Supports to Item No. 3
P&E Committee Agenda
June 24, 2010

CITY OF VANCOUVER

ADMINISTRATIVE REPORT

Report Date:	June 11, 2010
Contact:	Steve Brown/Kevin McNaney
Contact No.:	6944/6851
RTS No.:	08478
VanRIMS No.:	08-2000-20
Meeting Date:	June 24, 2010

TO: Standing Committee on Planning and Environment

FROM: General Manager of Engineering Services and the Director of Planning

SUBJECT: Georgia and Dunsmuir Viaducts Study

RECOMMENDATION

A. THAT Council endorse undertaking the Georgia and Dunsmuir Viaducts Study, generally in accordance with the Terms of Reference in Appendix A.

B. THAT Council approve the request for consultants, temporary staffing and other program components to undertake the Georgia and Dunsmuir Viaducts Study as outlined in the budget in Appendix B, at a cost not exceeding $695,000; source of funds to be $300,000 from the 2010 Streets Basic Capital Budget (A4A3 Georgia and Dunsmuir Viaduct Study), as approved, and $395,000 as approved in advance of the 2011 Streets Basic Capital Budget.

GENERAL MANAGER'S COMMENTS

The General Managers of Engineering Services and Community Services recommend approval of the foregoing.

COUNCIL POLICY

False Creek North Official Development Plan (1990)
Northeast False Creek Urban Design Plan (2001)
Downtown Transportation Plan (2002)
False Creek North: Land Use Policy for Special Events, Festivals and Entertainment Functions (2005)
Northeast False Creek: Directions for the Future (2009)

PURPOSE

This report provides an overview of the current condition and role of the Georgia and Dunsmuir viaducts, and presents a proposed Terms of Reference and budget for a study to evaluate potential scenarios for the future of the viaducts ranging from retention to complete removal.

BACKGROUND

The Northeast False Creek: Directions for the Future report (RTS#8338) was endorsed by Council in November 2009. This document is intended to guide future planning in Northeast False Creek (NEFC) and supplements existing policy, and calls for an additional 1.8 million square feet of job space and 4 million square feet of residential floor space in NEFC. The "bridging work" to proceed with sub-area rezoning applications is now underway.

The Northeast False Creek High Level Review Terms of Reference required that the findings of the review keep options open for future decisions on the viaducts. Accordingly, the endorsed Directions can be realized whether the viaducts are reconfigured, or partly or wholly removed.

In reviewing the Directions for the Future report, Council introduced a motion for a comprehensive review of options for the removal or alteration of the viaducts and later unanimously approved the following motion at the City Services and Budgets Committee on November 19, 2010:

"THAT staff report to Council on the potential costs and benefits to the City of removing or converting the Georgia and Dunsmuir Viaducts, including the financial impact, the consequences for managing contaminated soils, urban design considerations, and the need to assure appropriate transportation impacts and connections, especially for rail and goods movement that support the City's sustainability objectives."

This report outlines the recommended Terms of Reference, resources and approach to the requested study.

Land Use

The Georgia and Dunsmuir viaducts are located between the existing neighbourhoods in Chinatown and International Village, and the newly emerging neighbourhood in North East False Creek. For land use and planning purposes, the viaducts are most closely related to North East False Creek and have been discussed within the Council-approved North East False Creek High Level Review.

The recent North East False Creek Directions for the Future report includes an emphasis on sustainability, reinforcing the role of the area as a hub for events, achieving the requirements for 'job space' and the provision of public open space and parks. Residential development is accommodated in amounts and locations to the degree that it satisfies the public interest priorities and meets sustainability, livability, built form and architectural objectives.

The Directions identified the conversion of the under-utilized land under the viaducts to recreation use, and the provision of an 80,000 sq. ft. civic plaza (in the scenario without the Art Gallery) on the Plaza of Nations site. In endorsing the Directions for the Future report, Council asked that staff look for opportunities to provide more open space. While the use of any lands freed up as a result from any alterations to the viaducts is a component of this

study, removal of the structures could present an increased opportunity for the consideration of additional open space in the area.

Urban Design

A key reason to consider the removal of the viaducts relates to diminishing or eliminating their perceived "barrier" effect and taking opportunities to improve the urban design and overall image of the area. Urban design objectives that could be achieved through the various alternatives of viaducts' alteration through to complete removal include:

- Better physical, visual and perceived connectivity between North East False Creek and the existing neighbourhoods to the north (Chinatown, International Village, Gastown and the Downtown Eastside), including better access from these existing neighbourhoods to the False Creek waterfront;
- A more coherent, regularized street and block pattern with the opportunity for significantly improved public realm;
- Opportunities for improved usability and livability of buildings adjacent to existing viaducts structures;
- Reduced need for future building design to respond to the difficult interface with viaduct structures;
- Opportunities to better connect existing parks (Andy Livingstone park) and existing and new waterfront park space in North East False Creek;
- Better urban design, retail continuity/viability and pedestrian environment on Main Street by "closing the gap" created by the structures on Main between Milross Ave and E Georgia St.

Each of these urban design objectives will be further explored in the Georgia and Dunsmuir Viaducts Study.

Structural Overview of the Viaducts

The Georgia and Dunsmuir Viaducts were opened in 1972 to facilitate flow of traffic over the industrial lands below and replaced structures that were built in 1915.

Although structures of this type typically have a life span of 75 years, recent inspections indicate that the Viaducts are in good condition and a remaining lifespan of 50 years could be expected. Despite their good condition, all structures require capital rehabilitation and maintenance over their operating life. An approximation of these maintenance costs over the next 5 years would include:

- Basic Annual Maintenance (~$20k/ year)
- Barrier Repair ($600K)
- Expansion joint replacement ($400k)
- Asphalt repairs (~20k)

In addition, the viaducts have not been seismically upgraded and are vulnerable to damage from earthquakes; at this point there are no plans for seismic upgrades to the viaducts.

Transportation Role

The viaducts are part of the access into the downtown from the east (often referred to as the "Downtown Neck") and currently play an important role for transportation movements to and from the downtown from the east side of Vancouver and points beyond.

Although the primary mode of travel over the viaducts is by vehicle, they also play an important role in goods movement and for cycling connections, including the recent Council approval of a separated bicycle lane on the Dunsmuir Viaduct.

A summary of the transportation movements is included in the Table 1 below:

Mode	Current Status
Pedestrians	Pedestrian activity along the viaducts is currently low
Bikes	The new Dunsmuir Viaduct separated bike facility provides an important link between one of the City's busiest bike routes (Adanac Bike Route) and the downtown core.
Transit	There are currently no transit routes that use the viaducts.
Goods Movement	The viaducts are part of Vancouver's truck route network and the majority of the truck traffic is small trucks. The viaducts, along with Expo and Pacific Boulevards are the only route into the Downtown across the downtown neck between 7am and 6pm for trucks over 15m in length.
General Traffic	The Georgia and Dunsmuir viaducts currently carry about 1/3 of the traffic entering the downtown across the "Downtown Neck".

Table 1: General summary of the demand for various modes on the Georgia and Dunsmuir Viaducts.

The Georgia Viaduct is part of TransLink's designated Major Road Network(MRN), qualifying it for TransLink operating and capital cost-sharing. This designation would also require TransLink approval to reduce the "people-moving capacity" of the corridor or to remove this corridor from the network. Provincial legislation also requires TransLink approval for any changes that would prohibit truck movement (this applies to all municipal roads, not just the MRN).

The role of the viaducts to carry large volumes of vehicle traffic into the downtown does not preclude the ability to modify the viaducts from their current form. However, it requires some detailed analysis to provide the necessary information to make a decision.

Recent City Experiences with Road Capacity Reduction

The City has had three recent experiences with reduction in road capacity that can be used to help provide insight into this analysis. These include the reduction in capacity on Cambie Street during the Canada Line Construction, the Burrard Bridge Bike Lane trial, and the 2010 Olympic Games.

Traffic Impacts of the Canada Line

As part of the report to Council on the transportation trends from the 2006 census and Central Business District Counts, an overview of the traffic volume impacts during Canada Line Construction was provided. During the Canada Line Construction the lane closures generally reduced the number of lanes on the Cambie Bridge and Cambie Street north of Broadway from 6 lanes to 2. Comparing data recorded before the start of Canada Line construction, to data compiled during Canada Line construction shows that traffic volumes did not drop but were redistributed amongst the adjacent arterial streets, primarily Granville Street, Quebec Street and Main Street.

Traffic Impacts of the Burrard Bridge Bike Lane Trial

In the report back to Council on the Burrard Bridge bike lane trial, a summary of the data collection during the trial was provided. This summary reported that neither the Burrard nor the Granville Bridge had appreciable changes in the number of daily vehicle crossings. The most noticeable change to vehicle travel times was for trips approaching the north end of the bridge from the west along Thurlow or Pacific which on average experienced an increase in travel time of 1½ minutes in the morning peak period and 3 minutes in the afternoon.

Traffic Impacts During the 2010 Winter Games

A more comprehensive report on transportation modal changes during the 2010 Winter Games is expected this summer as the remainder of the data is summarized. Some initial observations however are provided for this discussion.

To support the security of Olympic venues, there were a number of road capacity reductions along the downtown neck, including the closure of Pacific and Expo Boulevard as well as the Georgia and Dunsmuir viaducts. The closure of Pacific and Expo Boulevard prior to the Games resulted in increases in traffic on the viaducts with little change over the remaining streets across the downtown neck. The closure of the viaducts throughout the Games resulted in large increases in traffic on Hastings Street, Pender Street and Powell/Cordova Streets. It should be noted that compared to normal, average morning weekday traffic into the downtown during the Games was down by 35 percent while there was over a 60 percent ridership increase on SkyTrain. More significant traffic impacts might have been experienced had motorists not utilized the additional transit capacity provided during the Games and the shift out of vehicles onto transit may also have been influenced by the temporary nature of the transportation network changes.

These three experiences indicate that given a change to their travel environment, motorists will:

1. Accept minor increases in travel delays on their current route without rerouting (as indicated in the Burrard Bridge Trial)
2. Reroute to an alternate route if delays became large (as indicated by Canada Line Construction)
3. Reduce the number of trips (by switching to transit or not driving at all) or change the time of the trip if alternate routes become congested (as indicated in the temporary nature of the Olympic Experience)

For each of the options, the transportation component of the work plan will review all transportation modes and develop an estimate of the capacity and the potential range of diversion, vehicle delay, or transportation mode shift.

DISCUSSION

Staff recommend that Council adopt the Terms of Reference for the Georgia and Dunsmuir Viaduct study, generally as laid out in Appendix A, as well as the budget and staff resources required, generally as laid out in Appendix B.

The Terms of Reference respond to the comprehensive Council resolution to study "the potential costs and benefits to the City of removing or converting the Georgia and Dunsmuir Viaducts, including the financial impact, the consequences for managing contaminated soils,

urban design considerations, and the need to assure appropriate transportation impacts and connections, especially for rail and goods movement that support the City's sustainability objectives."

Staff propose a combination of City staff and consultant resources to expedite the conclusions of the study in approximately 9 months after the staff team and consultants have been hired (estimated for September 2010). City Council will have a technical briefing as soon as the consultant studies and internal studies have produced early findings (anticipated for February 2011). At this point, Council can provide guidance and advice on how to proceed.

Staff anticipate that the study will be complete in May 2011. However, in recognition of the complexity of the technical work and the breadth of the scope, the budget includes staff resources for a period of up to one year to ensure that the study is completed.

The study will consider a number of options for the viaducts described briefly below, and more fully in Appendix C:

1. Maintain the viaducts;
2. Alter the viaducts so they come down to merge with Pacific Boulevard/ Expo Boulevard in as short a distance as possible;
3. Alter the viaducts so that they come down to the Main Street intersection;
4. Keep the Dunsmuir Viaduct, remove the Georgia Viaduct;
5. Complete removal of both viaducts, and
6. Removal of both viaducts with consideration of elevating/realigning the SkyTrain guideway to normalize the grid (can be considered for both options 2 and 5).

Each of these options will require comprehensive analysis of structural issues, transportation impacts, soils, urban design, financial analysis (costs and benefits) as well as consideration of appropriate future land use for any lands that become available as a result of the reconfiguration or removal of the viaducts. Staff note however that some other options or combination of options may arise during the analysis, and some of the aforementioned options may be determined to be unfeasible for structural reasons early in the process and would be eliminated from further comprehensive analysis.

Focussed and strategic consultation would take place throughout the process. In the early stages of the process, there would be consultation with key interests including local residents, business associations, transportation groups (including goods movement), development interests (large property owners and development associations), government agencies (e.g. Translink and the Port) and other interested parties to provide information on the study and to get an early understanding of issues arising from the various options for the viaducts. In early 2011, additional consultation is proposed, including public open houses, to discuss the findings of the technical/consultant studies, to provide better insight into the pros and cons of each of the options and to seek additional input.

The results of the technical analysis, public consultation and a recommended approach will be brought forward for Council consideration in March 2011.

FINANCIAL IMPLICATIONS

It is estimated that the temporary staffing, consultancies and other costs for the study will be *up to a maximum* of $695,000 as outlined in Appendix B. The total budget could be less depending on the outcome of the RFP process for the consultants.

Funding in the amount of $300,000 has been approved in the 2010 Streets Basic Capital Budget, (A4a3 – Georgia and Dunsmuir Viaducts Study). The additional $395,000 has been requested and approved in advance of the 2011 Streets Basic Capital Budget (A4a3 – Georgia and Dunsmuir Viaducts Study).

The Georgia and Dunsmuir Viaducts form a significant part of the City's infrastructure and urban form. A comprehensive technical, urban design, land use and financial study as outlined in the recommended Terms of Reference (Appendix A) provides an opportunity to make informed decisions on their future. These decisions have financial implications for the City Budget not only in terms of the maintenance or potential replacement of the structures, but also for any additional revenue that may be generated from development opportunities arising from their reconfiguration or removal.

CONCLUSION

Council is asked to approve a Terms of Reference, consultant budget and staffing for the Georgia and Dunsmuir Viaducts Study, as outlined in this report.

The Georgia and Dunsmuir Viaducts Study will help to explore options for the viaducts as staff review future rezoning applications and development in NEFC.

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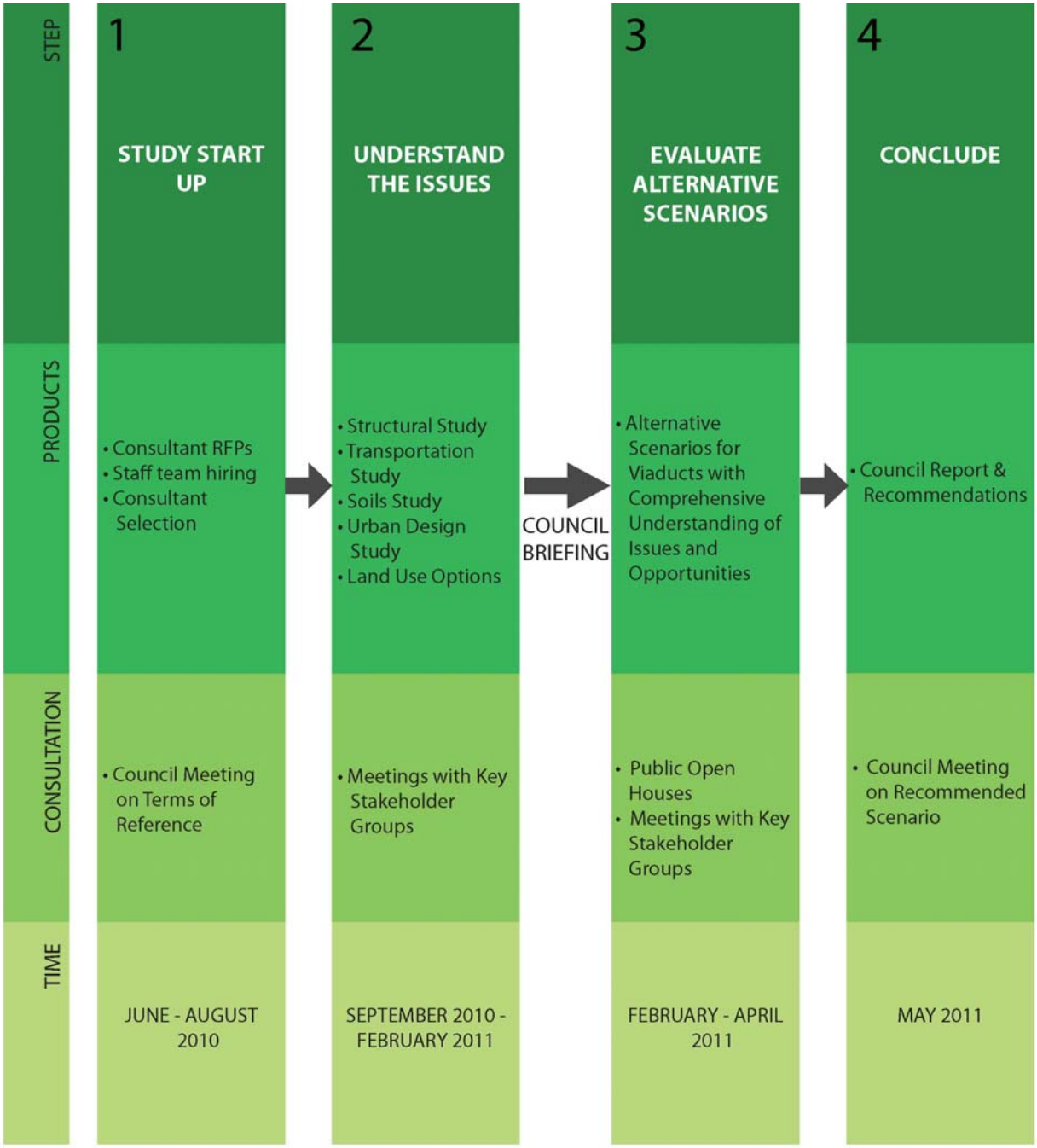
Appendix A : Georgia and Dunsmuir Viaducts Study – Terms of Reference

The Georgia and Dunsmuir Viaducts study will be undertaken through a combination of City staff resources and consultancies, and will be completed in approximately 9 months from the establishment of the City staff and consulting teams (Step 2), as outlined below:



Methodology

The methodology includes an early technical analysis of the structural opportunities and constraints for various options for alteration of the viaducts. Once a number of reasonable options are established the study will then examine in greater detail the issues related transportation, costs, soils, urban design, and land use and development.

City Council will have a technical briefing as soon as the consultant studies and internal studies have produced early findings (anticipated for February 2011). At this point, Council can provide guidance and advice on how to proceed.

There are six options to be examined as part of this study, noting that other options may arise through further technical analysis and some options may be eliminated early due to technical issues:

1. **Maintain the viaducts**- This scenario would be the status quo with no changes to the viaducts.
2. **Alter the viaducts so they come down to merge with Pacific Boulevard/ Expo Boulevard in as short a distance as possible** -Connection of Dunsmuir Street down to Expo Boulevard and Georgia Street down to Pacific Boulevard. The review should examine the earliest possible point to connect to the lower level.
3. **Alter the viaducts so that they come down to the Main Street intersection** –Maintain the viaducts up to Main Street
4. **Keep Dunsmuir Viaduct, remove the Georgia Viaduct**- This would involve connecting Georgia Street to Dunsmuir with two way operation of Dunsmuir.
5. **Complete removal of both viaducts**- This would involve complete removal of both the Dunsmuir and Georgia viaducts with either a connection between Georgia and Dunsmuir west of GM Place or cul-de-sac of Georgia and Dunsmuir.
6. **Removal of both viaducts with consideration of elevating/realigning the SkyTrain guideway to normalize the grid** - Both options 2 and 4 remove enough of the viaduct structure to also consider realignment of the SkyTrain guideway. This would involve raising the SkyTrain line to allow for a roadway to pass under the SkyTrain to connect Pacific boulevard to Prior Street without an "S" turn .

Scope and Key Questions

The following questions will be explored in greater detail for each of the options, with the primary responsibility for providing the information indicated in parentheses.

Structural Analysis (Consultant)

1. Structural feasibility of each option.
2. Cost estimates for any construction or removal of infrastructure.

Transportation Analysis (Consultant)

1. Summary of current transportation movements for all modes (pedestrians, cyclists, transit, goods movement and general traffic).
2. Assessment of transportation capacity for each option and a summary of the impacts to each mode.
3. Assessment of range of volumes of traffic to be diverted to alternate routes for each option.

Soils Analysis (Consultant)
1. Location and extent of contaminated soils, as well as cost of remediation.

Urban Design Analysis (City Staff)
1. Detailed urban design analysis of the issues and opportunities created by each of the viaduct options including impacts on public realm, parks, greenways, livability, public views, and urban structure.

Land Use Options Analysis (City Staff)
1. Analysis of land use options and opportunities created by each of the viaduct options.
2. Exploration of opportunities for increased open space.
3. Exploration of opportunities for increased development potential.

Financial Analysis (Consultant)
1. Summary of the costs and benefits of each of the options including demolition, construction, SkyTrain reconfiguration and any new development potential.

Public Consultation

Focussed and strategic consultation would include a broad range of local and regional interests including local residents, business associations, transportation groups (including goods movement), development interests (large property owners and development associations), government agencies (e.g. Translink and the Port) and other interested parties.

The consultation will involve a number of approaches including:
- A project website and listserve;
- Meetings with interest groups; and
- Advertised public open houses (early 2011)

The consultation will be summarized for Council in the Council Report and recommendation at the completion of the study.

Detailed Timeline

Task	Start Date
Council Approval of Study Terms of Reference	June 24 2010
Release RFP for consultants	July 24, 2010
RFP Closing Date	August 24, 2010
Review and select consultant	September 30, 2010
Structural feasibility, Transportation and Soils Study	September 2010 to February 2011
Land Use and Urban Design Study	September 2010 to February 2011
Financial Study	September 2010 to February 2011
Consultation with interest groups	September 2010 to February 2011
Technical Briefing for Council	February 2011
Public Open Houses on detailed options and alternatives	March 2011
Report back to Council	May 2011

Cost
The Georgia and Dunsmuir Viaducts Study will cost a maximum of $695,000 ($395,000 in temporary City staff; $290,000 in consultancies; and $10,000 for consultation costs).

Appendix B: Georgia and Dunsmuir Viaducts Study - Resources and Budget

It is proposed that the study be completed by Planning and Engineering Department staff who will report jointly to the Director of Planning and the General Manager of Engineering Services.

Consultants will be required to provide expertise in transportation analysis, structural engineering, costing, the review of contaminated soils and economic analysis.

The staff team will manage the study including providing direction to and reviewing the work of the consultants. Staff will also undertake the public and other stakeholder reviews and will prepare the reports to Council.

Due to existing work program and resource constraints, staff recommend hiring two planning (Planner II and a Planning Assistant III) and two engineering (Civil Engineer II and Engineering Assistant III) temporary full-time staff for a period up to twelve months.

Supervision for these staff will come from existing Senior Planner and Senior Engineer staff resources.

Staff resources from the Urban Design and Development Planning group will also provide resources to the urban design explorations.

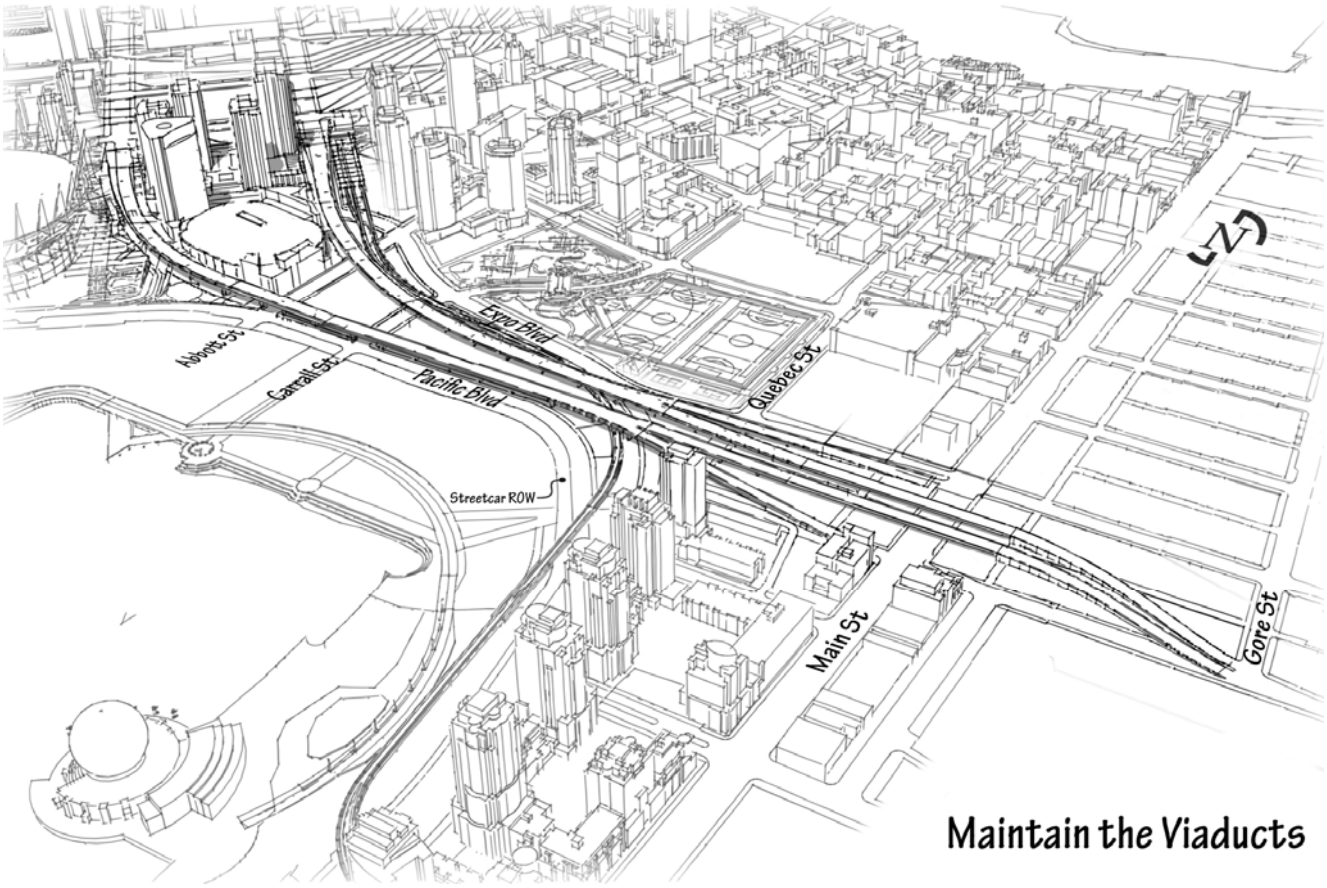
It is proposed that the temporary City staff, consultants and study costs required for this work be funded from the 2010 and 2011 Streets Basic Capital Budgets.

Staffing (Salary and Benefits)		
Planner II		110,000
Planning Assistant III		70,000
Civil Engineer II		120,000
Engineering Assistant III		75,000
Computer/Office costs		20,000
	Subtotal	$395,000
Consultants		
Structural		150,000
Traffic/Transportation		80,000
Soils		50,000
Real Estate/Financial		10,000
	Subtotal	$290,000
Other Costs		
Public Consultation		10,000
	TOTAL	**$695,000**

Appendix C: Georgia and Dunsmuir Viaducts Study – Scenarios to be Studied

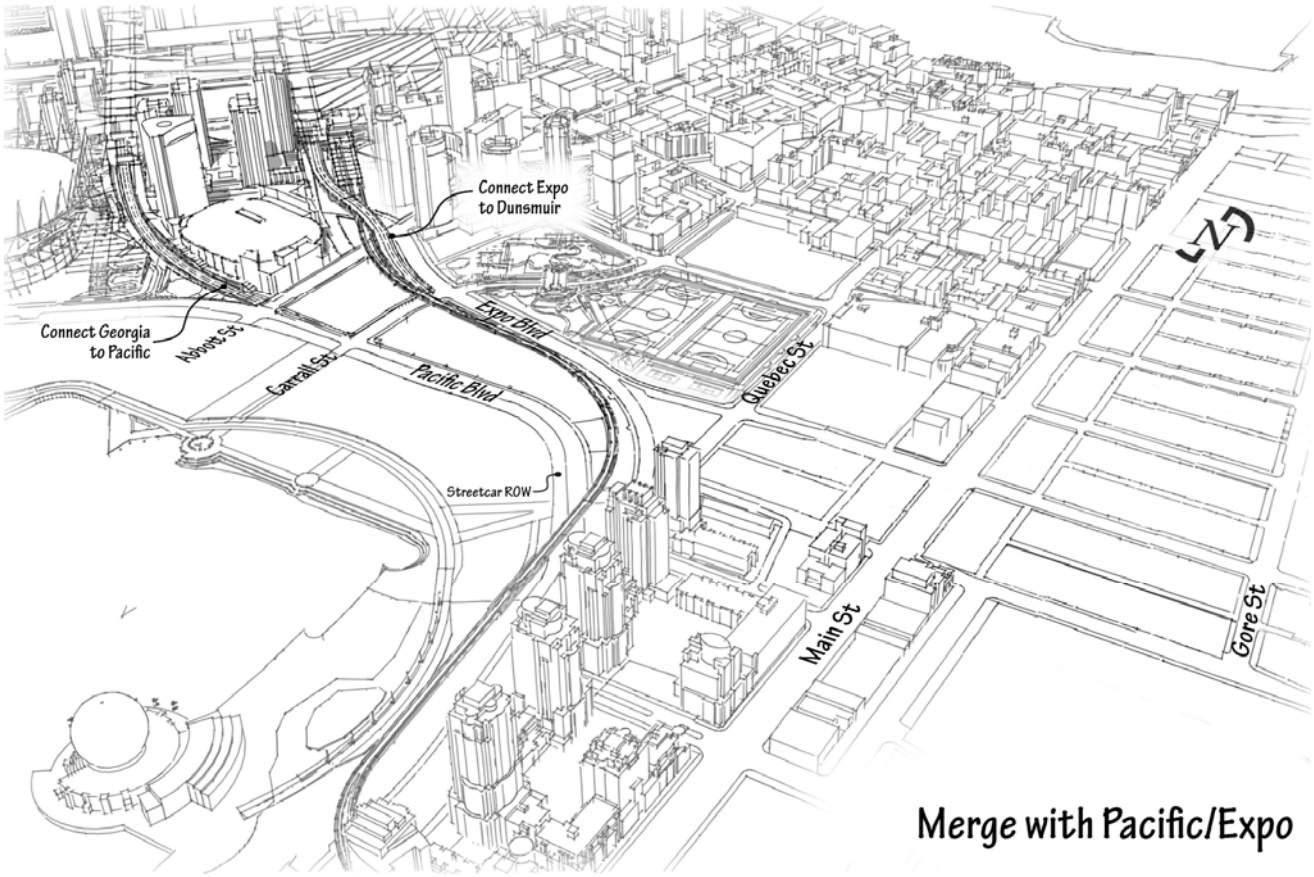
1. Maintain the viaducts - This scenario would be the status quo with no changes to the viaducts.

Urban Design	• Visual and psychological barrier between northerly neighbourhoods (Chinatown, International Village, Victory Square, Strathcona) and False Creek waterfront remains • Seek to improve linkages between the waterfront and surrounding areas.
Land Use	• Recreation use below the viaducts as per the Directions • Development on sites adjacent to the viaducts must mitigate impacts
Transportation	• Assess current capacity utilization for the viaducts to determine the range of capacity reduction that will not increase delays or reroute traffic
Structural	• Assess the current condition of the viaducts including life remaining and seismic upgrades



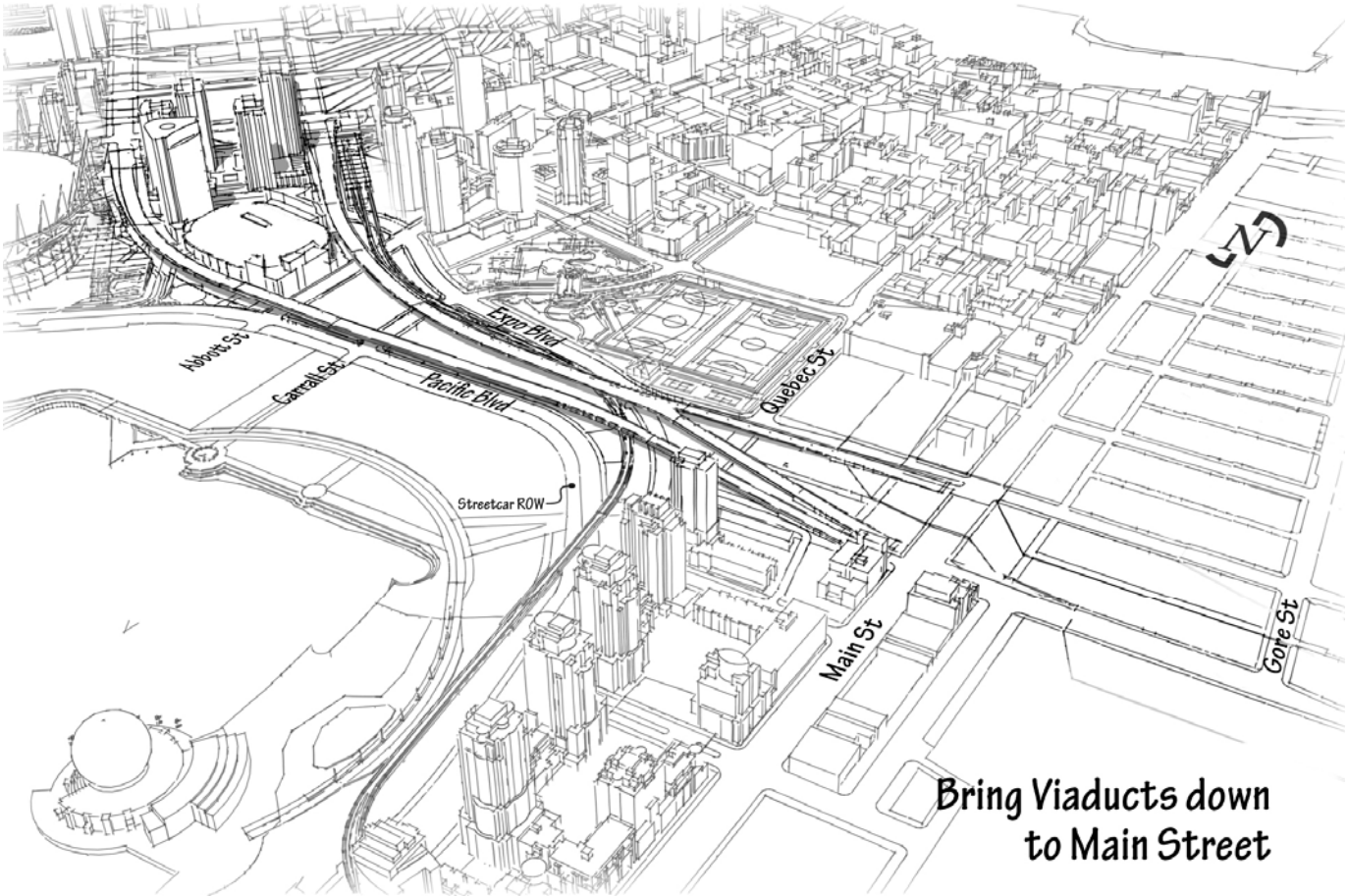
2. Alter the viaducts so they come down to merge with Pacific Boulevard/ Expo Boulevard in as short a distance as possible -Connection of Dunsmuir Street down to Expo Boulevard and Georgia Street down to Pacific Boulevard. The review should examine the earliest possible point to connect to the lower level.

Urban Design	• Close the gap on both sides of Main street and connect Main street with active street fronts. • reduce or eliminate visual and psychological barrier of the viaducts between northerly neighbourhoods and waterfront
Land Use	• 2 city blocks freed up in the Main Street corridor. • Freed up site between Quebec and Carrall Streets is presumed to have high contamination levels with high remediation costs (TBD) • Suitable land use TBD
Transportation	• Assess how to reconcile intersections/ viaducts ramps and the lower road system • Explore configuration of the Dunsmuir bike connection • Determine capacity reduction • Assess potential diverted traffic
Structural	• Assess feasibility of all changes including necessary clearances over roadways, driveways and sidewalks • Estimate deconstruction and construction costs



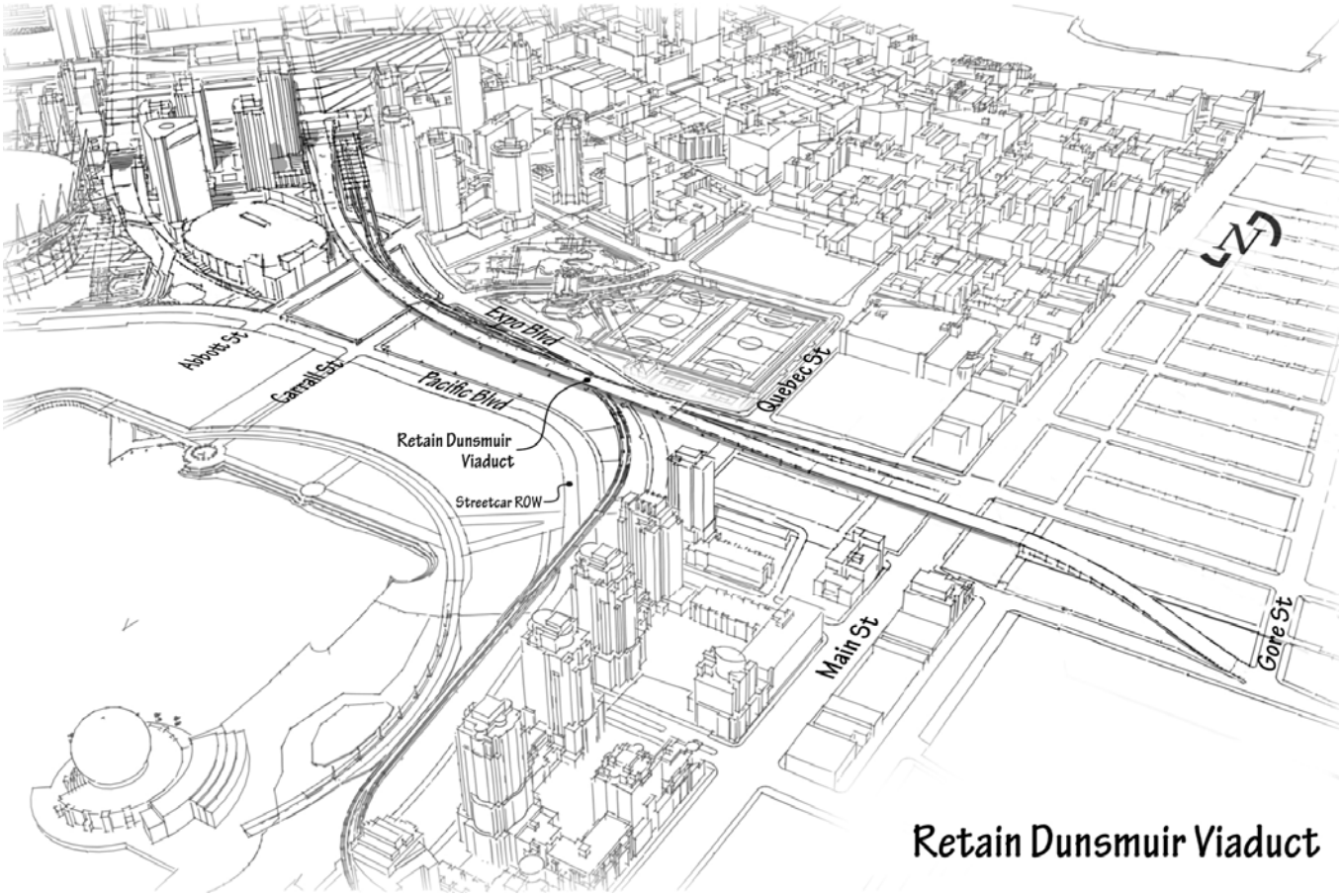
3. Alter the viaducts so that they come down to the Main Street intersection– Maintain the viaducts up to Main Street with a bike connection to Union Street

Urban Design	• Close the gap on the street front on the east side of Main Street • Unite and activate the east side of Main Street and enhance pedestrian flow in the area
Land Use	• Block between Main and Gore will be available for other uses TBD. • At grade commercial is assumed fronting Main St. • Suitable land use TBD
Transportation	• This option provides the lowest capacity reduction • Capacity reduction will be based on the intersection changes at Main Street
Structural	• Assess feasibility of all changes • Estimate deconstruction and construction costs



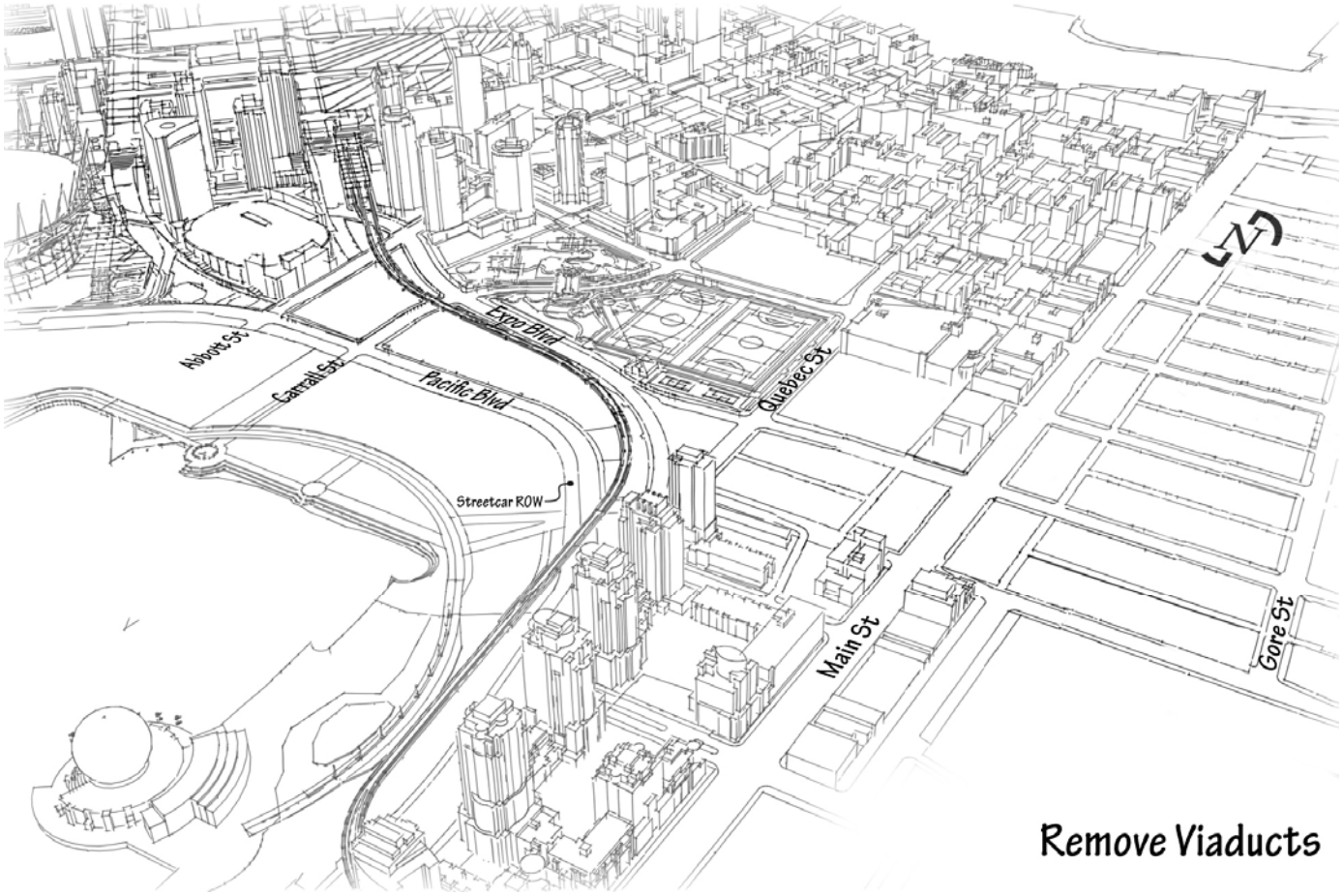
4. Keep Dunsmuir Viaduct, remove the Georgia Viaduct - This would involve connecting Georgia Street to Dunsmuir with two way operation of Dunsmuir.

Urban Design	• Reduce the visual and psychological barrier to the waterfront. • Eliminates the need for building design to respond to adjacency to the Georgia viaduct.
Land Use	• Improves utility of several sites • Consider additional density or alternative uses for sites in light of reduced constraints
Transportation	• Provides more capacity than complete removal but less than bringing the viaducts down at Main Street • Include accommodation for the bike lane • Assess potential diverted traffic
Structural	• Assess feasibility of all changes • Estimate deconstruction and construction costs



5. Complete removal of both viaducts - This would involve complete removal of both the Dunsmuir and Georgia viaducts with either a connection between Georgia and Dunsmuir west of GM Place or cul-de-sac of Georgia and Dunsmuir.

Urban Design	• Reduces the visual and psychological barrier to the waterfront. • Eliminates the need for building design to respond to adjacency to the Georgia viaduct
Land Use	• Improves utility of several sites • Consider additional density or alternative uses for sites in light of reduced constraints.
Transportation	• Reduces transportation capacity. • Include accommodation for the bike lane. • Assess diverted traffic
Structural	• Assess feasibility of all changes • Estimate deconstruction and construction costs



6. Removal of both viaducts with consideration of elevating/realigning the SkyTrain guideway to normalize the grid - Both options 2 and 4 remove enough of the viaduct structure to also consider realignment of the SkyTrain guideway. This would involve raising the SkyTrain line to allow for a roadway to pass under the SkyTrain to connect Pacific boulevard to Prior Street without an "S" turn .

Urban Design	• Placement of new buildings could respond to normalized grid • Consider how a change to the SkyTrain guideway would impact existing buildings.
Land Use	• If clearance is improved, utility of land below the guideway is possible
Transportation	• Assess the transportation benefits to all modes that would result from SkyTrain guideway realignment. • Assess realignment of Pacific Boulevard
Structural	• Assess feasibility of reconstructing portions of the SkyTrain guideway