population, such as kids, an outcome that has been challenged by youth groups and the Vancouver School Board (Figure 9.12).

Furthermore, in order to add revenue streams to the project as the construction budget rose, it was decided that the fare to the airport would be raised to a premium rate of between \$5 and \$6, a move that would disproportionately impact airport employees that use transit to access their job every day, but may have no other alternative mode of transportation. As well, in the event that patronage on the RAV line fails to meet

expectations, transit fares could be further increased by Translink, which would disproportionately impact bus riders who are the majority of system users.

Figure 9.12: Post Card Comparing Kids Transit Fares in Canada, February 2004

Due to copyright restrictions, Figure 9.12 has been removed

The Figure presented a reproduction of a postcard that was produced by Henry Orsini (age 9) and distributed by the BC Field Trips Organizing Committee, in order to raise awareness about the comparatively high cost of public transit for children in Greater Vancouver. In a colorful, hand drawn bar graph under the headline 'Kid's Transit Fares Across CANADA', the postcard shows how Vancouver's transit fares for kids were the most expensive in the country when compared to all other large cities as of February, 2004.

(Source: Henry Orsini, Age 9, 2004)

7. Operating Costs

Some local analysts actually question whether private service delivery will lead to lower operating costs. A report written by the planning staff at the City of Burnaby notes that repaying private debt at a higher rate of interest than can be borrowed by the public sector plus corporate profits will require concessions to the private operator that are greater than the cost of providing the service in the public sector (Belhouse 2003). Others suggest that duplication of control room and engineering functions for the existing publicly operated Skytrain service and the new RAV line will lead to greater costs than if the public sector operated the entire rapid rail system in-house (Redlin 2003). Confidentiality of official financial statements associated with the project makes it difficult to confirm these allegations. However, previous negotiations with Bombardier to contract out the operation and maintenance of Vancouver's publicly run Skytrain rail system have been rebuffed. In their staff report, Translink found that while the private firm could deliver somewhat lower direct operating costs, the absorption of corporate

overhead and profit would lead to increased total costs to the public sector of \$4.4 million, or approximately 8.3% (Dobell 2000).

8. Tax Burden and Risk

Since the public sector is financing \$1.2 billion of the RAV project directly through tax revenue plus \$245 million from the public Airport Authority, the project will not achieve a reduction in public debt, or the freeing up of public funds that proponents of private-public partnerships often claim will occur. Instead, the public sector will still be burdened with taking loans to finance the system, inhibiting its ability to finance other projects and priorities. By comparison, the private sector is contributing \$657 million which is being borrowed at a higher rate of interest, even as the provincial and federal government report massive budget surpluses and neither has reached their borrowing limit.

In exchange for their monetary contribution, the private sector will assume the financial responsibility for construction cost and time overruns. However, catastrophic cost overruns as a result of tunnelling and risk associated with ridership shortfalls remain to varying degrees the responsibility of the public sector. While both the federal and provincial governments and Airport Authority have capped their contributions to the project, in the public sector, only the GVRD has an uncapped liability. This means that in the event of tunnelling overruns or ridership shortfalls, the GVRD and Translink would be responsible for paying the difference. If this should occur, GVRD taxpayers could expect to see significant increases in property taxes, the regional gas tax, the introduction of a road charge, or a vehicle levy (Caranci 2004). Since Translink currently has a financial plan that only runs through 2007, there is uncertainty as none of the financial contingency plans have faced public debate or approval by the board of directors.

9. *Flexibility and Control*

Entering into a long-term contract with a private concessionaire for the operation of RAV limits the flexibility of regional planning bodies and governments to make service alterations in the face of changing contextual environments. Even if a new political party comes to power with a vastly different policy platform than their Liberal predecessors, it will be difficult for them to alter contractual obligations made by the current governments without incurring massive financial penalty. This may seem unlikely. Yet just such a situation is currently playing out with the 407 toll highway in Ontario (which Translink CEO Pat Jacobsen had a role in structuring as a private-public partnership). Specifically, the private operating consortium consisting of Macquarie Bank, the same firm which provided the technical justification for a private-public partnership on the RAV line in Vancouver, is in a protracted struggle to exercise its contractual right to raise tolls against the will of the government. This conflict reflects a growing trend for multinational corporations to sue governments when regulatory, planning or legislative changes are made that negatively impact on their profits.

Conclusion

In a column titled 'Neither black nor white, this issue's red all over,' *Globe and Mail* columnist Murray Campbell comments on the current state of the public discourse surrounding private-public partnerships in Canadian jurisdictions:

The debate is marked by apprehension, secrecy and imprecise (possibly fatuous) language. The truth of claims and counterclaims may not emerge for months, and even then it's possible that each side will be able to claim a victory...The government says its motives are pure, but until it comes clean on the details, the fears that it is on the wrong path can't be put to rest. (27 August, 2005, A9)

In this chapter, I have sought to demystify the contemporary application of private-public partnerships in the provision of public services in Canada, by following the narrative of one such project from its inception to conclusion. In piecing together the complex and detailed planning process of the RAV line in Greater Vancouver – relying primarily on

widely available public information, and inflected only lightly with primary data – I have highlighted the need for red flags to be raised about the merits of this alternate financing and procurement model.

Specifically, this chapter has shown that despite the claims being made by governments that private sector involvement in the provision of public infrastructure will introduce a new level of discipline, fiscal responsibility and accountability onto the public sector and make it far more responsive to the public interest, the outcomes in the instance of the RAV line have been far less triumphant. The rhetoric of the private and public sectors standing shoulder to shoulder to deliver the infrastructure necessary to enhance the quality of life for all British Columbians was perverted by ingrained power relations between the various parties, which ensured that the end product was designed so that it would meet the criteria of the most financially endowed collaborators.

Moreover, under the weight of inspection, the theoretical arguments put forward by academics such as Flyvbjerg (2003), Lave (1985) and Savas (2000) supporting private-public partnerships do not hold up particularly well. The requisite level of secrecy for a competitive planning process is not compatible with the need for public transparency, and the RAV project met very few of the criteria for a meaningfully consultative process (Innes and Booher 2004). The involvement of private sector financing has been insufficient to minimize development cost escalations, and the public sector continues to carry the most significant level of risk despite the intention of indemnifying taxpayers against potential cost escalations. The adherence to a competitive delivery process using performance standards has not resulted in more innovative system design, as a decade of studies on the RAV line noted the potential for an automated subway running under Cambie Street. And the private financing of the RAV line may in fact draw money away from other priorities, leading to the realization of a total transit system that is less able to meet the public interest for equitable or sustainable mobility.

Despite the wide range of criticisms leveled against the RAV project, most of which have been clearly articulated in the public domain through hundreds of newspaper articles,

radio call in shows and television news stories, the RAV project maintained a high level of popularity with the general public. Opinion surveys throughout the planning process consistently found that around 80% of respondents supported the project, even when they were presented with some information about the potential costs of the line, and ongoing public consultation processes involving thousands of residents from across the region uncovered broad support. To be certain, these public engagement processes had their flaws, leading to charges that they were more public relations exercises than accurate gauges of public opinion, designed to manufacture political and public consent for the development of the RAV line (Boddy, *Vancouver Sun*, 9 August, 2003, F14).

Nevertheless, the evidence of sustained public support for the RAV line during the planning process suggests that when seeking to redress what has been identified as a paradox between escalating project costs and poor performance, analysts must look beyond issues of forecasting methods and planning procedural accountability, and focus greater attention on why these projects remain widely popular. In the conclusion of this section, I will reflect on the broader experience of transportation planning within a neoliberal polity.

Part III: Conclusion

In Part III of this thesis, I have sought to fill the gap for academic research on the processes and implications of neoliberal approaches to transportation planning, in a manner that cuts through the ideological rhetoric surrounding this topic. In Chapter 8, I illustrated that a neoliberal paradigm of transportation planning in Greater Vancouver – which encourages stakeholder collaboration and an emphasis on investments that further regional competitiveness - emerged as a reaction to previous processes that were seen to be deficient in meeting the public interest for procedural accountability, or sustainable and equitable mobility. The incoming Liberal Party preferred a neoliberal growth model, as it provided an opportunity to benefit from the perceived popularity of infrastructure mega-project development while maintaining an image of fiscal responsibility and public collaboration.

However, in practice, regional strategic planning under a neoliberal growth model has led to a transformation of investment priorities that may not fit with the broad public interest for more sustainable, efficient or equitable mobility. The embedding of private-public collaborations in the visioning stage of the planning process has encouraged a gradual transformation of investment priorities from those which support a wide ranging vision of sustainability that includes economic, environmental and social pillars, to those that are primarily meant to spur economic competitiveness. Based on the lobbying of the goods movement industry, large-scale transit mega-projects have been encouraged alongside a return to a massive road-building program, which is intended to increase commercial activity and make Vancouver more competitive as a Gateway into North America.

Whether this new investment program fits with the interest of ‘multiple publics’ within the community remains an open question, although it is a significant deviation from the previously articulated investment priorities that first encouraged small-scale solutions such as bus fleet expansion and transit priority measures before other alternatives were explored. With this in mind, current transportation planners should have an obligation to answer a wide variety of questions about the motivations for the change in strategy.

For example, when allocating large portions of public resources to fixed underground (or elevated) transit mega-projects and highway schemes, how do planners intend to pay for providing quality transit service to other areas that are not served by those systems? Is it socially sustainable or equitable to widen a highway through a working class neighbourhood, which will provide improved goods movement and access to downtown Vancouver for car driving suburbanites, while increasing traffic, noxious fumes and noise levels for the local community? Is it sound planning to follow a program of spending public resources on constructing new roads, when evidence from across North America has shown that the phenomenon of induced demand has ensured that such a policy does not reduce congestion or contribute to environmental amelioration (Downs 2004).

While these, amongst others, are all fair questions, in Vancouver answers have not been forthcoming, as the cacophony of critical voices coming from different camps has been largely subjugated to the preferred position of the private sector collaborators and a planning process that has replaced public consultation with public relations. Presented with incomplete information about project benefits and costs, and granted limited opportunity for a fully open debate about potential alternatives, mega solutions have come to be seen as the sole salvation for Vancouver's congestion problem.

Nevertheless, the broad popularity of large-scale projects has become a major driver behind their planning, which was reinforced in the May 2005 provincial election in which the Liberal Party promoted their record on the RAV line and the proposed Gateway road program to win another term in office. In a democracy such as Canada's, elections provide the opportunity for the public to hold their politicians accountable for their decisions, and the Liberal Party election victory represents an explicit vote of confidence for the direction of the transportation plans under development in Greater Vancouver.

Moving from the regional scale to the individual project scale, the case study of the RAV line presented in Chapter 9 illustrates that the introduction of a neoliberal approach to transportation planning has been largely ineffective at curbing the main criticisms that

were leveled against the conventional planning approach. Like the processes that resulted in the realization of the two earlier Skytrain projects in Vancouver, the RAV case shows the presence of what Nobel laureate Daniel Kahneman and Dan Lovallo (Lovallo and Kahneman 2003) call 'anchoring,' where an original plan is fixed and then analysis is carried out to affirm this decision. In the case of the RAV project, path dependence, institutional inertia and the role of individual agents rooted in the long history of transportation planning in Vancouver overrode the theoretical benefits of a partnership approach, by creating a process that anchored the plan to a set of preconceived notions about how the project should be configured and delivered.

From institutional structure to human agency, the pressure was on to accentuate the positive when laying out the prospects for RAV as a private-public partnership, and more broadly as a top investment priority for the region. These pressures included the lure of financial gain, political success if the project was approved and the cultivation of personal legacies, which largely took precedence over the rationality of the technical analyses. More to the point, as was found in Flyvbjerg's (1998) trenchant study of planning in Aalborg, Denmark, instead of being impartial, the results of the technical analyses, public consultations and opinion surveying for the RAV line were being shaped by the criteria and specifications put in place to meet the political concerns of the parties involved, and reinforce public favour for certain projects. As Throgmorton (1991) observed in his study of electric power planning in Chicago, opinion survey research, models and forecasts served as important rhetorical devices used by planners and project proponents to form the persuasive narratives that shaped political and public opinion.

Intriguingly, the diverse pressures guiding the RAV line towards approval were the same forces that had plagued the planning of earlier large-scale rapid transit and road projects in Vancouver. In fact, a neoliberal approach to transportation planning, which encompassed the private-public partnership delivery method, was specifically implemented in Vancouver in order to redress the opportunistic tendencies and lack of cooperation that had been endemic in earlier transportation planning endeavours.

However, while the private-public partnership approach to planning did not alleviate the pattern of opportunistic behaviour in the delivery of transportation infrastructure as intended, it did embed a series of relationships that were incongruent with the undertaking of an accountable and transparent decision making process. The necessity for a high level of confidentiality in order to protect the integrity of the tendering process ensured that while many technical planning documents for the RAV line were made easily accessible to the public, only a limited amount of the financial and detailed project design information necessary to assess the relative merits of the project were publicly available. Limited public disclosure of important financial and design information has been a phenomenon observed in other projects delivered through private-public partnerships in Vancouver and around the world (Davis 2005; Demirag et al. 2004). Starting from this structural disadvantage, the general public was limited in their ability to criticize the official discourse in a cogent manner and to act as a strong counter balance to the pressures that are inherent in the planning of all major transit projects. Even the Auditor General was excluded from examining the project during the development process.

At a wider scale, as illustrated by the research of Miraftab (2004) and affirmed in the case study of the RAV project, intergovernmental and private-public collaborations are laden with imbalances of power, influence and financial means between the various partners. This has meant that despite the rhetoric of cooperation to deliver results that are better than any one party could achieve on their own, in practice the partner that has the greatest financial means or the most binding authority has been able to assert their own criteria upon which their support is contingent. This has resulted in the prioritization of projects that are large in scale and meet the interests of each funding party, while making it difficult to achieve resources for smaller scale investments that may have been ranked more highly on technical studies but could be unpopular with certain groups. Moreover in terms of risk transfer, a key driver for developing mega projects through a private-public partnership, the final contractual arrangement appears to allocate a more predictable risk profile to the private sector than the public sector, while between the

different levels of government only the regional district was left with an uncapped liability despite being the least financially endowed scale of administration.

The overall result of the structural deficiencies embedded in the neoliberal planning framework in combination with the opportunistic actions of those promoting the RAV line was the same old story in the world of infrastructure development. A transportation project was designed to qualify for funding from the contributing agencies and to receive support from the special interest groups involved. But precisely because of these constraints, it may not be the most effective means of achieving the public interest for equitable or sustainable urban mobility.

It is perhaps ironic that many of the organizations, institutions and players involved in the RAV project embrace the neoliberal paradigm that views competition as critical to enhancing efficiency and quality. In fact, the RAV project planning framework virtually limited the competition of ideas to those which supported a Skytrain type system, running under Cambie Street, and delivered as a private-public partnership.

In this sense, the RAV project provides a cautionary tale of private-public partnerships for readers on both the right and the left of the ideological spectrum. Readers on the right will take note of the failure of the private-public partnership to provide a truly unfettered market through which competitive forces would determine the ultimate design of the RAV project, resulting in a potentially sub optimal system configuration. And readers on the left will take note of the not-so-hidden hand that powerful private sector parties had in shaping the project to suit their interest, while also noting the potential added costs associated with the project being delivered by the private sector. Despite their ideological differences of perspective, there should be agreement across the political divide that the private-public partnership carried out for the RAV planning process was not a particularly strong example of good governance or public decision-making. However, the strong public support for the RAV line, even as planned through a private-public partnership approach, will ensure that other mega-projects remain on top of the political agenda in Greater Vancouver.

PART IV: REFLECTIONS

Chapter 10: Reflections on the Mega-project Phenomena

In concluding this thesis, it is my hope that the case of more than 100 years of transportation infrastructure planning in Vancouver has provided an engrossing story about the forces that have guided urban transformation in one Canadian city region. Like earlier studies of large-scale infrastructure projects in other jurisdictions such as London (Hall, 1982), Aalborg, Denmark (Flyvbjerg, 1998), Shanghai (Olds, 2000) and Boston (Altshuler and Luberoff, 2003), I have found that the development of mega-projects has been perpetuated by individual ambition and the quest for political and financial gain within a constellation of asymmetrical power relations.

However, by presenting a highly detailed, historically contingent analysis of transportation investment in Vancouver, this case study has blurred the boundaries between winners and losers, perceptions and realities. Instead I have highlighted the fad-driven nature of urban change, where yesterday's problem is today's miracle cure, and today's savior is tomorrow's plunderer.

Through a review of more than one hundred years of transportation investment, I have shown the general ineffectiveness of decision makers in Vancouver to address the mega problem of constricted urban mobility and its attendant costs, despite experimentations with state-of-the-art technologies ranging from trams to trolley buses to rapid transit mega-projects to an approach that balances large scale highway and transit investments. Moreover, I have identified a general inability to meet the public interest for accountable and transparent planning processes, despite experiments with state-of-the-art ownership models ranging from private to public monopoly, to greater partnerships between the private and public sectors, and despite the recent implementation of a regionally integrated urban transportation governance structure that is the envy of cities across North America.

Based on this longitudinal methodology, my research provides intriguing insights into the development of infrastructure mega-projects, and the wider endeavour of city building. It

bears repeating that as an analysis of a single case, this study does not provide sufficient evidence to generalize about the experience of other projects, or make predictions of future outcomes in other jurisdictions. Nevertheless, the findings of this case can be drawn upon as scholars and practitioners proceed to further study and plan urban infrastructure mega-projects. To this end, I will now briefly reflect on how my findings inform the literature on decision-making theory, the processes for planning transportation projects, and the outcomes of specific types of projects, as laid out in the theoretical framework presented in Chapter 2.

City building a as path dependent process: by taking a longitudinal approach to the study of transportation infrastructure projects in Vancouver, I have illustrated the importance that history and past decisions play in shaping the contemporary projects that are approved for development. This occurs on three levels, which contribute to locking in current policy makers on a certain path that once embarked upon is difficult to change.

The first level is physical lock-ins. Since single pieces of transportation infrastructure operate as part of a system, the early decision to invest in a given technology often reinforces its future usage in order to maximize the potential integration. In Vancouver, Skytrain technology has been repeatedly selected for development for its potential to be seamlessly integrated with the first line that was built in the mid 1980's, and also to capitalize on operational economies of scale. This preference for Skytrain-type technology has persisted even though its capital costs are considerably higher than other alternatives, and some experts have questioned whether it is the most effective technology choice given the urban fabric of Vancouver.

Moreover, transportation investment decisions have a reciprocal relationship with land usage, which then impacts the types of future transportation alternatives that are ultimately viable. As congestion has mounted, the nearly universal dependence on the automobile as the sole mode of transportation in certain parts of the region has locked policy makers into a situation where the development of larger roads is seen to be the only viable short/medium-term solution, even when these new roads are accompanied by

considerable negative externalities and a universal understanding that they are not a long term solution to congestion.

The second level is policy and political lock-ins, in the sense that past policies and political actions create a considerable momentum to follow in the same direction. From the mid 1970's in Greater Vancouver, the overarching policy document that has guided growth management has been the *Livable Region Strategy*, which highlights the priority of creating a system-wide network of surface transit before investing in large-scale infrastructure projects. This spawned a multitude of supportive policy documents in municipalities across the region, and strong rhetoric about the potential benefits of small-scale iterative changes. However, dating back even further to the 1950's and before, the path to achieving electoral success in the province of British Columbia has been closely tied to the development of large-scale infrastructure projects, which seemingly captivate the imagination of the electorate and have been successful at galvanizing considerable support. Conversely, electoral failure has been closely tied to those parties that have not successfully managed the development of infrastructure mega-projects. Amidst these two seemingly contradictory paths, the lure of electoral success and the continued public support for mega-projects has led politicians to consistently trump the direction established in the livability-oriented plans in favour of prioritizing large-scale projects.

The third level is what I will term institutional lock-ins. In Greater Vancouver over the course of a century, I have illustrated the continuity of actors, agencies, corporations, planning traditions and patterns of behaviour that have repeatedly been involved in the planning of transportation projects. By being involved in early projects, these parties gained experience and connections that led to their involvement in future projects. For instance, regardless of the ideological persuasion of the government in office, consultants from ND. Lea, Delcan and IBI Group have been deeply involved in providing the technical support for transportation policy decisions in Vancouver. And yet these firms, like the other parties involved, have existing expertise, ideology and biases that together reinforced the preference for large-scale transportation projects. In the case of the consulting firms, their engineering orientation and emphasis on economics over other

impacts has provided a strong technical foundation for the proliferation of a mega-project development paradigm, and also supported the increasing prevalence of different forms of private-public partnerships.

The combination of physical, policy, political and institutional lock-ins have together contributed to directing contemporary decision makers onto a specific development path that is very difficult to change. While the observation of a wide set of lock-in factors may seem somewhat banal, a central finding of this thesis is the importance that history and context play in understanding why certain projects, or certain decisions are made at specific moments in time.

Challenges facing transportation infrastructure planning beyond the private versus public divide: In this thesis I have highlighted the transformation in the model through which urban transportation services in Vancouver were provided, from private sector driven, to public sector guided, and finally to a mixed model of partnership between the private and public sectors. This is a pattern that has been generally followed in other North American and European cities. As I have shown, each transition was guided in large part by a genuine desire to ameliorate shortcomings that had emerged in the previous model of delivery, be it a decline in service quality when the public sector took over control of public transit service in the 1950's, or a lack of procedural accountability, consistent political interference and endemic cost escalations and performance shortfalls that resulted in the emergence of greater private sector involvement in the 1990's. Neither transformation was carried out capriciously or primarily as a result of selfish interest groups seeking to better their own position, but instead was the outcome of a previous model that not only failed to deliver a satisfying planning process, but also failed to provide adequate transportation solutions.

Despite the rhetoric surrounding the most recent transformation towards a private-public partnership approach to infrastructure planning, this emerging model has failed to redress many of the flaws that had become inherent in the earlier models of planning, and in fact has exacerbated others. The need for a high degree of secrecy to maintain the integrity of

the bid process challenged the potential for a transparent or accountable framework. Greater private sector involvement through a competitive tendering process did not increase the innovative nature of the solutions proposed as expected, as issues of physical, policy, political, and institutional path dependence overrode the potential benefits. And the desire to draw on private sector financing did not only fail to stop cost escalations during the planning phase but may have added to the overall cost of the project since the rate of interest at which the private sector can borrow money is higher than that for the public sector.

When placed in context and examined over more than 100 years, the challenges facing the planning of transportation infrastructure are beyond left-right ideological or private versus public dichotomies, and instead speak more widely to the challenges facing liberal democracies. Most specifically, this includes the question of how to plan for a broadly defined public interest in cities that are characterized by a diversity of needs, goals and aspirations.

Mega-projects are not a miracle cure of urban transportation challenges: in this thesis I have charted the long-term development of transportation investment in Greater Vancouver, and illustrated how at repeated moments of decision dating back at least to the 1950's, large scale projects were favoured over an approach that would have sought to maximize the efficiency of the transportation network as an entire system. Despite the prevalence of an institutional milieu that has consistently supported the development of large-scale projects, these projects have repeatedly failed to provide long-term relief to Vancouver's congestion problem or the attendant negative externalities. Since the 1970's, studies have found worsening levels of congestion, a growing financial cost to blocked roads and declining air quality in certain parts of the Greater Vancouver region, while public opinion polls have consistently found that congestion remains a top issue of citizen concern. In this sense, the investment in large-scale projects that have taken up large portions of the urban transportation budget, regardless of whether they are road or public transit-based, have failed to redress Vancouver's transportation mega problem.

Why Build Mega-Projects?

I would now like to return to the question that I posed in Chapter 1: In spite of the documented history of cost overruns and poor performance, why do societies around the world continue to invest in mega-projects? In short, based on the historical case study of more than 100 years of transportation planning in Vancouver presented in this thesis, the answer that I have proposed is that mega-projects are repeatedly developed because they are widely seen to hold the greatest potential for solving some of the most vexing mega problems of our time, including: disease, the overproduction of greenhouse gases, regional underdevelopment, chronic unemployment, etc.

In urban settings, the public, planners and politicians have come to perceive transportation and congestion as a mega problem, with externalities that impact on the economy, environment, social equity, quality of life and health. In this sense, transportation issues are in some ways conceived of as a catchall topic that, if properly addressed, will significantly improve other aspects of urban livability. Reflecting the predominance of this view, in Vancouver as in cities around the world, public opinion polls and ongoing public consultations consistently find that citizens rank transportation and more specifically road congestion as among the top issues for attention on the urban agenda, sometimes ahead of crime, education, and good governance.

In the case of transportation, it does not matter that distinguished scholars such as Anthony Downs (2004) and Martin Wachs (2005) have suggested that congestion is an endemic part of city life, traced as far back as the early days of urbanization. Moreover, these authors point out that because urbanization is fundamentally based on agglomerations of human populations who desire face-to-face interactions, congestion will never be fully eliminated – regardless of the technological or growth management strategies implemented - but can at best be mitigated. In Greater Vancouver, some parts of the regional planning establishment have even followed Downs' invocation to embrace

congestion as a beneficial feature of the urban landscape, seeing it as a catalyst to shape land use decisions and guide individual transportation choices.

Despite the intellectual construction of road congestion as a problem without a complete solution, the popular conceptualization of transportation and congestion as a mega problem with the potential to impact on a diverse set of externalities has legitimized support for dramatic solutions. By centrally inserting the role of public opinion into the analysis, my research is congruent with, and builds on the conventional explanations forwarded about the continued preference for infrastructure mega-projects.

Most authors have argued that the perpetuation of large-scale projects is a result of project planners and proponents pursuing their own interests. In this conventional construction, duplicitous and self-serving promoters repeatedly deceive the general public, who are all too willing to support projects without full information (Hall, 1980; Flyvbjerg, 2003; Altshuler and Luberoff, 2003). My analysis supports the contention that projects are shaped by institutionally ingrained opportunism and malversation, and that the processes for planning mega-projects under both the conventional public sector and private-public partnership approach have delivered inadequate public accountability and transparency.

Yet my analysis also suggests that the general public is not entirely unaware as previous studies have implied of the endemic cost underestimation-performance overestimation game that has plagued the planning of infrastructure mega-projects for a century. Nor is the public oblivious to the political forces that have been identified as shaping transportation mega-projects. In spite of the lack of procedural accountability, even the corporate media that have an ingrained interest in supporting mega-projects have shown a high level of criticism of certain projects, and provided enough background information to fuel public skepticism about the merits of certain proposals.

In Vancouver, the public recognition of transportation as a mega problem has meant that every transportation proposal since the 1960's has received intense media coverage,

comprising both positive and negative articles that generally highlight the context, purpose, interests served and past record of similar projects in the city as well as in other jurisdictions. Even with information publicly available, every major transportation project that has proceeded in Vancouver has been developed amidst poll results and citizen consultations that find considerable public support for the initiative, even if a more sober analysis of the facts available in the public domain strongly indicate that the project will not meet its objectives. Conversely, the events surrounding the halting of a plan to develop a cross-town urban freeway in Vancouver during the late 1960's and early 1970's indicates that if a project is, or is perceived to be unpopular with the public, it can be overturned, even in the face of powerful interest group support.

Additionally, despite ongoing weaknesses in the transportation planning process that have seen information dissemination and public consultations strategically used to both gage and favourably shape public opinion, there also appears to be some degree of political accountability. All provincial governments since 1952 that have finalized arrangements to develop a transportation infrastructure mega-project in Greater Vancouver have been elected for a subsequent term in office. Conversely, the only provincial government in British Columbia since the 1950's to hold power for just a single term in office was also the only administration not to approve a large transportation project in Greater Vancouver. Although not a direct indication of public support for mega-projects (since election campaigns are structured according to a diverse set of campaign issues), this electoral pattern suggests that there is some level of accountability for political parties that have supported the development of large transportation projects in Vancouver.

As such, my analysis points to a somewhat different motivation for the perpetuation of a mega-project paradigm than has been conventionally put forward – namely, that large projects are built due to their persistent popularity with the public. This conclusion leads to a different remedy than typically proposed to what has been a century of developing transportation mega-projects which have failed to provide a lasting solution to the central problem of urban congestion. While improving project analysis methods and creating

what Flyvbjerg (2003, p125) has called 'accountable megaproject [sic] decision making' may improve the performance of certain projects, I do not believe that this completely answers why many large projects continue to be developed. As linguist George Lakoff (2002) aptly notes, it has been a long held fallacy in public discourse that changing the opinion, let alone behaviour, of someone with an ingrained view can be achieved simply by providing more compelling information to contradict their position.

Instead, Lakoff suggests that comprehending the basis for a deeply held position requires a better understanding of the values, morals and worldviews that underpin the formulation of that individual's position. In the case of transportation mega-projects, there is a need for a better understanding of the general public's values and preferences, and why there remains continual support for large-scale projects even when the preponderance of local and international experience suggests that they will fail to meet expectations.

To be clear, public opinion in favour of large-scale projects in Vancouver is not immutable. In other words, simply because the recent regional experience suggests broad public support for the infrastructure mega projects that have been developed does not mean that future projects will garner the same level of popularity. Incrementally or sometimes suddenly, values change in response to evolving global influences as well as the actions of individuals working locally from inside and outside the political establishment. And proposed projects that were once seen to be unassailable due to public popularity can quickly lose their general appeal, sometimes resulting in outright cancellation or significant alterations. The question is under what conditions are public opinions formed, and what are the forces that lead to their transformation.

The argument that I have advanced in this work is that when problems are constructed as being large in scale with significant negative externalities, they legitimize the quest for solutions that are commensurate with that scale. At the same time, large-scale transportation projects are developed for reasons that go beyond the movement of people, including symbolic messages related to intercity competitiveness, urban progress,

visionary leadership and the cultivation of an all-round positive image that can catalyze further investment.

Therefore, while large transportation projects may not be effective at achieving their stated purpose related to mobility, they create the collective sense that a significant effort is being made to address the tangible problem at hand, while delivering considerable symbolic resonance. Moreover, when challenged by what is perceived to be a mega problem, societies repeatedly turn to mega-scale solutions that offer the possibility of significant reward, while posing the least threat to the existing ways of life and requiring the least amount of individual behaviour change or societal transformation. This explanation of mega solutions for mega problems has been documented in the case of transportation infrastructure investment in Greater Vancouver, but is at present only a hypothesis to explain behaviour in other contexts. Future research is needed to explore in greater detail the public psychology, as well as issues of social learning that have repeatedly supported the development of mega-projects in Vancouver and in cities around the world.

Where to from here?

In this thesis I have sought to show that every large-scale project has a narrative that is encapsulated in the economic, environmental and social elements of the project, but a narrative that is much more than the 'sum of its parts' factors that can be rationally quantified by a cost-benefit analysis. The narratives surrounding mega-projects are rooted in ideas about civic pride, cultural identity, political power, and the hope for a better future, which are fermented and challenged over the years, and often decades that it takes to bring a project to fruition. The specific narrative of each project is dictated by the local historical context, the institutional structure within which it is situated and the interactions of agents struggling to shape it to best meet their interests.

Of course, it bears noting that there is not a single storyline that accompanies a project, but a multiplicity of stories depending on the perspective of the teller. Based on the same

set of objective facts and information, a single project could be presented as a triumph of human ingenuity, a failure of democratic accountability, a colossal waste of money, or a positive catalyst of urban change. There can be little doubt that another researcher analyzing the past century of transportation investment in Greater Vancouver could come to different conclusions than the ones presented above.

Staying with the idea of a multiplicity of perspectives, once developed, the measure of a success or failure of each project in the eyes of the general public is wider than the amount of money that has been added to the public debt, or whether the project achieves its tangible benefits. In fact, the perceived success or failure of a project is not temporally fixed, but shifts over time as conditions change. The definition of success may also differ by constituency within the community, so that developers, system users, neighbours adjacent to the new facility, planners, and politicians amongst others may all have different conceptions of the project's outcome.

For students of mega-projects, the case presented in this thesis suggests that although an examination of forecasts and institutional structures is necessary, they provide only a partial explanation for why certain projects get completed while others do not, and which projects will ultimately be deemed successful in the longer term. To fully understand why mega-projects continue to be built in spite of their typically poor financial performance, it is necessary to comprehend the intangible, historically contingent factors that coalesce to make a certain development possible at a specific moment in time, and more broadly which emotive responses are evoked by a given project. In other words, there is a necessity to look not only at the projects themselves, but also at the specific society in which the project has been planned and delivered.

This requires a wider set of analytical tools than is generally included in the forecasters' toolkit, and necessitates a deep understanding of history, economics, sociology, social psychology, semiotics, media and rhetoric, and politics. As Flyvbjerg (2005) notes, the problems that plague mega-project evaluation today are complex and multidimensional, and require a wide range of possible solutions. To achieve this end necessitates

researchers, planners, engineers and politicians that are as comfortable with quantitative forecasts as they are with social science methods, as interested in looking into history as they are in looking into the future.

Theories of new institutionalism, with an emphasis on uncovering path dependent relationships through the articulation of institutional structures and individual agency, provide an ideal scaffolding for understanding transportation investment decisions in a given location over time. As illustrated in this thesis, employing new institutionalism's focus on both formal and informal rules, cultures, norms, and patterns of behaviour made it possible to reveal the tangible forces behind the development of transportation infrastructure projects, and an intangible set of motivations that were beyond the movement of people. While a new institutionalist approach has been applied in this work to the field of transportation, institutionally focused research may be illuminating in the study of other aspects of urban transformation, including policy studies, governance and urban form. In short, at a time when cities are increasingly being seen as the product of multiple processes and relationships, the new institutionalism is particularly effective at uncovering the temporally situated dynamics that guide change.

Finally, there is a necessity to continually return to ideas of the broader public interest when planning large-scale infrastructure projects. Postmodern scholarship has cogently argued that society is comprised of a multiplicity of fragmented interests, making the search for a single set of values or public interest illusory. Nevertheless, underpinning this diversity is a common set of broadly defined principles or value premises that can be used as criteria to guide infrastructure investment decisions. These include a quest for investments that enhance efficiency, social equity, sustainability, and procedural accountability and transparency – all principles that have been only partially achieved through the development of large-scale projects in Vancouver.

With this in mind, I do not wish to argue that all mega-projects are poor investments. To be certain, Greater Vancouver would be a very different place, and most likely for the worse, without some of the urban highways, bridges and rapid transit lines that have been

so passionately supported by their promoters. However, the experience of more than 100 years of transportation infrastructure planning in Greater Vancouver suggests that the time may have come to reevaluate the nearly universal emphasis on large-scale solutions for large-scale problems. Instead it may be appropriate to experiment with the potential for positive incremental benefits to be derived from smaller scale solutions, be they architectural, engineering or planning centered.

As this thesis has shown, the endeavour of city building is ultimately an experimental process of trial and error, which evolves over time as contexts change, values evolve, and new relationships of power are formed. In Vancouver after a long period of evolution, the contemporary vanguard of urban planning has emphasized large-scale infrastructure and policy solutions, which are delivered through multi-stakeholder partnerships between the public, private and non-governmental sectors, and mediated through increasingly competitive and market driven relationships. Vancouver, of course, is not alone in experimenting with such an approach to directing urban change, as decision makers in cities across Canada and around the world have to varying degrees encouraged large developments, delivered through increasingly competitive mechanisms. Yet how successful this contemporary experiment is at delivering on the public interest for substantive improvements in the economy, environment quality, and social equity, along with procedurally accountable decision-making, remains an open question. To this end, future research is needed that will reinvigorate Aristotle's concept of *phronesis*, and interrogate the processes and outcomes of urban change based on the value-rational questions that I have identified at the beginning of this study: 'where are we going,' 'what should be done,' 'who gains and who loses,' and with an eye towards action, 'how can we get where we would like to go.'

The academy can be instrumental in supporting such an experimental, value-rational approach to urban transformation, through research that is multidisciplinary, locally embedded and comparative, emphasizes theory and practice, planning and implementation, and interrogates the realities and perceptions that guide urban transitions. By employing such a holistic research approach, it may be possible to better

understand the conditions that make certain policy actions successful in one jurisdiction and not others, and inform policy makers of potentially successful courses for future action in their own locale.

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Appendix I: List of On the Record Interviews

Doug McCallum, July 18, 2004
Mayor, City of Surrey, GVRD Director, Chairman of Translink

Larry Campbell, July 23, 2004
Mayor, City of Vancouver

Tim Louis, July 24, 2004
Councilor, City of Vancouver, GVRD Director

Derek Corrigan, July 26, 2004
Mayor, City of Burnaby, Translink Director, GVRD Director

Jane Bird, August 4, 2004
Chief Executive Officer, RAVCO

Peter Ladner, August 18, 2004
Councilor, City of Vancouver

Barbara Sharp, August 20, 2004
Mayor, City of North Vancouver, Translink Director, GVRD Director

George Puil, July 28, 2005
Former Councilor, Chairman of Translink, Chairman of the Greater Vancouver Regional District Board of Directors

Interview Description

Interviews were generally 30-90 minutes, and took on an unstructured format. Each of the interviewees had been actively involved in the planning and political process of approving large-scale transportation projects in Greater Vancouver. Many of the interviews were held with decision makers who were in the midst of planning and approving the Richmond-Airport-Vancouver rapid transit connection, and were thus able to provide timely accounts of the politics and planning processes that characterized the project. Questions were specifically tailored towards each individual's involvement in the politics and planning of transportation projects in Vancouver, which had been determined based on background research.

Discussions typically ranged from general questions about the interviewee's characterization of the existing transportation system in Vancouver, to more specific questions about their involvement in the planning of specific projects and initiatives. With respect to the RAV line in particular, interviewees were asked questions about their perceptions of the effectiveness of the model for governing the transportation system in Greater Vancouver, their position on the project being delivered as a private-public partnership, the relationship between themselves and other individuals (from different levels of government and the private sector) involved in the planning process, and whether they felt that the RAV line would in fact deliver on the forecasted ridership, economic, environmental and social benefits.