CITY OF VANCOUVER

POLICY REPORT
URBAN STRUCTURE

Report Date:	June 18, 2013
Contact:	Brian J. Jackson
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Meeting Date:	June 25, 2013

TO: Vancouver City Council

FROM: General Manager of Planning and Development Services in collaboration with the General Manager of Engineering Services

SUBJECT: Dunsmuir and Georgia Viaducts and Related Area Planning

RECOMMENDATION

A. THAT, based on the conceptual design of the proposed replacement street network included in this report, Council approve the next phase of the work program to inform a future decision on the removal of the viaducts including the development of an area plan for the Viaducts/Northeast False Creek (NEFC) generally as set out in Appendix B, involving all stakeholders, and report back within 24 months or sooner if feasible with:

- Recommendations for amendments to the False Creek North Official Development Plan (ODP),
- Draft Agreements with private landowners and the Provincial Government for securing rights-of-way, land exchanges, environmental remediation obligations, and,
- A comprehensive financial analysis and strategy for the viaducts project.

FURTHER THAT Council approve a project budget of up to $2.4 million for the work program to be funded from the 2012-14 Capital Plan, with $0.6 million from the Emerging Priorities Category (Capital from Revenue) to be added to the 2013 Capital Budget, and the remaining $1.8 million from the Emerging Priorities Category (Capital from Revenue) or through funding reallocation to be determined as part of the 2014 budget process.

B. THAT Council approve the work program for the Eastern Core generally as set out in Appendix C, involving all stakeholders, and report back within 24 months or sooner if feasible with an Area Plan;

AND THAT Council approve a budget of up to $550,000 for the work program; source of funding to be:

- $225,000 from the 2012-14 Capital Plan, with $50,000 from the Emerging Priorities Category (Capital from Revenue) to be added to the 2013 Capital Budget, and the remaining $175,000 from the Emerging Priorities Category (Capital from Revenue) or through funding reallocation to be determined as part of the 2014 budget process,
- $250,000 from the approved operating budget for the False Creek Flats Study carried forward from previous years, and
- $75,000 to be considered as part of the 2015 Operating Budget.

C. THAT Council adopt the Viaducts Guiding Principles generally as shown in Appendix A for informing on-going planning and public consultation on the planning for the viaducts project.

REPORT SUMMARY

Council's consideration of this report is not the final decision to remove the viaducts. Rather, if approved, it represents another step forward with two years of detailed work related to not only the viaducts removal but also planning for the Eastern Core area of the city. Staff will report back to Council on the progress of work and issues as early as June 2014 with final plans and agreements ready for June 2015.

The report is another step in the process of preparing the information necessary for Council to make a final decision and will address the following objectives:

a) respond to City Council's July 2012 recommendations on the potential for the viaducts removal,
b) detail the benefits associated with the viaducts removal,
c) demonstrate how the new street system will provide adequate vehicular capacity for goods movements to and from the downtown, with improved connectivity,
d) summarize the financial implications associated with the proposal,
e) detail the future work programs for the viaducts removal, and
f) to obtain Council approval to proceed with the work plan for the potential removal of the viaducts.

In every city's evolution there are rare opportunities to take bold city-building steps to advance the city's goals and liveability or correct a past planning wrong. The potential removal of the viaducts provides an opportunity for the City of Vancouver to do both. The opportunity presented by the removal of the viaducts includes increased waterfront parkland, opportunities for affordable and subsidized housing on city land, connections between Vancouver's historic neighbourhoods to False Creek, and restoration of the gap created by the viaducts on Main Street. The viaducts removal also eliminates a physical and psychological barrier and erases an urban scar from a rapidly urbanizing part of the city. Removal of the viaducts would allow for improved street connectivity which will offer a new balance between mode shares that supports our Transportation 2040 goals and will integrate the development of Northeast False Creek into the fabric of the downtown.

Other cities have undertaken similar bold initiatives: Boston, at great expense, undertook the "Big Dig" and eliminated their elevated waterfront freeway and connected their downtown to the waterfront; San Francisco tore down the elevated Embarcadero freeway and reconnected several San Francisco neighbourhoods; other cities have failed in their attempts at a bold new vision, with Toronto trying for decades to consider the removal of the Gardiner Expressway.

The issues under study, related to the potential removal of the viaducts, are complex and there is a significant amount of work still to be done before a final report is brought before Council. This report outlines what has been achieved to date and the public consultation, planning and engineering work still to be done. Furthermore, as there is more clarity through the planning process, it will be possible to undertake the necessary financial review to better understand the cost benefit analysis of the proposal. There is some time pressure related to making the decision - with increasing development on lands surrounding the viaducts, a cost effective solution for the viaducts removal will become more and more challenging, given the need for temporary roads and deconstruction sites to facilitate the viaducts removal.

COUNCIL AUTHORITY/PREVIOUS DECISIONS

False Creek North Official Development Plan (1990)

Industrial Lands Policies (1995)

Metropolitan Jobs and Economy Land Use Plan: Issues and Directions (2007)

Burrard Inlet Rail Grade Separation Strategy (2008)

Rezoning Policy for “High Tech” Sits in the False Creek Flats (2009)

Northeast False Creek: Directions for the Future (2009)

Northeast False Creek: Issues Report (2011)

Housing and Homelessness Strategy 2012-2021 (2011)

Greenest City 2020 Action Plan (2011)

Greater Vancouver Regional Growth Strategy (2011)

The Vancouver Economic Action Strategy: An Economic Development Plan for the City (2011)

Transportation 2040 (2012)

CITY MANAGER'S/GENERAL MANAGER'S COMMENTS

This report is another step toward a future final decision by Council in regard to removing the viaducts. There are very significant positive outcomes which would flow from this decision, however much work remains to be done before a recommendation can be made. There is a need for further public discussion and, through this, improved opportunities for the public to

understand both the benefits and the potential impacts of removal of the viaducts. This work needs to be supported by the ongoing rigorous analysis outlined in the proposed work plan. Key partners and communities need to be supportive if this city building opportunity is going to advance and staff have outlined the approach to completing this work. At this point, the opportunity presented by removal of the viaducts appears to have very significant positive returns for the citizens of Vancouver, however understanding and mitigating risks associated with the proposal is still a work in progress.

REPORT

Background

In November 2009, Council approved the *Northeast False Creek: Directions for the Future* report (NEFC Directions) to provide policy advice for the future development of NEFC including the role and vision for the area, land-use mix, density, open space, public benefits and amenities.

In 2009, Council also directed staff to undertake a study to review the potential options to remove or modify the Georgia and Dunsmuir viaducts.

In June 2010, Council endorsed undertaking the first phase of the study to examine potential transportation, soils, and structural impacts of removing some or all of the viaducts with more detailed land use planning and public consultation to follow in a future phase. The phase 1 study determined that various options for removal of, or modifications to, the viaducts were feasible from a transportation capacity perspective, however timing of rapid transit improvements was a key factor.

In July 2011, Council directed staff to undertake an analysis of land use, development potential, structural reconfiguration options, including high level costs, for the Georgia and Dunsmuir viaducts in the context of an integrated transportation and land use approach to the Eastern Core.

In July 2012, staff presented a report reference updating Council on the work underway on the Viaducts opportunity and the planning for the Eastern Core Strategy. As a result of public input through our consultations, the Mayor directed staff to provide information on five key items: calming measures for Prior Street, prioritizing work on the Malkin Avenue connection, clarifying a timeline for amenities and other deliverables which would flow from the removal of the viaducts, how to ensure sustained commercial goods movement, and steps which would ensure the incorporation of the viaducts and Eastern Core planning with the City's Economic Action Strategy.

Since the outset of the work on the viaducts, staff have:

- Undertaken initial community outreach including a high level look at transportation, land use, and urban design opportunities across the Eastern Core,
- Launched re:CONNECT, an open ideas competition, to obtain public ideas on the future of the viaducts and Eastern Core – the ideas generated from this process have informed the conceptual thinking of the land use and streets plan if the viaducts are removed,
- Retained a consultant to generate preliminary conceptual options for land use following the viaduct modification/removal,

- Reviewed options ranging from full retention to full removal, with input from external urban design advisors,
- Developed and tested a preferred concept plan based on potential benefits to the public, structural and transportation feasibility, and urban design merit,
- Consulted the public on the concept plan through multiple public open houses, an online survey, and various stakeholder meetings,
- Entered into discussions with impacted landowners to work through challenges and opportunities related to viaduct removal,
- Implemented traffic and safety improvements on Prior/Venables Street,
- Worked with key business stakeholders to ensure the flow of commercial goods to the downtown is preserved,
- Initiated exploration of alternative options for goods movement and other traffic to replace Prior/Venables Street as an east-west arterial between Main Street and Clark Drive,
- Kicked-off discussions with the Vancouver Economic Commission for the Eastern Core planning to ensure alignment with the City's Economic Action Strategy goals, and
- Completed analysis of contamination risks and soils remediation costs on the City-owned blocks between Quebec and Gore Avenue.

Context

The Georgia and Dunsmuir viaducts occupy approximately five city blocks, which is a fairly small area, but they are an essential part of the City's arterial street network that serve the economic needs of the City for efficient movement of goods and people by truck, bus, cycling, walking and private vehicle. Modifications to the viaducts are being considered within the broader context including the Eastern Core (the area generally bounded by Main Street, Prior/Venables Street, Clark Drive and Great Northern Way), and the surrounding communities of Grandview-Woodland, Strathcona, Chinatown, Gastown, Thornton Park, Victory Square and the DTES Oppenheimer District. Traffic impacts resulting from modifications to the viaducts have been and will continue to be carefully studied to ensure there are no adverse negative impacts to the surrounding communities as a result of the proposed changes. Strategic planning for the Eastern Core area will be a parallel and related project which will examine land-use considerations in one of the last industrial areas to be intensified in the city; additional improvements to the transportation network will be an important part of this planning initiative.

Figure 1 shows the Viaducts and Eastern Core study areas within the wider context of the downtown core and surrounding communities. As noted above, the study areas share boundaries with the Downtown Eastside Local Area Plan and the Grandview-Woodland Community Plan, and as a result, any decisions on the transportation network within the study area must be taken into consideration in those community plans. The staff team has worked to ensure integration across these policy initiatives.

Figure 1. Context map for the Viaducts and Eastern Core areas

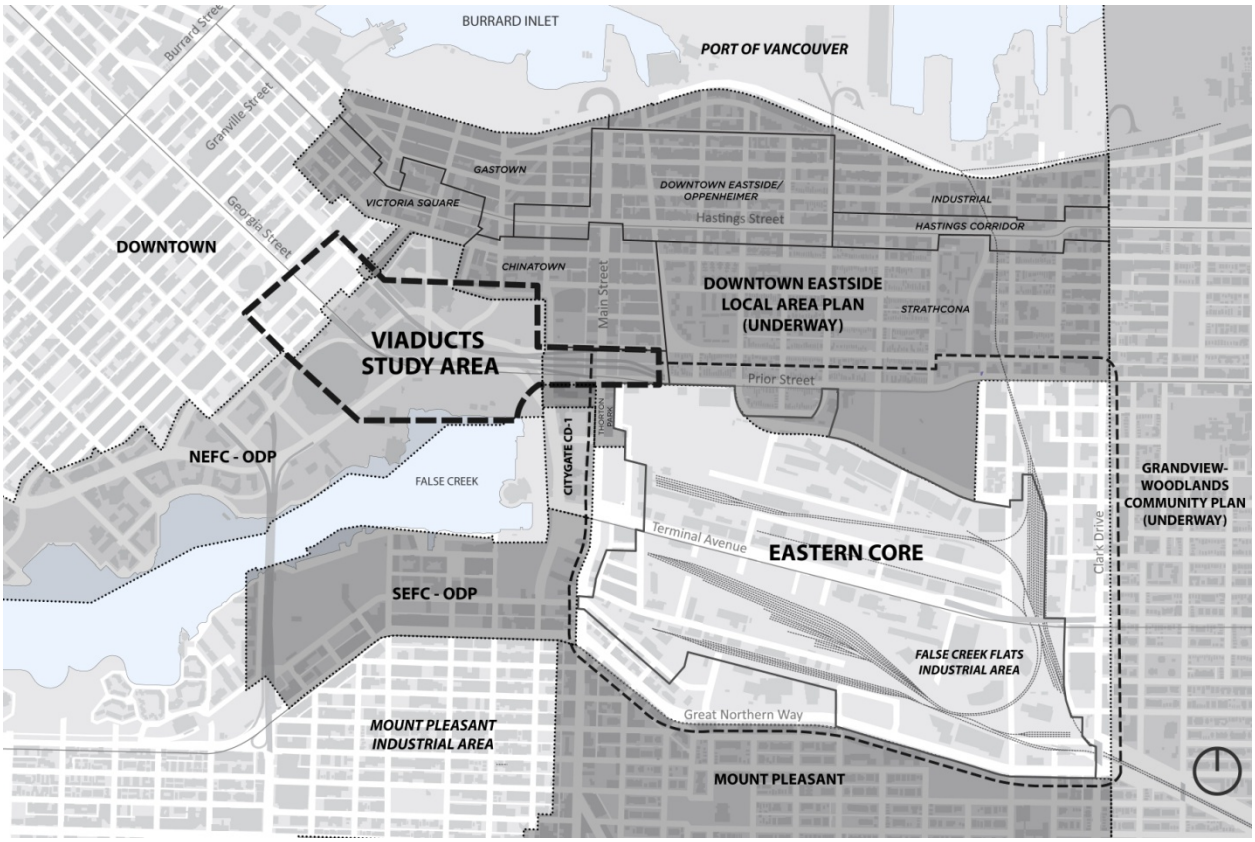
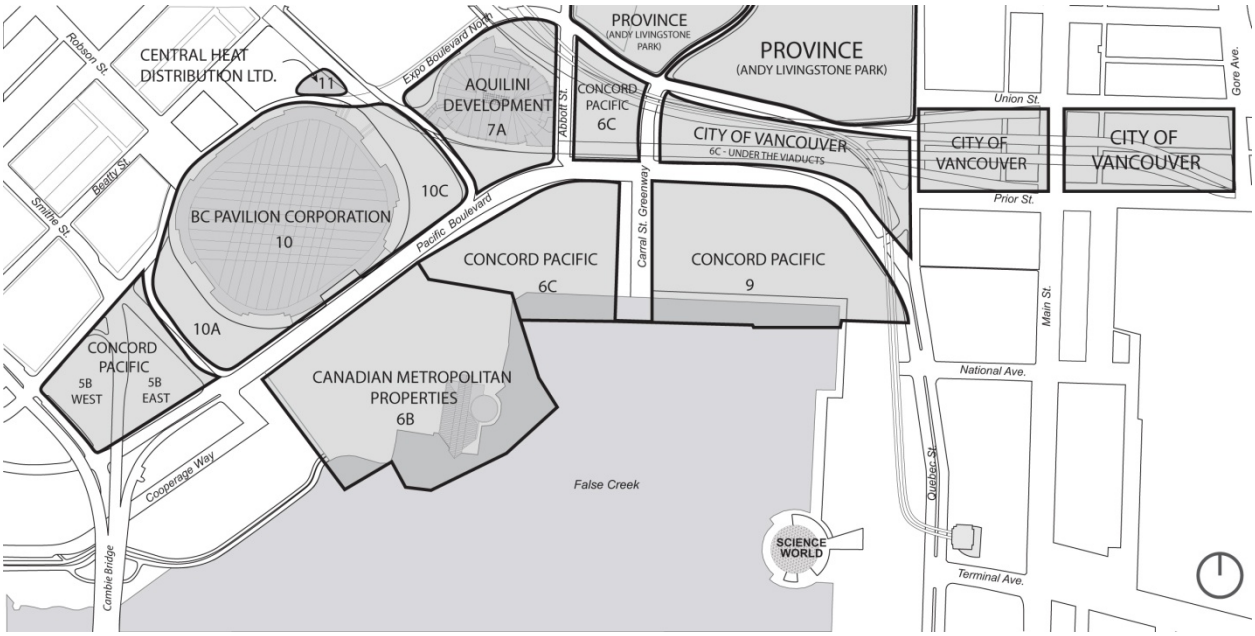


Figure 2 shows the ownership of parcels within the viaducts area. The City of Vancouver owns the land occupied by the viaducts between Carrall Street and Gore Avenue. The remainder of the sites in the study area are in private or public ownership.

Figure 2. Ownership map of the lands impacted by the Georgia and Dunsmuir Viaducts



STRATEGIC ANALYSIS OF VIADUCT REMOVAL

The Georgia and Dunsmuir viaducts were the first phase of an extensive highway network planned for the City of Vancouver in the 1960s. Public opposition to freeway building in the 1970s resulted in the viaducts being the only part of the system to be built. Designed as a freeway, the viaducts were intended to carry up to 1800 vehicles per lane per hour. Today, connected to an urban street network at either end, and at their busiest hour they carry less than half that (750 vehicles per lane per hour).

The viaduct structures create a psychological and physical barrier, cutting off historic communities of Chinatown, Gastown, Strathcona, Thornton Park, Victory Square and the DTES Oppenheimer District from False Creek and the seawall. In addition, the viaducts create a gap in the urban fabric along Main Street separating adjacent neighbourhoods.

In light of the approximately 5.8 million square feet of planned new development anticipated in Northeast False Creek (NEFC) over the next 20 years, it is a strategic moment to determine the role of the viaducts in the city's future. Their removal provides a unique opportunity to enhance the liveability and mixed-use nature of this neighbourhood and to develop a street network which promotes active transportation and transit use, which is key to achieving our Transportation 2040 Plan and Greenest City Action Plan objectives.

Vancouver is not alone in its strategic rethink of freeway structures within highly urbanized areas. Other cities across North America and around the world have been making decisions to remove urban freeways to improve the public realm, increase amenities, and encourage reinvestment in downtown areas. In Seoul, South Korea an elevated expressway was removed and replaced with an 8.4 km long public recreational space, which included daylighting of the Cheonggycheon stream. San Francisco fully removed the Embarcadero Freeway in 1991 after it was damaged in the 1989 Loma Prieta earthquake, replacing it with a ground level street

and a linear waterfront park. In Halifax, citizens are contributing ideas on what to do after the Cogswell Interchange comes down.

1. Imagining a Future Without the Viaducts

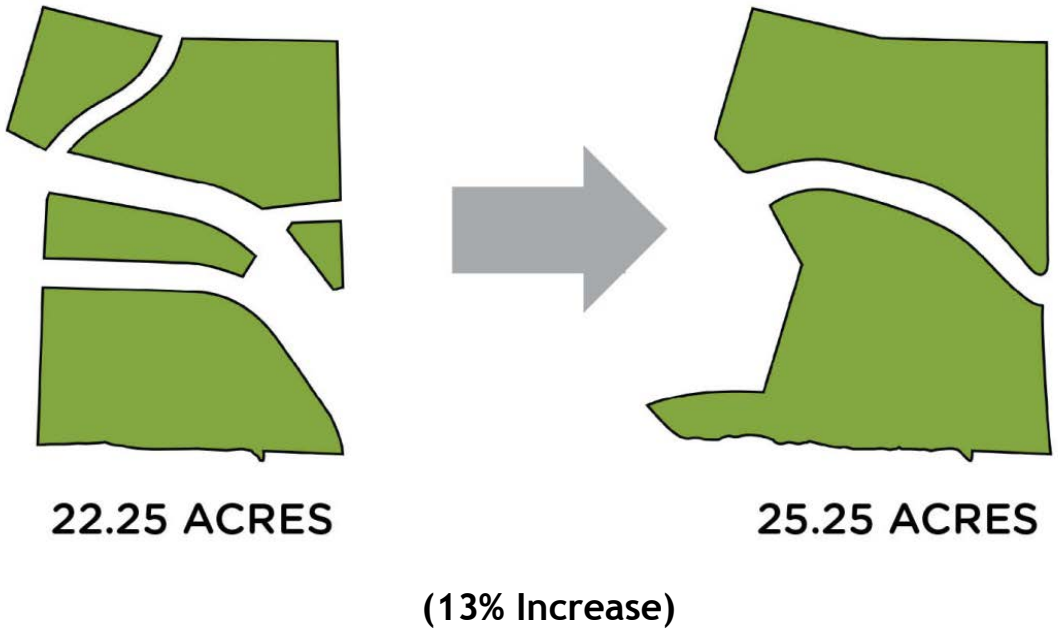
To envision the future of the viaducts and the Eastern Core, the City hosted an ideas competition re:CONNECT to gather ideas from the public and international design community. Over 100 ideas were submitted from 13 countries around the world, and, drawing inspiration from the public ideas, city staff and the consultant team developed and evaluated a range of options ranging from full retention to full removal. Each option was tested in detail for transportation performance, city building and public amenity benefits, and high-level costs. Conceptual planning and analysis of the options proved that removal of the viaducts could result in a number of public benefits and city-building opportunities.

Consolidating the existing ground level roadways, made possible by removing the viaducts, presents a unique opportunity to repair the urban landscape and to rethink this district encompassing more than 50 acres of centrally located land. The key benefits associated with removal of the viaducts are outlined below.

1.1 Open Space

Today, the parks and open spaces in the area (Andy Livingstone Park, Creekside Park Extension, skate park, and the area under the viaducts) are fragmented by the existing roadways. Consolidation of those streets allows for the creation of a larger (by a factor of 13%), more cohesive park on the False Creek waterfront. The new park configuration will make the park much more functional, allowing for greater flexibility in park programming opportunities.

Figure 3. Existing and planned parks (left) and potential park configuration (right)



1.2 "Repairing" Main Street

There are also significant and symbolic city-building opportunities to 'restore' the Main Street corridor providing a continuous active street front where a gap currently exists, and re-establish housing and services along Main Street and to the city-owned blocks between Quebec and Gore Avenue. The block east of Main Street, was known as Hogan's Alley which was once home to Vancouver's black population.

1.3 Housing Amenity on the City-owned Blocks

Removal of the viaducts creates nearly 7 acres of land between Quebec and Gore Avenue which can be utilized to achieve the City's targets for new affordable housing units. Conceptual planning of the two blocks between Quebec and Gore Ave identified an opportunity to provide approximately 850,000 sq ft of residential and commercial uses, representing about 1,000 housing units, of which a minimum of 200-300 (20%) were assumed as affordable non-market housing.

Figure 4. Illustration of Main Street with viaducts removed

1.4 Reconnecting Communities

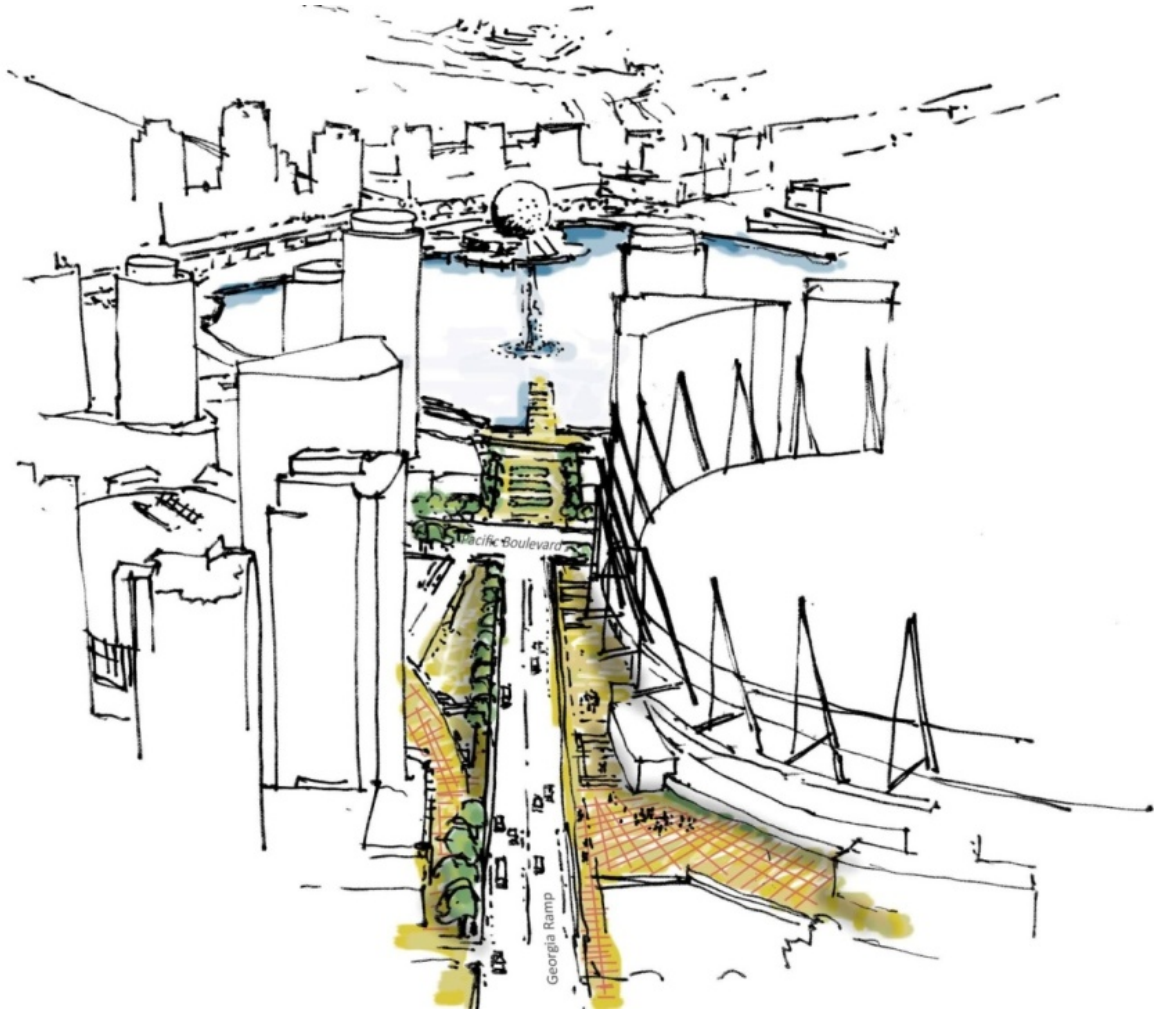
Removing the viaducts creates an opportunity to reconnect the surrounding communities to the False Creek waterfront and to each other. Creation of a major waterfront park with enhanced pedestrian and cyclist facilities would create new physical, visual and social linkages to the various neighbourhoods in the area.

Figure 5. Illustration of opportunity to connect surrounding neighbourhoods

1.5 Reinstate Georgia Street's Ceremonial Role

Removal of the Georgia viaduct creates an opportunity to reinstate Georgia Street as the city's most important ceremonial streets connecting from water-to-water (Lost Lagoon to False Creek). Georgia Street would extend down and connect to Pacific Boulevard, pedestrians and cyclists could link directly to the waterfront through a public plaza.

Figure 6. Illustration of the new Georgia Street connection to Pacific Boulevard



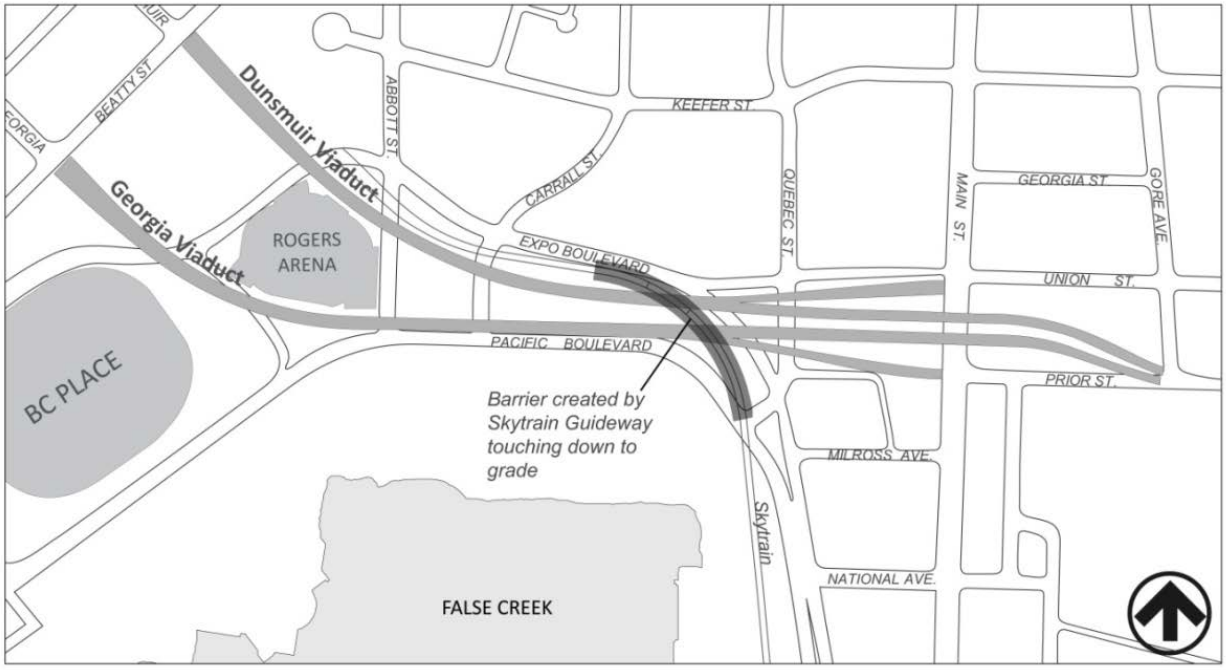
The biggest opportunity created by removal of the viaducts, is to rethink the plans for NEFC and to create a vibrant new mixed-use waterfront district, which was also highlighted recently in the Tourism Vancouver master plan survey results.

1.6 An Improved Transportation Network

The central challenge to realizing the opportunities identified is finding a solution for accommodating the traffic that currently utilizes the viaducts. The Skytrain Guideway, which passes beneath both viaducts just west of Columbia and almost touches the ground for 300 metres, creates a barrier that forces Pacific Boulevard into a north-south alignment,

preventing the traffic at ground level from travelling east-west, where the traffic from the viaducts flows.

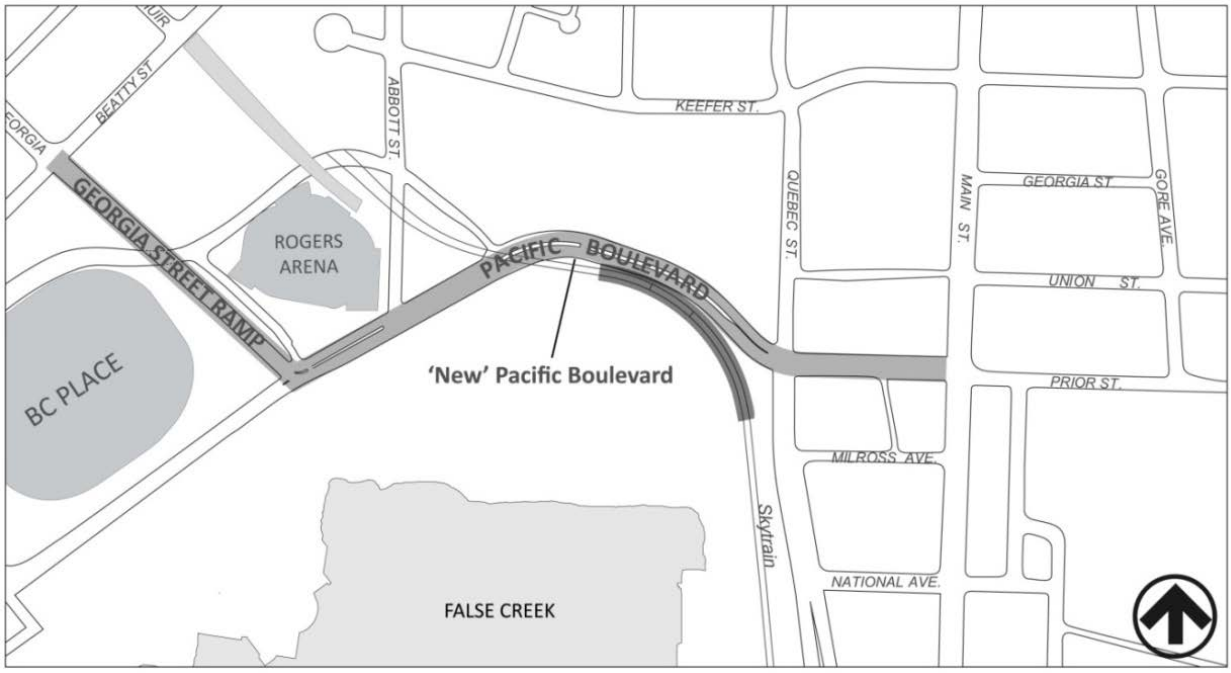
Figure 7. The east-west challenge created by the Skytrain Guideway



A key idea from a winning submission in the Ideas Competition, proposed by a team made up of Dialog, PWL Partnership, Beasley and Green, was a street network that replaces the viaducts with a two-way Georgia Street connection down to Pacific Boulevard, and combines Pacific and Expo Boulevards on the north side of the Skytrain guideway.

The replacement street network features a new 2-way extension of Georgia Street connecting down to Pacific Boulevard. Pacific Boulevard would be expanded into a 2-way street east of Georgia, and would be realigned north of the Skytrain Guideway for a direct east-west connection to the downtown.

Figure 8. The proposed replacement street network



Unlike many other North American cities, Vancouver does not have a network of interconnected, high capacity freeways. The critical capacity for the movement of goods and services is provided by a network of interconnected arterial streets, which in many cases serve as the commercial heart and front door for the City's diverse communities. The local economy is dependent on the efficiency of these arterial streets to serve the needs of local business, while the presence of multiple arterial options allow redundancy to overcome the impacts of accidents or construction and also to limit the impact of commuter vehicles and trucks on any one neighbourhood.

The Georgia and Dunsmuir viaducts are key components of this arterial network, connecting the downtown core out east via Main St/Terminal and Prior/Venables St as shown in Figure 9. The proposed street network would provide the essential capacity needed to meet vehicular demands for access to and out of the downtown.The transportation analysis shows the viaducts can be removed in the short term, with no expected increase in vehicle volumes on alternative routes to and from the downtown.

The design of the street network would ensure continued accommodation of full size trucks. With increased connectivity, through a greater number of street intersections, this network would provide improved access to existing and future developments planned for NEFC. The extensive analysis undertaken over the last 2 years has indicated that the street network would also retain sufficient capacity to accommodate peak attendance demands for Rogers Arena and BC Place. The street network allows for removal of the viaducts in the short-term, not the 15-20 year time horizon envisioned in the 2010 transportation study which considered a more limited street network with fewer connections.

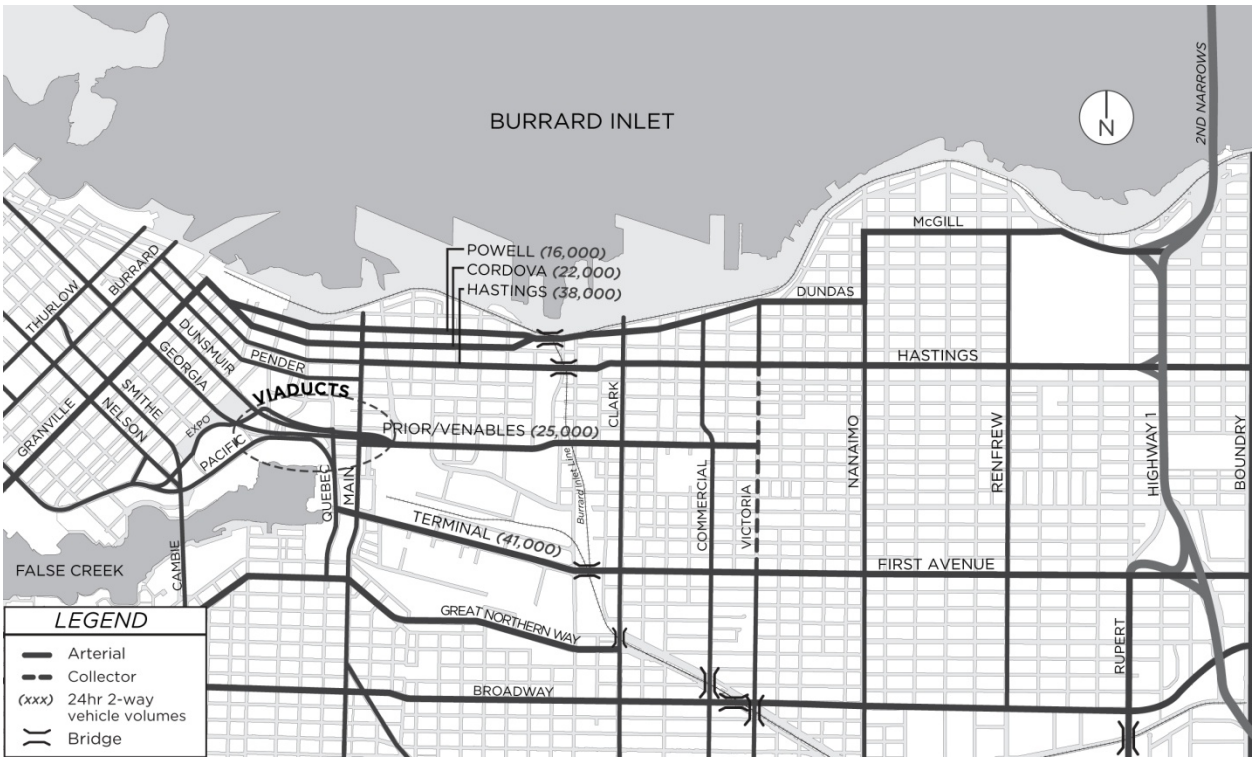
1.6.1. Transportation Analysis

Permanent vehicle counters have been installed to measure all traffic entering and leaving the city, and entering and leaving the downtown, as shown in Appendix D. These counters allow the continuous capture of vehicle volumes entering and leaving the downtown core, and provide a comprehensive data set for transportation analysis of potential road network modifications.

Over the past 15 years, the number of people living, working and travelling in the city has grown, with more trips every year. In contrast to this, the total number of vehicles entering or leaving the city has declined 5%, and, more important in regard to consideration of the future of the viaducts, the number of vehicles entering or leaving the downtown has declined 20% in an average 24hr period. This shift away from private vehicle to transit, walking and cycling means there is extra capacity on the City's road network. Through an efficient replacement with an at-grade street network which retains a direct two-way connection to the downtown along Georgia Street, the viaducts removal plan takes into account this extra capacity as well as the projected continuing reduction in vehicle volumes associated largely with the construction of the Evergreen Line which will have a similar impact as other major enhancements to rapid transit (such as the Canada Line and the Millennium line). It is through this analysis that staff have projected that there will be no increase in vehicle volumes through the communities which surround the viaduct study area (Citygate, Chinatown, Gastown, DTES, Strathcona and Grandview-Woodland). This and other interventions will help address some of the existing concerns related to traffic speeds and volumes in adjacent communities such as Strathcona, Chinatown, DTES, Gastown and Grandview-Woodland.

Figure 9 shows the arterial route network and connections for vehicles accessing the downtown from the east. Also shown are the average 24hr 2-way vehicle volumes for the major east-west routes of Powell St/Cordova St (38,000 vehicles combined), Hastings Street (38,000 vehicles), Prior/Venables (25,000 vehicles) and Terminal (41,000 vehicles).

Figure 9. Arterial network and connections within the North-East sector of Vancouver



1.6.2 How do you modify a major east-west arterial without negatively impacting the movement of goods and services or adjacent communities?

This is the key objective in developing the proposed replacement network and staff have worked diligently over the last 24 months with transportation consultants and stakeholder groups to develop a plan which achieves this objective.

Recognizing the important role the viaducts serve today, a replacement street network is proposed which retains the essential capacity and connectivity of the viaducts through a direct connection from Georgia Street to Main St/Terminal Ave and Prior/Venables (or an east-west alternative in that area) arterials via 2-way operation of a realigned Pacific Boulevard as shown in Figure 8.

While overall movement capacity is reduced through a reduction in the number of travel lanes, the impact to vehicle volumes is reduced by the existence of surplus capacity and the impact of enhanced public transit associated with the opening of the Evergreen Line. Furthermore, the proposed replacement network represents a significant improvement in connectivity and circulation as more routes such as Quebec and Pacific Boulevard can now access the direct connection to the downtown along Georgia Street. These projections are based on 25 years of analysis since the commencement of the Skytrain system and indicate that the new street network is fully expected to meet current and future demand.

1.6.3 Where will the traffic go?

The proposed replacement road network is designed to maintain the current capacity and relative balance of vehicle volumes across the parallel east-west arterial routes of Powell/Cordova, Hastings, Prior/Venables and First/Terminal. As discussed in Section 1.6.2, this analysis indicates that there should be no negative impacts to adjacent communities or the movement of goods and services.

Approximately 50% of the westbound traffic on the viaducts today comes from Prior/Venables via Clark Drive, while the other 50% comes from Main Street. This traffic will have taken a number of different routes to reach Main St and Clark Drive, routes which will remain unchanged as part of the viaduct removal plan. In the future, westbound traffic is expected to continue to use these routes up to the point of access of the replacement road network, where traffic will instead utilize the 'New Pacific' and Georgia Street connection to access the Downtown as opposed to the viaducts. For eastbound traffic leaving the downtown, vehicles are expected to utilize the Georgia Street connection and new Pacific Boulevard and continue to travel along Quebec Street, Main Street and Prior/Venables (or an alternative) and the same routes east of Clark Drive as they do today.

The analysis is reassuring however there is still more work to be done with local communities and stakeholders to review the data in detail and continue to discuss their issues and observations related to the arterial network in this portion of the city and how any final plans can address issues brought forward in these processes.

Important considerations identified by the community and business sector in ongoing discussions related to the arterial network are:

- Safety,
- Economic and business needs for efficient movement of goods and services,
- Community needs, aspirations, and valued assets,
- Long-term plans, such as the Burrard Inlet Rail Line Grade Separation Strategy,
- Technical constraints, and
- Cost-benefit analysis.

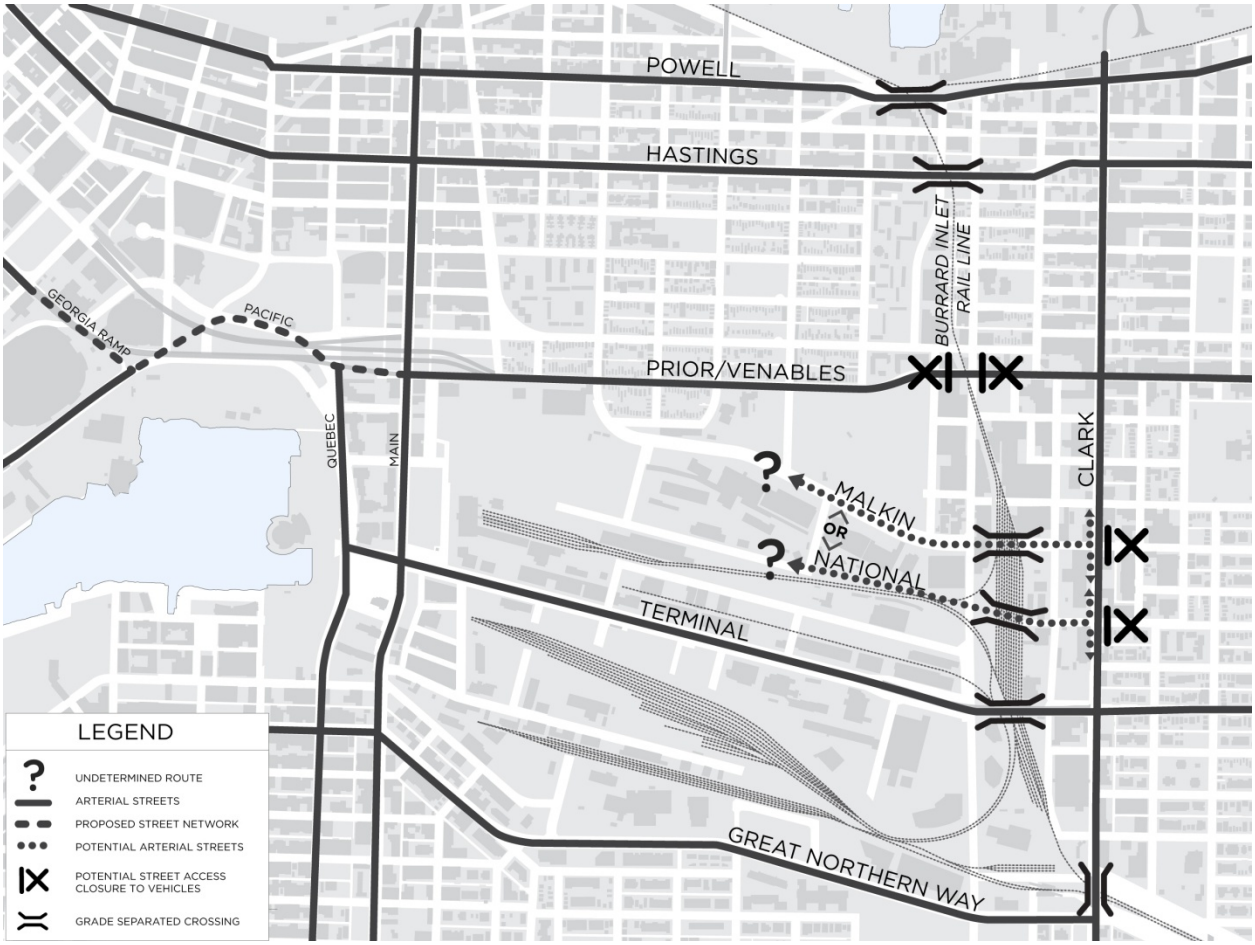
It is recommended that further work and public dialogue and engagement on these issues be incorporated into the Eastern Core Work Program as set out in Appendix C.

Critical to the above discussion is a decision on further grade separation of arterials crossing the Burrard Inlet Rail Line, as considered in the *Burrard Inlet: Rail Grade Separation Strategy* (2008) produced in collaboration with Transport Canada, Port Metro Vancouver, the Greater Vancouver Gateway Council, Translink, Vancouver Area Cycling Coalition and Better Environmentally Sound Transportation. This long-term rail separation strategy aims to facilitate better use of the Burrard Inlet Rail Line connection between the rail yards in the False Creek Flats and the Port, improve safety along this rail corridor, and preserve the capacity of key arterial streets by eliminating the conflict between vehicular traffic and train traffic. As shown in Figure 10, there are currently two east-west grade separations of the Burrard Inlet Rail Line, with a third separation along Powell St currently under construction.

The long-term plan encompassed in the report was to close Prior/Venables to vehicular traffic, and to construct a grade-separated arterial along the Malkin Avenue alignment (National Avenue is currently under consideration as an additional alternative). This would

address the significant technical challenges with construction of an overpass/underpass at Prior/Venables as well as longstanding community concerns with safety and liveability along this arterial route. The construction of an alternative arterial route would allow the downgrading of Prior/Venables without negatively impacting the movement of goods and services and without diverting significant volumes of traffic to the alternative parallel routes of Hastings St, Powell/Cordova and Terminal/First (listed in order of most to least impacted).

Figure 10. Rail grade separation options



1.6.4 How does the proposed road network address community concerns?

1.6.4.1 Central Business District (CBD)

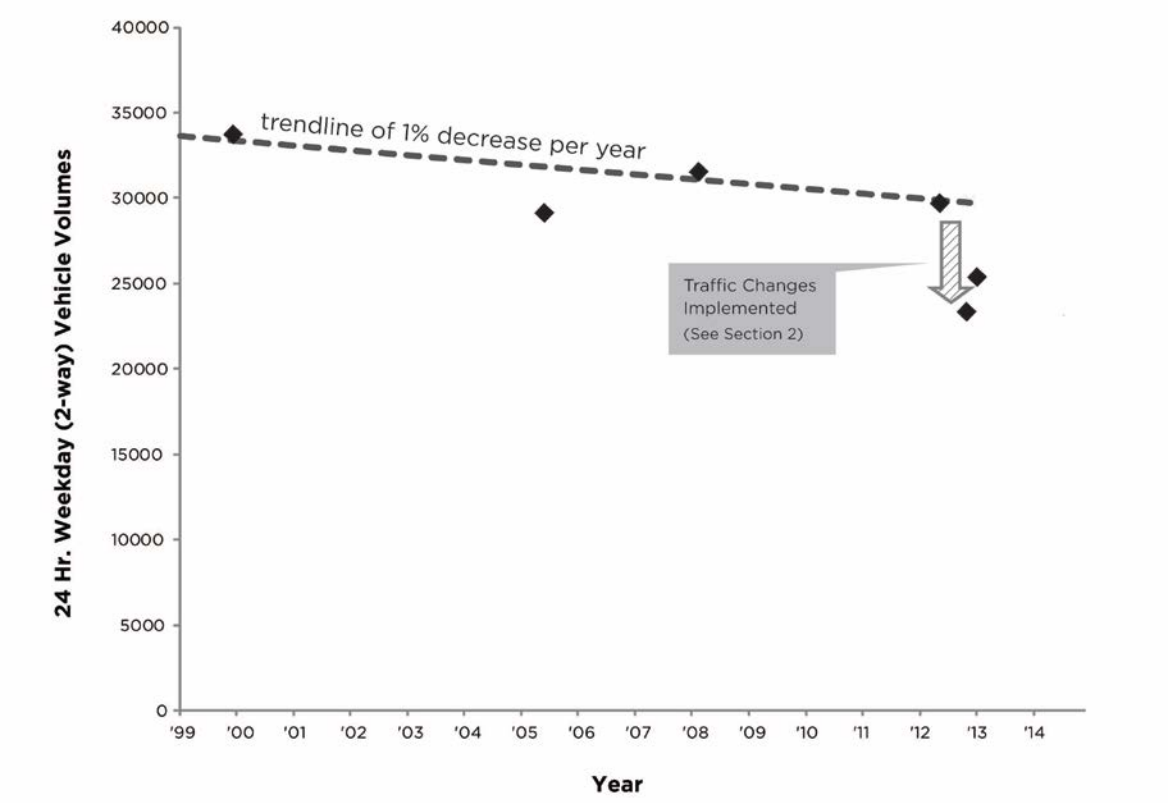
CBD tenants and landowners are concerned with access to the downtown and general circulation within the downtown. The replacement road network maintains the access currently provided by the viaducts through the two-way connection along Georgia Street to new Pacific Boulevard. Changes in vehicle volumes along Georgia Street and Dunsmuir Street immediately adjacent to the viaducts and as a result of the replacement road network (westbound traffic will access the downtown along Georgia Street as opposed to Dunsmuir Street) offers an opportunity to improve circulation in this area through potential two-way operation of Dunsmuir Street east of Howe and through introduction of new permitted left

turns along Georgia Street. These opportunities will be explored in more detail as part of the future viaducts work plan.

1.6.4.2 Strathcona

Local residents have expressed concern about the safety of the Prior Street corridor from Gore Avenue to Clark Drive, and desire to remove this street from the arterial and truck route network. Analysis undertaken to date to study the viaducts removal plan project that vehicle volumes post-removal will actually be reduced by 10% and average vehicle speeds will decrease. This pattern is consistent with data from the last 15 years which (Figure 11) shows a trend of decreasing vehicle volumes along this corridor and is largely consistent with the city wide average of a 20% decrease over the same period.

Figure 11. 24Hr weekday (2 way) vehicle volumes along Prior/Venables 2000-2013



In response to clearly articulated concerns from the Strathcona community in regard to safety, data available from ICBC (Figures 12 and 13) show that Prior/Venables, between Gore Avenue and Vernon Drive, ranks reasonably well in comparison to other comparable arterials across the city as it relates to intersection related collisions. There are more interventions possible to further improve safety and this data is somewhat reassuring, pending the construction of an alternative east-west arterial in the Eastern Core (which would entail shared funding with senior levels of government), that continuing interventions in regard to enhancing safety along Prior/Venables will provide additional protection for the community.

Figure 12. 2007 – 2011 Cumulative ICBC crash statistics and ranking
(Source www.icbc.com/crashmap)

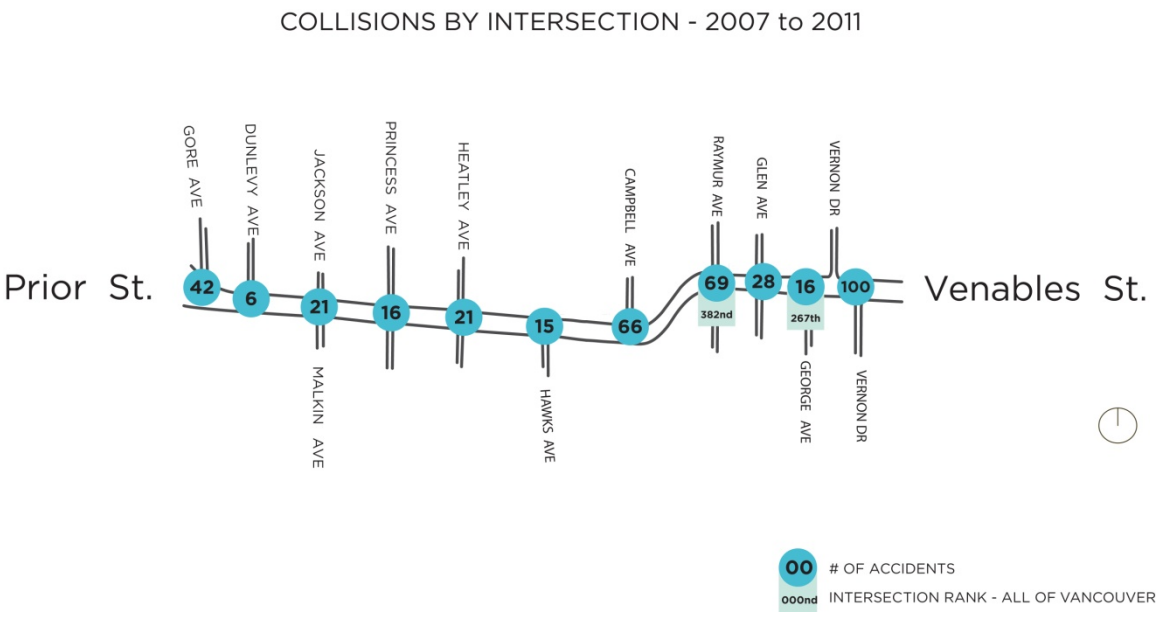
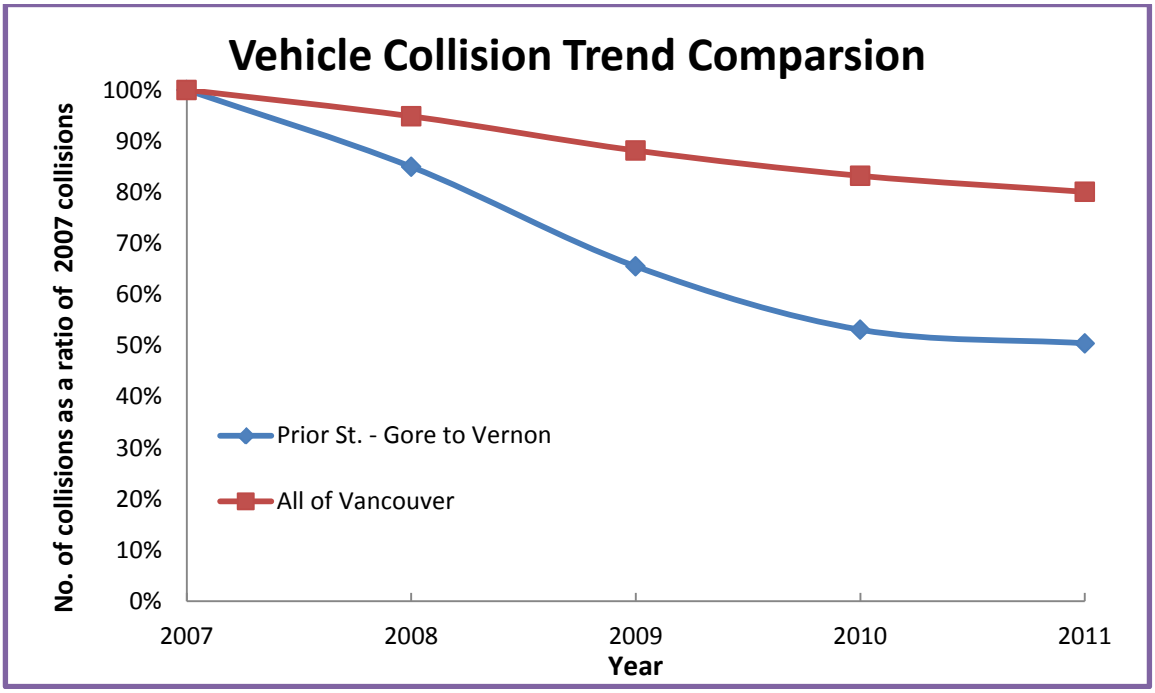


Figure 13. Five year vehicle collision trend comparison
(Source www.icbc.com)



1. 6.4.3 North East False Creek

Residents have expressed a desire to reduce vehicle volumes along Quebec Street. The viaducts removal plan is expected to result in a 10% decrease in vehicle volumes along this corridor.

Residents of the 100-300 Block of Prior Street, located either side of Main Street, have expressed concerns with the impacts of at-grade traffic as compared to the present situation, where the elevated traffic on the viaducts is further away. There are options to mitigate these impacts by using a buffer in the streetscape design, which will be explored as part of the future viaducts work program.

1.6.4.4 Chinatown Historic Area Planning Committee

Businesses and residents Chinatown has expressed a desire for improved connectivity to the seawall and NEFC, and is concerned about increased vehicle volumes. It is expected that with the replacement road network, vehicle volumes will not increase in Chinatown, while the removal of the viaducts will improve the north-south connectivity between Chinatown and the seawall/NEFC.

1.6.4.5 Gastown

Business and residents in Gastown have expressed concern with traffic volumes and speeds along Water Street. The viaducts removal plan is expected to have no impact along this corridor. Work continues in Gastown and DTES with Vancouver Police and staff on safety in regard to traffic speeds along these corridors.

1.6.4.6 Grandview-Woodland

During the process of the community planning exercise currently underway in Grandview-Woodland, residents have expressed concerns with commuter traffic on local streets within the community. The viaducts removal plan is expected to result in a marginal reduction in vehicle volumes along Venables and Victoria as there would be an expected 10% decrease in volumes along Venables west of Clark Drive.

A more substantive decrease is expected once a replacement arterial to Prior/Venables is constructed along the Malkin Avenue or National Avenue alignment, to be determined as part of the Eastern Core work program. This replacement connection would ‘T’ into Clark Drive, providing a less direct and hence less desirable connection to Venables and Victoria Drive for commuters.

1.6.5 What happens to traffic during construction?

The biggest traffic impacts will be incurred during removal of the viaducts and construction of the replacement road network. Fortunately the majority of the replacement road network can be constructed before removing the viaducts, minimizing these impacts. It is anticipated that construction would take approximately 18 months, with an estimated 4 months required to construct the new Georgia Street ramp extension to Pacific Boulevard and to connect new Pacific to Prior Street at the west, where the current viaduct off-ramp to Main Street is located. During this four month window a direct connection to the downtown in the study

area would be temporarily lost. Construction would be timed to ensure this was completed when traffic volumes are seasonally lowest in the summer. Similar to the period of the 2010 Winter Olympics, where the viaducts, Pacific and Expo Boulevards were closed to general traffic for two months, staff would work with Translink to investigate opportunities for transit optimisation and priority measures to mitigate the impacts.

A detailed phasing and traffic management strategy would be developed in advance of any modifications to the viaducts, to ensure impacts are mitigated and minimized to the extents possible.

2. Progress on Council Directions

In July 2012, in addition to extending public consultation, Mayor and Council requested that staff progress work on 5 key areas:

1) Ensure the flow of commercial goods is a priority and that the needs of the business community are considered

The proposed replacement street network ensures a direct connection for goods movement to and from the downtown, and preserves necessary capacity via the new Pacific Boulevard and Georgia Street connection. As discussed in Section 1. 6, the network would be designed to accommodate full size trucks and connect to the existing arterial and truck route network at Main and Prior/Venables Streets.

In addition to meetings with goods movement stakeholder groups such as BC Trucking, staff have met with the Downtown Business Improvement Association (DVBIA), the Board of Trade and a number of other business groups since July 2012 to discuss the proposed street network. These business and goods movement interest groups continue to emphasize the importance of maintaining the east-west truck movement route and sufficient vehicular access to the downtown to avoid an increase in congestion on alternate routes.

With the proposed changes, there are opportunities to improve access and circulation in the broader downtown context, such as introducing left-turn movements at key intersections (e.g. Seymour and Georgia), and modifying Dunsmuir Street's operation east of Howe Street to accommodate 2-way traffic. Staff will continue to work with the DVBIA and other interested stakeholders to explore and deliver on these opportunities.

2) Explore east-west arterial options to Prior/Venables to divert traffic from surrounding residential streets

As discussed in the transportation overview, a diversion of traffic from Prior/Venables without increasing traffic volumes in adjacent communities and without negatively impacting the movement of goods and services requires the construction of a new arterial connection for this area of the city, as contemplated in the *Burrard Inlet: Rail Grade Separation Strategy* (2008). The long-term rail separation strategy aims to facilitate better use of the Burrard Inlet Rail Line connection between the rail yards in the False Creek Flats and the Port, improve safety along this rail corridor, and preserve the capacity of key arterial streets by eliminating the conflict between vehicular traffic and train traffic.

Malkin Avenue was identified in this report as the best location for an arterial rail overpass to replace the existing rail crossing on Prior/Venables. However, more study is needed to examine other viable alternatives including along National Avenue. Any new connection would 'T' into Clark Drive to ensure commuter traffic is not encouraged to use local streets within Grandview-Woodland, and it is expected that non-local traffic volumes will decrease along Venables and Victoria, supporting the desires of the community as this is represents a less direct and hence desirable connection as compared to today for commuter traffic.

Since July 2012, the staff team has examined east-west arterial connection options to replace the Prior/Venables arterial. Existing uses along the route options that require careful consideration include Strathcona and Trillium parks, Civic Facilities (e.g. Firehall #1, Animal Control Shelter, National Works Yard, Fire Training Facility), 'Produce Row' wholesale businesses located on the south side of Malkin Ave, and the Providence lands. The Cottonwood and Strathcona Community Gardens, some of the oldest community gardens in the city, are also potentially impacted by a new east-west connection. The proposed work program for the Eastern Core will need to take all of these important issues into consideration.

All of the arterial alignment options studied to date can work with the replacement street network proposed for the Viaducts/NEFC Area. Given that the trade-offs for a new east-west arterial route are complex and involve multiple stakeholders, staff recommend the options be studied in greater detail as part of the first phase of the Eastern Core planning process. This will allow more time to develop a plan in consultation with the community, business and landowners in parallel with continued work on the viaducts.

3) Implement immediate traffic/safety improvements on Prior/Venables

To address the Strathcona community's concern and Council's direction, the following measures have been implemented since July, 2012:

1. **Relaxed parking restrictions on north side of Prior St** (September 2012)– changed the time restriction from 7am-7pm to 7am-9:30am to allow more on-street parking;

2. **Improved Pedestrian Safety along Prior St** (October 2012)– installation of count-down timers and increased walk times at all eight signalized intersections (there are four additional non-signalized intersections) between Gore and Clark Drive;

3. **Improved safety at the intersection of Prior and Campbell** (January 2013)– installation of a new larger, brighter traffic light to improve visibility for vehicles travelling westbound.

Since these changes were implemented, 24-hr traffic counts were completed in December 2012 and February 2013. The data collected, while limited, shows a decline in vehicle volumes on Prior Street, as in the table below.

	Date	Eastbound	Westbound	Total
Wed	June 27/2012	15713	14002	29715
Prior Street Traffic Improvements Implemented September 2012				
Tues	December 4/2012	11469	11385	22854
Wed	December 5/2012	11515	11350	22865
Thurs	December 6/2012	12287	11908	24195
Thurs	February 14/2013	13533	11889	25422

Table 1 Recent 24hr traffic count volumes on Prior street

Data collection will continue over the coming months to determine long-term trend information.

In response to the community's desire for a clearer understanding and enhancement of safety issues on the street, staff working with Strathcona, Grandview-Woodland and the Board of Trade to develop a terms of reference for an independent Road Safety Audit of Prior/Venables from Gore Avenue to Victoria Drive, which is expected to be completed in the fall of 2013.

4) Align with the City's Economic Action Strategy goals

Council has directed that land use and transportation planning work for the Eastern Core be aligned with the City's Economic Action Strategy goals. Through the planning process (described below), staff will explore land use and transportation policy directions that support the city's Economic Action Strategy (2011) goals of job densification, promoting innovation, bolstering the creative economy, creating a Green Enterprise Zone, and protecting and enhancing job space in collaboration with the Vancouver Economic Commission (VEC).

5) Provide a project timeline for project deliverables/amenities

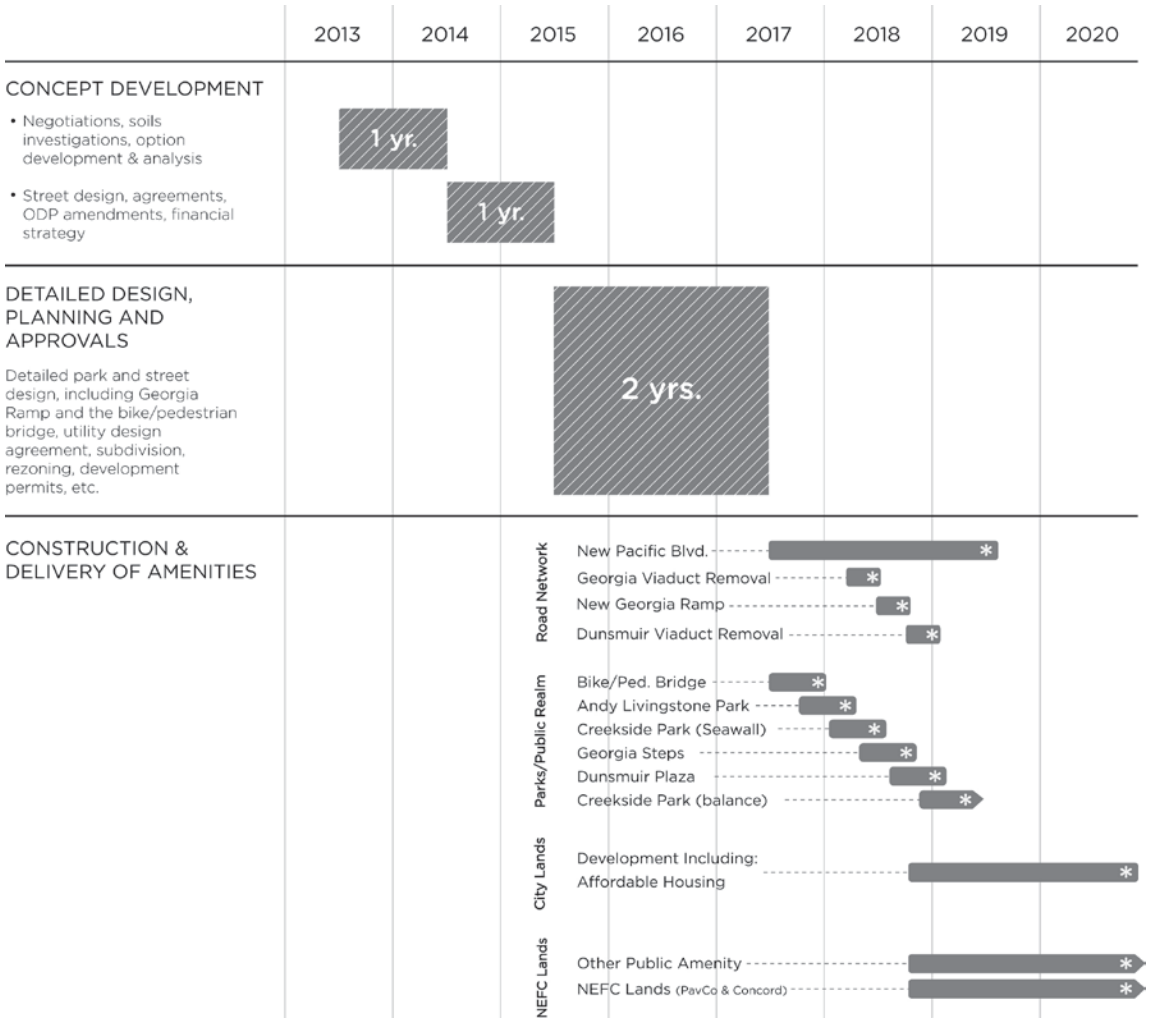
- 2013-2015 - Develop a viaducts area plan including ODP amendments, to support negotiation of agreements with the impacted land owners and complete preliminary designs of the streets and parks. Also complete Eastern Core plan with a priority for determination of the long-term east-west arterial connection.
- 2015-2017 – Subject to Council approval, work can begin on site specific rezonings, the necessary rezoning approvals including executing legal agreements, land exchanges, subdivision, and finalizing street designs and procurement.
- 2017-2019 - Construction and viaduct removal can commence, upon receipt of all required Council approvals. Construction and removal is anticipated to take 18 months – 2 years.

Pending a final decision over the next 24 months to remove the viaducts, construction of amenities such as affordable housing and parks can begin once the viaduct structures are removed. Early delivery of a portion of Creekside Park Extension will remain an objective throughout the planning process. The current agreement with Concord, the Province and the City allows for contaminated soils from development sites to be stored in the future

Creekside Park. Phasing of construction of the park will be partially dependant on Concord's development schedule. In addition, it is likely that a portion of Concord's land would be needed for project phasing (traffic may need to be temporarily rerouted to allow for construction of the replacement street network). It is possible however that a portion of Creekside Park could be delivered prior to the complete removal of the viaducts and efforts will continue to advance this important public policy goal. The next phase of work will examine park phasing scenarios in some detail to assess what is feasible.

It is possible to phase removal of the viaducts, by leaving the Dunsmuir viaduct in place and constructing the Georgia Street connection and new street network. However there are minimal transportation benefits to this approach: it increases the challenges associated with completing the new street network, results in a loss of construction efficiency, and delays delivery of portions of the parks and housing opportunities.

Figure 14. Proposed project timeline and delivery of amenities



4. Public Consultation

A concept illustrating the key opportunities and the conceptual transportation solution has been shared with the public in a number of different ways to gage support for the project over the last year.

In addition to the public Ideas Competition and initial stakeholder outreach, public open houses and stakeholder presentations on the concept plan were conducted through May to July 2012. Three public Open Houses were held in June 2012, which were attended by over 1,000 people. Staff received 675 comment forms in total - 423 from the open houses and 252 on-line. In general, 69% of respondents stated strong support or support for the concept, 6% were neutral, and 25% were opposed or strongly opposed. Over the last year, the concept was also presented to a wide range of stakeholders (over 40 groups to date), including business groups, representatives from adjacent community groups, Council committees and transportation interests.

The comments received at stakeholder meetings have been generally positive about the concept. While indicating general support, many stakeholder organizations had thoughtful questions and concerns, which will require further work and analysis to fully address. In addition to questions about traffic impacts, other issues of interest (depending on the audience) were the timing and delivery of the park, the proposed pedestrian and cyclist connections, design of the Georgia Street connection and new Pacific Boulevard, and development opportunities identified on the City owned lands (see Appendix E). Testing of the concept with the public has identified areas of the concept with strong support and other areas that need further evaluation.

Guiding Principles

Based on feedback from the public, stakeholder groups, and technical analysis of the concept, Staff is recommending that Council approve a set of principles that document the key opportunities. The principles, included as Appendix A, will be used to guide the next stage of planning work.

5. Viaducts and Eastern Core Planning Programs

Over the next two years, in order to complete the work necessary to allow Council to make a final decision in regard to the removal of the viaducts, it is necessary to embark on two planning studies:

> **Viaducts/Northeast False Creek** (NEFC) - The potential removal of the viaducts and construction of a replacement street network adds considerable complexity to on-going planning work for NEFC. Further technical work on the new Georgia Street and Pacific Boulevard as well as resulting changes to the False Creek North Official Development Plan (ODP) requires a dedicated staff team. Development in the area is proceeding so to ensure this opportunity is realized, staff recommend proceeding to the next phase of planning work on the viaducts/NEFC area.
>
> **Eastern Core** – The removal of the viaducts and the replacement street network relies on an east-west goods movement connection, currently located on Prior/Venables. Analysis of alternatives to Prior/Venables requires consideration of the street network

in the Eastern Core, including parallel routes of Terminal Ave and Great Northern Way, and potential north-south connections in an area limited by rail infrastructure. Land use and transportation are inter-related, therefore staff also recommend proceeding with a dedicated team to progress work on the Eastern Core plan in parallel. Each of the work programs are described below.

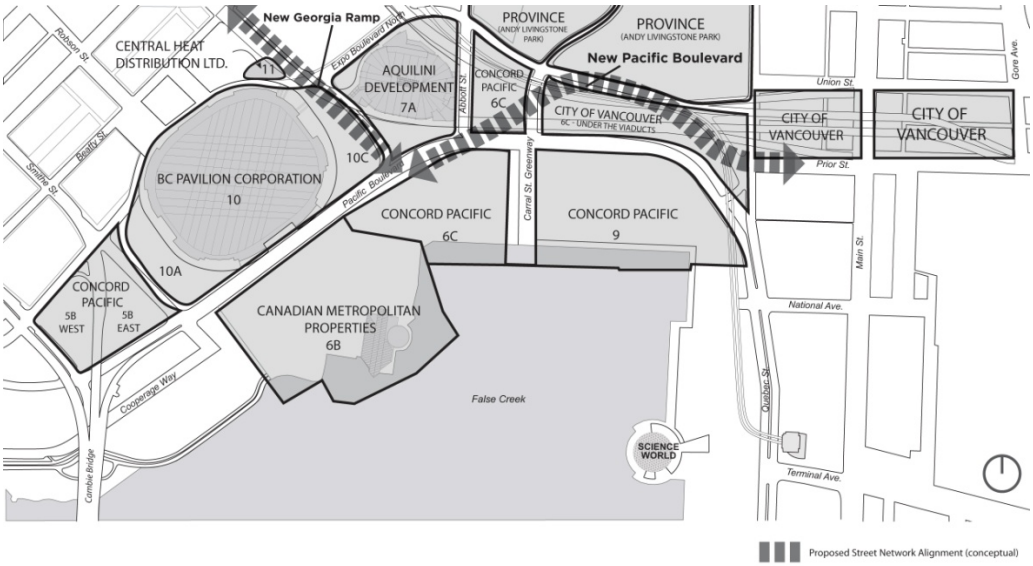
5.1 NEFC Planning and the Viaduct Integration

Future planning for the land affected by viaduct removal west of Quebec Street was approved in 2009 through the *NEFC: Directions for the Future* which established the vision, land use, density and public benefits to be achieved through the development of the area. Since 2009, three sites in Northeast False Creek have been approved for ODP amendments and rezoning (Area 10, Area 5b East and Area 7a) and two sites are currently in the process of rezoning (Area 5b West and Area 6b). Only the development site on the southeast corner of BC Place Stadium (Area 10c) and Concord's Area 6c have yet to submit for rezoning.

Staff will work with impacted landowners to seek agreements in principle on a number of topics to implement the new street network that could replace the viaducts. Staff have already resolved viaduct related matters with Aquilini (Area 7a), including securing a right-of-way for the new Pacific Street alignment, through design and development conditions included in the recently approved Rogers Arena rezoning.

Land owned by BC Pavillion Corportation (PavCo) and Concord Pacific (Concord) east of BC Place would be significantly affected by the new opportunities presented by viaduct removal and required changes to the street network. Specifically the construction of the Georgia Street ramp extends over the east side of the BC Place stadium site (Area 10c) connecting to Pacific Boulevard and the shift in the alignment of Pacific Boulevard crosses through Concord's Area 6c North. The Central Heat Distribution (CHD) site to the north of BC Place would be affected in a minor way and requires a small right-of-way to link the BC Place concourse to the new Georgia Street ramp.

Figure 15. NEFC Areas/Landownership



This situation warrants reconsideration of the future planning for the area in order to create a new option that takes full advantage of the opportunities presented by viaduct removal, meets both City and Land owner objectives and allows the project to proceed. The City's objectives for the area are defined by the Guiding Principles (Appendix A) and the NEFC Directions.

The work program for the next year would explore a number of complex and interrelated topics required to advance the planning for the area as follows:

1. **Park Space** – The NEFC Directions anticipated providing the 9 acre Creekside Park Extension and 2.3 acres of youth-oriented recreation space under the viaducts along with two new plaza spaces. A key objective in the removal of the viaducts is to provide more and improved park space that maximizes programming and integration opportunities. Staff will work with Concord and the Province to develop park options that meet the City's park objectives, Concord's development objectives and the soils agreements with both Concord and the Province. The delivery of some portion of the park in an early phase of development and/or interim park possibilities will be a priority objective.

2. **New Roads** - Staff will work with the Concord, PavCo and Central Heat Distribution Ltd. to seek agreements on the necessary street dedication and rights-of-way and determine land exchanges with the City needed to implement the new street network and bike/pedestrian connections that would replace the viaducts. For Concord, this will produce new development parcels which will need to consider tower placement and density, park configuration and programming and soils contamination.

3. **Soils Contamination** – Existing agreements between the City, Concord and the Province identify the parcels that are to be development sites, street and parks. These agreements allow for soils from Concord's development sites to be stored within the future Creekside Park Extension. The new roads, development parcels and park parcel configuration will require changes to the agreements. Staff will work with Concord and the Province of BC (the Province) to explore new development options that are mindful of our agreements and shared intention to minimize risk and costs associated with management of contaminated soils.

4. **Land Use and Density** - The existing land use and density recommendations for the PavCo and Concord lands was based on the 2009 parcel boundaries and context. Both PavCo and Concord have asked that the City reconsider the current land use and density advice for their sites in light of the new context and opportunities presented by viaduct removal. Staff has committed to work with PavCo and Concord to explore any possible changes to achievable density which must be balanced with the City's public interest objectives as outlined in the Guiding Principles and other policies for the area, including City-wide view protection policies and requirements for open space and other amenities.

The proposed changes to street network combined with the anticipated changes to the development plan for the area would result in amendments to the existing False Creek North Official Development Plan (ODP) which will also require Council consideration and approval. Staff anticipates that ODP amendments, detailed street network design, landowner agreements in principle, and the financial strategy could take until June 2015 to complete for

Council's direction. Broad public consultation and adjacent community stakeholder involvement will be part of the planning process. The budget and timeline are described in Appendix B.

5.2 Eastern Core Planning

As part of the planning for the Eastern Core, staff will identify policy directions that support the City's economic action goals of job densification, innovation and the creative economy, establishing a Green Enterprise Zone, and protecting and enhancing job space in collaboration with the Vancouver Economic Commission (VEC).

In addition, the plan will address Greenest City 2020 Action Plan goals, Transportation 2040 directions, and existing City jobs and economy policy including the Industrial Lands Strategy and Regional Growth Strategy as noted below:

- Protecting industrial lands while also exploring potential for industrial intensification particularly with civic uses on City Lands,
- Demonstrating climate Leadership through renewable energy, green buildings, and green transportation,
- Introducing new open space and green space,
- Encouraging a dense and diverse mix of jobs, services, and amenities in close proximity to transit stations, in the Eastern Core these are the Main Street Skytrain Station, Vancouver Community College Station and future Great Northern Way Campus station of the Millennium Line extension,
- Recognizing the importance of protecting and improving rail corridors for goods and passenger movement, and implementation of the False Creek Flats Rail Corridor Strategy subject to refinement based on area planning, and
- Prioritizing improvements to the walking and cycling networks, as identified in the Transportation 2040 plan.

Developing an area plan will involve a series of steps combining technical work and consultation undertaken by Planning and Engineering, staff from Vancouver Economic Commission, and consultants as necessary. A priority consideration will be determining the east-west arterial connection between Main Street and Clark Drive in the broader land use and transportation context. The key process steps, timeline, and incremental budget required to complete a comprehensive area plan are outlined in Appendix C. Staff anticipate seeking Council direction on key land use and transportation issues and directions within a year (June 2014), and finalizing the area plan by June 2015.

Public consultation will be carried out to inform preparation of the area plan. The consultation program will enable:

- Input from adjacent community and residents' groups, landowners, businesses and transportation interests in the area, and
- Opportunities for review and feedback from the general public.

A variety of consultation approaches will be used including outreach through open houses, establishing a multi-stakeholder working group, workshops, one-on-one meetings, mailings, social media, online engagement and a website.

6. IMPLICATIONS/RELATED ISSUES/RISKS

6.1 NEFC Landowners

Private development in NEFC is proceeding, and a decision is needed on the new street network to provide certainty for the affected landowners. The affected landowners recognize the merits of viaducts removal, but have identified a range of issues that need further work.

PavCo – In 2012 PavCo identified a number of concerns with the viaducts project, including loading access and clearance, ability for trucks and patrons to access the stadium, congestion and the impact on the future viability of a tower on the east side of the stadium. Staff have received a letter from PavCo dated June 17, 2013 that notes "there appears to be ways to address operational impacts but design, regulatory and funding solutions need to be resolved. As such the comments in this letter do not represent PavCo agreement to the removal of the eastbound Georgia Viaduct and extension of Georgia Street across the PavCo lands."

Staff will be meeting with PavCo in the near term to further discuss these issues. As requested by PavCo, the work program budget includes the completion of a revised loading and event management plans for the area.

Concord Pacific – The proposed street network and removal of the viaducts has significant positive impacts to Concord's lands, however as discussed in the NEFC Planning and Viaducts Integration section of this report, a number of complex and inter-related issues require resolution including land exchange and development parcels resulting from new roads, soils contamination, land use and density and park area, program and timing.

The rezoning of Concord's Area 5b West is anticipated to be addressed as part of the upcoming negotiations with Concord. The rezoning of that site was considered in 2011 and has been on hold since Council referred the rezoning back to staff for further work on the public benefits package and park timing clarification.

The Province of BC (Andy Livingstone Park) – The City currently has a 999 year lease with the Province for use of Andy Livingstone Park for park purposes. A restrictive covenant is registered against the park limiting use for park purposes. A portion of the southern edge of the park is needed for the replacement street network (new Pacific Boulevard), which is not a permitted use under the covenant. A court application would be required to modify the covenant to permit the road to encroach onto the park. Closing Carrall Street to vehicles and converting it to park could result in a net increase in park area overall, which may be key to resolving the road encroachment issue.

6.2 Impacts on Surrounding Communities

As noted in the earlier sections of the report, some of the surrounding communities have raised concerns regarding transportation and land use impacts associated with viaducts removal, including concerns about the broader transportation structure of the Eastern Core. Strathcona Residents Association (SRA) and Grandview-Woodland Area Council are concerned about vehicles volumes and speeds on Prior/Venables, and spillover traffic through the Grandview-Woodland community. The Downtown Eastside (DTES) Local Area Planning

Committee is concerned about pedestrian safety and traffic volumes on Hastings and would like to see a significant amount of affordable housing programmed into the City-owned lands between Quebec and Gore Street. Residents of 100-300 Blocks of Prior Street are concerned about future traffic volumes and scale of the new Pacific Boulevard. Others, like CityGate, have raised questions about timing and delivery of public amenities such as park.

The Viaducts/NEFC and Eastern Core work plans are designed to include resources for comprehensive community consultation and stakeholder discussion. Staff will work with the interested and impacted stakeholders at various steps in the process to ensure that their concerns are considered and addressed as much as is possible.

6.3 Soil Remediation

Land in the study area is known to contain contaminated soils and groundwater from former industrial uses and contaminated fill materials. Land within the Pacific Place Remediation Project (west of Quebec) is governed by legal agreements which do not apply to the two blocks between Quebec and Gore Ave. Each area is described in more detail below.

a) **Pacific Place Remediation Project -** In May 1988, Concord Pacific Developments Ltd. purchased the former Expo Lands from the BC Enterprise Corporation. Because it was known that there were problems with soils on these provincially-owned lands, the Provincial government agreed to take on the risk and responsibility for the remediation (clean up) of the site. There are agreements in place with the City, Concord and the Province that identify the parcels that are to be development sites, street and parks. These agreements allow for soils from Concord's development sites to be stored within the future Creekside Park Extension. Changes to Concord's development parcels that are required for the replacement street network and any other changes that proposed buildings outside of defined areas of responsibility for soils contamination will require amendments to existing legal agreements between the City, Concord and the Province.

b) **City Owned Blocks between Quebec and Gore** - The City-owned lands that could be freed up for development if the viaducts are removed are not within the Pacific Place Remediation Project. These sites are subject to current Ministry of Environment regulations. A complete assessment of environmental site conditions (soil and groundwater) was completed in early 2013 and identified contaminated False Creek fill widespread in the area between Quebec and Main Street, and metals and hydrocarbon contamination and buried debris related to former industrial activity between Main Street and Gore Ave. Based on these findings a remedial cost estimate (approximately $3 - $7 million) has been completed to inform total project costs and risks.

6.4 East-West Arterial Connection

It is clear from staff investigations to date that regardless of the option some of the existing uses in the False Creek Flats area will likely be affected by a new east-west arterial option to Prior/Venables. There may be property acquisition, relocation of uses, and legal and technical considerations not yet identified. These unknowns may impact financial and technical feasibility of developing a new east-west connection.

Staff will prioritize this work in the Eastern Core planning process and report to Council on issues by mid-2014.

6.5 Implications During Construction

In advance of any construction, Staff would engage and work with a team of industry professional consultants to develop a management plan which minimizes the City's and public's exposure to physical and economic risk. The anticipated construction duration, methodology and traffic impacts are similar to a number of projects that the City has undertaken in past years or are currently underway such as the $50M Powell Street Overpass Project, which involves the reconstruction of a significant east-west arterial and a full 1 year road closure.

FINANCIAL IMPLICATIONS

Viaducts/NEFC Planning

Capital Costs

There are significant, short- and long-term financial considerations associated with the future of the viaducts. Before a comprehensive financial analysis can be undertaken, more work is required to finalize the land agreements, soils issues, planning and design details, potential value arising from any enhanced density for existing landowners, and redevelopment potential of some of the city lands made available through removal of the viaducts.

The high level cost estimates of the proposed removal of the viaducts and construction of the replacement street network are laid out below, against the projected future costs associated with maintaining, rehabilitating and replacing the viaducts which would be eliminated.

1) Retaining the viaducts is projected to cost approximately $35-$40 million over the next 5-15 years and $60-$80 million in about 40 years (overall total $95 – $120 million):
    a. Over the next 5 to 15 years:
        - approximately $10 million to rehabilitate the viaducts,
        - approximately $15 million to construct the "Georgia Steps" - a new pedestrian-bicycle ramp to connect the downtown (Georgia and Beatty) to False Creek (Pacific Boulevard), and
        - $10-$15 million to construct the planned new waterfront park (Creekside Park Extension).
    b. In about 40 years:
        - $60-$80 million to replace the viaducts.

2) Removing the viaducts and providing a new street and open space network is estimated to cost approximately $115-$132 million over the next 5-10 years, as follows:
        - $50-$55 million to remove the viaducts and construct the new Georgia Street and pedestrian-bike connections,
        - $30-$35 million to modify existing streets and utilities,

- $30-$35 million to modify existing parks and construct new parks (including Creekside Park Extension), and
- $3-$7 million for soil remediation for City-owned blocks between Quebec and Gore Avenue.

The overall value of 10 acres of land freed up for use through the removal of the viaducts is estimated at $100-$110M (assuming a gross floor space ratio of 3.5). The viaducts and associated land are City-owned assets, and as part of the overall plan would be repurposed for use as public open space, affordable housing or other public use. In addition, some of the land can be sold for residential/commercial development. Finally, depending on the planning decisions and land exchange opportunities which could be achievable through the viaducts removal, any incremental value arising from additional density would also be considered in the overall business case for viaducts removal.

Further financial analysis will be undertaken over the coming months in parallel to the planning processes outlined above. Staff will return to Council with a comprehensive financial analysis and funding strategy on the project when there is more certainty in regard to planning and design decisions.

Work Program Costs

Approximately $1 million has been spent to date on planning and engineering work, and an additional phase of planning work is required before a comprehensive financial analysis and funding strategy can be developed. This work will span the next two years and is estimated to cost $2.4 million (see Appendix B for details).

Staff recommend that a project budget of $2.4 million be approved and funded from the 2012-14 Capital Plan, with $0.6 million from the Emerging Priorities Category (Capital from Revenue) to be added to the 2013 Capital Budget, and the remaining $1.8 million from the Emerging Priorities Category (Capital from Revenue) or through funding reallocation to be determined as part of the 2014 budget process.

Eastern Core Planning

Capital Costs

Capital costs associated with Eastern Core planning have not yet been determined.

Work Program Costs

There are significant financial considerations associated with Eastern Core planning, most notably the possible construction of an overpass over the Burrard Inlet rail line that connects the Port of Vancouver to the False Creek Flats, to replace the existing at-grade crossing along Prior/Venables Street. The overpass costs have not been determined. Further study is required to evaluate and cost alternatives. While some preliminary planning work has been initiated, completing the study is estimated to cost $550,000 (see Appendix C for details).

Staff recommend that this work be funded as follows:

- $225,000 from the 2012-14 Capital Plan for engineering studies for arterial/overpass feasibility, street network, Central Valley Greenway alignment and development of a

stormwater strategy, with $50,000 from the Emerging Priorities Category (Capital from Revenue) to be added to the 2013 Capital Budget, and the remaining $175,000 from the Emerging Priorities Category (Capital from Revenue) or through funding reallocation to be determined as part of the 2014 budget process;
- $250,000 from approved but unspent operating budget for the False Creek Flats Study carried forward from previous years; and
- $75,000 to be considered as part of the 2015 Operating Budget.

Detailed financial implications will be presented to Council when the study is completed in 2015.

CONCLUSION

The city building potential associated with the proposed removal of the Georgia and Dunsmuir viaducts could result in a series of "once in a generation" city-transforming opportunities. This underutilized area of the city could be re-thought to create a truly vibrant mixed use waterfront precinct connected to surrounding communities, increased public park, a repaired Main Street corridor with resulting economic benefit, and increased affordable housing opportunities. The transportation analysis shows that these opportunities can be realized by creating a replacement street network that does not sacrifice the essential capacity needed to meet vehicular demands for access to the downtown nor goods movement access.

Much work needs to be done before a final decision can be made by Council. This report has detailed the benefits associated with viaducts removal, demonstrated how the new street system will work, responded to the Mayor's July 2012 recommendations, outlined the financial implications of the proposal, and described future Viaducts and Eastern Core planning work programs and budgets.

Staff recommend that Council approve the next phase of public consultation and planning work necessary to move toward a final decision over the next 24 months, and that Council adopt the Viaducts Guiding principles to inform the public consultation and planning work to be done.

* * * * *

GUIDING PRINCIPLES FOR REMOVING THE VIADUCTS (June 2013)

Objective

To create an active and diverse waterfront neighbourhood through removal of the Georgia and Dunsmuir viaducts, shifting the balance away from an automobile-dominated landscape to one focussing on improving public life. The tasks will focus on enhancing pedestrian and cyclist connections, creating larger parks, and providing a dynamic mix of uses including entertainment, employment and new residential opportunities, while respecting the essential movement of goods and services to and from the downtown.

Guiding Principles

1) **Reconnect the Historic Communities and the False Creek Waterfront.** The Viaduct structures, combined with the Skytrain Guideway, create a physical and visual barrier between the historic communities of Chinatown, Gastown, Strathcona, Thornton Park, Victory Square and the DTES Oppenheimer District, and the False Creek waterfront. Removal of the viaducts provides an opportunity to rethink how these communities connect to the water and each other.

2) **Expand Parks and Open Space.** Increase the amount of parks and open space in current plans. Removal of the viaducts, and a more efficient street network (combination of Pacific and Expo Boulevards, closure of a portion of Union and Carrall Streets) results in a potential park increase of 13% (approx. 3 acres) and presents the possibility of a more coherent open space system with greater flexibility for a variety of programming opportunities. A Dunsmuir 'elevated plaza' and open space on the Hogan's Alley block may provide additional park spaces.

3) **Repair the Urban Fabric.** Forty years ago, buildings on the blocks between Quebec and Gore were demolished to make way for the viaduct structures. Removal of the viaducts allows for restoration of shops and services along the Main Street corridor, and the mixed-use development of the two city-owned blocks.

4) **Explore Housing Development and Place-Making Opportunities on the City Blocks.** Utilizing a building form and development patterning consistent with the historic community of Chinatown (to the north) and the more contemporary buildings of the Creek (to the south), the City-owned blocks could generate approximately 850,000 square feet of density, potentially representing about 1,000 units with 200-300 affordable housing units, depending on the final density and unit mix. Ongoing planning must find ways to remember the historic neighbourhood of Hogan's Alley. Building heights, density, unit mix (including affordable housing), uses, open space patterning and other potential public benefits will be refined through further study and consultation with the neighbouring communities.

5) **Create a Vibrant Waterfront District.** Ensure that future build-out of the area creates a mixed-use entertainment, recreational and residential district considering urban design principles such as view cone protection and providing a strong urban edge on the new Creekside Park Extension.

6) **Increase Efficiency of the Street Network.** By replacing the Georgia and Dunsmuir Viaducts with a new network of at-grade streets. The replacement street network requires a bi-directional connection, suitable for essential movement of goods, from Georgia Street to Pacific Boulevard with east-west movement connecting directly to Quebec, Main Street and Prior Street.

7) **Improve Connectivity between Downtown, NEFC and the Waterfront.** The replacement street network would retain sufficient goods movement routes to and from the downtown, maintain vehicular capacity, provide new opportunities for bus transit routing, and better integrate future development of NEFC and surrounding communities to downtown.

8) **Enhanced Pedestrian and Cyclist Movement.** The Dunsmuir Viaduct currently provides a direct east-west connection for cyclists between the Adanac bike route and Dunsmuir bike route through the downtown core. The future network of streets and pedestrian and cyclist pathways would improve on the existing connections, through the use of a ped/bike bridge or other means.

9) **Develop a Fiscally Responsible Approach** –Consider the short- and long-term financial implications of redeveloping the area and ensure an equitable sharing of costs and benefits between the City, the Province and private landowners/developers.

10) **Engage Residents and Stakeholders in a Meaningful Way** – Do all of the above while consulting the public and other stakeholders in a meaningful way at all stages of the planning process.

VIADUCTS CONCEPT PLAN: WORK PROGRAM & BUDGET

Objective:

To create an active and diverse waterfront neighbourhood by removing the Georgia and Dunsmuir viaducts, enhancing pedestrian and cycling connections, creating larger parks, and introducing a broad mix of uses including entertainment, new employment and residential opportunities, while maintaining essential movement of goods and services to and from downtown.

Products:

- Establish agreements in principle with PavCo, Concord and the Province to proceed with viaduct removal and the changes to the at-grade street network,
- Resolve restrictive covenants related to Andy Livingstone Park
- Advance design of streets and structures to a level necessary to support landowner discussions and to allow development in the area to proceed,
- Complete soils investigations to understand soil contamination, risk and responsibilities related to changes to development parcels, road and park
- Develop a range of development options for development sites and park configuration that meet objectives including integration with surrounding areas; and
- Create a preferred concept plan and FCN ODP amendments to guide future subdivision and rezoning applications.

Work Items:

1) New Roads

a) Concord - The City will need to negotiate with Concord Pacific to re-align Pacific Boulevard. The location and boundaries of privately owned development parcels would need to change. Land on the south side of the new Pacific Boulevard would need to be exchanged with Concord to off-set the land required to construct the new road. These changes would also involve the Province which is responsible for soil remediation of Concord's existing development parcels.

b) PavCo - The City would need to negotiate with PavCo to secure a right-of-way along the east side of BC Place Stadium in order to construct the Georgia Ramp connecting to Pacific Boulevard. The ramp would complicate the timing and access for the tower proposed at the southeast corner of the stadium and negotiations are required to ensure development feasibility.

c) Central Heat Distribution (CHD) – The planned connections from the BC Place concourse/steps to the Georgia Street ramp would go over CHD land and would require a Right-of-Way.

d) Andy Livingstone Park – To provide adequate street width, the proposed reconfigured street network would result in a portion of the new Pacific Boulevard cutting through the southern edge of Andy Livingstone Park. Modifications to the existing restrictive covenant affecting the park or other legal means would be needed to secure the use of this portion of the park for the new street. Potential modifications to Andy Livingstone Park would also require consideration by the Park Board.

2) Preliminary Street Design
Preliminary design would be needed to advance the key components of the new street network including the Georgia Street ramp, the new Pacific Boulevard and the pedestrian and bicycle bridge. This work would be needed to support negotiations and:

- provide a higher level of certainty on the ultimate street design for establishing new property lines and building grades for adjacent land owners who are proceeding with development along Pacific Boulevard (Rogers Arena and Plaza of Nations),
- ensure the new Georgia Street ramp is compatible with Rogers Arena's west tower (under construction), the BC Place concourse, and potential future development,
- ensure foundations of the new Georgia Street ramp provide adequate clearance for truck loading and staging at the East Gate of BC Place,
- ensure the pedestrian and bike bridge connection between Carrall Street and the Dunsmuir elevated plaza improves on the existing connection, and
- develop accurate cost estimates and phasing plans for future stages of work.

3) Contaminated Soils Review
There are agreements in place with the City, Concord and the Province dealing with the management of soils within the Pacific Place Remediation Project (former Expo Lands). The agreement identifies the parcels that are to be development sites, street and parks. The Province is responsible for the costs and risks associated with the development of Concord's as currently configured. Changes to Concord's development parcels, the boundary of the Creekside Park Extension and the street network would require amendments to existing legal agreements between the City, Concord and the Province. A clear understanding of the soils and groundwater contamination on the Concord lands and adjacent City owned land (now road) would be required to determine incremental costs, risks and responsibilities to the City. This knowledge is essential to the land exchange negotiations and the consideration of development options.

4) Land Use and Density
The placement and number of towers that can be achieved as a result of viaduct removal would be considered in the context of a number of inter-related factors including, street alignment and parcel configuration, contaminated soils, park size and configuration, the achievement of City policies, objectives and public benefits implications.

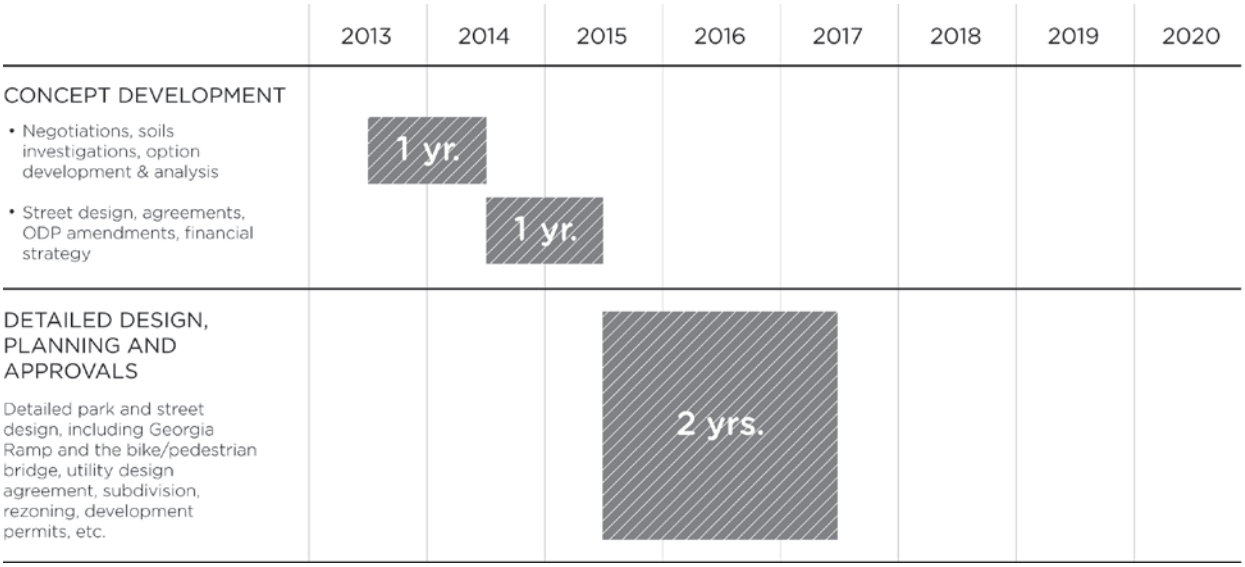
5) Park Area, Program and Timing
Discussions and negotiations related to development parcels, roads and soils would have direct and indirect impacts on the shape and programming potential of the park space. Some of the key city building and public interest objectives to be achieved through viaduct removal relate to the expanding range of park uses and integration opportunities that can be realized. Testing out conceptual park planning and programming would be essential to considering of changes to the area. The potential for delivery of some part of the park in early phases of development or interim provision of park space would be explored.

6) Generation of Options
The above discussions and investigations would contribute to creating new options for the development of the area including development sites, tower placement, roads, park configuration and program.

Timeframe:

It is anticipated that the work program will take up to 24 months to complete. Staff will report back to Council in Spring 2014 on progress of development options and land owner agreements. The balance of the work on the detailed street network design, False Creek North Official Development Plan Amendments, land owner agreements in principle and the financial strategy could take until June 2015 to complete.

Figure 1. NEFC/Viaducts Area Planning Anticipated Timeline



Public Consultation:

The Northeast False Creek Joint Working Group (JWG) consists of representatives from each of the major land developers in NEFC, area residents and other representatives from the community. Staff meets regularly with the group to discuss the implementation of the NEFC Directions advice, development applications and planning matters of interest to the area.

Reconsideration of the NEFC Directions advice on land use, density and public benefits resulting from emerging concept plans would be reviewed through on-going discussions with the NEFC Joint Working Group. In addition, with the JWG's assistance, staff would engage in broader public engagement on key issues and emerging ideas prior to reporting back to Council.

Budget:

The next phase of the Viaducts Area plan would cost a maximum of $2,400,000 including contingency allowances ($645,000 in City Staff; $1,555,000 in consultancies; and $50,000 for consultation costs). Staff recommend that this work be funded from the 2012-14 Capital Plan, with $0.6 million from the Emerging Priorities Category (Capital from Revenue) to be added to the 2013 Capital Budget, and the remaining $1.8 million from the Emerging Priorities Category

(Capital from Revenue) or through funding reallocation to be determined as part of the 2014 budget process.

BUDGET ESTIMATE - Staff and Resources (24 months)

STAFFING* - Salary and Benefits		
Planner II (full time) - NEFC Team		*(existing Permanent Staff)*
Planning Analyst (full time) - NEFC Team		*(existing Permanent Staff)*
Civil Engineer II (half time)		$130,000
EA III (half time)		$65,000
Legal Services (half time)		$200,000
City Surveyor (3 months)		$30,000
Real Estate (half time)		$220,000
	24 month Subtotal	***$645,000***
CONSULTANTS		
Engineering (structural, traffic, etc)		$900,000
Project Management (Engineering items)		$0
Pedestrian Study		$75,000
Stadium Event Staging Plan		$50,000
Soils Analysis		$200,000
Public Realm Plan		$50,000
Parks Conceptual Planning & Analysis		$100,000
Urban Design/Testing - City Blocks		$100,000
Real Estate Financial Analysis		$80,000
	24 month Subtotal	***$1,555,000***
OTHER COSTS		
Public Consultation [2]		$50,000
Contingency	10%	$150,000
	24 month Subtotal	***$200,000***
NEFC/VIADUCTS	***24 month TOTAL***	***$2,400,000***

*If staff resources are not available, outside consultants may be considered.

EASTERN CORE PLAN: WORK PROGRAM & BUDGET

DRAFT Guiding Principles (June 2013):

The following guiding principles have been developed to guide development of the Eastern Core planning process, based on preliminary consultation with key stakeholders and advice from external urban design advisors. These draft principles will be tested and refined through the consultation process. The principles are to:

1) Retain and intensify 'back of house' industrial functions, separated from surrounding residential neighbourhoods, to support the downtown core and to maintain our commitment to the protection of industrial land in the Regional Growth Strategy.

2) Increase job capacity, with a focus on green jobs and economy, at the western end of the site and around transit stations.

3) Ensure that food security and the food economy continue to have a strong presence in the Eastern Core. The area is already the city's main centre for food processing, cold storage and food distribution and these functions are serviced by excellent rail, port and arterial road network access. The area has significant urban agriculture assets that could be strengthened for increased food production and local food security.

4) Create and foster a unique sense of identity and character by building on existing assets and energy generators such as GNW Campus, artist enclaves, train stations, public parks, etc.

5) Plan for the long-term presence of rail to support movement of passengers and goods into and out of the City and Port of Vancouver.

6) Celebrate and enhance arts and culture presence in the area.

7) Recognize the historic importance of the area as a tidal mud-flat and seek to reintroduce water and natural systems to manage stormwater and address challenges of sea-level rise while restoring nature to this area of the city.

8) Identify opportunities to create new and enhanced public gathering spaces, parks and pedestrian/cyclist trails.

9) Seek creative and/or temporary uses for underutilized land such as vacant sites or remnant parcels next to railyards.

10) Improve traffic circulation by introducing new streets and pedestrian/cyclist connections, where necessary grade separate movement network from rail corridors and yards to optimize rail capacity and improve public safety.

11) Maintain an efficient network of arterial streets essential for goods movement to support jobs and the economy, while mitigating impacts on the safety, character, and

quality of city streets within neighbouring residential communities of Strathcona, Grandview-Woodland, Mt. Pleasant, Thornton Park and City Gate.

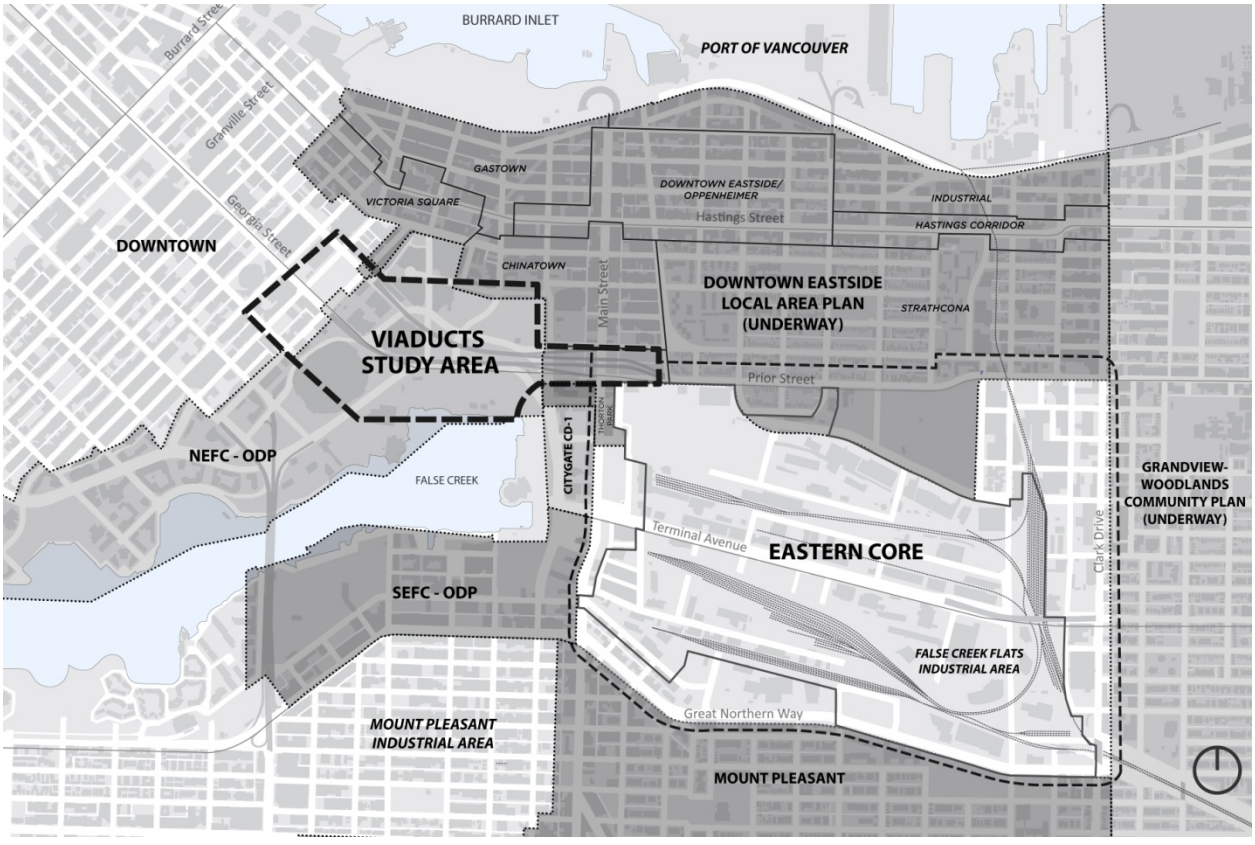
12) Consult the public and all stakeholders in a meaningful way at all stages of the planning process.

Background:

100 years ago the citizens of Vancouver voted to support the "Canadian Northern Railway Deal" to fill False Creek east of Main Street to create land for rail yards, stations and industrial use. On the centennial of this historic decision, the City is re-examining the transportation and land-use functions of the area with a renewed focus on sustainability and the green economy. Creating an Eastern Core Plan is an opportunity to create a coherent and comprehensive vision of land use and transportation directions for the area as whole.

The Eastern Core study area includes the neighbourhoods which surround the eastern basin of False Creek. The study area, including the False Creek Flats, is generally bounded by Prior/Venables to the north, Clark Drive to the east, Great Northern Way to the south and Main Street to the west. The study area boundary is not intended to be a hard line, as illustrated on Figure 1 below, as there are overlapping boundaries with other policy initiatives, including those underway in the Downtown Eastside, Grandview-Woodland, Mt. Pleasant and Great Northern Way Campus.

Figure 1. Eastern Core Study Area



Currently, the Eastern Core is an area characterized by a wide range of city-serving light industrial and transportation uses. Nearly one-third of the land area (95 acres) is utilized for freight and passenger rail operated by Canadian National (CN), Canadian Pacific (CP), Burlington-Northern San Francisco Railway (BNSF) and VIA Rail/Amtrak. The remaining land is zoned for light-industrial uses, primarily I-2 with I-3 zoning in the western and southern areas. Great Northern Way Campus and the Home Depot sites are CD-1 districts. The transportation network, including walking and cycling, throughout the area lacks connections, particularly north-south because of the prominence of the rail yards. Modifications to the transportation network, including potential re-routing of Prior/Venables arterial route, need to be considered within the context of longer-term rail grade separation strategies.

Work Items:

It is anticipated that it will take up to 24 months to complete this work. The work will be completed in four phases (as illustrated in figure 1 below):

1) Planning Principles & Framework

The key focus of this phase of work is to complete research, technical studies, and analysis of the transportation network, including completion of the Prior Street Safety Audit. Key pieces of work would be to complete precedent research, business survey, zoning review, heritage survey, determine sustainability metrics, and to hire consultants to examine potential innovative solutions for stormwater management, flood control, and soils evaluation. Another fundamental task would be to determine future rail footprint scenarios, which would inform the potential for new north-south connections and identification of east-west arterial options.

The first phase of work would result in detailed mapping and an inventory of businesses and other uses in the study area, a heritage survey, and preliminary findings associated with the soils analysis and stormwater/flood control consultancy. These inputs would inform a draft structure plan for the area. The draft principles would be refined based on technical information prior to first phase of public consultation. The public would be asked to assist in the identification of issues/opportunities, and to provide feedback on the guiding principles. A critical task would be identifying impacts and potential solutions for transportation network, particularly a new alignment of the east-west arterial.

2) Emerging Directions: Land-use, Transportation & Green Infrastructure

The second phase of work would focus on land-use strategies for intensification and identification of precincts and preliminary conceptual planning for vacant or underutilized land (i.e. Providence Site, and the City-owned land between Station/Main/Industrial and Terminal). Conceptual planning would look at land-use, building heights and massing, and development patterning. Work on the transportation network would propose modifications to the structure plan, including feasibility of overpass options (i.e. Malkin, National and Thornton) and potential locations for the Central Valley Greenway bike/ped bridge and other cycling/pedestrian routes. In this phase, stormwater management and climate adaptation strategies, and other sustainability initiatives (i.e. district energy plant locations) would be identified and integrated into the structure plan.

Draft emerging directions with preliminary costs for overpasses, the Central Valley Greenway, east-west arterial options, etc) would be presented to the public and team of external urban design experts for feedback and refinement prior to drafting the Eastern Core Plan.

3) Draft Plan

A draft of the Eastern Core plan with land-use directions, amenity and public benefits strategy, refined transportation network, pedestrian/cycling routes, stormwater infrastructure, habitat and district energy strategies supported by feasibility and economic analysis, and updated design guidelines would be compiled by early 2015, for review by stakeholders and the public. Included in the plan will be a preferred alignment option for the east-west arterial and associated costs.

4) Validate the Plan

The final phase would be refinement of the draft plan based on public feedback, with final stakeholder review, and report to Council.

Public Consultation:

The Eastern Core study area covers over 300 acres, and faces a unique set of challenges from intensifying industrial uses within the I-2 Zoning District, connecting the Central Valley Greenway (a regional pedestrian/cyclist facility) to the False Creek seawall, promoting and greening businesses, and addressing the challenges of grade separating rail from the street network, to name a few. As such, a consultation approach suited to a range of interests is necessary.

Staff would create an Eastern Core Working Group, comprised of local business owners, Vancouver Economic Commission, transportation interests, artists, park users, and representatives from the surrounding communities of Strathcona, Grandview-Woodland, Mt. Pleasant, and False Creek/City Gate. The Working Group would meet at regular intervals throughout the duration of the planning process.

It is anticipated that focused stakeholder consultation would also be required for key issues such as relocating the east-west arterial, given the potential impacts to existing uses (i.e. Malkin Avenue wholesale businesses, community gardens, Strathcona community, etc). Issues related to zoning changes (heights and densities) would be of interest to businesses and land-owners. Intensive stakeholder consultation, on key issues, will be conducted leading up to public open houses at the conclusion of each phase of the planning process.

In addition to the public consultation, staff propose to create a panel of external urban design advisors will review the work of the staff team. Advice from the panel would be sought at the completion of Phase 2. Input from the panel and the public would be used to refine the directions in preparation of the draft plan, for presentation to Council in May 2015.

Phase 1.
Draft Planning Principles & Framework

KEY TASKS

Research & Technical Studies:

Precedent Studies, Heritage SOS, Business Survey, District Schedule Review, Rail Footprint Review, Sustainability Metrics, Habitat/Stormwater/Flood Control/Soils Baseline Analysis

Transportation Network Review:

Baseline Analysis, Ped./Bike Connections, Prior St. Safety Audit, E/W Arterial Option Identification & Analysis, N/S Connections

Phase 2.
Emerging Directions:
Land Use, Transportation & Green Infrastructure

KEY TASKS

Land Use

Overall Land Use Directions, PDR Precinct Identification, Intensification Strategies

Transportation Network Scenarios & Options

Proposed Modifications to Transportation Network (i.e. Glen, Station, Thornton, and E/W Arterial Options), Pedestrian & Cyclist Routes, Streetcar and Transit Options

Infrastructure

District Energy, Stormwater Management Options

Report to Council

Phase 3.
Draft Eastern Core Plan

KEY TASKS

Land-use:

District Sub Area Conept Plans, Proposed Design Guidelines Changes, Economic Analysis, Amenity Strategy

Transportation:

Grade Separation & E/W Arterial Preferred Options, Street Network, Pedestrian & Cyclist Routes, Streetcar and Transit Routes

Green Infrastructure Strategy:

Integrated Stormwater and Habitat Strategy, District Energy

Public Realm Plan:

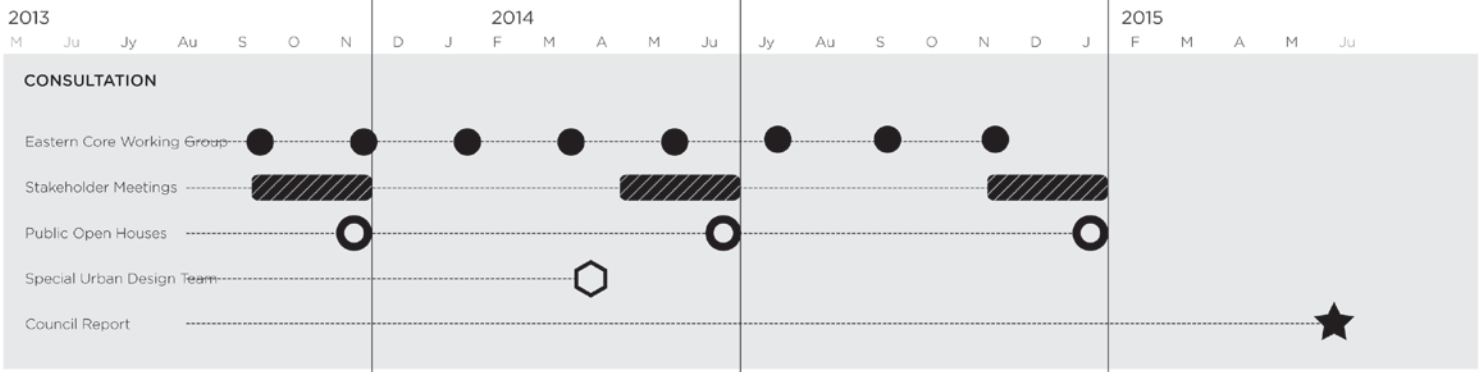
'Walk-the-line', Parks and Open Space, etc

Phase 4.
Validate the Plan

KEY TASKS

Refine Eastern Core Plan – based on public feedback

Report to Council



PRODUCTS

Eastern Core Area Inventory, Background Studies (Heritage SOS, ISMP Study, Soils Analysis, Prior Safety Audit, etc)

PRODUCTS

Draft Directions, Preliminary Costs (overpasses, Central Valley Greenway, etc.), EW Arterial Options & Analysis

PRODUCTS

Eastern Core Draft Plan (Land Use, Structure Plan), Public Benefits Strategy, Public Realm Plan, Updated Design Guidelines

PRODUCTS

Eastern Core Plan

Report to Council

Budget:

The Eastern Core Plan would cost a maximum of $550,000 including contingency allowances ($130,000 in City Staff; $330,000 in consultancies; and $50,000 for consultation costs). Staff recommend that this work be funded as follows:

- $225,000 from the 2012-14 Capital Plan for engineering studies for arterial/overpass feasibility, street network, Central Valley Greenway alignment and development of a stormwater strategy, with $50,000 from the Emerging Priorities Category (Capital from Revenue) to be added to the 2013 Capital Budget, and the remaining $175,000 from the Emerging Priorities Category (Capital from Revenue) or through funding reallocation to be determined as part of the 2014 budget process;
- $250,000 from approved but unspent operating budget for the False Creek Flats Study carried forward from previous years; and
- $75,000 to be considered as part of the 2015 Operating Budget.

BUDGET ESTIMATE - Staff and Resources (24 months)

STAFFING - Salary and Benefits		
Planner II (full time)		*(existing Permanent Staff)*
Planning Assistant (full time)		*(existing Permanent Staff)*
CE II (1/2 time)		$130,000
	24 Months Subtotal	***$130,000***
CONSULTANTS		
Engineering Studies		$150,000
Economic Consultant		$50,000
Stormwater / Flood Control Consultant		$75,000
Special Urban Design Team Review		$15,000
Parks & Open Space / Public Realm		$40,000
	24 Months Subtotal	***$330,000***
OTHER COSTS		
Public Consultation [2]		$50,000
Contingency	10%	$40,000
	24 Months Subtotal	***$88,000***
EASTERN CORE PLAN	***24 Months TOTAL***	***$550,000***

Vehicular Transportation Analysis

1. Background and context

1.1 Transportation trends for Vancouver

Almost every year for the last 15 years, the City of Vancouver has counted the number of vehicles entering and leaving the downtown peninsula (Screenline count – see Figure 1.1.1).

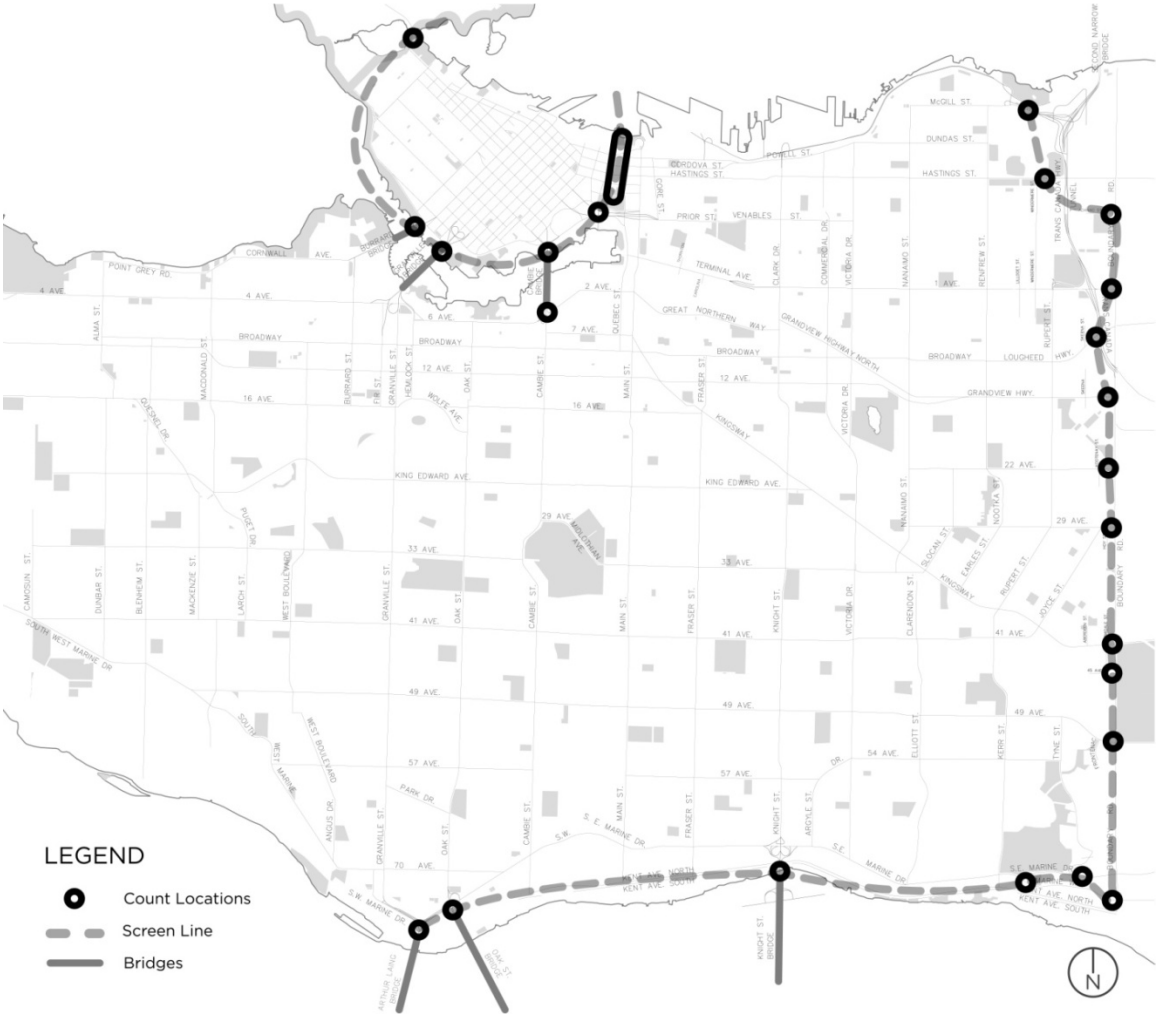


Figure 1.1.1 Permanent Vehicle Count Locations Map

As shown in Figure 1.1.2, during this time-frame the population and employment have increased significantly, while the total number of vehicles entering the downtown has decreased 15% during the peak periods, and 20% over 24 hrs.

The reduction in vehicle volumes has be en facilitated by a shi ft from motor vehicles to transit, attributable in large part to significant investment in high capacity transit infrastructure during that time period, which includes both the Millennium and Canada Lines.

Land use planning, demographics, socioeconomic and external factors such as the price of gas and parking among others have also contributed significantly to this shift.

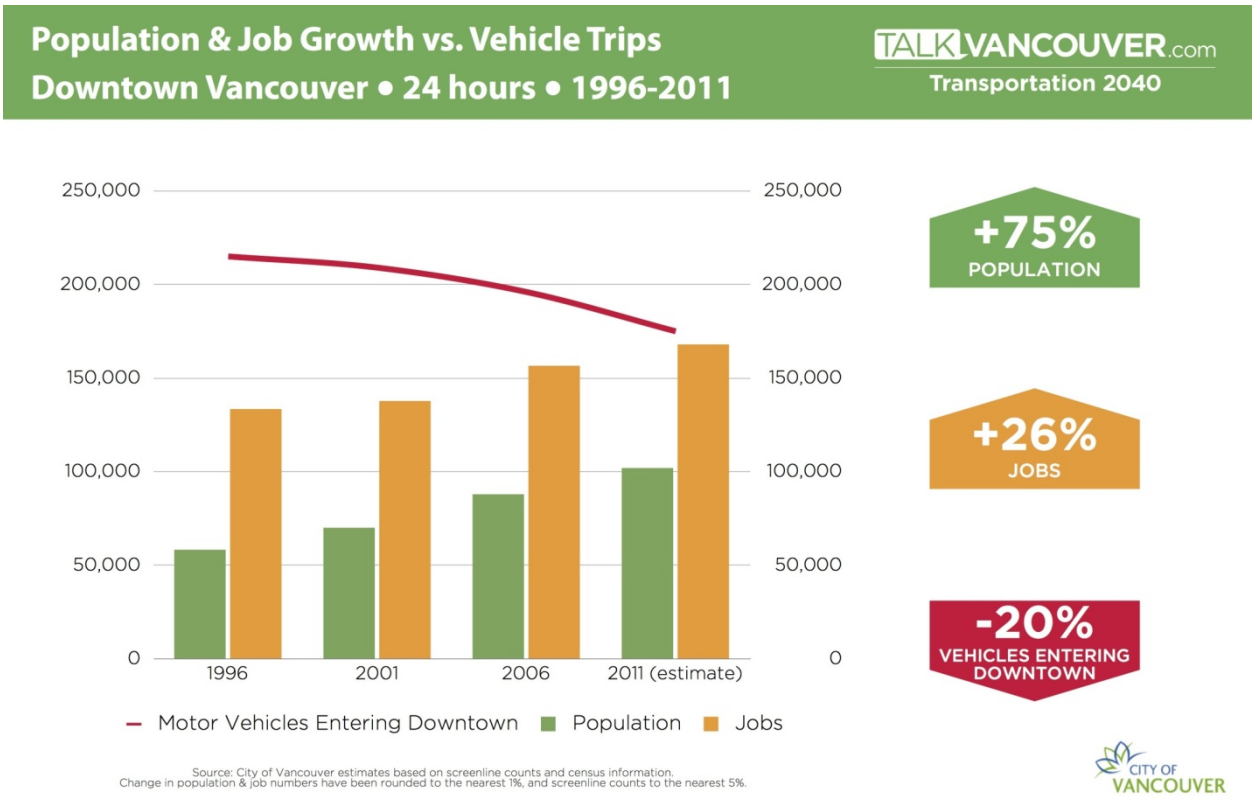


Figure 1.1.2 Transportation trends for downtown Vancouver

Data from Translink shows that transit trips in the region are up 80% since 1999. Census data also show a near doubling of bicycle trips into downtown between 1995 and 2006, prior to the implementation of separated bike lanes on Burrard Bridge, Dunsmuir Street/Viaduct and Hornby Street. While recent data from TransLink's Trip Diary shows that more people in Vancouver are choosing sustainable transportation modes. Recent data from Translink's trip dairy survey in 2011 shows a 20% increase in walking, 40% increase in cycling, and 15% increase in transit use from 2008 to 2011, for trips originating in the City of Vancouver (this research and analysis is based on data from Translink but does not represent the views of Translink).

1.2 Viaducts today:

The Georgia and Dunsmuir viaducts are essential components of the City's arterial/truck route network with connections to Main St. and Prior/Venables St. They act as one-way couplets, Dunsmuir for Westbound (WB) traffic to downtown and Georgia for Eastbound (EB) traffic leaving the downtown. They serve as an important and direct link to the downtown for commuters and goods movement, and are one of two routes into the Downtown core from the East for trucks greater than 15m in length during the daytime (7am to 6pm), the other route being Expo and Pacific Boulevards.

Combined, the viaducts carry approximately 43,000 vehicles per day, including approximately 160 heavy trucks (three or more axles) and 800 light trucks (two axles). 43,000 vehicles represents roughly 30% of the traffic across the downtown neck (E-W routes bounded between False Creek and Burrard inlet), and 10% of total traffic entering and leaving downtown.

The viaducts are not heavily used by pedestrians, attributable in part to substandard sidewalk widths, but with the addition of the separated bike facility on Dunsmuir, there are approximately 2,000 cyclist trips using the Dunsmuir viaduct bike lane on a peak summer day.

Average Monday to Friday 24hr vehicle volumes for the Georgia and Dunsmuir Viaduct are given in Figure 1.2.1, which shows that Dunsmuir peaks at approximately 8:30 AM with 1,250 vehicles per hour (vph), while Georgia peaks at approximately 5:30 pm with 1,750 vph. The pm peak for typical arterials in the city is generally 10-15% larger than the am peak, attributable to discretionary trips which are in addition to commuter vehicles on the return leg of their am trip, however in this case the pm peak is significantly larger than the am peak as Georgia currently supports three vehicular lanes as compared to two on Dunsmuir.

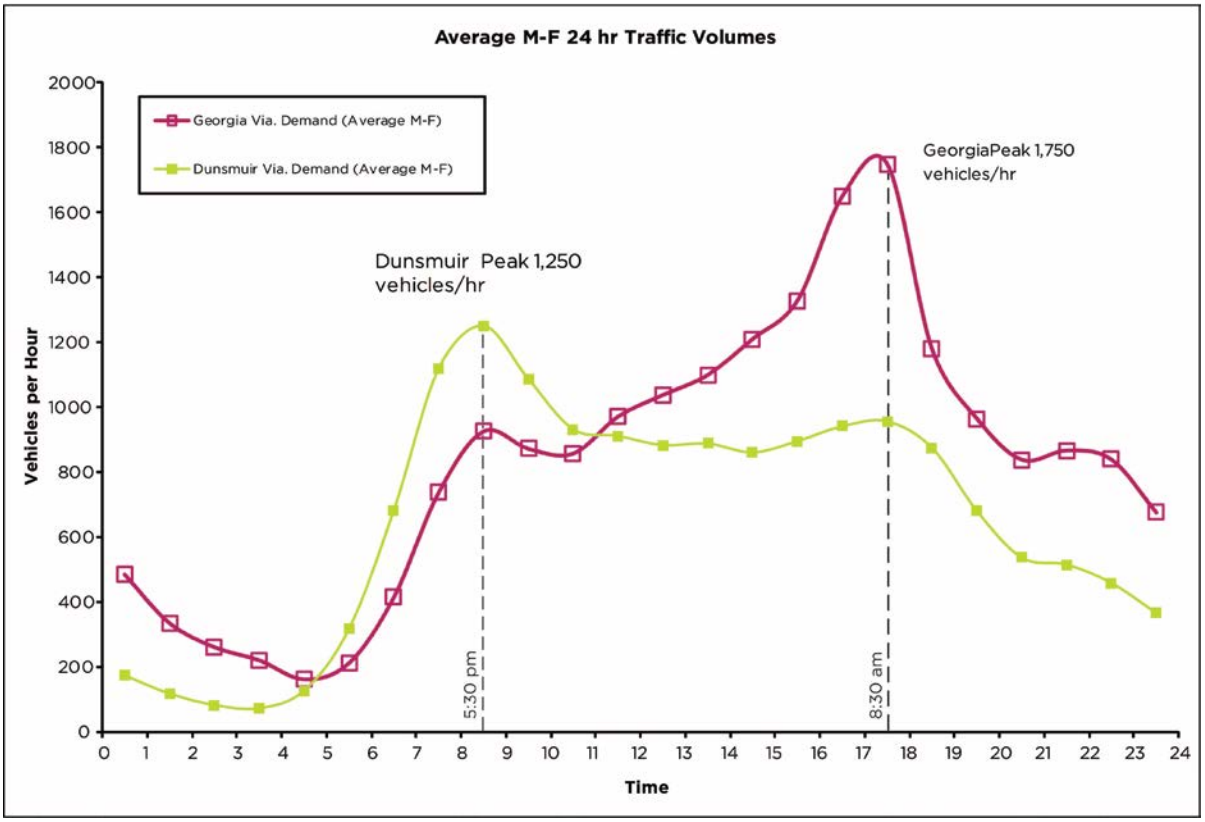


Figure 1.2.1 Average Monday-Friday 24hr vehicle volumes for the Georgia and Dunsmuir Viaducts

Trip origins during the peak am period for the Dunsmuir viaduct from a 2011 license plate survey are shown in Figure 1.2.2. A similar distribution would be expected for trip destinations for vehicles using the Georgia Viaduct during the peak period. This figure shows

that approximately 50% of Dunsmuir Viaduct users originate from the eastern half of Vancouver, while another large proportion originates from the North East Sector.

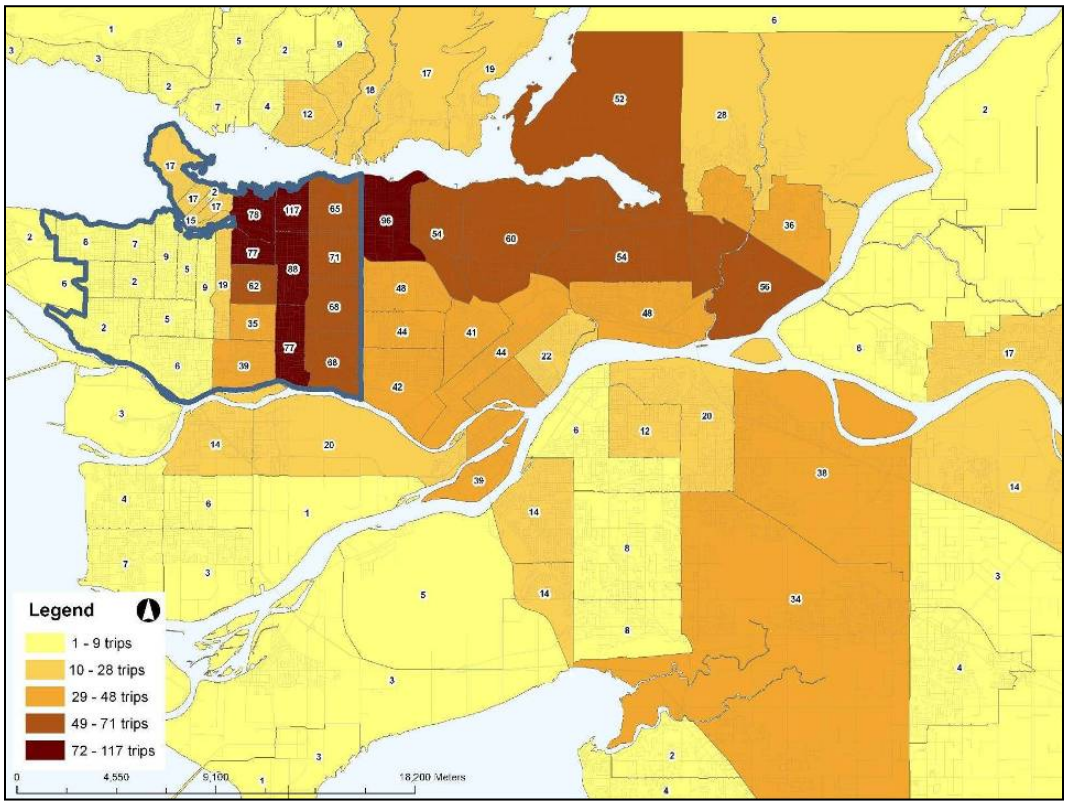


Figure 1.2.2 Vehicle Origins Map for vehicles using the Dunsmuir Viaduct in the am peak period

2. Transportation Analysis

Local transportation consultants Bunt & Associates Engineering and Halcrow Consultants performed the analysis, with support and input from City of Vancouver engineering Staff. While the work was collaborative in nature, Staff are responsible for the key assumptions and interpretation of results.

2.1 Methodology

For the purposes of this study, the EB and WB directions are evaluated separately. While changes in counter-flow volumes and, in particular, the associated turning movements will have an impact on primary flow capacity, the effects are secondary and within the margins of error for the analysis methodology used.

The primary metric used to categorize transportation impacts is the volume to capacity ratio (V/C), which represents the volume on a roadway divided by the capacity of that roadway. Essentially this ratio is a measure of congestion, the higher the V/C ratio the greater the level

of congestion. The effects of congestion are realized as travel time delays, which impact commuters, goods movement and bus transit.

Acceptable or supportable V/C ratios are dependent on the methodology used to calculate the capacity. Theoretical capacity estimates may not fully capture real-life effects and hence dictate the use of a lower permissible V/C ratio - typically 0.85, to give a margin of safety to account for the uncertainty. For this analysis, historic volume count data was used to establish the true capacity of parallel E-W routes through the neck. This data captures real-life capacity reduction phenomena such as uneven lane utilization and conflicting vehicle and pedestrian movements and allows a use of a higher maximum permissible V/C ratio.

Figure 2.1.1 shows a schematic, generalized relationship between V/C ratio and travel time. From this it can be seen that for V/C ratios of 0.85 and lower, there is negligible increase in travel time with increasing V/C ratio. For V/C ratios between 0.85 and 0.95, there is a moderate increase in travel time with increasing V/C ratio, but the resulting impacts to goods movement and bus transit are manageable. For V/C ratios greater than 0.95, there is an exponential increase in travel time, and significant adverse impacts to goods movement, bus transit and the overall character of the street. For this reason, a V/C ratio of 0.95 is considered the upper threshold in terms of a supportable ratio which Staff are comfortable realizing on our street network, for routes potentially affected by proposed changes to the viaducts.

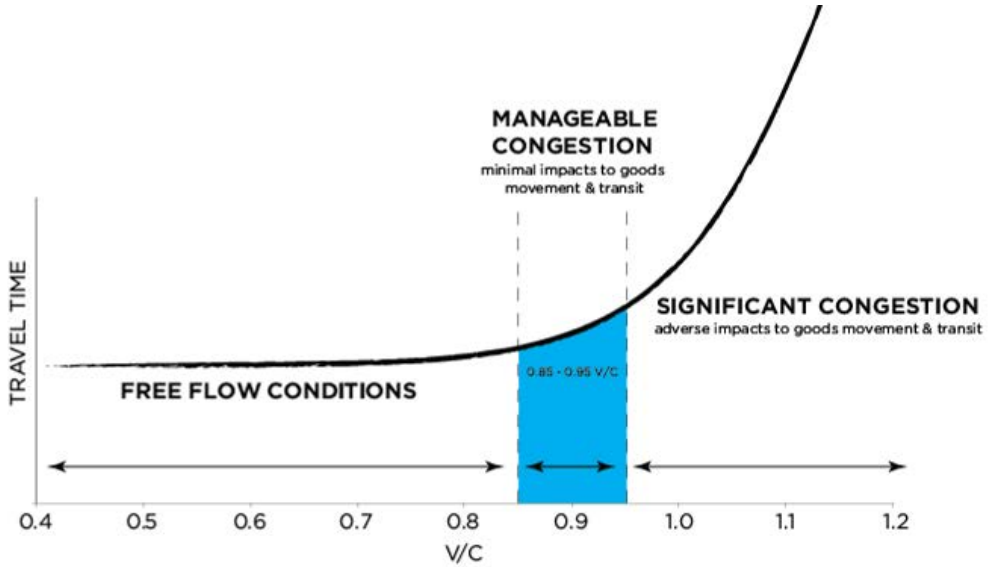


Fig 2.1.1 Schematic relationship between V/C ratio and Travel time

For reference the following are approximate V/C examples for well know locations in the City during peak periods:

- Main Street and Terminal Ave – 1.1 V/C
- Dunsmuir Viaduct and Beatty Street – 1.0 V/C
- Prior Street and Hawks Street – 0.95 V/C
- Pender Street and Columbia – 0.6 V/C
- Cambie Bridge – 0.8 V/C

2.2 Existing Available Network Capacity

Figure 2.2.1 and 2.2.2 show schematic network diagrams for existing primary eastbound and westbound routes through the downtown neck respectively. These are some of the most likely alternate routes for any vehicles displaced as a result of the proposed street network changes; Cambie Bridge is included in these network diagrams as it acts as a ' pseudo' E-W route, as vehicles divert to this crossing when there are delays travelling through the neck.

Existing vehicle volumes for the primary routes during peak periods are shown along with the corresponding V/C ratios. From these figures it can be seen that in general our existing routes through the neck operate at V/C ratios of +/- 0.7 during peak periods, and hence there is reserve capacity to accommodate a limited diversion of vehicles as a result of modifications to the viaducts.

It should be noted that this analysis of available capacity is performed at the screen line as indicated by the vertical dashed line, with consideration for upstream and do wnstream constraints. V/C ratios for these routes further east of the screenline and certainly past Clark Drive are much higher, however, as described in section 3.0 vehicle diversion impacts are concentrated at the screen line location and are negligible east of Clark Drive, or west of Cambie Street.

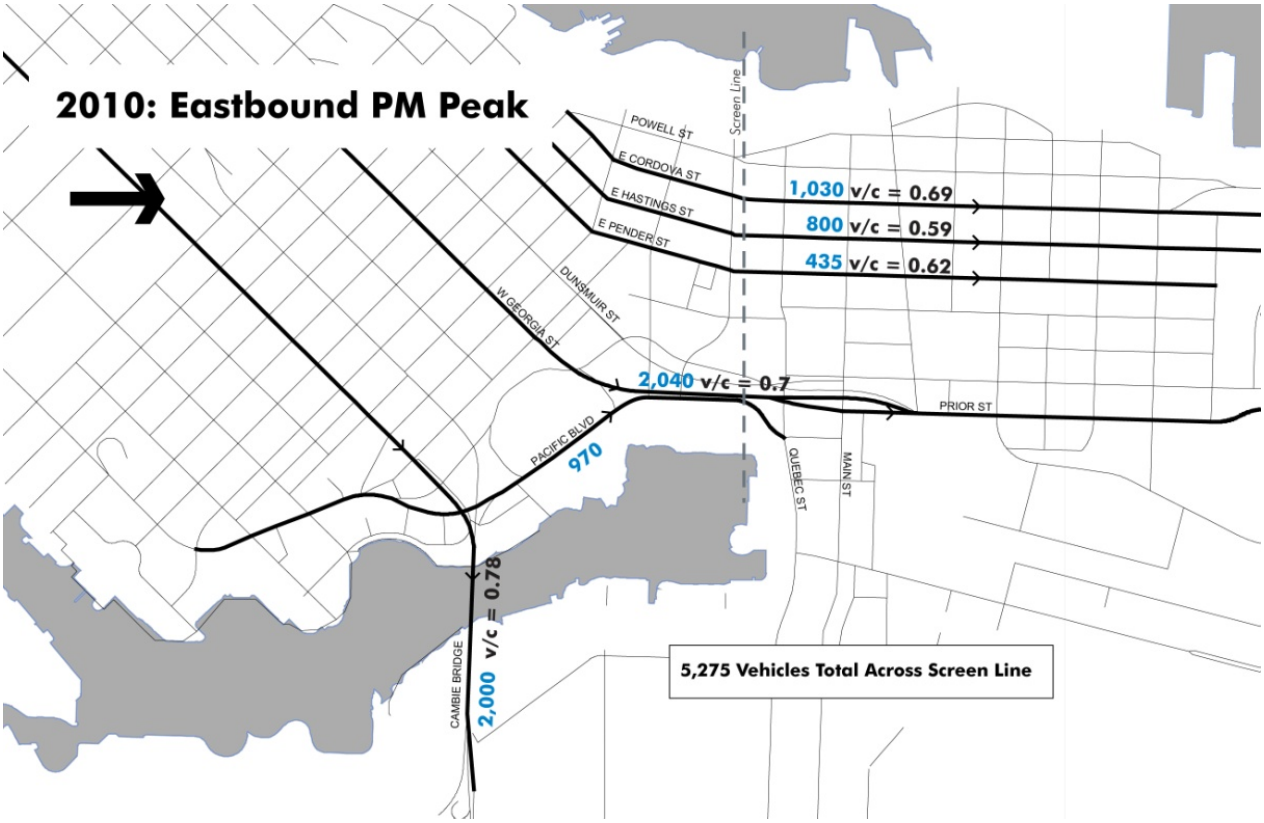


Figure 2.2.1 Existing Eastbound traffic through the neck and Cambie (vph)

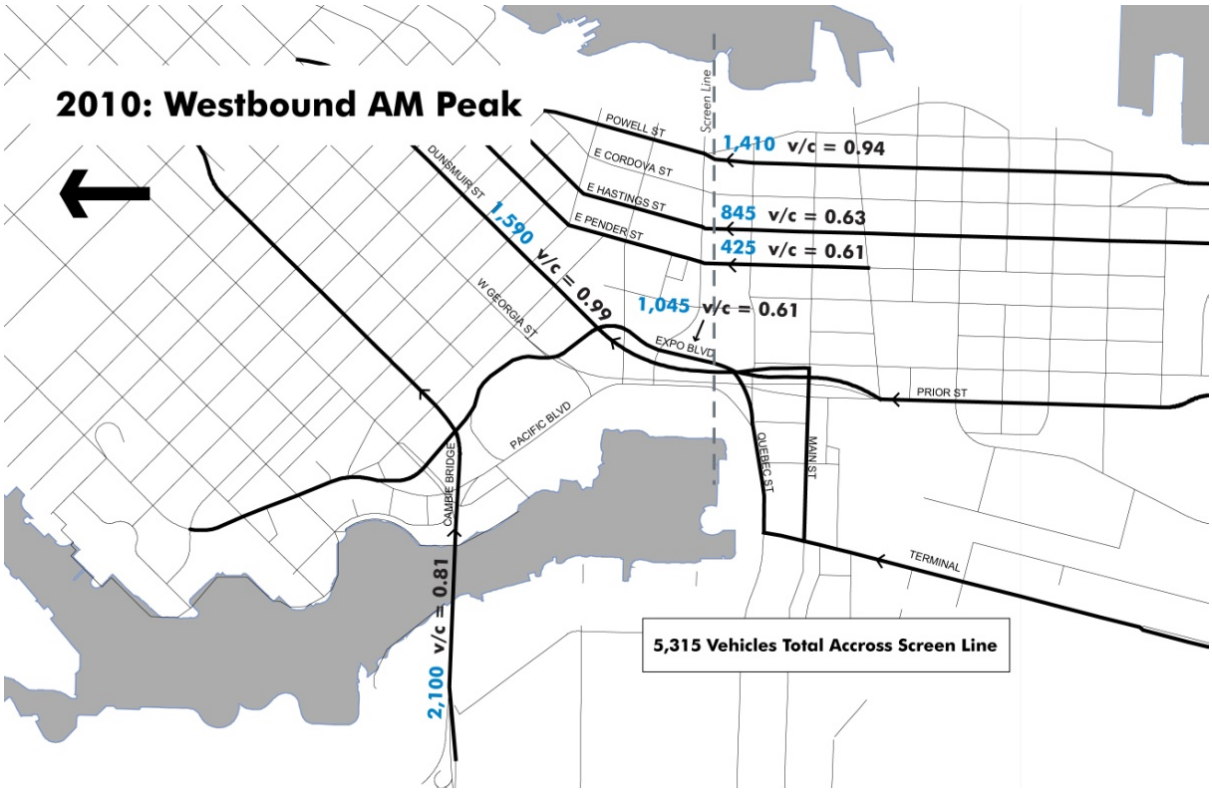


Figure 2.2.2 Existing Westbound traffic through the neck and Cambie (vph)

2.3 Future Vehicle Volumes

In order to assess the transportation impacts of the proposed modifications to the street network in the study area, it is necessary to project anticipated future vehicle volumes, to allow categorization of potential impacts for both the short and long term horizons.

Figure 2.3.1 shows historic vehicle volumes entering and l eaving downtown during peak periods, from 1996 – 2011. During this time period vehicle volumes decreased 15% during peak periods, and 2 0% over 24 hrs. This decrease is attributable to a number of reasons, most significantly a shift to transit, facilitated by large scale infrastructure investment such as the Millennium and Canada lines, as described in section 1.1.

For the purposes of the transportation analysis, two limiting cases were considered – representing upper and lower bound estimates for future vehicle volumes. For the lower bound analysis it is assumed that historic trends will continue and result in decreasing vehicle volumes up to the year 2030, at which time vehicle volumes are maintained and it is assumed that the minimum demand for vehicles has been reached. For the upper bound analysis, Staff consider that maintaining vehicle volumes at their current levels represents a reasonable and conservative upper limit.

Given the Evergreen Line commitment and plans for further future transit investments such as the Hastings B-line, UBC Line, continued Expo Line capacity upgrades and potential Surrey Rapid transit extension, combined with market factors such as hi gh gas prices and t he

potential for vehicle taxation strategies such as congestion charging, road/bridge tolling or vehicle levies in the future, that the lower bound would represent the more realistic projection. It is also important to note, that the lower bound projection is consistent with our Transportation 2040 Plan and Greenest City objectives, which informs our future decisions and investment priorities.

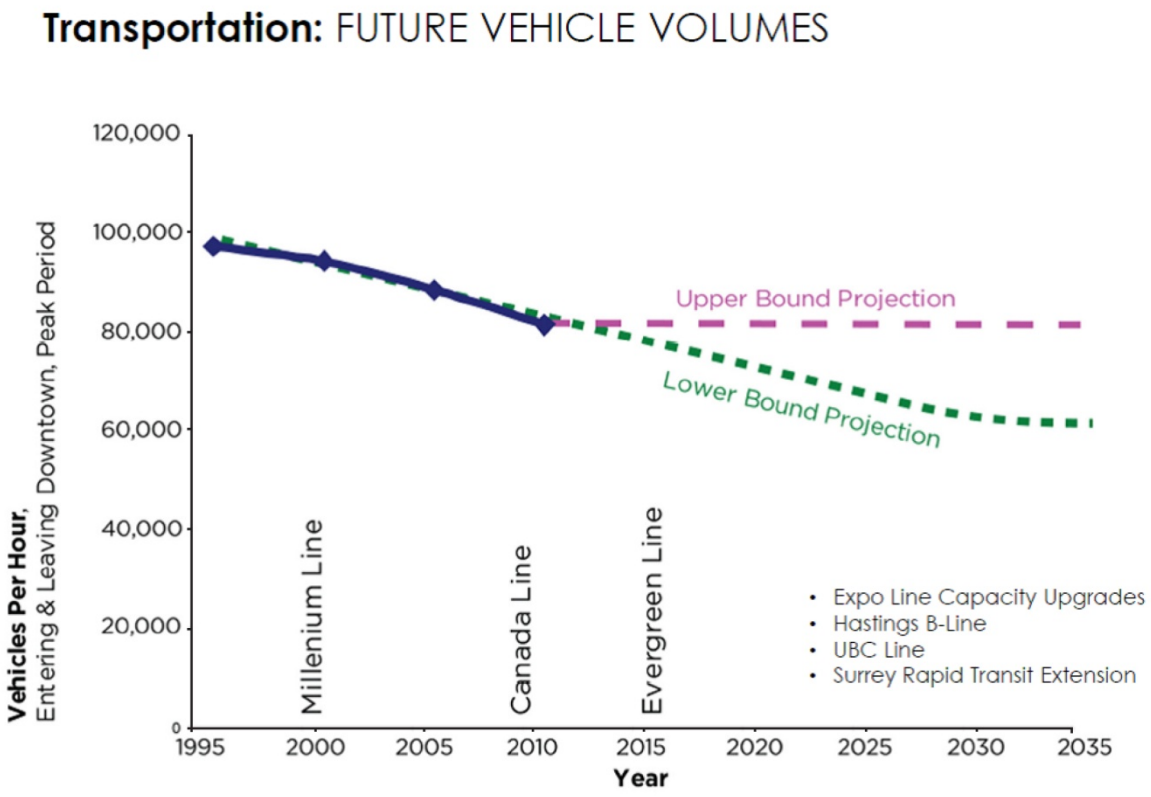


Figure 2.3.1 – Vehicle volume projections

3.0 Analysis Results

Analysis results presented in the subsequent sections are focused on the anticipated impacts of the revised street network in the short term (2016 at the earliest), with results for an upper bound conservative analysis presented for comparison purposes.

Projections for the long-term future are presented in Section 3.6, which considers regional growth in population and employment and current and planned future network changes such as the Port Mann Hwy1 project.

3.1 Eastbound (PM Peak)

Figure 3.1.1 shows average Monday-Friday 24hr vehicle volume demands for Georgia and Pacific Boulevards respectfully for the last calendar year, and t he cumulative combined demand through simple addition of these two curves. The combined curve represents the

expected 24hr vehicle demand on the 'New Pacific', the capacity of which is given by the dashed line at 2,135 vehicles per hour. Graphically, areas above this dashed line represent vehicles which are diverted to alternate routes. Staff do not anticipate any vehicle diversions outside of the peak pm period, and a t ypical maximum diversion of approximately 550 vehicles during the peak hour.

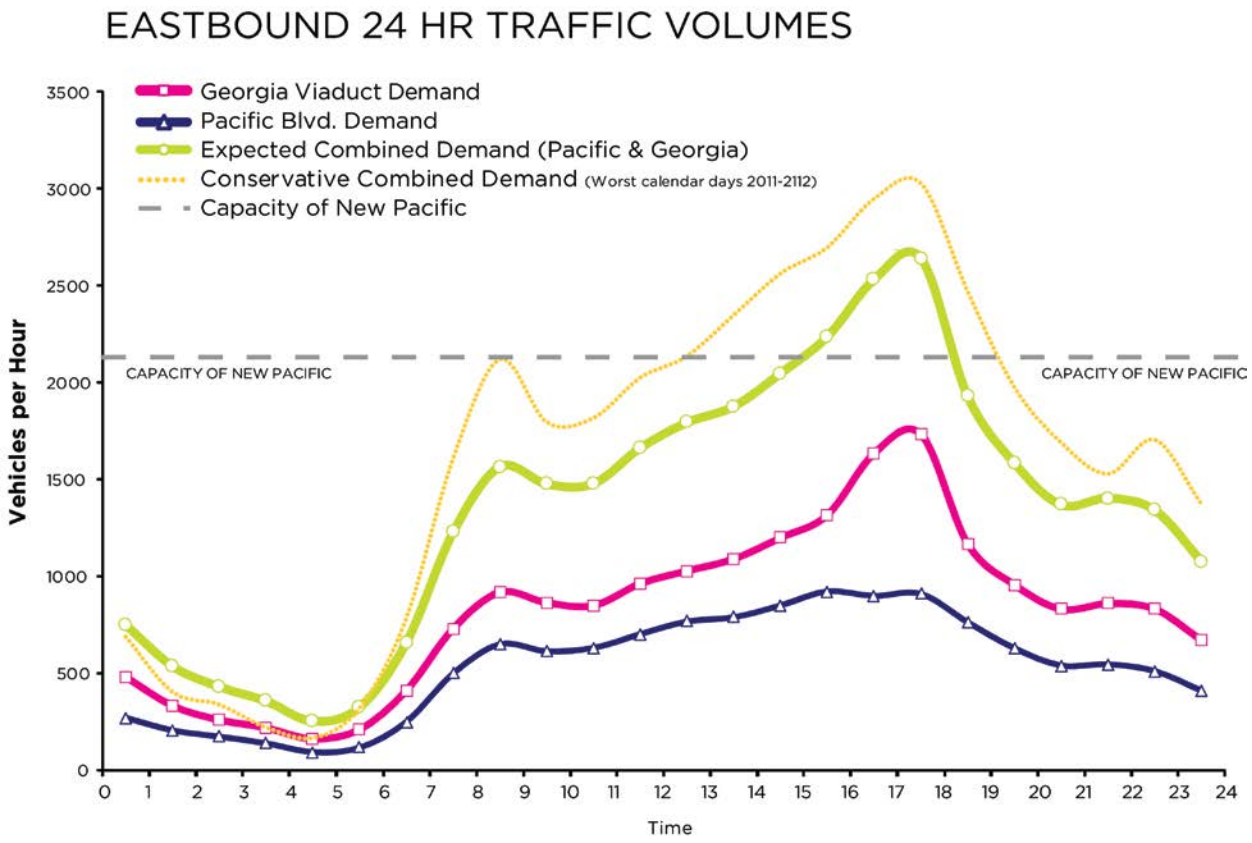


Figure 3.1.1 Potential eastbound trip diversion to routes through the neck

Shown for comparison is the theoretical maximum demand if the days in the last calendar year of maximum peak hour volumes for Georgia Street and Pacific Boulevard respectfully are taken, giving rise to a theoretical maximum potential diversion of approximately 915 vehicles during the peak hour. It should be noted that peak volume days for Georgia Street and Pacific Boulevard occurred on different calendar days in the last year and l ikely are a r esult of constriction in traffic flow through the network which resulted in a significantly higher peak for those particular days as compared to the average weekday. This conservative and theoretical maximum diversion of 915 vehicles is taken as the upper bound for the transportation analysis.

Figure 3.1.2 shows the expected absolute vehicle volumes during the peak PM period for each of the alternate eastbound routes once the street network changes are implemented. Given the proven attractiveness of rapid transit, as showcased by ridership along the Millennium, Expo and C anada SkyTrain Lines, Staff conservatively expect a m inimum 10% diversion of vehicles to this new transit investment for all E-W routes through the neck (approximately 550 vehicles). We expect the results of these two transportation network changes to be

offsetting with respect to potentially impacted alternate eastbound routes through the neck i.e. no net increase in traffic. For comparison purposes, theoretical upper bound vehicle volumes for the alternate routes are shown in italics, taking the conservative estimate of a maximum peak hour diversion of 915 vehicles and making the further conservative assumptions that the Evergreen Line project is cancelled, and vehicles divert only to routes through the neck and Cambie Bridge. Under these cumulative and significantly conservative assumptions, there is sufficient reserve capacity to accommodate the diverted vehicles, with V/C ratios on alternate routes averaging at approximately 0.85 (essentially remaining under free flow conditions, with negligible travel time delay).

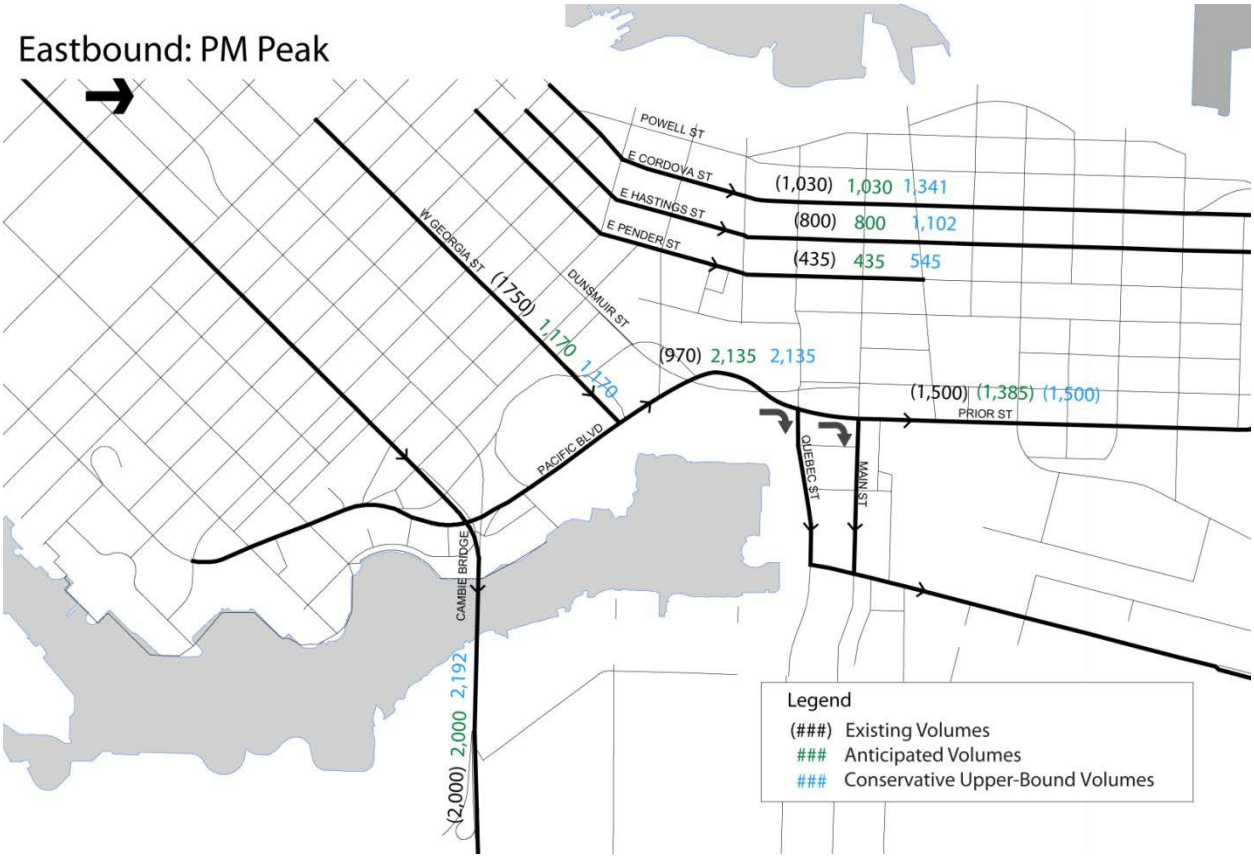


Figure 3.1.2 Eastbound peak period vehicle volumes with diversion (typical M-F)

3.2 Westbound (AM Peak)

Figure 3.2.1 shows average Monday-Friday 24hr vehicle volume demands for Dunsmuir Street and Expo Boulevard respectfully for the last calendar year, and the cumulative combined demand through simple addition of these two curves. The combined curve represents the expected 24hr vehicle demand on the 'New Pacific', the capacity of which is given by the dashed line at 2,135 vehicles per hour. Graphically, areas above this dashed line represent vehicles which are diverted to alternate routes. There is anticipated to be no vehicle diversion during the typical M-F workday.

Shown for comparison is the theoretical maximum demand if the days in the last calendar year of maximum peak hour volumes for Dunsmuir Street and Expo Boulevard respectfully are taken, giving rise to a theoretical maximum potential diversion of approximately 515 vehicles during the peak hour. Similar to the discussion in section 3.1, it should be noted that peak volume days for Dunsmuir Street and Expo Boulevard occurred on different calendar days in the last year and likely are a result of constriction in traffic flow through the network which resulted in a significantly higher peak for those particular days as compared to the average weekday. This conservative and theoretical maximum diversion of 515 vehicles is taken as the upper bound for the transportation analysis.

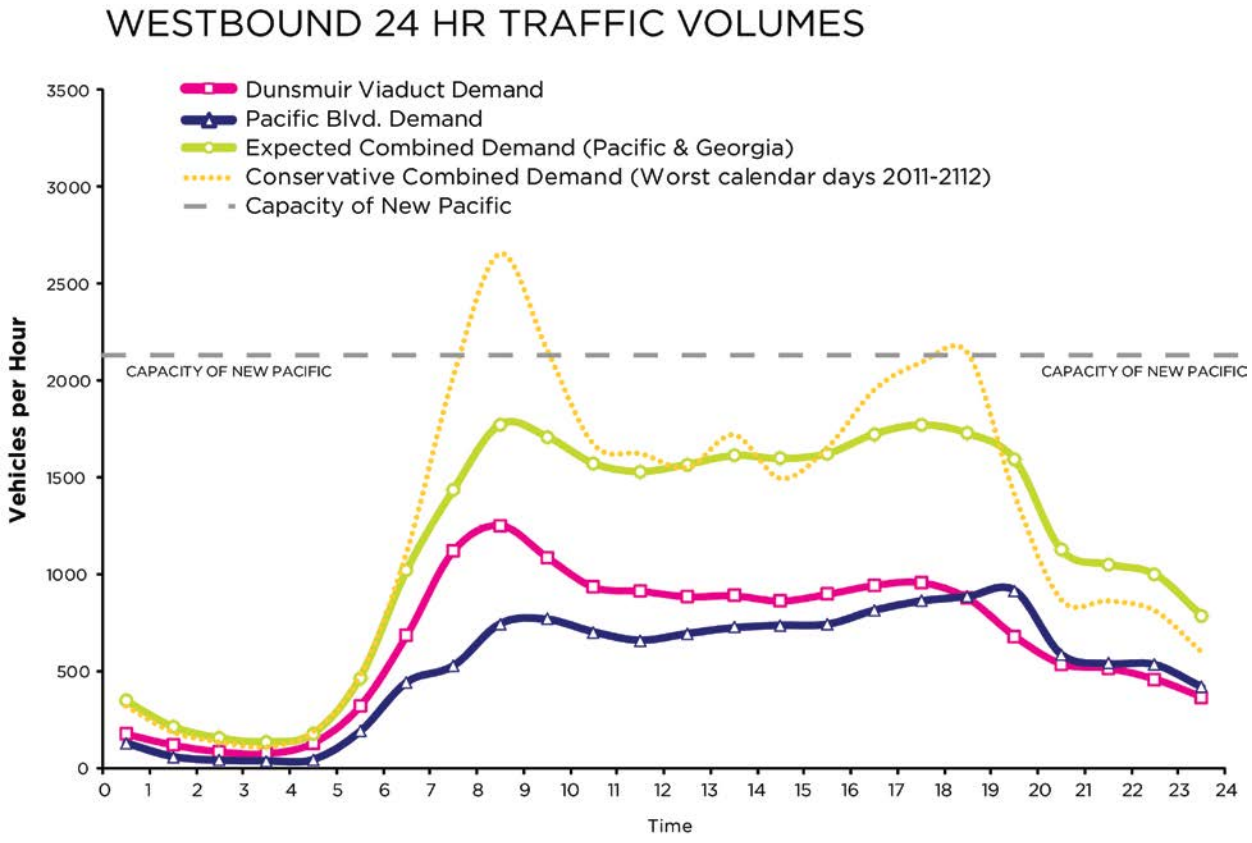


Figure 3.2.1 Potential Westbound Trip Diversion to routes through the Neck

Figure 3.1.2 shows the expected absolute vehicle volumes during the peak AM period for each of the alternate westbound routes once the street network changes are implemented. With no anticipated vehicle diversions for a typical workday, Staff expect the Evergreen Line to result in a net 10% decrease in vehicle volumes for alternate westbound routes through the neck. Similarly to the discussion in Section 3.1, there is sufficient reserve capacity to accommodate the conservative upper bound estimate of diverted vehicles, with V/C ratios on alternate routes averaging at approximately 0.85 (essentially remaining under free flow conditions, with negligible travel time delay).

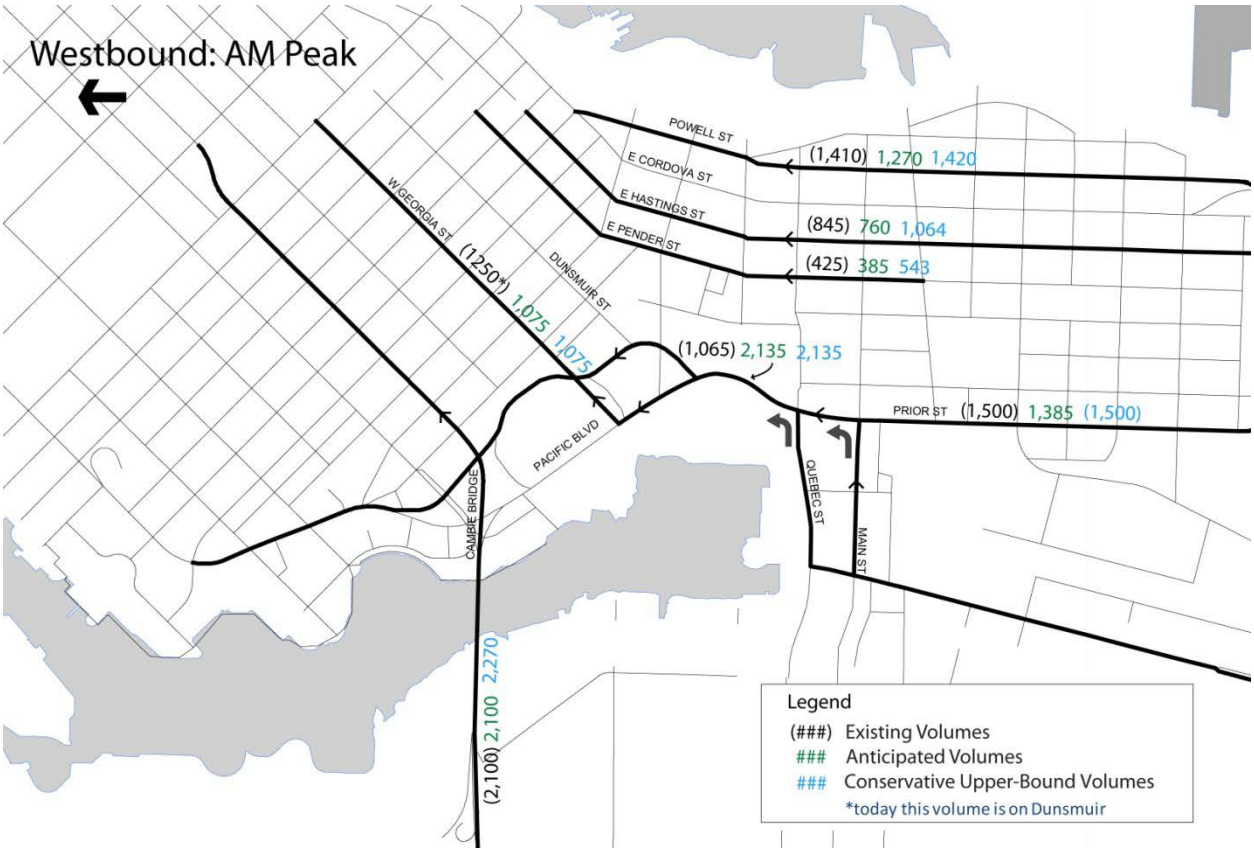


Figure 3.2.2 Westbound peak period vehicle volumes with diversion (typical Mon-Fri)

3.3 *Unaccounted mitigating effects*

Predictions involve uncertainty. To adequately address this, Staff have bounded the transportation analysis and erred on the conservative side in considering an upper bound case which does not account for construction of the Evergreen Line when determining potential transportation impacts. Consequently, there are several mitigating effects which have not been accounted for in the analysis, which will act to reduce the actual observed V/C ratios.

The most significant mitigating factor, is the resiliency of Vancouver's street network, which gives many options for commuter vehicles. From the analytical model it is predicted that the proposed network changes will encourage up to roughly 10% of the existing traffic through the neck, or approximately 550 vehicles (compared to Staff's theoretical upper bound EB diversion of 915 vehicles), to utilize west 2nd and Broadway as an East – West route during the peak periods. This is validated from license plate surveys of users of the Georgia and Dunsmuir viaduct, which show that approximately 10% of vehicles during peak periods are travelling to and from the Broadway Corridor to the East of Vancouver and utilizing one of the False Creek bridges and the viaducts in the same trip.

This potential diversion to routes south of False Creek has not been accounted for in the analysis, although under current volumes there is spare capacity to accommodate this potential diversion. This redistribution of vehicles would offset to a large degree the impacts

described for the upper bound analysis case, for the theoretical situation where the Evergreen Line project is cancelled.

3.4 Transit

There are many transit alternatives for those currently using vehicles to travel over the viaducts. Shown in Figure 3.4.1 are existing high capacity transit lines and t he planned Evergreen Line scheduled for completion in 2016, superimposed over the vehicle origins map for commuter vehicles using the Dunsmuir Viaduct in the AM peak period.

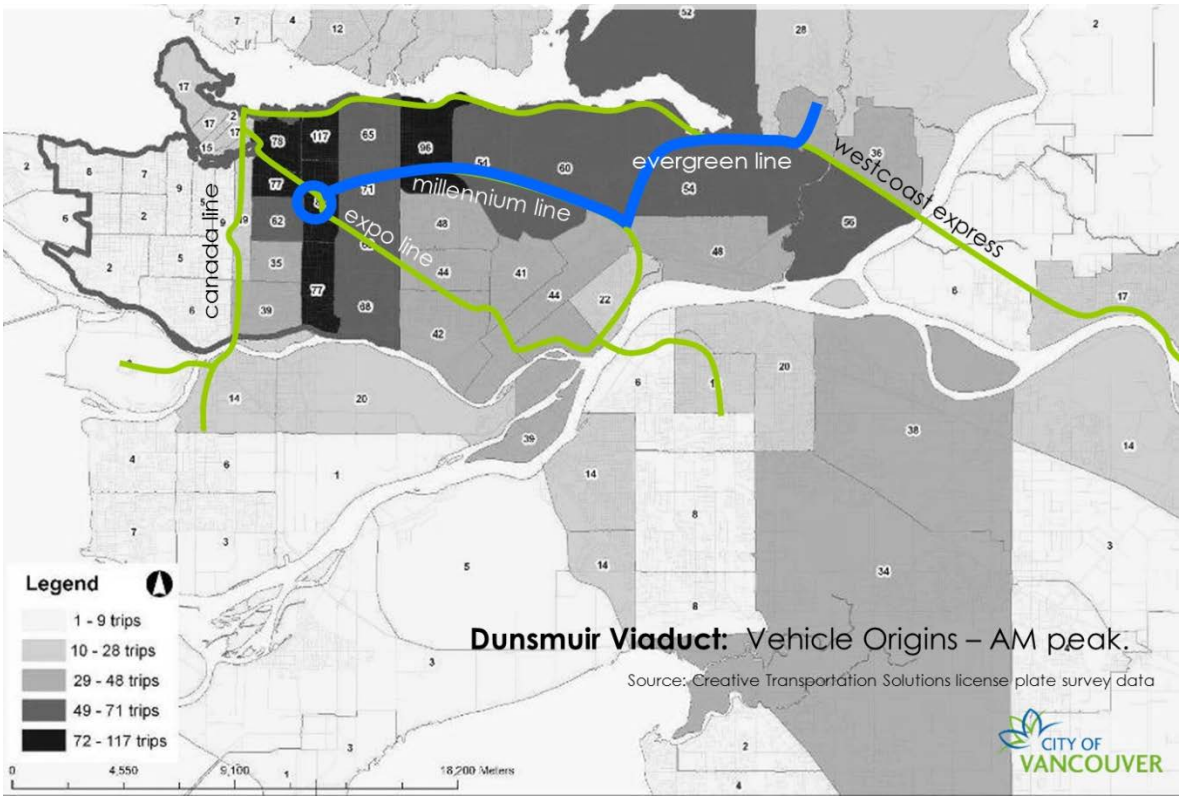


Figure 3.4.1 High Capacity Transit Alternatives

As previously discussed, Staff expect the Evergreen Line to facilitate a large shift of vehicles to transit, not only for vehicles using the viaducts today, but for vehicles using all E-W routes through the neck. We expect that this transit initiative, scheduled for completion in 2016 i.e. before any of the proposed street network changes will be made, will at a minimum attract 10% of vehicles currently using E-W routes through the neck, approximately 550 vehicles or 715 people during the AM and PM peak hours.

However, it is important to note, that our analysis and conclusions are not dependent on this transit investment.

3.5 Rogers Arena and BC Place Accessibility Review

Implications of the new street network with respect to attendance for both Rogers Arena and BC Place, and access to current and future developments, have been evaluated and found to have negligible impact. The study area retains sufficient capacity to accommodate event demands, while overall connectivity and circulation is improved.

The modifications to the street network may necessitate expediting changes to the event and loading management plans for both Rogers Arena and BC Place. A new Event and Loading Management Plan for this area is required with the anticipated build out of NEFC, whether the viaducts are retained or removed as the City does not support continued use of Pacific Boulevard and the lands beneath the viaducts for truck staging/storage. A new comprehensive and cohesive plan, reflective of the revised land use and street network for this area will need to be advanced with Rogers Arena and BC Place in the next phase of work.

3.6 Projections to the year 2040

Figures 3.6.1 and 3.6.2 show the predicted relative difference in vehicle volumes between the base case (viaducts remain) and our proposed street network using projected 2040 vehicle volumes during the PM and AM peak periods respectively. These figures are produced from the results of an EMME model run - a computer simulation of the street network changes, which explicitly accounts for the anticipated regional growth in population and jobs, and currently planned network investments such as the Port Mann Hwy 1 expansion. This model captures the impacts of additional trip generators and attractors in specific geographical locations and the corresponding impact on capacity (e.g. additional density in NEFC).

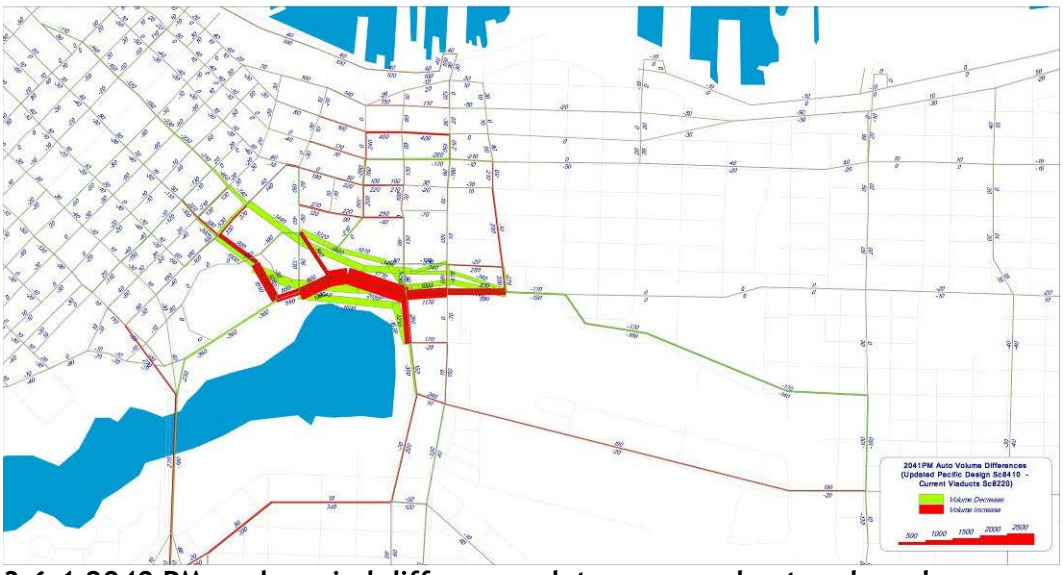


Figure 3.6.1 2040 PM peak period difference plot – proposed network vs. base case

Figure. 3.6.2 2040 AM peak period difference plot – proposed network vs. base case

From these figures it can be seen that relative effects of the street network changes diminish very rapidly as you travel away from the study area, and are negligible east of Gore or west of Cambie. There is a modest increase in vehicle volumes for alternate routes through the neck as a result of the viaduct removal, however in absolute terms, this redistribution in traffic is offset by transit investments such as the Evergreen Line which we expect will result in no net increase in volumes, and in fact a modest decrease in vehicle volumes as compared to today.

3.7 Summary and Conclusion

The removal of the viaducts and proposed replacement street network represents a significant improvement to pedestrian and cyclist connectivity in NEFC, allowing for a more cohesive integration of NEFC into the downtown and the potential for revised and improved bus routing not only to NEFC but the Eastern Core as a whole. The transportation analysis shows that construction of the Evergreen Line, in conjunction with the connectivity and capacity provided by the proposed transportation network which makes more efficient use of streets at grade, allows for removal of the viaducts in the short term with no expected net increase in vehicle volumes on alternate routes to or from the downtown for a typical workday.

In the unlikely event that the Evergreen Line project is cancelled, and under a number of further cumulative conservative assumptions, the analysis further shows that the theoretical upper bound estimate of vehicle diversion can be accommodated on our existing network, without adverse impacts (travel times are expected to increase in the order of 1-2 minutes). This is due to the reserve capacity present on parallel streets as a result of the significant reduction in vehicle volumes entering and leaving the downtown that has been realized over the last 15 years. In fact, our analysis indicates that for this upper bound case, after the proposed changes are implemented, there will continue to be reserve capacity on Vancouver's street network, to continue to consider further street reallocation for other priorities such as dedicated bike lanes and priority bus transit lanes on our E-W routes through the neck.

VIADUCTS PUBLIC CONSULATION SUMMARY

In June 2012 the city launched a public consultation to gather feedback on the viaducts conceptual plan. The consultation included:

- Presentations to a wide range of stakeholders including business interests, adjacent community groups, Council committees and transportation interests,
- Public Open Houses: held on June 5, 7 and 9th at Woodwards Atrium, Creekside Community Centre and the Central Library downtown which drew in excess of 1,000 individuals over the three days, and
- An online presentation which was viewed over 20,000 times.

At the open houses, the public was asked their opinions on the concept and were asked to respond to the following questions with their level of support (from 'Strongly Supportive' to 'Strongly Opposed'):

1. Do you support the overall concept for this area of the City?

2. Do you support removing the viaduct structures and the proposed changes to the street network (bringing Georgia Street down to Pacific, and creating a 'new Pacific Boulevard')?

3. Do you support increasing the amount of parks in the area and the creation of a large urban waterfront park on the eastern end of False Creek?

4. On the lands east of Quebec Street, do you support the proposal to restore Main Street by returning housing, shops and services to the city-owned blocks between Quebec Street and Gore Avenue?

In addition to the Open Houses, the material was made available online with the same survey posted for responses between June 7th- 15th. In total, 675 comment forms were received – 423 from the open houses and 252 on-line. This appendix summarizes the responses.

Combined Open House & Online Comment for Summary

	Question 1: Do you support the overall concept for this area of the City?		*Question 2:* Do you support removing the viaduct structures and the proposed changes to the street network (bringing Georgia Street down to Pacific, and creating a 'new Pacific Boulevard')?		*Question 3:* Do you support increasing the amount of parks in the area and the creation of a large urban waterfront park on the eastern end of False Creek?		*Question 4:* On the lands east of Quebec Street, do you support the proposal to restore Main Street by returning housing, shops and services to the city-owned blocks between Quebec Street and Gore Avenue?	
1 - Strongly Supportive	282	**43%**	305	**46%**	374	**60%**	333	**54%**
2 - Supportive	171	**26%**	129	**20%**	129	**21%**	138	**23%**
3 - Neutral	40	**6%**	54	**8%**	66	**11%**	82	**13%**
4 - Opposed	57	**9%**	44	**7%**	25	**4%**	18	**3%**
5 - Strongly Opposed	108	**16%**	127	**19%**	31	**5%**	42	**7%**
TOTAL RESPONSE	**658**		**659**		**625**		**613**	
No Response	17	3%	16	2%	50	7%	62	9%
TOTAL COMMENT FORMS	675	100%	675	100%	675	100%	675	100%

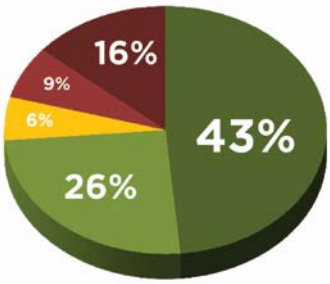
Responses Broken out by Venue of Feedback

Open House Summary	*Question 1:* Do you support the overall concept for this area of the City?		*Question 2:* Do you support removing the viaduct structures and the proposed changes to the street network (bringing Georgia Street down to Pacific, and creating a 'new Pacific Boulevard')?		*Question 3:* Do you support increasing the amount of parks in the area and the creation of a large urban waterfront park on the eastern end of False Creek?		*Question 4:* On the lands east of Quebec Street, do you support the proposal to restore Main Street by returning housing, shops and services to the city-owned blocks between Quebec Street and Gore Avenue?	
1 - Strongly Supportive	197	**48.5%**	209	**51.2%**	233	**62.5%**	208	**57.5%**
2 - Supportive	102	**25.1%**	76	**18.6%**	75	**20.1%**	75	**20.7%**
3 - Neutral	23	**5.7%**	29	**7.1%**	38	**10.2%**	46	**12.7%**
4 - Opposed	28	**6.9%**	22	**5.4%**	17	**7.3%**	9	**2.5%**
5 - Strongly Opposed	56	**13.8%**	72	**17.6%**	10	**2.7%**	24	**6.6%**
TOTAL RESPONSES	**406**		**408**		**373**		**362**	
No Response	17	4.0%	15	3.5%	50	11.8%	61	14.4%
TOTAL COMMENT FORMS	423	100%	423	100%	423	100%	423	100%

Online Comments Summary	*Question 1:* Do you support the overall concept for this area of the City?		*Question 2:* Do you support removing the viaduct structures and the proposed changes to the street network (bringing Georgia Street down to Pacific, and creating a 'new Pacific Boulevard')?		*Question 3:* Do you support increasing the amount of parks in the area and the creation of a large urban waterfront park on the eastern end of False Creek?		*Question 4:* On the lands east of Quebec Street, do you support the proposal to restore Main Street by returning housing, shops and services to the city-owned blocks between Quebec Street and Gore Avenue?	
1 - Strongly Supportive	85	**33.7%**	96	**38.2%**	141	**56.0%**	125	**49.8%**
2 - Supportive	69	**27.4%**	53	**21.1%**	54	**21.4%**	63	**25.1%**
3 - Neutral	17	**6.7%**	25	**10.0%**	28	**11.1%**	36	**14.3%**
4 - Opposed	29	**11.5%**	22	**8.8%**	8	**3.2%**	9	**3.6%**
5 - Strongly Opposed	52	**20.6%**	55	**21.9%**	21	**8.3%**	18	**7.2%**
TOTAL RESPONSES	**252**		**251**		**252**		**251**	

Summary by Question:

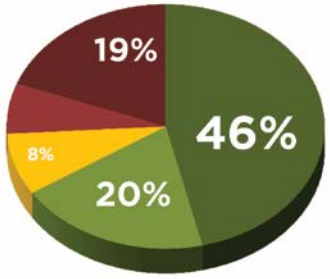
QUESTION 1: DO YOU SUPPORT THE OVERALL CONCEPT FOR THIS AREA OF THE CITY?



QUESTION 1: RESPONSES

Strongly Supportive	282	43%
Supportive	171	26%
Neutral	40	6%
Opposed	57	9%
Strongly Opposed	108	16%
TOTAL RESPONSES	**658**	

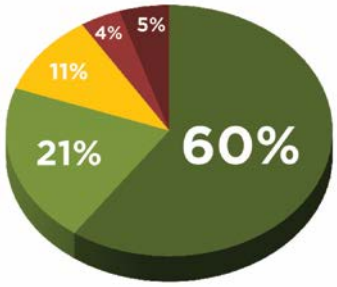
QUESTION 2: DO YOU SUPPORT REMOVING THE VIADUCT STRUCTURES AND THE PROPOSED CHANGES TO THE STREET NETWORK (BRINGING GEORGIA STREET DOWN TO PACIFIC, AND CREATING A 'NEW PACIFIC BOULEVARD')?



QUESTION 2: RESPONSES

Strongly Supportive	305	46%
Supportive	129	20%
Neutral	54	8%
Opposed	44	7%
Strongly Opposed	127	19%
TOTAL RESPONSES	**659**	

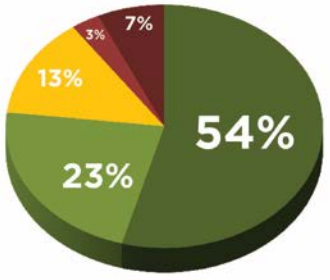
QUESTION 3: DO YOU SUPPORT INCREASING THE AMOUNT OF PARKS IN THE AREA AND THE CREATION OF A LARGE URBAN WATERFRONT PARK ON THE EASTERN END OF FALSE CREEK?



QUESTION 3: RESPONSES

Strongly Supportive	374	60%
Supportive	129	21%
Neutral	66	11%
Opposed	25	4%
Strongly Opposed	31	5%
TOTAL RESPONSES	**625**	

QUESTION4: ON THE LANDS EAST OF QUEBEC STREET, DO YOU SUPPORT THE PROPOSAL TO RESTORE MAIN STREET BY RETURNING HOUSING, SHOPS AND SERVICES TO THE CITY-OWNED BLOCKS BETWEEN QUEBEC STREET AND GORE AVENUE?



QUESTION 4: RESPONSES

Strongly Supportive	333	54%
Supportive	138	23%
Neutral	82	13%
Opposed	18	3%
Strongly Opposed	42	7%
TOTAL RESPONSES	**613**	

Additional Comments & Feedback

In addition to asking for responses on the level of support, respondents were asked to provide some indication as to why they supported, or opposed the concept. The following highlights some of the general themes of that feedback, and is organized by the respondent's level of support for the overall concept.

Strong Support/Support

Of the respondents who identified support (either 'strongly supportive' or 'supportive') of the concept, many cited the transformation of the area from an under-utilized, unwelcoming, part of the city to a vibrant new district as their reason for support. Particular focus was placed on additional parks and open space located in close proximity to the downtown, improved connections between communities, and the focus on the public realm rather than transportation infrastructure.

Those who strongly support the plan specifically cited the proposed parks and open space as the main reason for their support. A number of respondents indicated support for removing pieces of the freeway which was never realized in favour of public realm improvements and reduced focus on the automobile.

Among those who supported the plan, several aspects were highlighted including:

- **PARKS AND OPEN SPACE** – while the majority of respondents cited the proposed Park as their main reasons for support, there were many positive comments for creating a major urban park in close proximity to downtown, programming ideas illustrated in the plan including the beach, the skate park, and the concept of 'straight to the creek'. There were additional comments about reintroducing water, the need to animate such a large park, and a desire to see less grass space.
- **GEORGIA STREET** – connecting Georgia Street 'water-to-water' and providing an enhanced pedestrian connection between downtown and False Creek were supported.
- **DUNSMUIR ELEVATED PLAZA** – the proposal to repurpose a portion of the viaduct was supported. There were comments regarding extending the elevated plaza to the next expansion joint to create unique views toward False Creek.
- **IMPROVED CONNECTIONS** – many respondents supported the principle of improving connections between the historic communities and False Creek. Although there were many concerns raised about reconnecting Strathcona (by reducing traffic volumes on Prior Street).
- **REVITALIZATION OF HOGAN'S ALLEY** – was identified by many as a positive aspect of the proposal. There was a range of feedback on the proposed built form ranging from too much density to not enough density, for a need to further design work on the relationships to Strathcona, and a desire for a mix of housing types including family housing, a need for more cultural diversity in the plan.
- **PROTECTION OF THE PUBLIC VIEWS** – there was support for enhancing the public views across the site to the mountains, Port and historic district.
- **STREETCAR** – there were many positive comments about the planned Streetcar, and a desire to see it delivered in the near term.

- **AFFORDABLE HOUSING** – while there is strong support for Affordable Housing, there was also a desire for a mix of unit types (i.e. families, seniors, low income), for different income brackets (co-ops), and for the overall amount of affordable housing to be increased.

The most common concern cited among those supporting the plan was the continued traffic volumes on Prior/Venables Street and in adjacent neighbourhoods. To address this concern, many residents of Strathcona expressed a desire to see a Malkin Avenue connection included in the conceptual plan as a way to alleviate traffic through their neighbourhood.

A number of other concerns were raised including, but not limited to:

- Improving the quality and safety of the pedestrian experiences on the new (Pacific Boulevard) and existing streets (Prior and Hastings),
- Ensuring that the proposed bike improvements are implemented to alleviate traffic congestion,
- A desire to see more attention to transit opportunities in the plan,
- Concerns about re-routing of traffic to other routes (paticulary Hastings) and travel time delays associated with the new intersections of the proposed street network,
- That the size and scale of the proposed 'new Pacific' would create a new barrier,
- On-going concern about the delivery of Creekside Park,
- Concern that the proposed street network changes, park development costs, and cost to remove the infrastructure, is too expensive to implement,
- Many felt that the length of time required to implement the changes would be too long,
- the amount of density shown next to the entertainment district and the density on the City Lands needed further exploration, and
- that the proposal needed to include more affordable housing.

Other comments included: a need to go farther with water restoration and enhancement, more attention to sense of place, history and ecological references, further development of the social/cultural aspects of the plan, and some cited a need for more development with a reduction in the park area.

Neutral

Of those who responded as 'neutral' the primary reasons given were: traffic impacts to neighbourhoods, movement to- and from- downtown for commuter traffic, dislike of the tower forms proposed, and the costs associated with the proposal.

Opposed/Strongly Opposed

Twenty-five percent of respondents were 'opposed' or 'strongly opposed' to the vision. The main sentiment of those strongly opposed was that the viaducts are a functioning part of the street network that efficiently move traffic to and from the downtown core. Removing the viaducts was not seen as a priority and that traffic congestion and increased travel time were not outweighed by the benefits.

The most common concern was traffic impacts on Prior/Venables Street and a desire for traffic calming and construction of the Malkin Avenue connection.

Some respondents felt that the viaducts still had useful life and that it would be more sustainable to maintain or repurpose them. Citing that the plan is too expensive and the money could be put to better use (i.e. affordable housing). Other comments include:

- concern about buildings heights proposed,
- lack of park space east of Quebec ,
- the scale of the new Pacific Boulevard would create a new barrier,
- that this scheme benefits land owners (the City and Concord) by proposing residential uses, and
- desire to see a 'high-line' park.

There were also some concerns raised about the process citing that no options were presented, that the materials were too simplistic and that the decisions have already been made.

OTHER CITIES REMOVING ELEVATED ROADWAYS

Other Cities in North America and around the world are rethinking their freeway infrastructure. The following cities have already made successful changes, or are contemplating modifications:

Portland – In 1974, Portland closed a three mile long, ground-level highway that ran alongside the Willamette River and replaced it with a 37 acre park. Portland was the first city in the United States to initiate the idea of freeway demolition.

San Francisco - After the 1989 Loma Prieta earthquake knocked down sections of the Embarcadero Freeway, it was fully removed in 1991. An arterial street and a linear waterfront park were built in its place, helping to revitalize the neighbourhoods along that section of the city's waterfront.

Seoul, South Korea - An elevated expressway was removed and replaced with an 8.4 km long public recreation space, which included daylighting of the Cheonggycheon stream. Restoring the stream brought a new urban paradigm to Seoul that places more emphasis on economic growth through sustainability and the pedestrian environment rather than on vehicular movement.

Boston - The so-called Big Dig project buried a major elevated downtown expressway underground in a tunnel, freeing up space for parks and plazas, and improving connectivity between neighbourhoods.

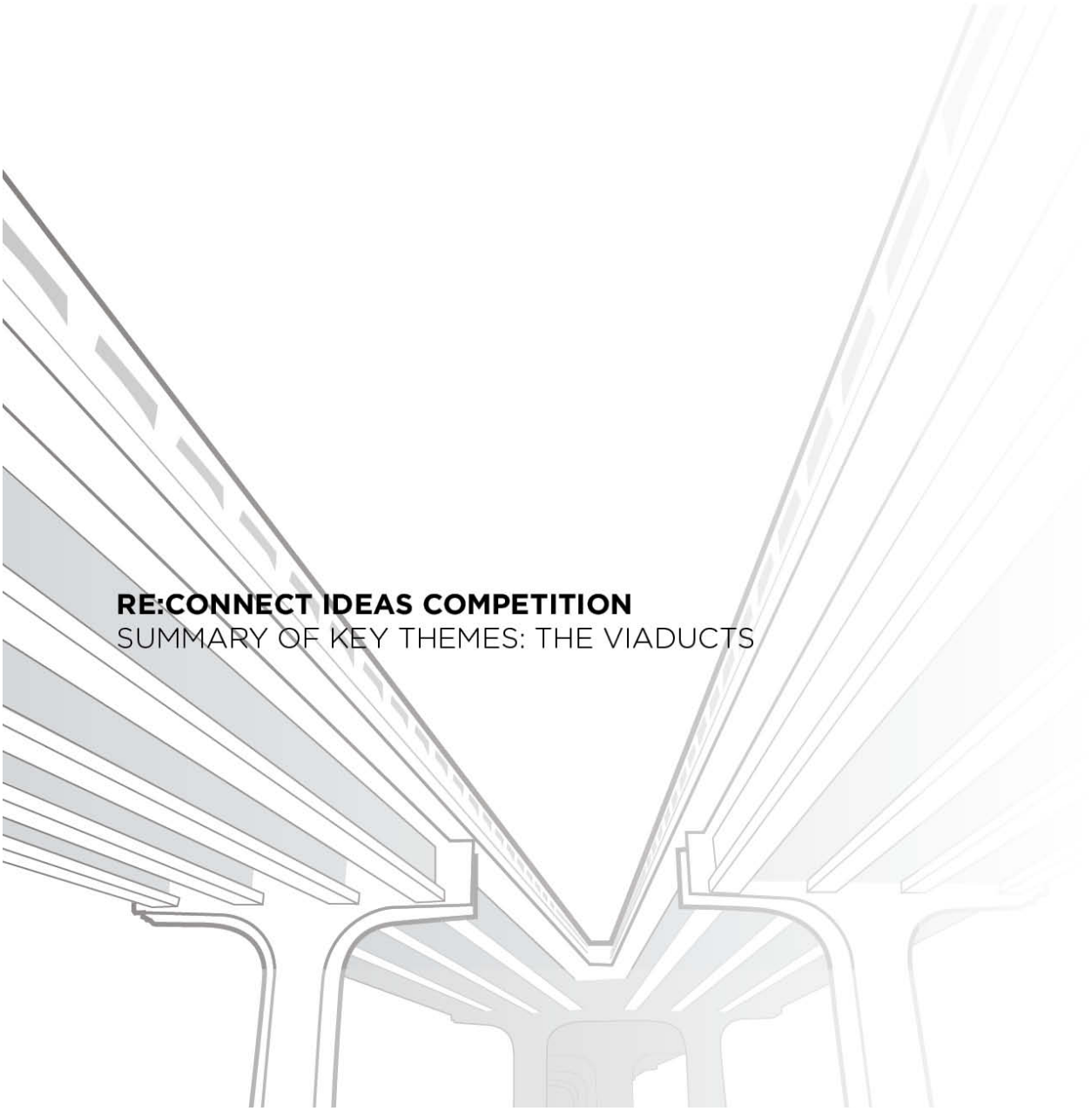
New York - The High Line is a 2.3 km park in built on a section of former elevated freight railroad, running along the lower west side of Manhattan. The City committed $50 million to the project, and it was redesigned and planted as an aerial greenway. This unique urban park has catalyzed real estate development in the neighbourhoods along the line.

Seattle's Alaskan Way Viaduct - A two mile long elevated expressway along the city's waterfront, was damaged during the 2001 earthquake and needs to be replaced. Various replacement options have been examined, with the preferred solution being a bored tunnel. This would allow for improved pedestrian access and connectivity between the downtown and waterfront.

Toronto – The city is contemplating the future of the aging elevated Gardiner Expressway as the structure requires significant investment (in the order of $500 million). Ideas include tearing it down and replacing it with tunnel or a boulevard, or converting it into an elevated park.

Halifax – The Cogswell Interchange occupies 6.5 hectares of land within the urban core, like Vancouver, only a portion of the highway was built as there was public dissent and a lack of funding to complete the project. Planning for the future of the area began in May 2013.

vancouver viaducts & eastern core
re:CONNECT
AN OPEN IDEAS COMPETITION



RE:CONNECT IDEAS COMPETITION
SUMMARY OF KEY THEMES: THE VIADUCTS

RE:CONNECT

The submissions and commentary presented in the re:CONNECT Open Ideas Competition provided a glimpse into public opinion surrounding the potential future for the viaducts and the land beneath them. Over-arching themes emerged that sought an area that was refreshingly unique; with nearly every one of the fifty submissions illustrating a decided departure from the previous development pattern lining the north shore of False Creek. Embedded in this was a level of public focus that place the primary goal of creating an exciting and inviting place for the citizens of the city to congregate. This document provides a quick recap of the overall themes and strategies that formed the submissions.

STRUCTURAL APPROACH

In the end, 51 unique submissions were received that addressed the issue of the viaducts, in either the Visualizing the Viaducts or Wildcard category of the competition. While one might have anticipated that the open invitation to envisage a different future would have led to more aggressive approaches, well over half of all submissions suggested that both structures be retained (33,

Structural Options Illustrated in Submissions				
	Retain	Modify		Complete Removal
Primary Function		Minor	> 50%	
Traffic	13	0	4	n/a
Public / Cycling Link	12		7	n/a
Both (Traffic & Public)	7	2	0	n/a
Neither	1	0	0	n/a
TOTALS	33	13		5

65%). Of those that sought retention of the structures, opinions were essentially evenly split between focusing on traffic needs, and focusing on retaining the structures for the purpose of the public use. In summary, 13 sought retention for traffic (25%), 12 sought retention for parks and public space or cycling/ pedestrian links (24%), while seven sought a retention for both (14%).

CENTRAL THEMES

Looking at all of the submissions together central themes begin to emerge.

PARK SPACE:

Three-quarters of all submissions addressed an enhanced public park as a central driver of their submission.

ACTIVATED GROUND PLANE:

Of the submissions that retained, or modified the viaduct structures, nearly all took strides to activate the public realm at the ground plane. Approaches ranged dramatically from retail infill under the structures, to developing gathering spaces, markets, swimming pools and yoga studios. Part of this activation explored the potential for increasing the amount of covered public space at the ground plane.

INTRODUCTION OF WATER:

Water is an integral element of the site's history and this fact was something that was picked up on by a number of the participants. Whether in the form of canals or swimming pools, water played a role in a larger number of the submissions received.

BIKES & PEDESTRIANS:

Well over half of all the submissions (31) addressed the need for cycling and walking connections through this area of the city.

ENGAGING THE STRUCTURES:

Of the submissions that retained or modified the structures 19 of them sought to engage the elevated level of the viaduct with some sort of building or structure. These ranged from civic structures and galleries, to commercial and residential development.

INTRODUCTION OF DEVELOPMENT:

Another theme that emerged in 20 of the submission was the introduction of additional development opportunities in one way or another into the scheme. This development ranged in use but provided some contextual infilling opportunities as a way of engaging the ground plane.

BUILD UNDER THE VIADUCTS:

In the schemes where the viaducts were either retained or modified, a number of submissions (12) sought to fill in underneath the structures.

TUNNELING OF TRAFFIC:

A few of the submissions (5, 10%) sought to remove the pedestrian barrier of vehicular movement by exploring some level of tunneling of traffic.

THEMES MOVING FORWARD

The ideas competition has been an informative first look into the desires and ideas that the public have about the future of this important area of the city. While the real value of the competition is in the collection of ideas there are a number of themes and directions that staff will be actively looking to integrate into the future options and schemes presented to the public. They include:

- deliver a highly public and human scaled district
- maximize the potential & quality of park
- Introduce water and references to its historic presence in the area
- Ensure that the uses activate the public realm, and should the viaducts remain, the ground plane under the viaducts
- In phased options, explore ways to engage the structures to animate underneath

SPECIFIC IDEAS TO TEST

- A thoughtful street re-configuration was put forth by the team of Dialog, PWL, Beasley & Green which staff is exploring to unite Pacific & Expo and to resolve the complicated intersections on the eastern edge.