



POLICY REPORT DEVELOPMENT AND BUILDING

Report Date: October 6, 2015
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RTS No.: 11057
VanRIMS No.: 08-2000-20
Meeting Date: October 20, 2015

TO: Vancouver City Council

FROM: General Manager of Planning and Development Services and Acting
General Manager of Engineering Services

SUBJECT: Removal of the Georgia and Dunsmuir Viaducts

RECOMMENDATIONS

- A. THAT Council approve the removal of the Georgia and Dunsmuir Viaducts, and approve the *Northeast False Creek Conceptual Plan* (generally as presented in Appendix A) to guide area planning without the viaducts for the remaining areas of the False Creek North Official Development Plan and two City blocks east of Quebec Street.
- B. THAT Council direct staff to proceed immediately on planning for the new mixed-use neighbourhood including a road network in place of the viaducts with landowners and interested citizens, generally in accordance *Northeast False Creek Conceptual Plan* and the *Northeast False Creek: Directions for the Future* (2009), and report back with the necessary amendments to the False Creek North Official Development Plan, and other associated By-laws and Policies, a revised Public Benefits Strategy and associated funding strategy, within 18 months or less.
- C. THAT Council direct staff to work with the Vancouver Park Board and interested citizens on planning for new waterfront parks and open space of no less than 13.75 acres as well as options for expedited delivery of the new parks and open space, generally in accordance *Northeast False Creek Conceptual Plan* and the *Northeast False Creek: Directions for the Future* (2009), and report back with the necessary amendments to the False Creek North Official Development Plan and other associated By-laws and Policies within 18 months or less.

- D. THAT Council direct the General Manager of Real Estate and Facilities Management and Director of Legal Services to negotiate and enter into, subject to Council approval, the necessary legal agreements and take such additional actions to implement the *Northeast False Creek Conceptual Plan* including for the replacement street network, land exchanges and transfers, contaminated soils management, parcel re-configurations, and adjustments to the legal boundaries of Andy Livingstone Park.
- E. THAT Council direct the Director of Planning to prepare an application to rezone the lands adjacent to BC Place on area 10C in the False Creek North Official Development Plan (FCNODP) to increase the density and height permitted for the site to accommodate residential and non-residential use, on certain conditions, including the condition that BC Pavilion Corporation ("PAVCO") will enter into all rights of way and other legal agreements necessary to accommodate the new Georgia Street ramp alignment and integration with the mixed-use building and parkade.
- F. THAT Council advise One West Holdings Ltd. and related corporate entities ("Concord Pacific") that Council is willing to consider an application to rezone its lands in and adjacent to sub area 6C in the False Creek North Official Development Plan (FCNODP), to increase the density and height permitted to accommodate residential and non-residential use, on certain conditions, including the condition that the rezoning application complies with the proposed or enacted FCNODP amendments arising from the planning process, and that the rezoning results in the delivery of part or all of the new waterfront park (Creekside Park Extension) on an expedited basis.
- G. THAT Council direct staff to work with the Province on parcel re-configurations, including the reconfiguration of the proposed Creekside Park Extension, environmental remediation matters, reconfiguration of the legal boundaries of Andy Livingstone Park and such other matters which are required to implement the Northeast False Creek Conceptual Plan.
- H. THAT Council approve downgrading of Prior Street to a local-serving street upon the completion of a new east/west arterial alignment to be determined through the False Creek Flats planning process;
- FURTHER THAT Council direct the General Manager of Engineering Services to continue to pursue near-term improvements along Prior Street to continue to address community concerns about traffic-related safety.
- I. THAT the passage of recommendations B through G, and approvals are subject to:
- i. Completion of the work and reporting back to Council which is required or contemplated above, all to be to the satisfaction of Council;
 - ii. Conclusion of all agreements and other arrangements which are required for the replacement street network, land exchanges and transfers, parcel re-configurations, including the reconfiguration of the proposed Creekside Park Extension, and adjustments to the legal boundaries of Andy Livingstone Park, all to the satisfaction of Council; and

- iii. Passage of all amendments to City of Vancouver by-laws which are required to facilitate those works in the Northeast False Creek Conceptual Plan as contemplated by the foregoing resolutions and approved by Council.
- J. THAT the passage of recommendations B through G and consideration of matters set out in this report will not fetter Council's discretion in considering any future rezoning applications or by-law amendments, including amendments to the False Creek North Official Development Plan, nor fetter the discretion of other City officials in discharging their duties nor will passage of the above resolutions create any legal rights for any person or obligation on the part of the City and any expenditure of funds or incurring of costs is at the sole risk of the person making the expenditure or incurring the cost.
- K. THAT Council approve a budget of up to \$21 million for the 2-year work program (2016-2017 as set out in Appendix B); sources of funding to be reported back as part of the 2016 Capital Budget;

FURTHER THAT the Director of Finance report back on the final project budget and a viable funding strategy upon completion of Recommendations B through G.

REPORT SUMMARY

This report responds to Council direction from June, 2013 to continue to advance planning, analysis, and consultation related to the removal of the Georgia and Dunsmuir viaducts. Since 2013, Staff have completed the necessary due diligence and stakeholder consultation for Council to make an informed decision about the future of the Georgia and Dunsmuir viaducts. This report represents a step forward by recommending that Council approve the replacement of the viaducts with a new, more efficient replacement street network which unlocks opportunities to deliver on key City and community objectives related to:

- access to green space,
- accelerated delivery of Creekside Park Extension
- affordable housing, and
- active transportation among others.

The majority of the lands discussed in this report (west of Quebec Street) are located in False Creek North. The False Creek North Lands (FCN Lands) were formerly owned by the Province and purchased by Concord Pacific in 1988. This area has been developing over the past 26 years since the original *False Creek North Official Development Plan* (FCNODP) was approved in 1990. This plan put in place opportunities for new growth and the associated amenities that would be delivered. It identified four waterfront neighbourhoods that would be developed in a phased approach. As each neighbourhood was developed, the amenities for that neighbourhood were delivered, including the neighbourhood park. Three of the four neighbourhoods have been completed including those surrounding David Lam Park, George Wainborn Park, and most recently, Coopers' Park.

We are at a moment in time where the benefits from removing the viaducts are significant and the cost of removing them will continue to increase as the area develops. With or without the viaducts, the remaining lands in Northeast False Creek will be developed, representing the last undeveloped piece of the downtown's waterfront.

Staff need Council direction to pursue the necessary detailed negotiations and legal agreements needed to advance additional planning and design in the area resulting from the removal of the viaducts.

This report provides the information necessary for Council to make a decision to replace the Georgia and Dunsmuir viaducts and will address the following objectives:

- Respond to City Council's June 2013 approval of the eleven Guiding Principles and associated recommendations on the potential for the viaducts removal.
- Detail the benefits associated with the viaducts removal.
- Demonstrate how the new street system will provide adequate vehicular capacity for goods movements to and from the downtown, with improved connectivity.
- Summarize the financial implications associated with the proposal.
- Detail the future work programs for the viaducts removal.
- Obtain Council approval to proceed with detailed planning for the neighbourhood, parks and open spaces, and replacement of the viaducts generally as described in the Northeast False Creek Conceptual Plan (Appendix A).

The issues related to the removal of the viaducts are complex. This report outlines what has been achieved to date and the public consultation, planning, engineering, land negotiations, and legal agreements still to be completed. Staff are seeking to advance more detailed planning, technical analysis and the necessary negotiations and legal agreements to implement the decision to remove the viaducts. Today there is a window of opportunity to make this decision with increasing development pressures 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 and construction of the replacement street network.

The Viaducts project is estimated to cost \$180 to \$200 million, subject to further refinement upon completion of the detailed design. The City anticipates that the project, as well as the NEFC Public Benefit Strategy, will be funded through development-related revenues, sale or lease of lands in Northeast False Creek and City-owned blocks east of Quebec Street, senior government contributions, including the Provincial Participation Mortgage (discussed in Background Section of this report) and other strategic partnerships. Removal of the viaducts will enable delivery of a larger park, better connections among nearby neighbourhoods, improved urban design, and repurposing of City lands for affordable housing and other much needed public amenities which are difficult to quantify but are real and substantial. As well, it will also create an opportunity to improve the seismic resilience of local roads, averting a \$50 to \$65 million expenditure on the viaducts.

COUNCIL AUTHORITY/PREVIOUS DECISIONS

False Creek North Official Development Plan (1990)

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

Burrard Inlet Rail Grade Separation Strategy (2008)

Northeast False Creek: Directions for the Future: Part 1 (June, 2009)

Northeast False Creek: Directions for the Future: Part 2 (October, 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)

Regional Context Statement (2013)

Healthy City Strategy (2014)

Downtown Eastside Local Area Plan (2014)

Dunsmuir and Georgia Viaducts and Related Area Planning Report (2013)

In June 2013, Council approved the following resolution as part of the consideration of the Dunsmuir and Georgia Viaducts and Related Area Planning Report (2013):

"A. THAT, based on the conceptual design of the proposed replacement street network included in the Policy Report dated June 18, 2013, entitled "Dunsmuir and Georgia Viaducts and Related Area Planning", 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 of the above-noted report, except as noted below, 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 of the Policy Report dated June 18, 2013, entitled "Dunsmuir and Georgia Viaducts and Related Area Planning", except as noted below, involving all stakeholders, and report back within 24 months or sooner if feasible with an Area Plan;

FURTHER 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 of the Policy Report dated June 18, 2013, entitled "Dunsmuir and Georgia Viaducts and Related Area Planning", for informing on-going planning and public consultation on the planning for the viaducts project.
- D. THAT staff convene a Viaducts Work Program Roundtable at least three times per year for the purpose of sharing information with interested parties on the status of the implementation of both the Viaducts Work Program and the related consultative process.
- E. THAT Appendix A of the Policy Report dated June 18, 2013, entitled "Dunsmuir and Georgia Viaducts and Related Area Planning", be amended as follows:
- *add the following Guiding Principle:*

"11) Strengthen the Festival and Entertainment Function of the Area. Acknowledge the importance of BC Place and Rogers Arena and improve access, loading and event management plans to ensure that these facilities continue to function efficiently."

- *amend Guiding Principle 10 by adding at the end: "including design of the engagement process."*
- *amend Guiding Principle 6 to read as follows:*

"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, especially between the

Eastern Core area and downtown and reduces traffic along Prior Street."

- F. THAT Council direct staff to incorporate into the Eastern Core planning process a specific planning objective to create, with the input of the City's food policy group and other stakeholders, an urban agriculture "centre of excellence", including the potential for an "urban food" production centre with an expanded future garden system, through optimizing the existing assets in the area, which include:
- *Strathcona and Cottonwood Gardens; and*
 - *the key food warehousing and shipping infrastructure on Malkin Street.*
- G. THAT further to the Viaducts Work Program outlined in Appendix B of the Policy Report dated June 18, 2013, entitled "Dunsmuir and Georgia Viaducts and Related Area Planning", staff report back to Council with a plan for a consultation program that delivers meaningful resident and stakeholder engagement, as committed to in the Guiding Principles.
- H. THAT Appendix C of the Policy Report dated June 18, 2013, entitled "Dunsmuir and Georgia Viaducts and Related Area Planning", be amended to have DRAFT Guiding Principle 11 read as follows:

"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, particularly within the neighbouring residential communities of Strathcona, Grandview-Woodland, Mt. Pleasant, Thornton Park and City Gate." "

CITY MANAGER'S/GENERAL MANAGER'S COMMENTS

The Acting City Manager, the Acting General Manager of Engineering Services and the General Manager of Planning and Development Services recommend APPROVAL of the foregoing.

The opportunity to remove the viaducts and create a new neighborhood that is connected to many existing neighborhoods is a once in a lifetime opportunity to address many council objectives and further existing initiatives, such as the Greenest City Action Plan, the Earthquake Strategy, the Climate Adaptation Plan, the Healthy City Strategy, the housing affordability initiative, and fundamentally further good urban design, which Vancouver is so well known for. Furthermore, by pursuing this approach, we can seek to address the community desires to see the expedited delivery of the Creekside Park Extension, and to address traffic related concerns along Prior Street, east of the viaducts. The removal of the viaducts appears to offer solutions to these concerns while also advancing other City objectives.

REPORT

Background/Context

In June 2013, City Council approved eleven Guiding Principles aimed at guiding future planning for the removal of the viaducts and the associated replacement opportunities. See Appendix A for these Guiding Principles. Council also directed staff to undertake additional analysis and planning to:

- Confirm the results of previous transportation analysis undertaken.
- Address the key community concerns related to the replacement street network in Northeast False Creek.
- Begin establishing the necessary agreements to achieve the new replacement street network with:
 - BC Pavilion Corporation (“PAVCO”),
 - Concord Pacific, and
 - The Province of B.C.

Since Council approved the eleven guiding principles in 2013, staff continued to advance work on the viaducts to ensure the outstanding concerns were addressed and the necessary due diligence was completed. This work is highlighted in Figure 1.

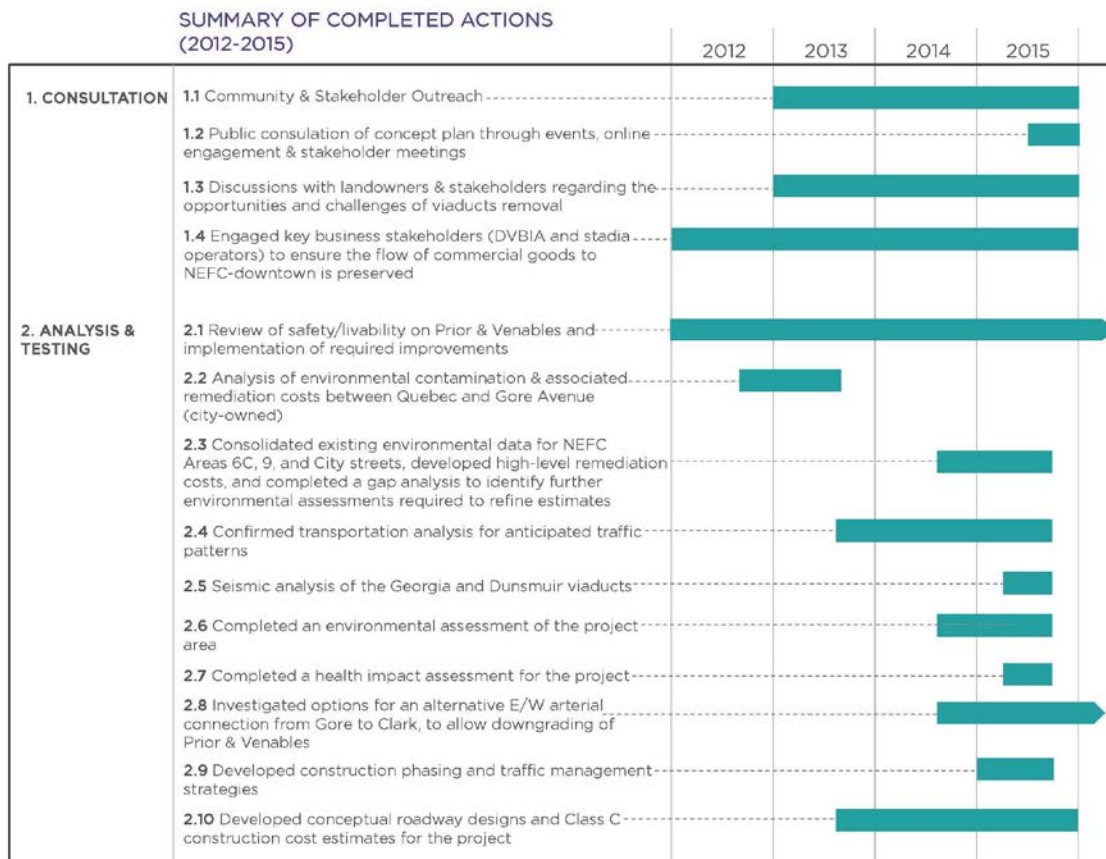


Figure 1: Summary of completed actions since previous Council decision in 2013
 *Note: Work for Prior Street improvements and the future East/West Arterial alignment through the False Creek Flats is underway as part of the False Creek Flats planning process.

The original Georgia viaduct was constructed in 1915 as a means of connecting the downtown to the communities to the east like Strathcona, Grandview Woodland and others. The elevated road had to bypass obstacles like the False Creek waterfront which extended farther north than it does today, heavy industrial uses that surrounded False Creek, and a multitude of Canadian Pacific rail lines that ran through Northeast False Creek.

In 1971, the original Georgia viaduct was replaced with the Georgia and Dunsmuir viaducts that were built as the first phase of a larger freeway network intended to connect downtown Vancouver to communities to the north, east, and south. However, the remaining portions of the freeway network were never completed due to community opposition and a lack of federal funding. The two viaducts allowed traffic to bypass the industrial and rail lines that existed in Northeast False Creek at the time.

In 1986, Vancouver hosted the world fair, EXPO 86. For this event the Northeast False Creek area was temporarily converted from a primarily industrial area to a place for celebration and events. The industrial uses were never replaced in Northeast False Creek leaving the area for future expansion of the downtown and waterfront communities. However, the viaducts remained as unusual elevated structures.

The False Creek North Lands ("FCN Lands") were formerly owned by the Province. In 1988 Concord purchased the FCN lands from the Province. The Province agreed to retain the legal obligation to remediate contaminants on the FCN Lands to Provincial standards.

In 1988, as part of the Purchase and Sale Agreement, a portion of the FCN Lands were identified as future park land areas. This was a key component of the proposed soils remediation process and obligations of the Province in that future park space would be:

- Located in areas of high contamination so that the contaminants could be left in place and risk managed.
- Used to deposit soil contaminants from other areas within the FCN Lands that were to be used as development sites.

Concord Pacific has agreed that the Province can leave contaminated soils in place and also relocate contaminated soils from Concord's Area 6C lands into the lands identified in 1988 to become the Creekside Park Extension.

As part of the sale of the FCN Lands, Concord pursuant to an agreement (called the Public Participation Mortgage Agreement "PPM") agreed to make future payments to the Province, in addition to the sale price, based upon achieving certain amounts of density on the FCN Lands above prescribed levels, these payments are generally payable when the respective buildings being constructed reach above grade. Any future rezonings of the remaining FCN Lands that are the subject of the PPM may trigger Concord's obligation to make additional payments to the Province in accordance with the terms of the PPM.

Today, the viaducts occupy approximately five city blocks of land that are located adjacent to the downtown, False Creek, International Village, Chinatown and City Gate. Figure 2 shows the viaducts study area in context.

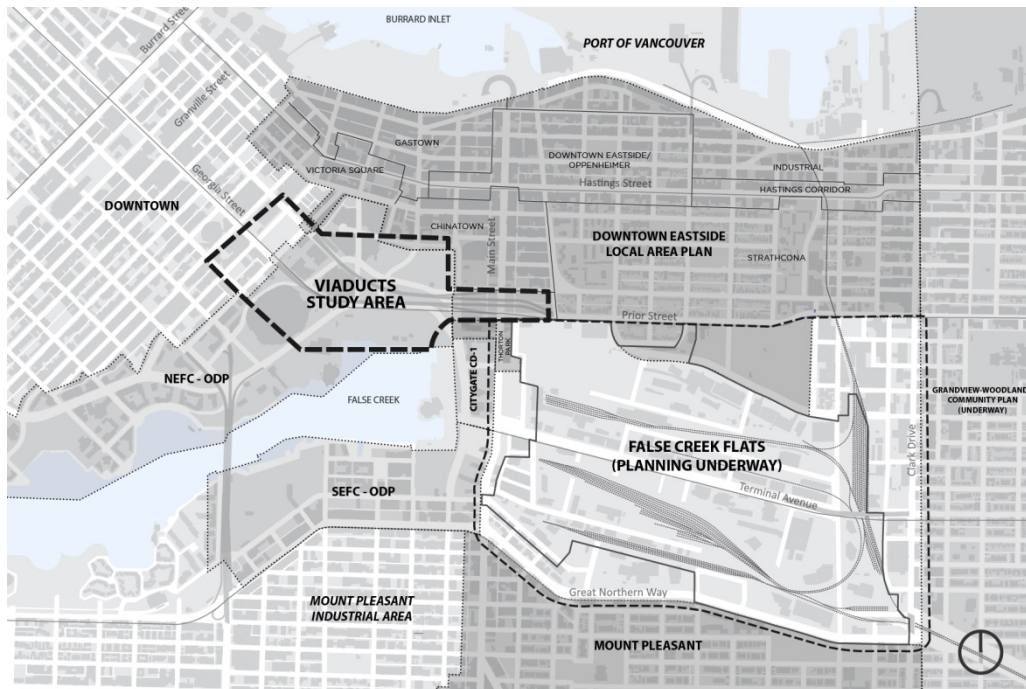


Figure 2: Viaducts study area

Growth in and around the Northeast False Creek area is guided by a variety of plans and strategies including:

- False Creek North Official Development Plan.
- Metro Core Jobs and Economy Land Use Plan.
- Downtown Official Development Plan.
- Downtown Eastside Local Area Plan.
- Housing and Homelessness Strategy.
- Greenest City 2020 Action Plan.
- Other City Council approved plans and policies.

The Northeast False Creek area is planned to accommodate future growth of the downtown and waterfront communities. The area will provide opportunities for a mix of new homes and job space. Existing Council approved policy requires at least 20% of the new housing to be affordable housing. A minimum of 1.8 million sq.ft. of new job space is needed in Northeast False Creek to meet economic growth objectives. Northeast False Creek is the last component of the *False Creek North Official Development Plan (1990)* and represents a significant opportunity to complete the downtown waterfront.

Strategic Analysis

With future development in the area taking place with or without the viaducts, now is the time to make a decision while there is physical space to build the temporary and permanent replacement street network, and to shape the new waterfront neighbourhood to better integrate with Creekside Park Extension.

Through extensive community consultation with local residents, businesses, and stakeholder groups, Staff heard that the viaducts pose a significant physical and psychological barrier for local communities, the downtown, and the waterfront.

Traffic counts show that both viaducts are under-utilized. At rush hour, the viaducts typically are used at less than half of their designed capacity. This is partially due to the fact that they were designed as part of a larger freeway network that was never built. They are limited by the ability of the City's street network and signals to feed traffic to/from them. Staff have also heard from emergency service providers that they do not use the viaducts due to concerns that they can easily become stranded on the elevated roadways if there is an incident.

Based on technical analysis completed over the past two years, Staff have determined that both viaducts are seismically deficient, as they were designed and constructed to outdated design codes and built on loose soils used to fill the creek in the early 1900's. In the case of even a moderate earthquake, the viaducts are at significant risk of collapse. In the event of a collapse, nearby buildings could be severely damaged and the fallen structures would block the surface streets below, which include Pacific Boulevard, Expo Boulevard, Abbott Street, Quebec Street and Main Street. Furthermore, the viaducts pass over top of the Expo/Millennium Skytrain line and their collapse would sever this critical transit line which carries approximately 120,000 trips a day to and from the downtown. Lastly, with the planned relocation of St. Paul's hospital to the False Creek Flats, a collapse of the viaducts would cut off a major access point from the hospital into the downtown where more than 100,000 residents live, more than 150,000 people work, and millions of people visit. It will cost between \$50-\$65 million dollars to upgrade the viaducts to keep them standing after a moderate earthquake. At this level of upgrade, they would likely not be usable afterwards and may need to be replaced. To fully seismically upgrade to today's standards, the viaducts would need to be completely rebuilt which would be cost prohibitive.

The viaducts are large elevated concrete structures that cost between 5-10 times the cost of the same roadway built on the ground to maintain. The viaduct structures would result in \$8 - \$10 million in maintenance costs over the next 15 years on top of the \$50-\$65 million to upgrade.

1. AN IMPROVED TRANSPORTATION NETWORK

The proposed replacement street network represents a significant improvement in overall network connectivity and resilience and when considering the inherent opportunities to provide new transit routes in the study area, and improved walking and cycling infrastructure. A preliminary health impact assessment has been completed, which indicates that the improvements outlined in this report will have positive health outcomes. If approved, staff will engage with Vancouver Coastal Health (VCH) to further assess and improve the design to ensure optimal health outcomes of the project.

Generally speaking, there are presently two road systems in Northeast False Creek; the surface streets of Pacific Boulevard, Expo Boulevard, Abbott Street, Carrall Street and Quebec Street, and the elevated Georgia and Dunsmuir viaducts, as shown in Figure 3.

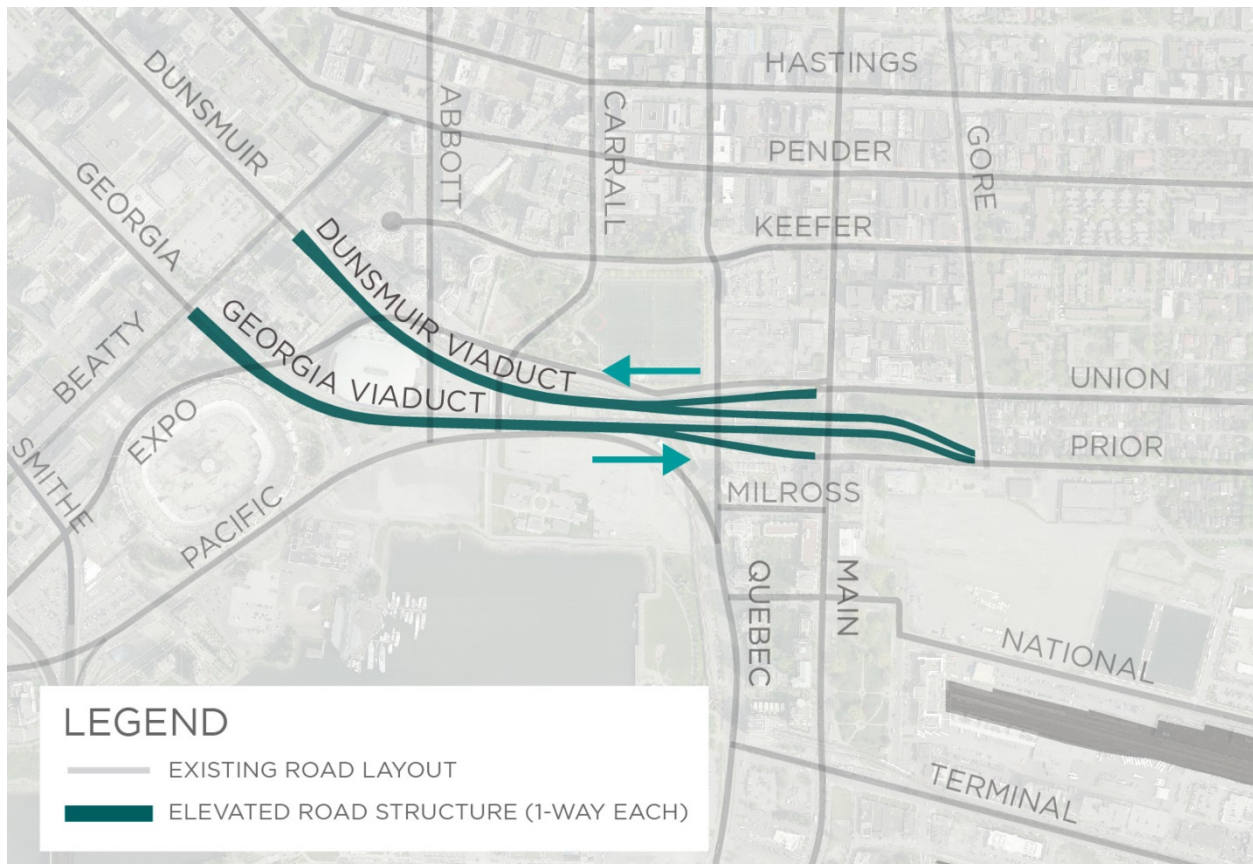


Figure 3: Existing Street Network

These two road systems do not intersect. The viaducts bypass Northeast False Creek entirely, offering no connection to the area. In addition, the cumulative impact of the SkyTrain guideway and viaducts structures, mean that the major east-west surface arterials of Pacific and Expo Boulevard have poor connections to the east, being forced to merge with Quebec Street which runs north-south before connecting to Terminal Avenue.

Today, the viaducts offer modest travel time savings for those that are heading east from the downtown, allowing vehicular traffic to bypass the regular street network and intersection signals for approximately one kilometre, a short section of the overall trip for the significant portion of traffic on the viaducts that are destined to or from communities east of Highway 1. In the future, if the viaducts remain, this will force new local trips generated as a result of the expected future developments in the area to use the existing surface streets which offer circuitous connections to the downtown for all modes.

Recognizing the important role the viaducts play today in providing network route options for commuter traffic and goods movement trucks accessing the downtown, the proposed replacement street network retains a direct connection between downtown and routes east of Main Street, achieved through the construction of the 'Georgia Ramp,' a bi-directional extension of Georgia Street from Beatty Street to Pacific Boulevard that passes between Rogers Arena and BC Place and over top of Expo Boulevard, as shown in Figure 4.

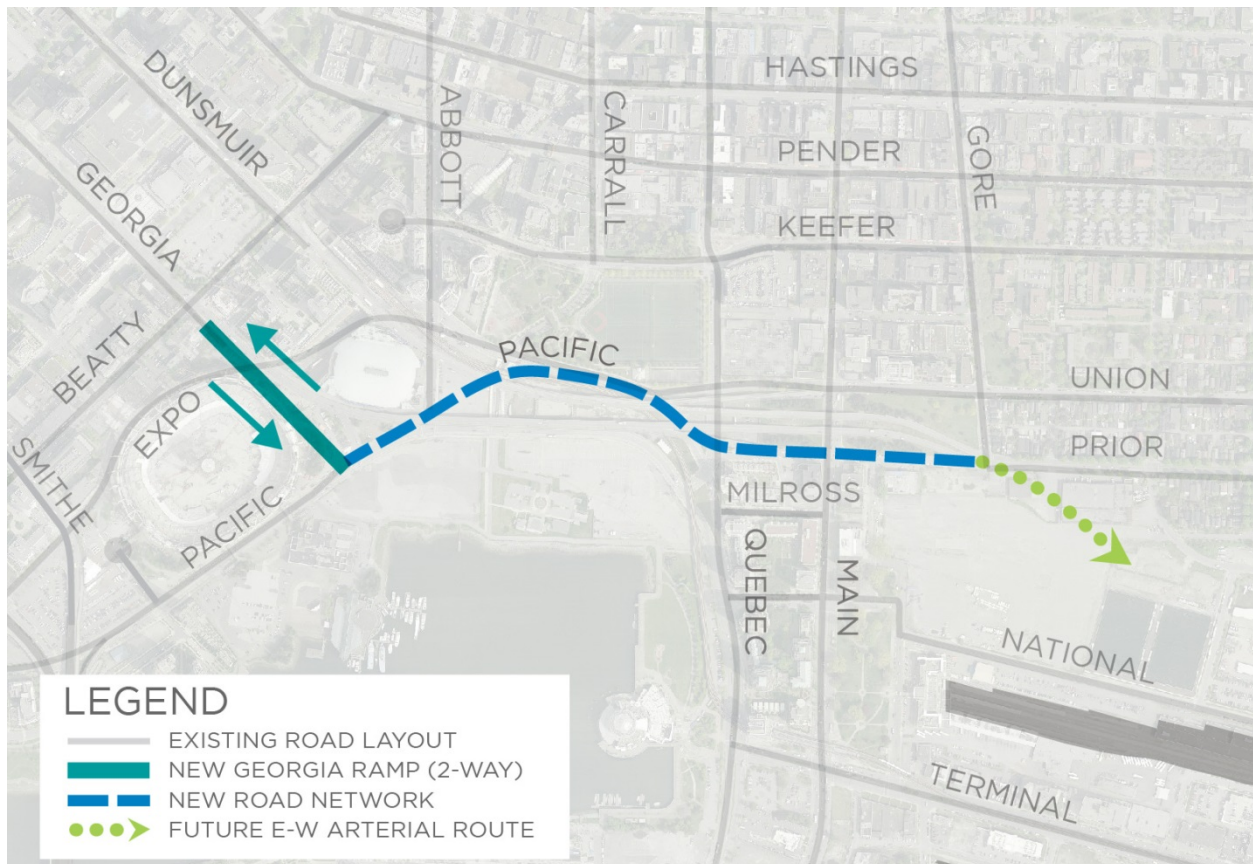


Figure 4 - conceptual street replacement network

The 2-way Georgia Ramp can bridge the natural escarpment behind the two stadiums, and overcome the approximate 15 metre elevation difference between the downtown and Northeast False Creek in a much shorter distance than required by the viaducts today. This allows a reconfiguration of Pacific Boulevard and two-way operation east of the new Georgia Street intersection, to ensure an efficient arterial connection to not only Main Street and arterial routes east of Main Street, but an efficient connection between Georgia Street and the balance of the surface streets of Abbott Street, Expo Boulevard and Quebec Street.

Comprehensive transportation analysis and modeling of the existing road network and the proposed replacement network shows that the proposed road network can accommodate 100% of the existing traffic present in the study area, and offer better performance for all modes, particularly when considering the impacts of future developments. These proposed network changes will help support the needed growth in non-auto travel modes required to meet the City's Transportation 2040 and Greenest City objectives.

From a technical perspective it is not possible to construct a Dunsmuir Street extension between Beatty Street and the reconfigured surface streets in Northeast False Creek for vehicles. Also, from a transportation analysis perspective, it is not required. This offers an opportunity to evaluate the operation of the first few blocks of Dunsmuir Street west of Citadel Parade, including consideration of two way operation to improve local access and circulation. Further west towards the centre of downtown, Dunsmuir Street would need to remain one-way to accommodate the volume of westbound vehicles heading to the West End or Lions Gate bridge.

A new Dunsmuir Connection (described later in this report) is proposed to replace the sidewalk and protected cycling facility on the Dunsmuir Viaduct, preserving an all ages and abilities (AAA) connection to the Adanac/Union bikeway. This new connection can be designed to provide an important and unique addition to the City's inventory of public spaces, providing both an active transportation corridor for the movement of people to and from the downtown in a safe, comfortable, convenient and enjoyable way, but also a place to pause and enjoy elevated views of the City, the new array of parks and a new Entertainment District. It will also serve as a new programmable gathering space for major public event celebrations for the portion adjacent to Rogers Arena, and will provide a safe and comfortable pedestrian connection from the downtown to the expanded Creekside Park.

The existing street network supports a number of cycling routes; from one way painted facilities on Pacific Boulevard to a two-way protected facility on the Dunsmuir Viaduct and a two-way path on the Seawall; as shown in Figure 5. Today these facilities see significant volumes of people cycling, with upwards of 7,000 cyclists a day recorded on the two-way facility adjacent to Science World and 4,000 cyclists a day on the Union/Adanac bikeway.

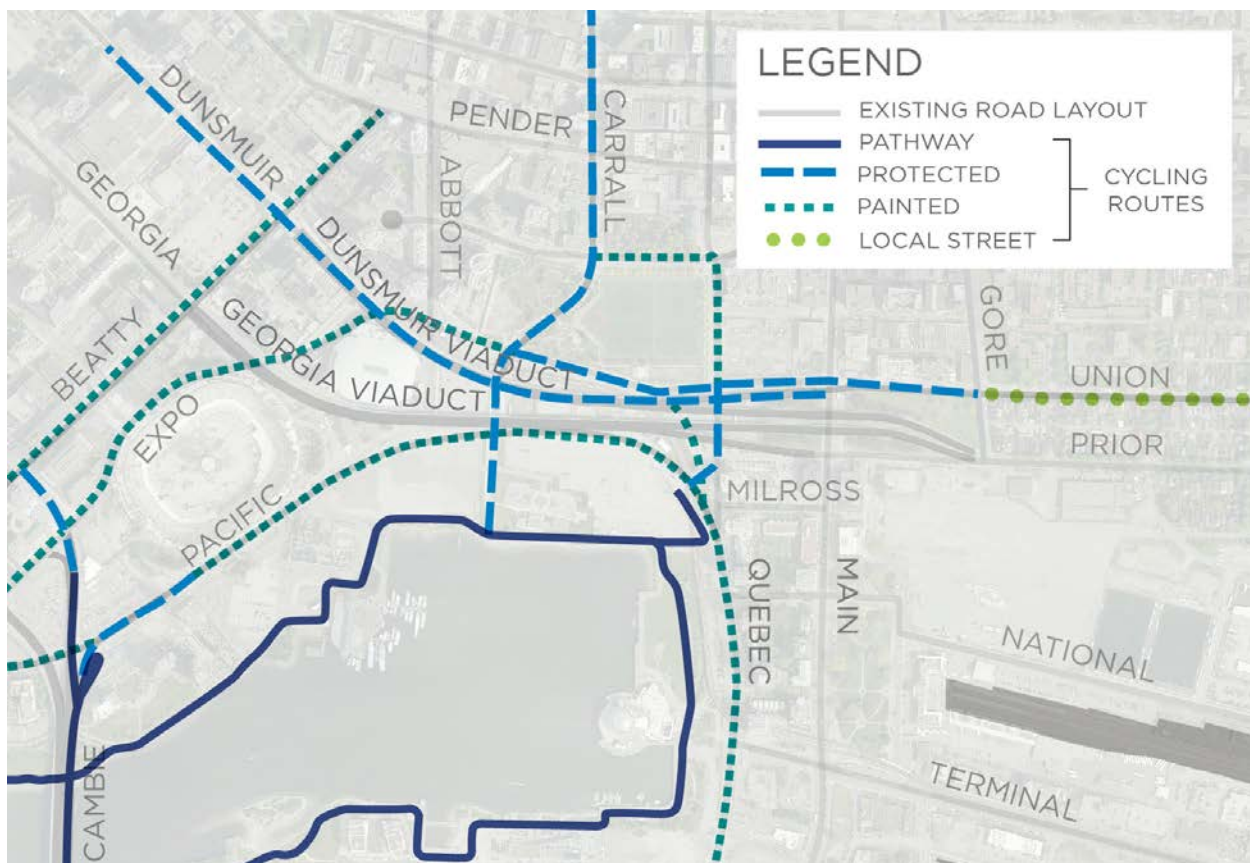


Figure 5: Existing cycling routes in NEFC

The proposed replacement street network includes an integrated protected bike lane network with better connected and more comfortable cycling connections to provide safe, convenient and enjoyable cycling routes which can accommodate the anticipated growth in cyclists volumes in the City.

Notable improvements include the replacement of painted bike lanes on Pacific, Expo and Quebec, with protected bike lanes, and a new path between the seawall and Quebec designed to accommodate commuter cyclists, leaving the seawall for more recreational users, as shown in Figure 6. With improved connections to the Quebec/Ontario bikeway, seawall and

Carrall Street, the cycling facility on the new Dunsmuir Connection to the downtown is expected to accommodate upwards of 10,000 cyclists a day shortly after construction.



Figure 6: Proposed cycling routes in NEFC

With additional network connections and expansion of two-way streets in the proposed replacement street network, there are opportunities to provide new, more direct and intuitive bus routes to serve NEFC and the surrounding communities, this includes the ability to provide future streetcar service.

The replacement network also includes expanded sidewalks and more direct and accessible connections to the downtown on both the Georgia Street and Dunsmuir Street alignments, encouraging walking as a safe and comfortable travel choice.

1.1 Goods Movement

Pacific Boulevard, Expo Boulevard, the Georgia Viaduct and the Dunsmuir Viaduct are designated truck routes, providing needed connectivity and capacity for the movement of goods by vehicles ranging from small cube vans to large 75 foot semi-trailers both to and through the NEFC area.

The proposed new Georgia Ramp connecting from Beatty Street to Pacific Boulevard, and the new Pacific Boulevard from Georgia to Main Street will be designed to accommodate full size goods movement trucks, transit buses and coaches and would replace the Georgia and Dunsmuir viaducts on the City's truck route network, preserving route connections present today and providing additional connectivity and access options.

Similarly, it is also anticipated that the Georgia Ramp and the new Pacific Boulevard between Georgia Street and Main Street would become a part of Translink's Major Road Network (MRN), as a replacement of the existing MRN connection on the Georgia Viaduct from Beatty Street to Main Street.

1.2 Events at Rogers Arena and BC Place

Rogers Arena and BC Place rely on the City's street network to provide access to their stadiums for event attendees. Access to the stadiums is needed by a range of modes including private vehicle, coach, taxi, transit, bicycle and foot, and for access and staging for large semi-trailer trucks supporting event infrastructure and inventory pre and post events. This is also relevant to local business such as Costco.

The City has worked closely with the operational managers of Rogers Arena, BC Place and Costco to develop conceptual designs which provide the necessary truck access and on-street staging that their respective operations require and to develop construction methodologies and traffic management concepts which will minimize the short term impacts during construction.

In the long term, the proposed replacement street network improves vehicular access to Northeast False Creek and the associated developments, and makes it more comfortable and convenient to travel to and through the area by all modes. The proposed new Georgia Ramp with its improved pedestrian permeability and the proposed repurposing of the east end of the Dunsmuir Viaduct as an elevated park adjacent to Rogers Arena are seen as significant improvements to overall pedestrian access and egress to/from the two stadiums and offer opportunities for event day programmable public space. (Source: 2015 Parsons North East False Creek Transportation Study, Phase 3 Event Management)

1.3 The replacement street network - East/west arterial connection to Clark Street

With the planned relocation of St Paul's hospital to the False Creek Flats, and in consideration of community concerns with the ongoing function of Prior and Venables Streets as an arterial, staff see an opportunity to continue the Burrard Inlet Rail Line Grade Separation Strategy through the construction of a new arterial overpass of the B.I. rail line south of Prior and Venables Street, allowing the concurrent downgrading of Prior and Venables Street to a local street. This investment would provide a reliable arterial connection between the future St Paul's hospital and areas to the east, which would be unfettered by rail movements and would protect Port activities for the long term. Staff recommend that this initiative be pursued in tandem with the viaducts replacement project.

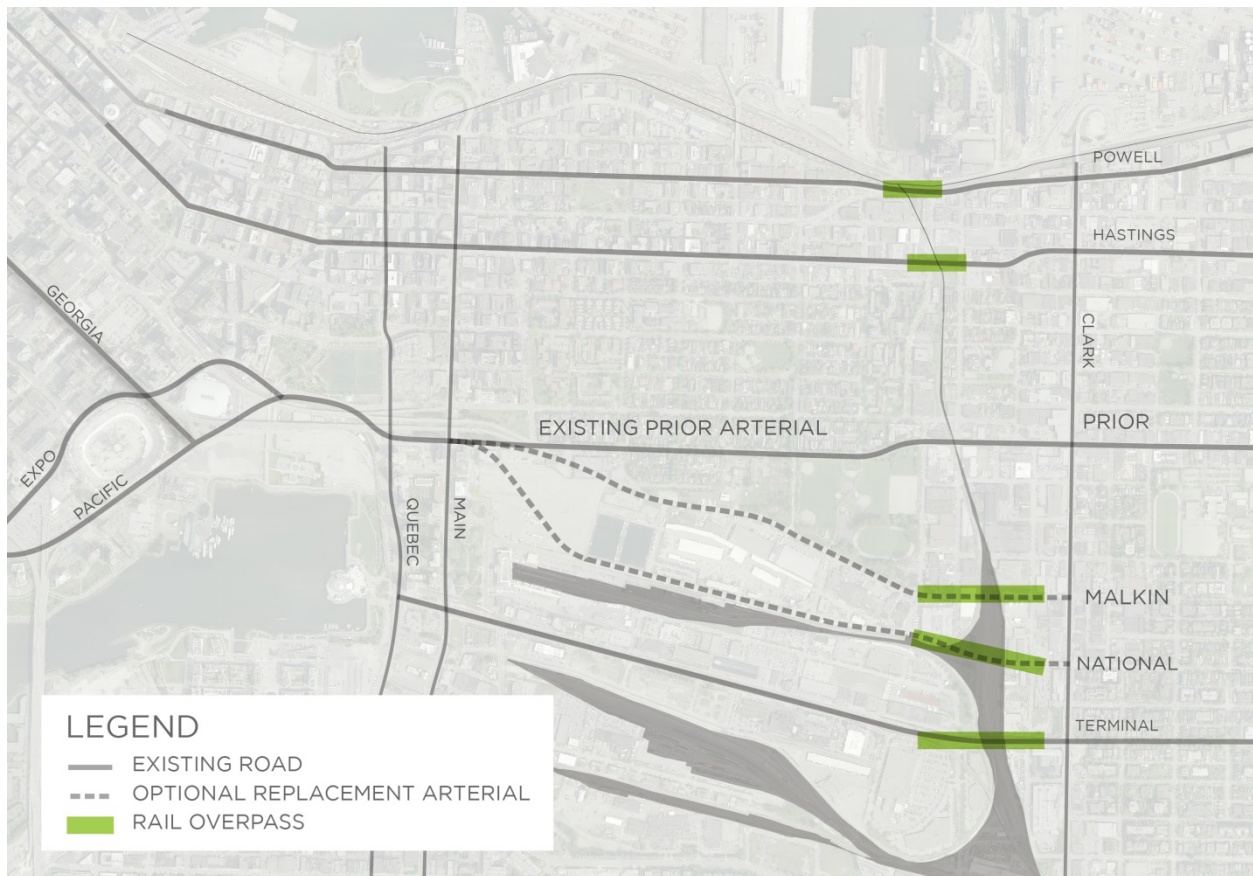


Figure 7 - Burrard Inlet Line strategy map, with options for a new east-west arterial.

Analysis of replacement arterial options is ongoing through the False Creek Flats planning process. There are a number of potentially impacted stakeholders and requirements for external funding partners including railway operators and the federal government. As such, timing for construction of a new arterial is uncertain. Staff are working with the Gateway Transportation Collaboration Forum, which includes representatives from rail way operators, BC Ministry of Transportation and Infrastructure, Port Metro Vancouver, Transport Canada and the construction industry, among others, to prepare a business case and identify the appropriate existing federal funding program for application.

Similar to the Powell Street Overpass project, construction of this proposed new arterial is expected to deliver significant safety improvements for road users and railway operators, a more reliable and resilient arterial road network with greater travel time reliability for goods movement and transit to and from the downtown, and more efficient rail movements between the False Creek Flats rail yards and goods movement facilities on the south shore of Burrard Inlet. This investment would enhance opportunities for increased rail and port related activities in line with the Pacific Gateway expansion, with concurrent local and national economic benefits.

Staff recommend that the arterial function of Prior Street be downgraded to a local street in conjunction with the completion of a new east/west arterial street identified through the False Creek Flats planning process as the recommended route (Recommendation G of this report).

2. PARKS AND OPEN SPACE

Through the proposed *Northeast False Creek Conceptual Plan* (Appendix A), new parks and open spaces can be achieved in the area including approximately 2.7 acres on the Plaza of Nations site and a minimum of 13.75 acres in the new Creekside Park Extension, Carrall Street conversion to park, and Dunsmuir elevated park. Northeast False Creek will also be the site for a new entertainment district that anchors the stadiums and cultural facilities in the area to the waterfront.

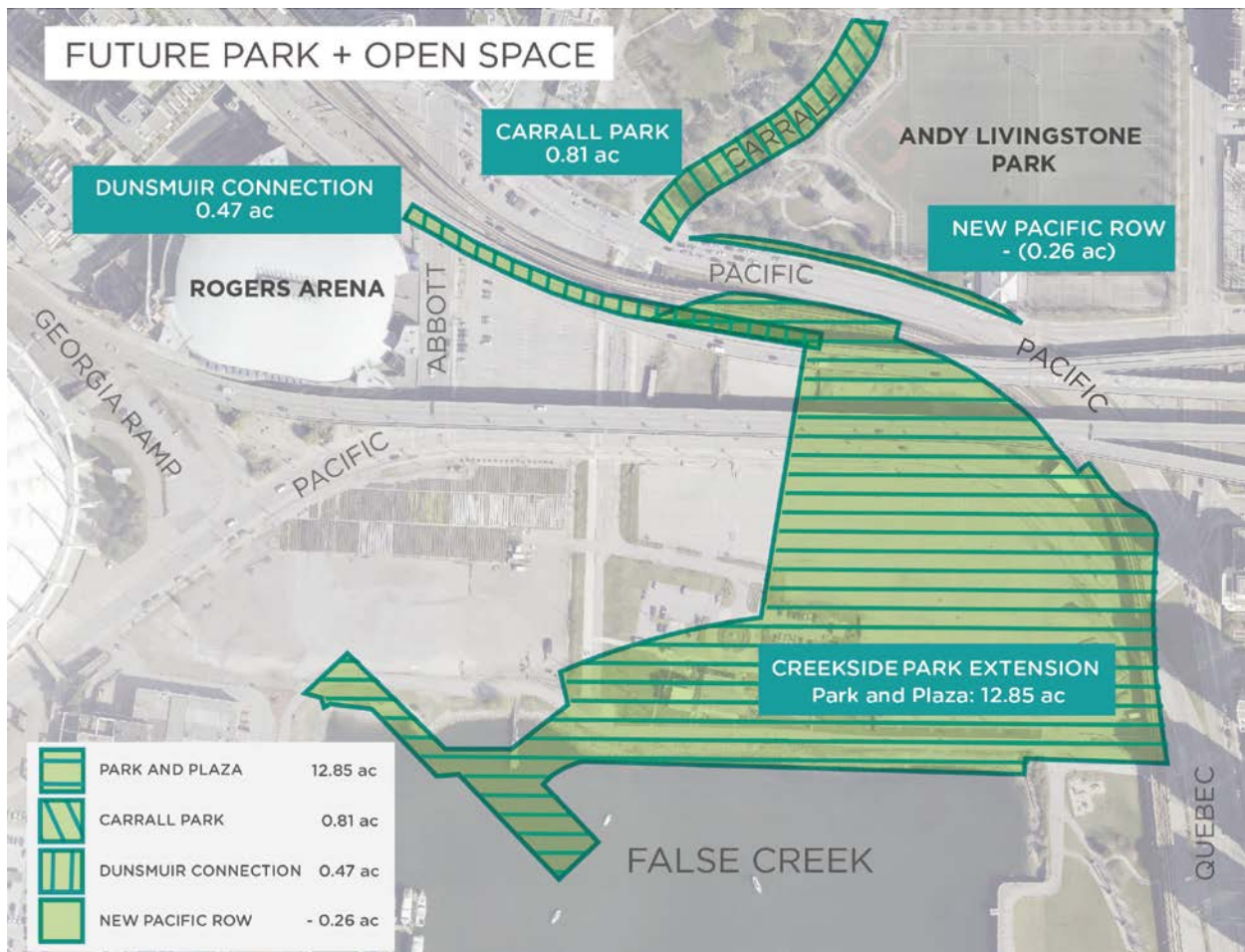


Figure 8. Future Parks and Open Spaces

2.1 Creekside Park Extension

The removal of the viaducts presents the opportunity to build a truly remarkable park in the heart of Vancouver. This new, prominent park will complete the series of public spaces along the False Creek waterfront and reconnect the seawall as a contiguous and engaging loop. This park represents the fourth and final major park planned as part of the *False Creek North Official Development Plan* (1990). The timing of the delivery of Creekside Park Extension is tied to various agreements between the Province of B.C. and Concord Pacific and/or the City. These agreements provide for the future Creekside Park Extension to accommodate contaminated soils excavated from development of the adjacent 6C neighbourhood and certain other lands. As such, presently only when NEFC Area 6C is developed can the entire Creekside Park Extension be completed.

Creekside Park Extension will be distinct from other parks in the city due to its:

- Larger size in relation to other parks in the downtown core.
- South facing orientation adjacent to the city's Entertainment District.
- Central location and easy access to rapid transit.
- Accessibility to a number of neighbourhoods like Downtown, Gastown, Chinatown and Strathcona, False Creek Flats and the Olympic Village.
- Connection to the water at the head of False Creek.
- Proximity to the indoor sports and recreation venues of Rogers Arena and BC Place.

This park will be a prized amenity for local residents and a popular destination for people from across the city and region. It will have a diverse program of spaces for play and relaxation supported by a great lawn for unstructured play and to host cultural events and festivities. Access to the sports amenities already available at Andy Livingstone Park will be strengthened by a new north-south path for pedestrians and cyclists. The park will naturally extend to the new pier and plaza space at the foot of Georgia Street (Georgia Wharf) and connect to the existing Creekside Park by Science World.

Policy for this area of False Creek, a result of 25 years of work, has revolved around the following general themes which will be refined in the future stages of park planning and design:

- Sustainability: Lead with a lighter footprint; reduce greenhouse gases; improve rainwater management, manage soil and groundwater contamination.
- Access to Nature: Promote biodiversity and the creation of foreshore habitat.
- Play for All: Provide access to open space and opportunities for informal physical activity, youth oriented sport and adult play.
- Access to the Water: Activate the water's edge; incorporate non-motorized boating.
- Integration and Permeability: Bringing together surrounding neighbourhoods.
- Culture: Incorporate event spaces; opportunities for cultural expression; and celebration of historical and environmental topics.
- Social: Provide places that foster social interaction and casual gathering.

2.2 Creekside Promenade

A new active edge along the waterfront, linking the Georgia Wharf to the new contiguous portion of Creekside Park Extension, will provide flexible space that can occasionally accommodate expanded programming in the park. It can also be a place of pop-up-commerce and community markets during summer months. This promenade will offer a new experience along the seawall that will draw nearby residents, people working in the area, and visitors alike to enjoy the activities and unique setting.

2.3 Dunsmuir Connection - Elevated park connecting the creek to the downtown

As part of the re:CONNECT ideas competition, which included more than 15,000 votes and more than 1,500 online comments, an elevated park idea was identified by 55% of the 104 submissions and received a significant amount of interest from the public. This idea can be realized by repurposing a small portion of the existing Dunsmuir viaduct between Beatty Street and Abbott Street into an elevated park, providing improved access into Rogers Arena, new programmable public space adjacent to the arena, and by working collaboratively with adjacent landowners to connect this elevated park through the new developments to the future Creekside Park Extension. Seismic improvements to the small section of the viaduct are needed to retain them as an elevated park.

With inspiration stemming from New York's High Line Park, this unique public space will help connect the new Creekside Park Extension to the downtown and provide active transportation options from the historic communities to the east along Union Street, as well as communities to the south along Quebec Street. In addition to being an important active transportation route, the Dunsmuir Connection will provide additional public space for relaxation and enjoying views of the city, creek, and mountains.

2.4 Carrall Street Conversion to Park

With the removal of the viaducts, a portion of Carrall Street located between Keefer Street and Pacific Boulevard is no longer needed for vehicular movement and as such can be converted to park. This represents a unique opportunity to better integrate the east and west sides of the park and ensure it is a safe, comfortable and welcoming park. Future programming and options to address contaminated soils will be subject to planning and conceptual design, led by the Park Board, as part of the next phase of work as outlined in Appendix B.

2.5 Modifications to Andy Livingstone Park

The realignment of the Carrall Greenway as a more direct north-south route will strengthen the connection between the new waterfront park and Andy Livingstone Park, and enable the two parks to read as one larger green space. Scenarios for the insertion of this greenway and associated improvements to the park will be explored as part of the next phase of work.

The construction of the new Pacific Boulevard will also impact the southern edge of Andy Livingstone Park (as shown in Figure 8), and require modification of the existing contamination management system, amendments to legal documents for the park, and the replacement of the existing field house and covered skate park located adjacent to Quebec Street. These changes will be explored as part of the parks conceptual planning and design to be completed in accordance with Appendix B.

3. New development opportunities

Northeast False Creek represents the final piece of development along the north side of False Creek and last remaining waterfront community in the downtown. In 2009, City Council approved the *Northeast False Creek: Directions for the Future* report that provided policy direction for future growth and public benefits. The plan at that time included the Georgia and Dunsmuir viaducts. However, the removal of the viaducts presents opportunity to unlock additional benefits not contemplated, including:

- A larger, more connected and contiguous Creekside Park Extension.
- A new Entertainment District anchored where W. Georgia Street meets the False Creek waterfront.
- Additional job space close to transit and amenities.
- Increased affordable housing opportunities.
- Additional public benefits.
- A reconnected Main Street with new local businesses and shop fronts.

Figure 9 shows the reconfigured street network and parcels in Northeast False Creek with the viaducts removed. Specific changes to areas 6C, 10C, and the two City blocks located east of Quebec Street between Prior Street and Union Street become possible to better integrate with the new street network and provide addition benefits to the area. Other areas of Northeast False Creek including the Plaza of Nations site and Rogers Arena site are not part of the proposed changes in this report.

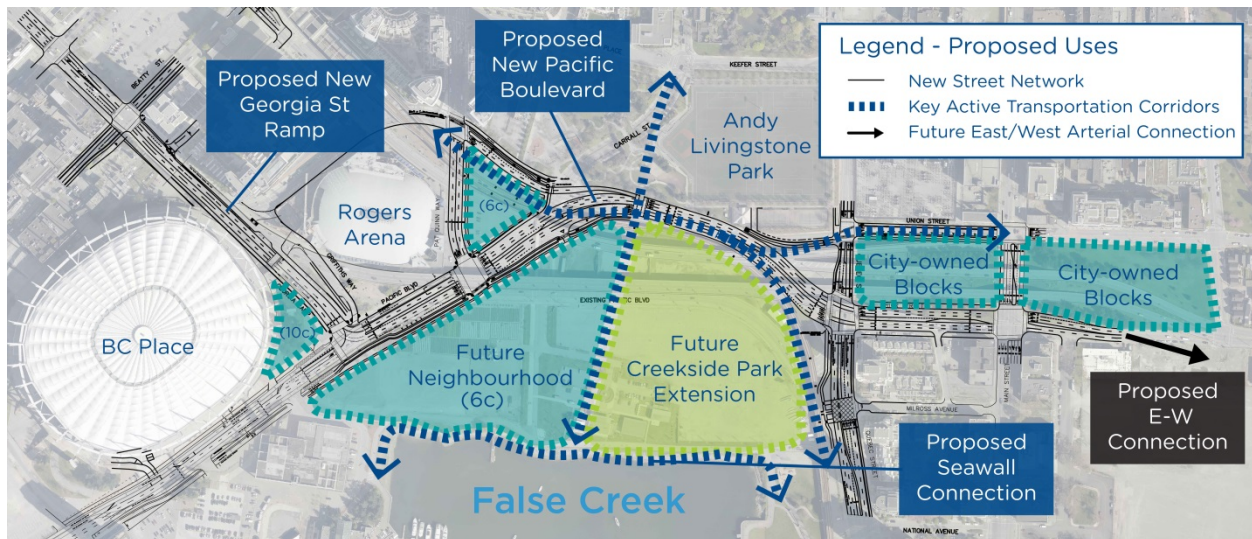


Figure 9: Proposed street network, active transportation connections, and parcel configuration

	Current Policy (gross density)	Proposed Policy (gross density)
Area 6C	FCNODP (1990): 415,719 sq.ft of job space NEFC: Directions for the Future (2009): 1.36M (including 220,000 sq.ft of commercial) on Concord lands	2M - 2.5M (including 220,000 sq.ft of commercial) on City of Vancouver and Concord lands
Area 10C	NEFC: Directions for the Future (2009): 30 storey tower with job space	30 storey tower with mix of residential and job space (density to be determined through future planning)
2 City blocks	0	850,000 sq.ft (including 25,000 sq.ft of commercial)

Table 1: Before and after comparison of potential gross densities on impacted sites.

As an extension of the downtown, the removal of the viaducts creates additional land that can accommodate new growth close to jobs, amenities, and services. The *Northeast False Creek: Directions for the Future* (2009) plan provides guidelines for the build out of NEFC with the viaducts in place. However, if the viaducts are removed, Area 6C, 10C, and the two City-owned blocks are impacted.

3.1 False Creek North Area 6C

The *Northeast False Creek: Directions for the Future* (2009) report identified the opportunity to accommodate 1.36 million square feet of new density on Concord’s area 6C, including 220,000 sq.ft of non-residential uses to meet objectives of the *Metro Core Jobs and Economy Land Use Plan*.

To accommodate the new street network that replaces the viaducts, there is an opportunity to reshape the parcel configuration and land uses to maximize the opportunities associated with a new direct connection to the Downtown on Georgia and Dunsmuir streets as well as the exceptional waterfront location that anchors a new “Entertainment District” at the foot of Georgia Street. The reconfigured 6C parcel shown in Figure 10 is approximately 11 acres in

size (compared to the existing 6C parcel size of 7.91 acres), and includes a significant amount of City-owned land that was previously used as road.

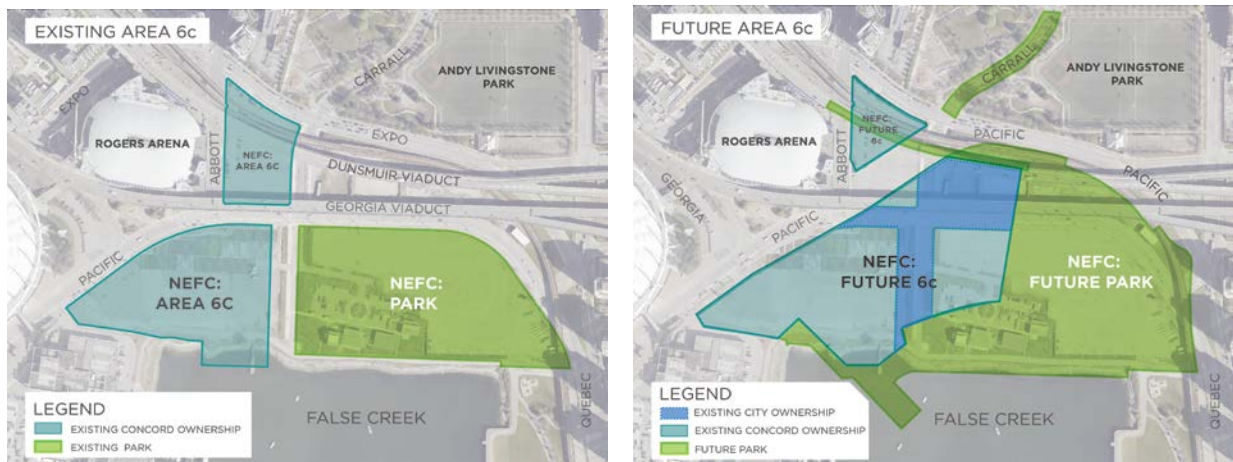


Figure 10: A comparison of lands available for the Creekside Park Extension and development in area 6C before and after the removal of the viaducts.

<i>Current Plan (acres)</i>		<i>Proposed Plan (acres)</i>
7.91	<i>Concord owned developable land</i>	7.85
0	<i>City owned developable land</i>	3.3
9 acres Creekside Park Extension + 2.3 acres of public space under viaducts	<i>Parks and Open Space</i>	13.88

Table 2: Comparison of parcel size for park and NEFC Area 6C before and after the removal of the viaducts.

Note: Acreage includes the local street network that will serve future development.

There are a number of reasons why staff believe that the reconfigured lands and parks resulting from the removal of the viaducts could support more residential and non-residential density in the area than contemplated in the *Northeast False Creek: Directions for the Future* (2009) policy document:

- There is almost forty percent more land available for development (~11 acres versus ~7.9 acres previously). The additional 3.3 acres is currently road and land under the viaducts owned by the City which will be available for development.
- With the connection of Georgia Street to Pacific Boulevard, the possibility for future transit on the replacement road network, and the improved pedestrian and cyclist connections, the neighbourhood would now be better integrated into the Downtown and surrounding neighbourhoods.
- The larger parks and open spaces, and the removal of the viaducts structure, provides more “breathing space” for additional density and ensures livability.
- From an urban design perspective, possible densities in the area should generally reflect the average densities built along other portions of False Creek North, Downtown South, Triangle West, or Coal Harbour (generally Floor Space Ratio 4.5 - 6.5).

In consideration of the new opportunities for development outlined above and to deliver on Council's direction to strengthen the area for festivities and entertainment and support job space in the Downtown, the proposed *Northeast False Creek Conceptual Plan* (Recommendation A in this report) recommends that the new mixed use neighbourhood should include:

- A mix of job space and mixed housing opportunities.
- A maximum gross density between 2.0 - 2.5 million square feet of residential and non-residential uses (combined density on City of Vancouver and Concord owned portions of 6C).
- A minimum of 220,000 square feet of new job space that anchors the entertainment district to the False Creek waterfront and contributes towards meeting goals of the Metro Core Jobs and Economy Land Use Plan.
- A minimum of 20% of units delivered as affordable housing consistent with Council-approved policies set out in the False Creek North ODP and the Downtown Eastside Local Area Plan (see Appendix A).
- Other public benefits achieved through increased density.

The net densities of this new mixed-use neighbourhood would be similar to those further to the west at Davie Street and Marinaside Crescent.

New development in NEFC area 6C would adhere to all Council-approved view corridors with building heights stepping up from the water and park towards West Georgia Street and Pacific Boulevard. The tallest towers would be located at the intersection of West Georgia Street and Pacific Boulevard. This would help minimize shadowing on the future Creekside Park Extension and Georgia Wharf, Andy Livingstone Park, and International Village School. Careful consideration of tower placement, floor plate sizes, and tower separation will maintain important views from the park and seawall to BC Place stadium, and allow for better access to sun on the sidewalks, privacy for residents, and active commercial streets. A minimum 80 foot tower separation will be required for all new developments in this area. These development parameters are outlined in the *Northeast False Creek Conceptual Plan* (Appendix A), with a potential build-out rendered in Figure 11.

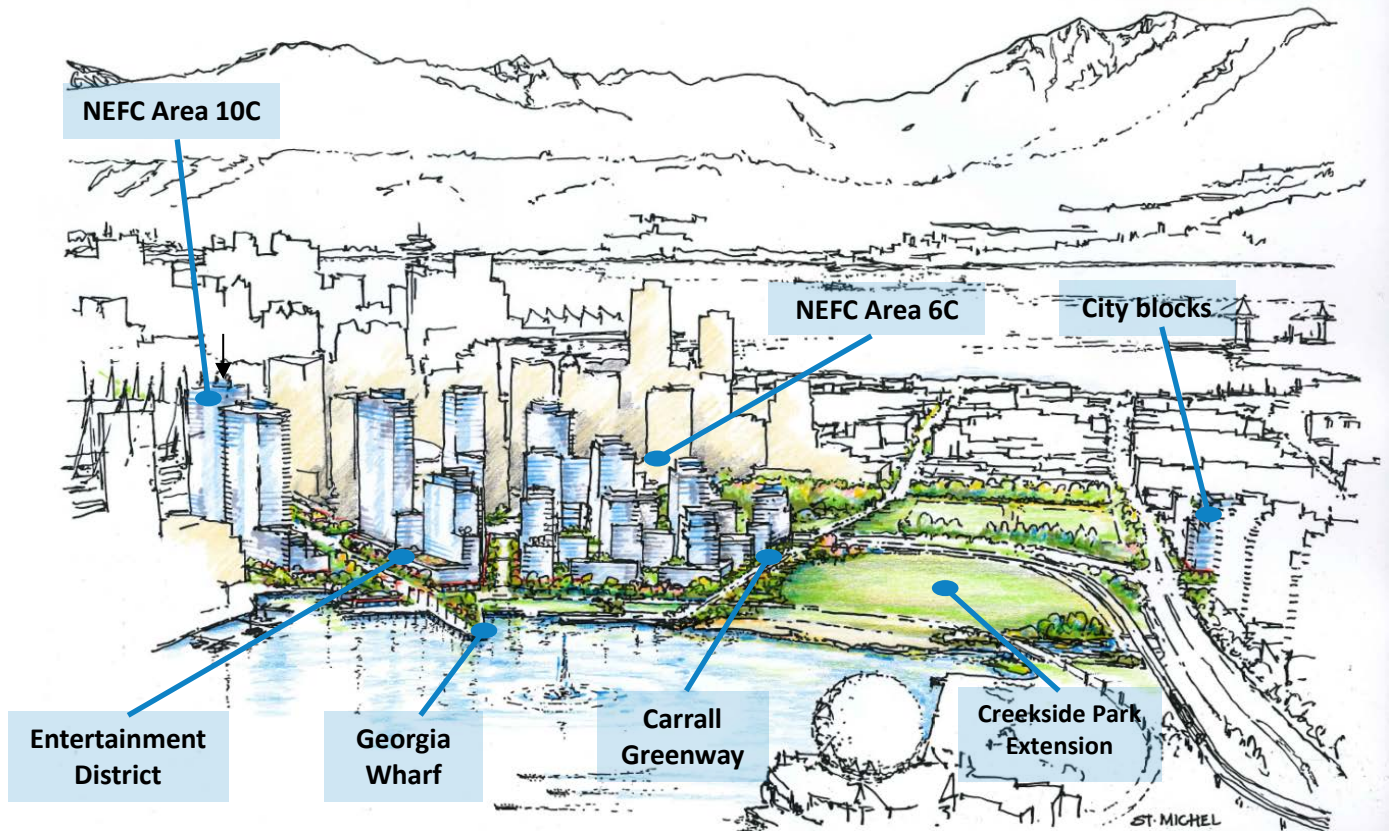


Figure 11: Conceptual rendering of Northeast False Creek with viaducts removed, illustrating approximately 2.0-2.5 million gross ft² of residential and non-residential space on NEFC Area 6C, and 13.75 acres of parks and open space, consistent with the urban design policies of the *Northeast False Creek Conceptual Plan*.

3.2 False Creek North Area 10C (see Figure 9 for site location)

NEFC Area 10C is an existing future development site located adjacent to BC Place Stadium. To accommodate the new Georgia street extension alignment from Citadel Parade to Pacific Boulevard, a portion of NEFC area 10C is impacted. The new alignment offers an improved connection from the Entertainment District to the downtown and False Creek waterfront. It is important that this new connection not only be better connected for all transportation modes, but be designed in a way to welcome people into the downtown. As such, Staff recommend that Council direct Staff to prepare an application to rezone this site to accommodate a mixed-use building and increased heights up to Council-approved view cones to achieve the necessary street right-of-ways, access agreements, and sidewalk improvements needed to integrate the site with the existing BC Place concourse and new Georgia Street ramp sidewalk. Additionally, it is important that the parkade for the new 10C building be built prior to the Georgia Ramp being constructed as a significant portion of the parkade will be on PavCo land beneath the east end of the proposed new



Figure 12: Conceptual illustration of the integrated Georgia Ramp (centre) with new 10C building (shown on the left) and new commercial building (shown on right).

Georgia Street extension. Construction in advance, will allow cost-effective use of the parkade roof structure to support the new street connection, and will avoid high cost construction methodologies and parkade design inefficiencies if the parkade were to be built after construction of the new Georgia Ramp.

As outlined in the *Northeast False Creek Conceptual Plan* (Appendix A), the tower should be designed to reflect the scale of the area with increased floor plate sizes up to 10,000 ft² in size and sculpted in a way to maximize views from the Georgia Wharf to the stadium.

A small commercial building site is also possible on the north side of the new West Georgia Street alignment to add an active frontage and integrate new connections between the Rogers Arena concourse and West Georgia Street as shown in Figure 12.

3.3 Future City blocks (see Figure 9 for site location)



Figure 13: Conceptual rendering of two City blocks

The removal of the viaduct down ramps will free up two city blocks of land located immediately east and west of Main Street between Prior Street and Union Street. Future land use on the two City-owned blocks will include a mix of new job space, housing and possibly civic and/or community uses. New business opportunities will front onto Main Street and allow for a contiguous retail frontage.

These two City blocks are within the area covered by the *Downtown East Local Area Plan* (2014). That plan and previous Council direction from 2013 identifies, new mixed income housing opportunities will be integrated into the development of both blocks above and behind the retail spaces. This housing will include a mix of market and non-market housing opportunities with the specific mix to be determined through more detailed planning for the area. The City is also exploring options to locate a public safety facility on site, as there are nearby police buildings and fire halls that will eventually need to be renewed. There may also be a need / opportunity for community and non-profit space such as a childcare or a cultural facility.

The density of the two blocks should reflect the historic character of the area to the north where average densities are about 3.5 Floor Space Ratio. This would provide approximately 850,000 sq.ft of new development opportunity on both blocks. More detailed design and land use opportunities can be explored through future planning in consultation with local residents.

Improvements along Main Street between Prior and Union Streets will include new sidewalks and street trees that allow for easy walking through the area. The sidewalk will be designed to include spaces for walking, patios, street trees and utilities. The new Pacific Boulevard will include an 8 metre buffer between the street edge and the existing building frontages. This buffer area will be designed to mitigate potential noise impacts associated with the new street, and be designed with input from residents living in the adjacent buildings.

4. Progress on Council directions

In June 2013, Council voted unanimously to move forward with the final phase of planning work for removal of the Georgia and Dunsmuir viaducts. Along with creating opportunities for housing and public green spaces, Council asked staff to pay particular attention to:

- Strengthening the area for festivals and entertainment.
- Improving the road network.
- Incorporating an urban agriculture centre of excellence including the potential for an urban food production centre and garden system.

Council also directed staff to prepare a consultation program to facilitate meaningful discussions with residents, businesses, and stakeholder groups as future planning takes place for the detailed land use, street design, and park planning in NEFC. Staff have included with this report a recommended approach to advancing detailed planning and design for:

- The NEFC community.
- Parks and open spaces.
- The transportation network.

Staff have worked to address each of Council's resolutions from the *Dunsmuir and Georgia Viaducts and Related Area Planning Report (2013)* as identified in the *Council Authority/Previous Decisions* section of this report:

Resolution A

This report identifies the strategy needed to advance towards amendments to the False Creek North Official Development Plan (ODP). At this time, elements of this work aren't complete. However, Staff have prepared the necessary planning for street network improvements, future site plan, land use, range of densities, and financial strategy needed to obtain agreement in principle from the landowners (Pavco and Concord Pacific). Staff are seeking a Council decision on the future of the viaducts to provide certainty needed to advance the necessary detailed designs and negotiate the agreements needed to implement this project.

Resolution B

City staff have initiated a planning process for the Eastern Core also known as the False Creek Flats. This planning initiative will put a plan in place that allows the area to flourish as a more productive, sustainable, and connected area of our city. This planning process will provide certainty for the new arterial street that will replace Prior Street once funding has been secured through the necessary partnerships. Currently, two primary options are being reviewed in detail through the False Creek Flats process including Malkin Avenue and National Street. Figure 7 shows the possible arterial alignments that will be explored. The False Creek Flats process is anticipated to result in a plan for the area to be considered by City Council mid-late 2016.

Resolution C

The eleven Council-approved Guiding Principles have helped guide and shape the recommended approach to replace the viaducts with a new more connected and sustainable street network, the proposed park and plazas, the role of the remaining development sites in the study area, and the outreach and engagement that has taken place. These principles are carried forward on the *Northeast False Creek Conceptual Plan* (Appendix A) to guide ongoing area planning.

Resolution D

In 2013, Council directed staff to *“convene a Viaducts Work Program Roundtable at least three times per year for the purpose of sharing information with interested parties on the status of the implementation of both the Viaducts Work Program and the related consultative process.”* Due to a legal challenge brought following Council’s direction, it was not possible for Staff to work on this Council direction until recently. Following the completion of the lawsuit, City staff held two NEFC Joint Working Group roundtable meetings in June and October, 2015. These meetings were supplemented by more than 60 other stakeholder events and meetings. Moving forward, staff intend to continue to engage interested residents, business owners, and stakeholder groups in a meaningful way as described in *Appendix C*.

Resolution E

The proposed Northeast False Creek Conceptual Plan (Appendix A) includes provisions for the remaining development sites that will enhance and strengthen the unique role this area plays anchoring Georgia Street the False Creek waterfront. A minimum of 220,000 sq.ft of new job space and large public plaza will be developed at the foot of Georgia in NEFC Area 6C. Improved connections to and from the downtown, nearby stadiums, future housing, Creekside Park Extension, and direct access to the seawall will help foster a festive place that anchors a new ‘Entertainment District’. Critical movement and access for the stadiums will also be maintained and in some cases improved, under the proposed street design ensuring continued attraction of major events and festivities.

The engagement process being undertaken as part of the Viaducts and False Creek Flats work was developed with input from a variety of local residents, business owners and stakeholders from the area who showed interest in shaping the process. Feedback was received through an online survey and stakeholder interviews. Appendix B includes the recommended consultation plan and work program.

With respect to Council's direction to increase the efficiency of the street network, the comprehensive transportation analysis and modeling of the existing road network and the proposed replacement network shows that the proposed street network can accommodate 100% of the existing traffic present in the study area, creates efficient movements of goods and services, and offer better performance for all modes now, and with future developments in the area.

Resolution F

The False Creek Flats planning process is advancing the objective to create an urban food "centre of excellence" that can benefit the city as a whole. Consultations and analysis is currently underway to better understand and explore this opportunity in more detail. The False Creek Flats process is anticipated to result in a plan for the area to be considered by City Council mid-late 2016.

Resolution G

Appendix B includes a recommended approach to consultation for future planning and design work in Northeast False Creek. It builds upon stakeholder defined principles for engagement including:

- A transparent process that uses a variety of in-person and online engagement tactics.
- Focusing on opportunities that build capacity and focus on positive group dialogue.
- Includes eye-catching information on-site and go where people are.
- Leverages the use of the web.

Resolution H

Staff have responded to Guiding Principle 11 as described in Sections 1 and 6 of this report.

5. Land exchange, parcel reconfiguration and related development matters

Prior to any future rezonings within this area, significant issues must be addressed with the landowners and the Province. The ability of the City to fund the removal of the viaducts, construct the new road network, address the required environmental contamination issues and obtain the community/public amenity benefits (i.e. park space, seawall, walk/bike bridge, affordable housing, childcare, etc.) are impacted by prior agreements dating back to the original sale of these lands by the Province, the prior commitments made by the landowners, the community amenity contributions generated, Development Cost Levies (DCLs) applicable to any development, and the potential lease or sale of some City owned land that would no longer be encumbered by the existence of the viaducts structures and not required for purposes of the proposed road network. Staff will be undertaking extensive negotiations with the landowners and the Province over the coming year related to these matters, and may need to report to Council for the appropriate authorities with respect to related transactions.

6. Public consultation

Since June 2013, there has been a significant amount of consultation and outreach including:

Consultation Activity	Quantity	Participation
Stakeholder meetings	38 meeting	~570 participants
Joint Working Group Meetings	2 meetings	~40 participants
Public Open Houses	13 events	~1150 participants
Science World Exhibit	2 weeks	~20,000 views
Online (and hard copy) Questionnaire	1 questionnaire	117 completed
City of Vancouver Twitter	1 account	5 tweets, 14 re-tweets, 7 favourites
City of Vancouver Facebook	1 account	1 post (25,882 post total reach, 151 comments, 404 likes, 80 shares)
Notification Activity	Quantity	Distribution/Hits
City of Vancouver Website	2 webpages	28,053 page visits*
Media Coverage	31	Local, Provincial and National media

*Since June 2013

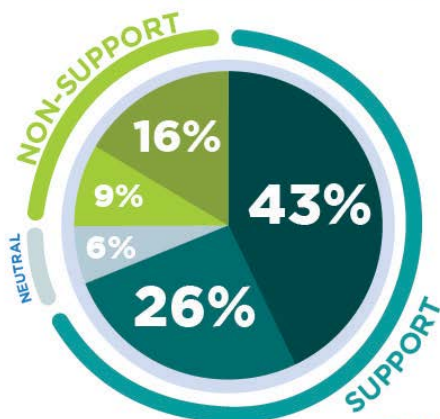
Table 3: 2013-2015 consultation summary table

Overall, the feedback continues to be very supportive of the replacement of the viaducts with the new street network and the opportunities to advance housing affordability objectives, additional parks and open spaces, improved connections through the area, and the opportunities associated with a new Entertainment District at the foot of West Georgia Street.

Based on the meetings held, staff have heard that the concerns that were raised previously have been addressed as outlined below.

Question:

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



Strongly Supportive	282
Supportive	171
Neutral	40
Opposed	57
Strongly Opposed	108
TOTAL RESPONSES	658

69% indicated either **support**, or **strong support** for the overall concept.

In 2013, 69% of people indicated either support, or strong support for the overall concept of removing the Georgia and Dunsmuir viaducts and the replacement street network. 6% weren't sure and remained neutral. And 25% either did not support or strongly did not support the concept. Of the 25% who did not support, the following five key concerns were identified. Over the past years, City Staff have undertaken analysis through an extensive set of consultant studies as listed in Appendix E to better understand and address these as follows:

6.1 Concern: Difficulty accessing downtown for people and goods, travel time delays

How important are the viaducts for people accessing the downtown?



Approximately 94% of person-trips to and from the downtown do not involve a vehicle trip over the viaducts. Combined, the viaducts support approximately 45,000 person trips by vehicle in a 24 hour period; this represents approximately 6% of person trips to and from the downtown by all modes in a 24 hour period, (Source CoV 2013 Fall Screenline Data).

The new bi-directional Georgia Ramp will provide four vehicular lanes to access downtown from Northeast False Creek as compared to the five lanes on the Georgia and Dunsmuir viaducts today. This ramp will preserve the network connection from Main Street and Prior Street (or alternative through the False Creek Flats) offered by the viaducts today, and will add new direct connections from the downtown to Quebec Street, Pacific Boulevard and Expo Boulevard.

The ramp and new surface streets are designed for full size goods movement trucks, transit and coach buses. With appropriate intersection design and traffic signal optimization, marginal travel time increases of 1-3 minutes, depending on route are expected during peak periods.

6.2 Concern: Permanent diversion of traffic to neighbouring communities

With a growing population and employment base, the City needs to support a significant increase in person trips in the years ahead. In order to protect communities from the impacts of increased commuter vehicles on local neighbourhood streets and to protect travel time reliability on our arterial streets for goods movement trucks and transit buses, the City has and continues to invest in projects that support increased use of transit and active transportation options. Projects such as the proposed viaducts replacement helps achieve this by providing more comfortable, complete and connected streets.

A replacement street network concept has been developed with sufficient capacity and connectivity to accommodate 100% of the traffic that currently uses routes in the study area (Georgia Viaduct, Dunsmuir Viaduct, Pacific Boulevard and Expo Boulevard). In addition, this network has been shown through comprehensive analysis and modeling to perform better when considering future local traffic needs in Northeast False Creek once current and planned

future developments are constructed. With these conclusions from the transportation analysis, the City does not anticipate any net increase in traffic on alternate routes. (Source: 2015 Parsons Northeast False Creek Transportation Study, Phase 2 Transportation Multi-Modal Assessment).

6.3 Concern: Disruption to existing business operations and events at the two stadia.

The City has worked closely with the operational managers of Rogers Arena, BC Place and Costco to develop conceptual designs which provide the necessary truck access and on-street staging that their respective operations require and to develop construction methodologies and traffic management concepts which will minimize the short term impacts during construction.

In the long term, the proposed replacement street network improves vehicular access to Northeast False Creek and the associated developments, and makes it more comfortable and convenient to travel to and through the area by all modes. (Source: Parsons North East False Creek Transportation Study, Phase 3 Event Management)

6.4 Concern: Length of construction and associated traffic impacts

Construction of the replacement street network is expected to take approximately two years generally in accordance with Appendix D. The City has worked closely with professional transportation engineers to develop a traffic management strategy which will maintain access to local business and residents during construction and minimizes the need to detour traffic.

The conceptual traffic management plans, will allow Pacific Street and Expo Boulevard to remain open during construction and includes the phased conversion of the Dunsmuir viaduct to two-way operation while the Georgia Viaduct is removed and the Georgia Ramp is constructed, ensuring there will be continuous access to the downtown for all routes in the area. The City's grid network of streets have capacity to accommodate the anticipated diversion of traffic during construction. (Source: 2015 Parsons North East False Creek Transportation Study, Phase 2 Transportation Multi Modal Assessment, MMM Group NEFC Roads and Utilities Design Report)

6.5 Concern: Ongoing dependence of Prior/Venables corridor as an arterial connection

Prior and Venables Streets provide an important arterial connection from the viaducts at Gore Street to Clark Street, providing a city serving function for the movement of people and goods in addition to serving the needs of the local community. Historically, traffic volumes on this corridor have followed a similar trend as the balance of routes to and from the downtown, experiencing an approximate 20% reduction in 24 hour volumes in the last 20 years.

If this corridor were to remain the arterial connection to Clark Street, construction of the viaducts replacement road network is anticipated to result in a modest decrease in vehicle volumes and speeds on the corridor.

The corridor has also seen a historic reduction in number of vehicle collisions, and an independent review of the type and frequency of collisions along the corridor concluded that there is nothing inherent in the engineering design or operation of the street that would be considered a safety concern that requires immediate rectification. (Source: 2015 Urban Systems Prior & Venables Street In Service Road Safety Review)

As described in Recommendation G, Staff will monitor the corridor along with the rest of the city's street network, and will implement improvements on a city-wide priority basis. Since 2012 the City has:

- Relaxed parking restrictions on the north side of Prior Street, allowing parking for longer durations.
- Increased pedestrian walk times at key intersections.
- Installed new traffic signal displays.
- Installed pedestrian countdown timers at key intersections.
- Completed tree limb removals to improve signal visibility.

With the planned St Paul's hospital relocation to the False Creek Flats, and in consideration of community concerns with the ongoing function of Prior and Venables Streets as an arterial, staff see an opportunity to continue the Burrard Inlet Rail Line Grade Separation Strategy through the construction of a new arterial overpass of the B.I. rail line south of Prior and Venables Street, allowing the concurrent downgrading of Prior and Venables Street to a local street. This investment would provide a reliable arterial connection between the future St Paul's hospital and areas to the east, which would be unfettered by rail movements. Staff recommend that this initiative be pursued in tandem with the viaducts replacement project.

Analysis of replacement arterial options is ongoing through the False Creek Flats planning process and with a number of potentially impacted stakeholders. Timing for construction will be determined once external funding partners including railway operators and the federal government have been committed.

7. IMPLEMENTATION

Timeline of Next Steps

The *NEFC Work Program* (Appendix B) and *NEFC Consultation Strategy* (Appendix C), provides a breakdown of the proposed Northeast False Creek work program needed to implement the recommendations in this report and deliver upon the opportunities. In summary, it is anticipated that following a decision from Council:

- 2015-2017 - 18 months of detailed planning, design, land negotiations, and the necessary legal agreements would be completed for the new street network, future 6C neighbourhood, 10C mixed-use site, and parks and open spaces. This would also include completion of the necessary rezonings and Official Development Plan amendments to NEFC areas 6C, 10C, and the new expanded Creekside Park Extension.
- 2018 - 2020 - A phased deconstruction of the viaducts and building of the replacement street network and associated Andy Livingstone Park improvements. During this time, the first permanent improvements to the seawall could be completed to begin delivery of the waterfront portion of Creekside Park Extension.
- 2018-2024 - Development of NEFC areas 6C and 10C, the Dunsmuir Connection, environmental contamination remediation, as well as the remaining portion of Creekside Park Extension are completed.
- 2020-2025 - Development of two City blocks is completed.

8. Financial Implications

8.1 Capital Cost to Remove the Viaducts

The removal of the Viaducts provides an opportunity for significant transformation of the community, including new development and associated public amenities as noted in the report.

The project cost estimates as summarized in Table 4 represent the costs of the capital work associated to the removal of the viaducts, which include all structural and street-related work required to achieve the proposed transportation network, associated changes to the utility and park systems, and associated soil remediation work. They exclude items that are typically associated with the development of the lands in Northeast False Creek, which include new streets and utilities to serve the new development, a new seawall and waterfront park, new public amenities contemplated as part of the development (e.g. affordable housing and childcare), and environmental remediation work related to the development of these land. All development-related work and costs will be reported back as part of the NEFC Public Benefit Strategy.

The project cost of removing the viaducts and associated work is currently estimated between \$180 and \$200 million. Approximately two-thirds of the cost is related to the engineering-related items such as structures, streets and utilities, with the other third related to parks and environmental remediation.

While significant progress has been made in the last two years in scoping and costing of the project, the cost estimates are based on preliminary designs which are 20-30% complete. A 35% contingency (a 15% construction allowance and a 20% project contingency) has been factored into the estimates as detailed construction drawings have not yet been generated. The range of cost estimates provided also reflects the options currently under consideration regarding the relocation of the Carrall Greenway within Andy Livingstone Park. The work program presented in Appendix B will progress the engineering designs to the 100% completion stage, at which point refined and more accurate cost estimates and an associated funding strategy will be developed and presented to Council for approval before commencing construction.

Preliminary cost estimates for structural, street and utilities were provided to Council in 2013; these estimates are included below for comparative purposes. The 2015 cost estimate for these items is about 19% higher than in 2013, mainly due to the following factors:

- an improved solution to accommodate the east-west bike traffic heading to/from the downtown.
- a more accurate cost for seismically upgrading the portion of the Dunsmuir Viaduct proposed to be retained as a new public space.
- consideration of refined viaduct deconstruction and Georgia Ramp construction methodologies and structural solutions which minimize impact to adjacent business operations and overall traffic flow.

Preliminary cost estimates for parks and soil remediation work were provided in 2013, however, due to changes in assumptions, they are not comparable to the 2015 estimates and therefore not included in the table.

Table 4: Capital Cost Estimate to Remove Viaducts

Category	Key elements	2015 estimate	2013 estimate	Change
Structural	<ul style="list-style-type: none"> Remove existing viaducts New Georgia Ramp Seismic upgrade of portion of Dunsmuir Viaduct to be kept New east-west pedestrian-bike bridge connection 	\$73 M	\$50-\$55 M	+39%
Streets	<ul style="list-style-type: none"> Upgraded Pacific Blvd. (Nelson to Georgia) New Pacific Blvd. (Georgia to Gore) Removal of existing Pacific Blvd. (Abbott to Quebec) 	\$10 M	\$30-\$35 M	-29%
Water & sewer pipes	<ul style="list-style-type: none"> Relocation of City utilities from existing streets to proposed new streets 	\$9M		
Traffic management	<ul style="list-style-type: none"> Detours and rerouting during construction period 	\$4 M		
Sub-total 1 (hard & soft costs):		\$96 M	\$80-\$90 M	+13%
Parks	<ul style="list-style-type: none"> Replacement of Skateboard Park Changes to southern edge of Andy Livingstone Park Changes to Andy Livingstone Park due to relocation of Carrall Greenway (cost range provided as several options under consideration) 	\$14-\$24 M	Not comparable	
Environmental remediation	<ul style="list-style-type: none"> Remediation and management of environmental contamination under proposed new streets, including alterations to Andy Livingstone Park Relocation of ground water treatment facility currently located near Pacific & Quebec 	\$16-\$21 M	Not comparable	
Non-City utilities	<ul style="list-style-type: none"> City contribution to relocation of non-City utilities (e.g. electricity, gas and communications) from existing streets to proposed new streets 	\$1 M	Not included	
Sub-total 2 (hard & soft costs):		\$31-\$46 M		
Sub-total 1 & 2 combined (hard & soft costs):		\$127-\$142 M		
Project planning, studies and public engagement		\$7 M		
Construction allowance (15% of hard costs) & contingency (20% of hard & soft costs)		\$46-\$51 M		

TOTAL CAPITAL COST TO REMOVE VIADUCTS		\$180-\$200 M		
Additional items covered by third parties	<ul style="list-style-type: none"> • Third party contribution to relocation of non-City utilities (e.g. electricity, gas and communications) from existing streets to proposed new streets 	\$8 M		

Note: figures rounded to the closest million.

Large scale projects of this type often require changes, reconstruction and/or relocation of existing capital assets, some of which have not reached their end-of-life. The removal of the viaducts will require changes to relatively young infrastructure and facilities in the area, for example, the reconstruction of the street network and the associated underground utilities in Northeast False Creek, the replacement of the downtown skateboard park, and changes to Andy Livingstone Park and the Carrall Greenway. It is estimated about 20% of project costs are linked to this type of work.

8.2 Capital Cost to Retain the Viaducts

Retaining the viaducts requires significant capital investment over their asset life:

- *Capital maintenance:* The structures are 40+ years old and require periodic maintenance. It is estimated that \$8-\$10 million will be required over the next 15 years to maintain the viaducts in an appropriate state of repair.
- *Capital upgrades:* As noted earlier in the report, the viaducts have not been seismically upgraded since they were originally constructed. It is estimated that \$50-\$65 million would be needed to seismically upgrade the viaducts to enable them to function during a moderate earthquake. As well, the viaducts do not provide a direct pedestrian link between downtown and the False Creek waterfront. A capital upgrade to provide this link is estimated to cost \$15 million (the Georgia Steps).
- *Capital renewal:* When the viaducts reach end-of-life in 30-40 years, they will need to be renewed. It is estimated that rebuilding the viaducts that would meet the seismic standard will cost \$80-\$100 million. To avoid the high cost associated with the seismic upgrades (\$50-\$65M), it is likely that the work to renew the viaducts up to code (\$80-\$100M) will be advanced much sooner before they reach end-of-life.

8.3 Preliminary Funding Strategy

Should Council decide to proceed with the removal of the viaducts (\$180-200 million), staff will formulate a thoughtful, robust funding strategy for Council's consideration, incorporating the funding requirements and strategy for the overall NEFC Public Benefit Strategy. This type of large-scale, multi-year capital project typically involves multiple funding partners and complex negotiations. The City anticipates that the Viaducts project and the NEFC Public Benefit Strategy will be funded through development-related revenues, sale or lease of lands in Northeast False Creek and City-owned blocks east of Quebec Street, senior government contributions (including the Provincial participation mortgage), and other strategic partnerships:

- *Prioritize the use of Development Cost Levies (DCLs) and Community Amenity Contributions (CACs):* The Viaducts project involves reshaping the transportation infrastructure in this part of the city to better meet the needs now and into the future, based on key guiding principles from Transportation 2040. It is a project that meets eligibility criteria for both DCLs and CACs.

Currently, only a portion of the Viaducts project area is within the City-wide DCL District (the section between Quebec and Gore Streets). Staff will expedite a report to Council to allow Council to consider incorporating NEFC (Beatty to Quebec Streets) into the Citywide DCL District. This will allow both the collection and spending of DCLs for all of the Viaducts project area. Rezoning is expected for Plaza of Nations site (Area 6B) and Concord's Area 6C and it is anticipated that a portion of the cash CACs associated with these rezonings could be allocated to the Viaducts project.

- *Align major capital work with development as much as practical:* As development revenues (DCLs and CACs) are generated over time, to minimize short to mid-term financing requirements, staff will explore opportunities to align the major capital work with development as much as practical, and develop a viable phasing strategy for Council's consideration.
- *Maximize the use of partner funding to support the Viaducts project:* A number of specific project components may be cost-shared with non-City utility providers (e.g. BC Hydro, Terasen, Telus, etc.) and possibly the Province through their involvement in environmental remediation and participation mortgage. In addition, the Viaducts project may be eligible for funding from Federal and/or Provincial government programs. Staff have started and will continue to explore these opportunities.

There is an agreement between the Province and Concord Pacific Holdings Ltd. which provides that Concord will make payments to the Province once the density on certain Concord lands reaches prescribed levels. The payments to the Province under this agreement may be significant. The City intends to work with the Province on options for the transfer of these public funds to the City as part of the funding for this project and the NEFC Public Benefit Strategy, particularly for new public amenities such as new affordable housing to meet the *Housing and Homelessness Strategy*.

The PPM has the potential to generate significant public funds. The City's perspective is that these public funds should be reinvested into the local community for new public amenities, particularly as new affordable housing to meet the *Housing and Homelessness Strategy*.

8.4 Implementation and Capital Planning

Should Council decide to proceed with the removal of the viaducts, and based on the implementation timeline discussed in this report, the Viaducts project will become a major project in both the current 2015-2018 Capital Plan and the upcoming 2019-2022 Capital Plan. Staff will review the short term funding requirements of the Viaducts project and assess them against other Transportation projects and programs in the 2015-2018 Capital Plan. Staff will report back to Council with options for consideration either as part of a follow-up report on the Viaducts projects or as part of the annual or quarterly capital budget process.

8.5 Next Phase Work Program Costs

The 2-year work program (2016-2017) and associated staff and consultancies will cost up to \$21 million as described in Appendix B; sources of funding to be reported back as part of the 2016 Capital Budget.

9. Environmental Implications

The NEFC area was partially constructed on land infilled to increase the size of the foreshore area and was occupied by heavy industry for nearly 100 years, resulting in area-wide contamination of soil, groundwater, and sediments. Significant environmental testing of the NEFC area was completed in the 1980s and 1990s but data gaps exist due to changes in environmental regulations and to development plans.

In several locations around False Creek, risk management of contamination has been utilized as a remediation approach and is accepted by the BC Ministry of Environment. Risk management is an economic approach to remediation of contaminated soil, allowing for placement and encapsulation of contaminated material in a park or other approved location. Under the existing legal agreements and remediation plans between Concord Pacific Development Ltd., the Province, and the City, the Province is responsible for remediation costs associated with Concord's development of Area 6C and the Province has the right to relocate contaminated soil from Concord's Area 6C and the Abbott Street Outfall into Creekside Park, or within certain City lands designated as road. All other contaminated material and that not geotechnically suitable for reuse will need to be removed offsite for disposal.

Further environmental assessments are required; however, conservative estimates of costs to manage contaminated material beneath City-owned property (roads, development lands, and parks) have been included in the financial analysis and business case.

CONCLUSION

Staff have completed the necessary due diligence to understand the implications of a decision to replace the viaducts as described in this plan. The new replacement street network can accommodate all of the anticipated traffic volumes today and into the future, will be safer, seismically more resilient and improve connections for all modes of transportation.

Building upon the *Northeast False Creek: Directions for the Future* (2009), staff will prepare for Council's consideration the necessary zoning and Official Development Plan amendments needed to achieve the opportunities set out in this report related to the future mixed-use neighbourhood in Area 6C, 10C, and the two City-blocks, and will prepare a clear plan to be approved by Council for delivery of the future parks and open spaces, including early delivery of a portion of Creekside Park Extension along the waterfront, and additional public benefits to be achieved.

Overall, the community and stakeholders have been highly supportive of the proposal, particularly with the last two years of analysis completed to address previous concerns that were raised. Detailed planning and design work is still needed to achieve some of the details related to the land use, parks and open spaces, and street design. Processes have been recommended to undertake this work immediately following a decision from Council, including detailed planning with interested citizens and stakeholders, and landowners.

Given the ever-tightening window of opportunity to make changes to the street network while the area is largely unobstructed and prior to a seismic event, a decision from Council will allow the necessary detailed work to proceed towards replacement of the viaducts with the new street network, and accelerate the completion of the final piece of False Creek North including the development of an expanded Creekside Park Extension.

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NORTHEAST FALSE CREEK CONCEPTUAL PLAN

The purpose of this Northeast False Creek Conceptual Plan is to provide additional policy direction to existing Council policy, guidelines, and by-laws for the area for future planning without the Georgia and Dunsmuir Viaducts.

The *Northeast False Creek: Directions for the Future* (2009) report identified opportunities to guide new growth and development in Northeast False Creek (NEFC). It also put in place a Public Benefit Strategy that provided clarity about the types of amenities needed to support future growth. However, it did not anticipate the specific opportunities associated with the removal of the Georgia and Dunsmuir viaducts.

The removal of the viaducts presents additional opportunities beyond the *Northeast False Creek: Directions for the Future* (2009) plan to deliver on key City objectives such as affordable housing, improved connectivity, improved health and safety, and sustainability. It also provides the opportunity to extend the boundary of NEFC to include two City-owned blocks located on the east and west side of Main Street between Prior Street and Union Street shown in Figure 1. Both blocks are freed up by removing the down-ramps to the viaducts. Only if the viaducts are removed will the following opportunities be possible.

Eleven Council-approved principles inform the recommended changes outlined below to the *Northeast False Creek: Directions for the Future* (2009) plan.

COUNCIL'S 11 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, especially between the Eastern Core area and downtown and reduces traffic along 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 including design of the engagement process.

11) Strengthen the Festival and Entertainment Function of the Area. Acknowledge the importance of BC Place and Rogers Arena and improve access, loading and event management plans to ensure that these facilities continue to function efficiently.

The removal of the Georgia and Dunsmuir viaducts results in a reconfigured replacement street network, parcel configurations for False Creek North areas 6C, 10C, and Creekside Park Extension, and expanded opportunities for parks and open spaces. Building upon Council-approved direction, the following changes to the *Northeast False Creek: Directions for the Future* (2009) would apply only in the case that the Georgia and Dunsmuir viaducts are removed.

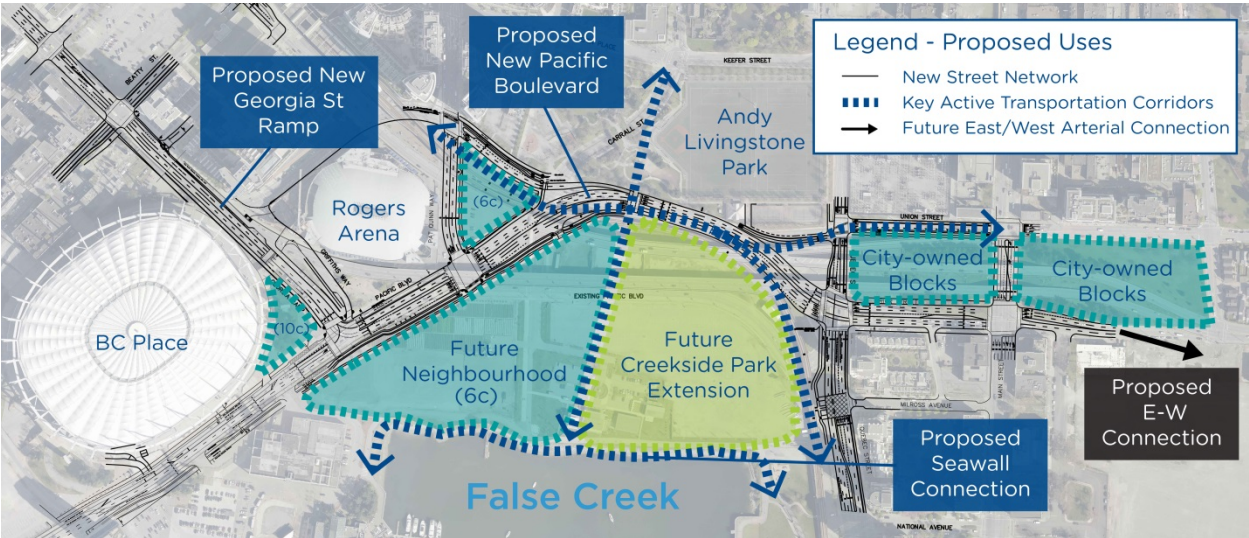


Figure 1: Proposed street network and parcel configuration with the removal of the Georgia and Dunsmuir viaducts

Future Mixed-use Neighbourhood

False Creek North - Area 6C

To accommodate the new street network that replaces the viaducts, there is an opportunity to reshape the 6C parcel configuration and land use to maximize the opportunities associated with a new direct connection to the Downtown on Georgia and Dunsmuir streets as well as the exceptional waterfront location that anchors a new “Entertainment District” at the foot of Georgia Street. The reconfigured 6C parcel shown in Figure 2 is approximately 11 acres in size (compared to the existing 6C parcel size of 7.91 acres).

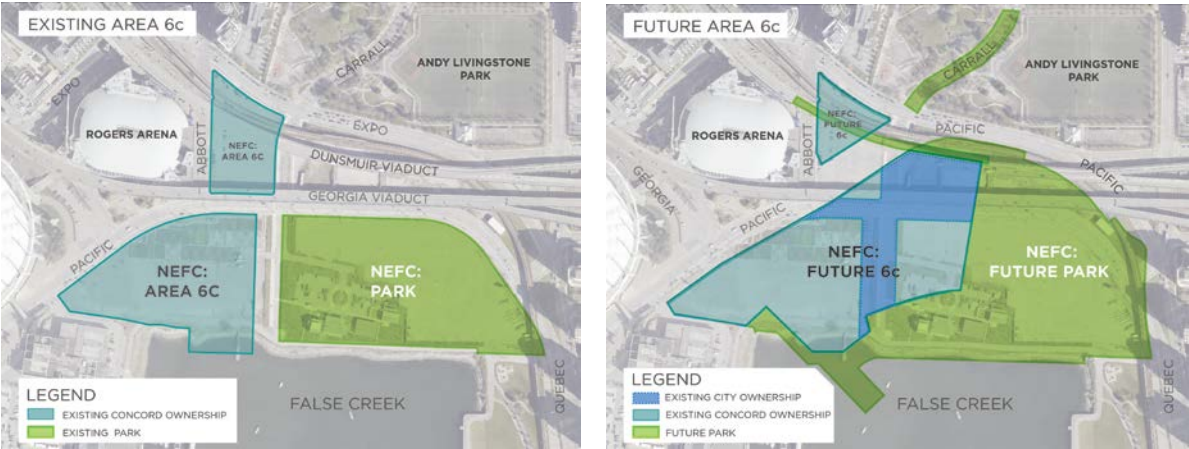


Figure 2: A comparison of lands available for development in area 6C before and after the removal of the viaducts.

Development opportunities in this area will deliver on Council's direction to strengthen the area for festivities and entertainment and support job space in the Downtown. This new mixed-use neighbourhood will accommodate a mix of jobs and housing including:

- A maximum gross density¹ between 2.0 - 2.5 million square feet of residential and non-residential uses.
- A minimum of 220,000 sq.ft of new job space that anchors the Entertainment District to the False Creek waterfront and contributes towards meeting goals of the *Metro Core Jobs and Economy Land Use Plan*.
- A minimum of 20% affordable housing consistent with the council policies set out in the *False Creek North ODP* where affordable housing is defined as:
 - housing with "priority on housing core-need households, with fifty % of the affordable units suitable for households with children. The affordable units shall be integrated into each residential area, except that Council may permit alternate arrangements to provide some affordable units off site. Council may also permit affordable housing programs or initiatives to include subsidized and market rental units or subsidized and market co-op units".
- Other public benefits.

New building forms will:

- Adhere to all Council-approved view corridors.
- Step up in height from the water and park towards Georgia Street and Pacific Boulevard. The tallest towers would be located at the intersection of W. Georgia Street and Pacific Boulevard.
- Minimize shadowing on the future Creekside Park Extension and Georgia Wharf, Andy Livingstone Park, and International Village School.
- Include a minimum tower separation of 80'.
- Include a maximum tower floor plate that:
 - Accommodates minimum tower separation requirements.
 - Allows views through the site.
 - Maximizes access to sunlight to public spaces.
 - Maximizes privacy and views to the water.
- Be designed to maintain important views from the new Creekside Park Extension and seaside greenway to BC Place stadium.
- Include a minimum 8' tower setback above commercial uses to reduce impacts to residents from things like noise, smells, and light.
- Be designed to mitigate noise impacts from nearby stadiums and event spaces.

¹ Gross density refers to all interior floor space, enclosed balconies, storage, typical wall and other exclusions, amenity spaces, exterior balconies adjacent to protected views, and does not include 25% of ground floor area for loading/servicing, etc

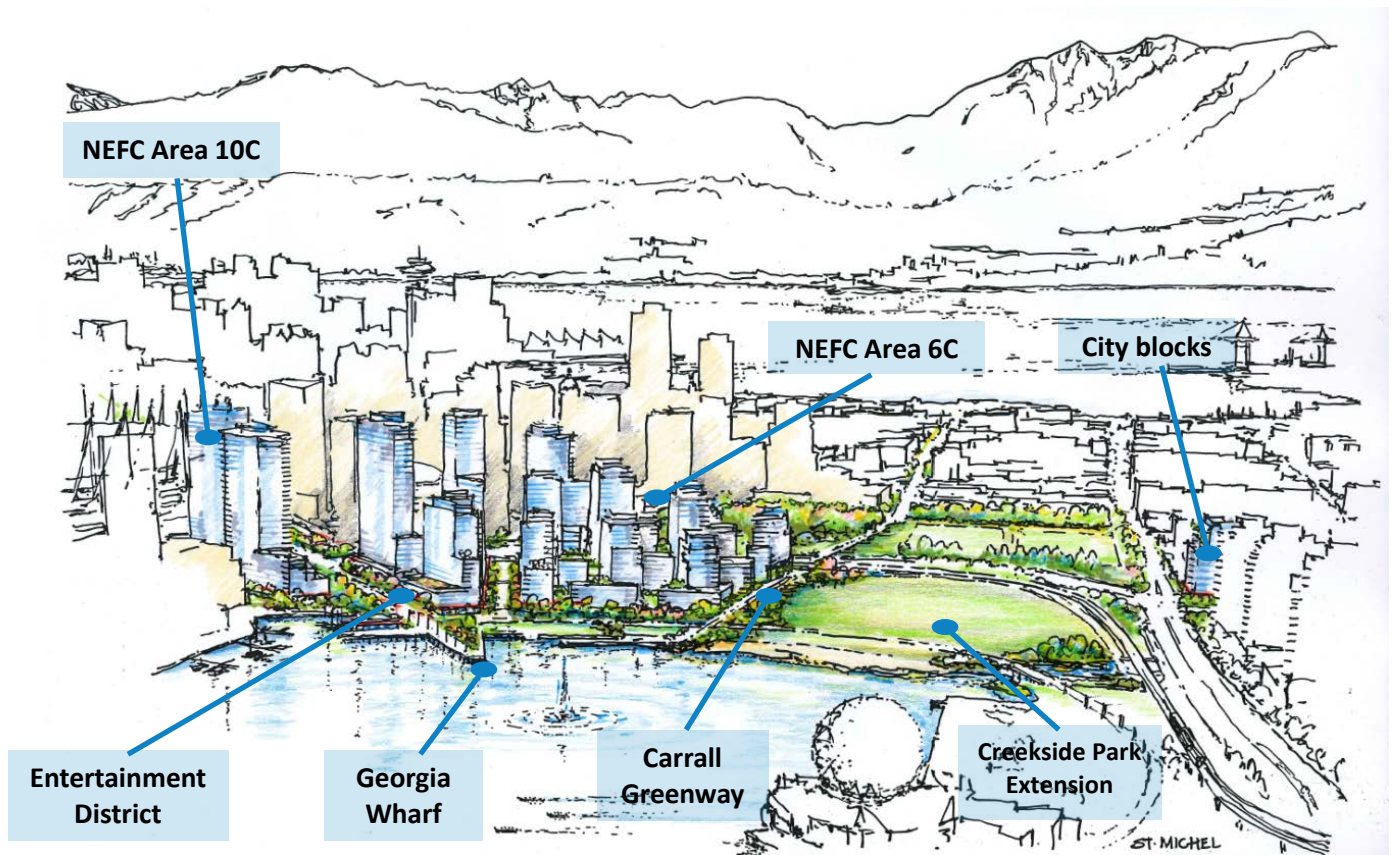


Figure 3: Conceptual rendering of Northeast False Creek with viaducts removed, illustrating approximately 2.0-2.5 million gross ft² of residential and non-residential space on Area 6C, and a larger 13.75 acres of parks and open space, consistent with the urban design policies of the *Northeast False Creek Conceptual Plan*.

False Creek North - Area 10C (see Figure 1 for site location)

Area 10C is located adjacent to BC Place Stadium and plays an important role in establishing a new direct connection from False Creek into the downtown. As part of the Entertainment District, the site should be designed to welcome people into the downtown with street trees, architectural lighting elements, and active uses at grade to break up the perceived length of the stadium.

There are two building sites that include one tower site on the south side of W. Georgia Street and a small commercial building on the north side of W. Georgia Street.

Tower

Uses on the tower site should include active commercial along the ground floor, and opportunities for job space and housing above as part of a mixed use building.

Design considerations will need to address the necessary street right-of-ways, access agreements, and sidewalk improvements needed to integrate the site with the existing BC Place concourse and new Georgia Street ramp sidewalk.

The new building form will:

- Adhere to all Council-approved view corridors.
- Include a minimum tower separation of 80', (not including to the BC Place stadium).
- Be sculpted in a way to maximize views from the Georgia Wharf to BC Place stadium.
- Include a maximum floor plate size of 10,000 sq. ft.
- Include a minimum 8' tower setback above commercial uses to reduce impacts to residents.
- Be designed to mitigate noise impacts from nearby stadiums and event spaces.



Figure 4: Conceptual illustration of the integrated Georgia Ramp (centre) with new 10C building (shown on the left) and new multi-level retail building (shown on right).

The proposed density for the site will be determined through additional site planning and with consideration of urban design performance objectives, including those listed above.

Commercial Building

A small commercial building site located on the north side of the W. Georgia St should be designed with an active frontage, and integrate new connections between the Rogers Arena concourse and W. Georgia Street.

Maximum height should adhere to the Georgia street-end view.

Main Street Blocks (See Figure 1 parcels titled, "City-owned Blocks" for site location)



Figure 5: Conceptual rendering of Main Street blocks

The two blocks are located on the east and west side of Main Street between Prior Street and Union Street. The redevelopment of both blocks will help stitch back the urban fabric that the viaducts disconnected on Main Street more than 40 years ago.

Future redevelopment of these blocks should:

- Incorporate design and use options that contribute to the historic neighbourhood of Hogan's Alley.
- Include a mix of new job space, housing and possibly civic and/or community uses.
- Focus commercial uses onto Main Street and allow for a contiguous retail frontage.
- Seek to maximize opportunities to deliver on-site social and affordable housing for families and singles, consistent with council policies as set out in the Downtown Eastside Local Area Plan (2014).
- Include consideration of options to locate a public safety facility on site, to be explored along with other opportunities for a community facility, e.g. a childcare or a cultural facility that would recognize the history of Hogan's Alley.
- Reflect a similar density of the historic character of the historic buildings to the north (approximately 3.5 Floor Space Ratio (FSR)).
- Decrease building scale down from City Gate towards Chinatown.

Additional detailed design, densities, and land use opportunities can be explored through detailed area planning and with consideration of urban design performance objectives, including those listed above.

Expanded Parks and Open Spaces

There is an opportunity to expand parks and open spaces to include a minimum of 13.75 acres generally as shown in Figure 6 below.

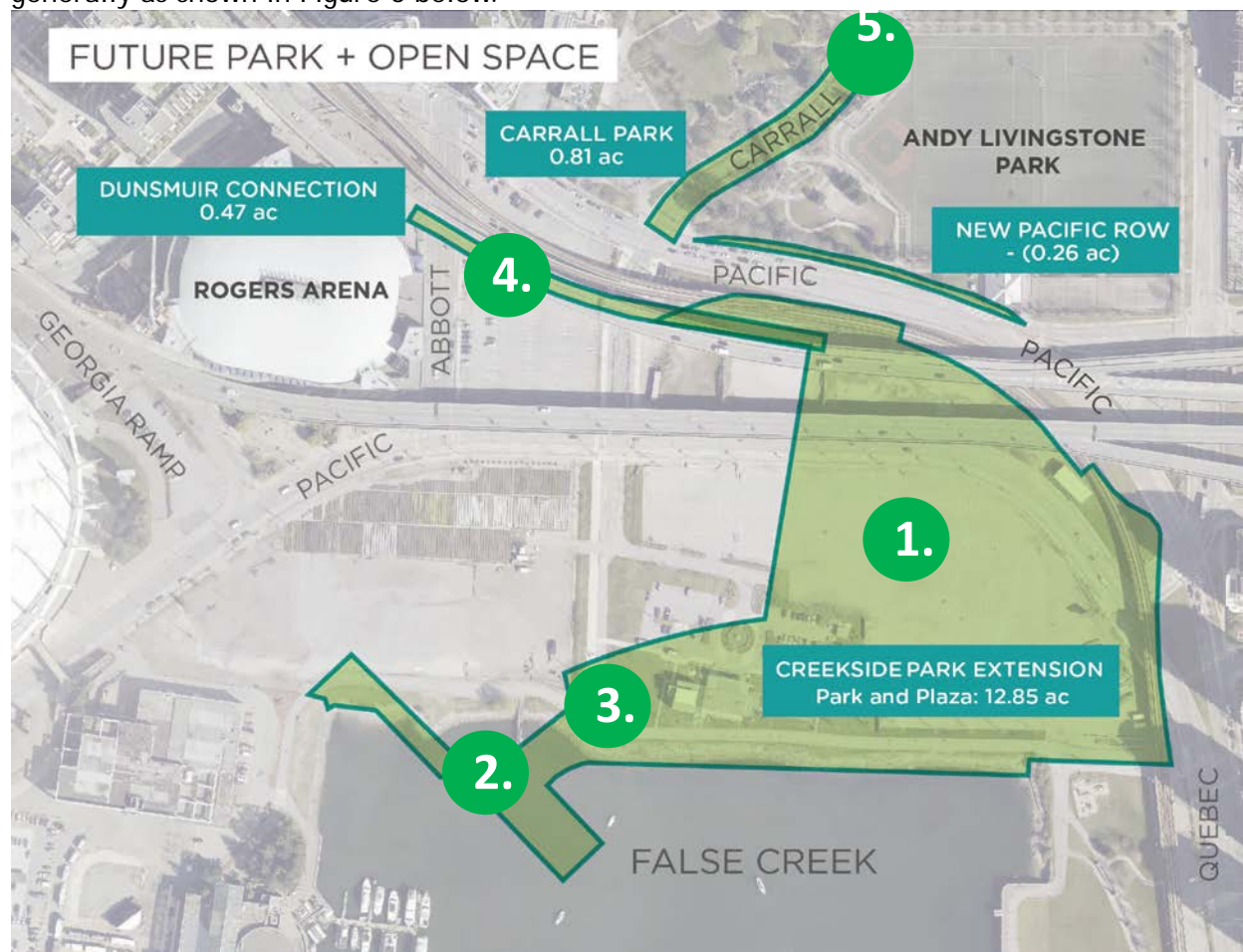


Figure 6: NEFC - Future Parks and Open Spaces
Creekside Park Extension (shown in Figure 3 and as #1 in Figure 6)

Creekside Park Extension will be distinct from other parks in the city due to its:

- Larger size in relation to other parks in the downtown core.
- South facing orientation adjacent to the city's Entertainment District.
- Central location and easy access to rapid transit.
- Accessibility to a number of neighbourhoods like Downtown, Gastown, Chinatown and Strathcona, False Creek Flats and the Olympic Village.
- Connection to the water at the head of False Creek.
- Proximity to the indoor sports and recreation venues of Rogers Arena and BC Place.

This park will have a diverse program of spaces for play and relaxation supported by a great lawn for unstructured play and to host cultural events and festivities. Access to the sports amenities already available at Andy Livingstone Park will be strengthened by a new north-south path for pedestrians and cyclists. The park will naturally extend to the new pier and plaza space at the foot of Georgia Street (Georgia Wharf shown Figure 3 and as #2 in Figure 6) and connect to the existing Creekside Park by Science World.

General themes to guide future stages of park planning and design:

- Sustainability: Lead with a lighter footprint; reduce greenhouse gases; improve rainwater management, manage soil and groundwater contamination.
- Access to Nature: Promote biodiversity and the creation of foreshore habitat.
- Play for All: Provide access to open space and opportunities for informal physical activity, youth oriented sport and adult play.
- Access to the Water: Activate the water's edge; Incorporate non-motorized boating.
- Integration and Permeability: Bringing together surrounding neighbourhoods.
- Culture: Incorporate event spaces; opportunities for cultural expression; and celebration of historical and environmental topics.
- Social: Provide places that foster social interaction and casual gathering.

Creekside Promenade (shown in Figure 3 and as #3 in Figure 6)

A new active edge along the waterfront, linking the Georgia Wharf to the new Creekside Park Extension will provide flexible space that can occasionally accommodate expanded programming in the park. It can also be a place of pop-up-commerce and community markets during summer months. This promenade will offer a new experience along the seawall that will draw nearby residents, people working in the area, and visitors alike to enjoy the activities and unique setting.

Dunsmuir Connection - Elevated park connecting the creek to the downtown (shown as #4 in Figure 6)

A portion of the Dunsmuir Viaduct will be repurposed into an elevated park, providing new programmable public space adjacent to Rogers Arena. It will connect with a series of elevated public spaces that integrate into the new developments in NEFC area 6C utilizing podiums, and land in Creekside Park Extension. Podium connections will create distinct viewing platforms, places for rest, and interesting urban park spaces. With inspiration coming from New York's High Line Park, this unique public space will help connect the new Creekside Park Extension to the downtown and provide active transportation options for the historic communities to the east along Union Street, as well as communities to the south along Quebec Street.



Figure 7: Conceptual rendering of the integration between the Dunsmuir Connection and NEFC area 6C development.

Carrall Street Conversion to Park (shown as #5 in Figure 6)

Approximately 0.8 acres in size, the portion of Carrall Street located between Keefer Street and Pacific Boulevard will be converted to park. This will better integrate the east and west sides of Andy Livingstone Park and ensure it is safe, comfortable and welcoming.

Modifications to Andy Livingstone Park (shown in Figure 3)

The realignment of the Carrall Greenway as a more direct north-south route will strengthen the connection between the new waterfront park and Andy Livingstone Park, and enable the two parks to read as one larger green space. Scenarios for the insertion of this greenway into the park and associated improvements to the park will be explored as part of the next phase of work.

Design will consider options for the replacement of the existing field house and covered skate park located adjacent to Quebec Street.

NEFC WORK PLAN

Work Program

Changes associated with the removal of the viaducts will take place in three general phases:

Phase 1

2015 - 2017 - Complete detailed planning, design, and the necessary agreements to advance removal of the viaducts and development of the remaining NEFC lands including areas 6C, 10C, and the future parks and open spaces.

Phase 2

2018 - 2020 - Construction of the new street network including the new Georgia Street ramp with 10C parkade and Pacific Blvd, seaside greenway along False Creek, and Andy Livingstone improvements.

Phase 3

2018 - 2024 - Development of NEFC areas 6C, 10C, Creekside Park Extension, and the Dunsmuir Connection.

2020 - 2025 - Development of the City blocks east of Quebec Street between Prior Street and Union Street.

Products for Phase 1:

- Prepare the necessary False Creek North Official Development Plan amendments to define the development parcels and park boundary that meet objectives including integration with surrounding areas.
- Prepare detailed street designs for Georgia Ramp, Pacific Blvd, Carrall Greenway, Dunsmuir Connection, Active Transportation routes, and internal streets.
- Complete detailed utility and infrastructure design.
- Resolve restrictive covenants related to Andy Livingstone Park.
- Review rezoning applications for NEFC areas 6C and 10C.
- Prepare plan for two City Blocks east of Quebec.
- Prepare Creekside Park Extension Conceptual Design.
- Prepare Andy Livingstone Renewal and Carrall Street Conversion Conceptual Design.
- Complete environmental investigations to understand extent of contamination, risk and responsibilities related to changes to development parcels, road and park.
- Establish detailed legal agreements with PavCo, Concord Pacific Developments Ltd. and the Province of B.C. to proceed with viaduct removal and the changes to the at-grade street network.
- Funding strategy including Development Cost Levy and Community Amenity Contribution review.

Costs

Similar to other significant projects on this size at the City, a dedicated project office is required to advance all of the detailed planning, design, land agreements, and negotiations over the next two years to ensure delivery of the opportunities outlined in this report.

Staffing and consultant costs identified in Table 1 includes two years of funding to achieve the products listed.

Staffing	FTE Annual Cost	Project Cost
1. Project Management	\$730,000	\$1,323,000
2. Engineering	\$685,000	\$1,129,250
3. Planning	\$315,000	\$677,500
4. Parks & Recreation	\$190,000	\$347,500
5. Legal Services		\$500,000
6. Real Estate		\$350,000
Subtotal staff		\$4,327,250
		Project Cost
7. Technical Consultants		\$
7.1 Engineering		12,000,000
7.2 Parks		1,000,000
7.3 Planning		300,000
7.4 Real Estate		1,000,000
7.5 Legal		200,000
8. Public Consultation		300,000
Subtotal consultants		14,800,000
Total before contingency		19,127,250
Contingency@10%		1,912,725
TOTAL		21,039,975

Table 1: NEFC work program budget

NEFC CONSULTATION STRATEGY

Northeast False Creek (NEFC) is a city and regional hub of sports, culture, events and celebration. It includes the venues of BC Place Stadium, Rogers Arena, and the Plaza of Nations, as well as the land currently occupied by the Georgia and Dunsmuir Viaducts. The new conceptual plan builds on the Northeast False Creek: Directions for the Future plan, while incorporating the opportunities presented by replacing the viaducts with a new at-grade road network.

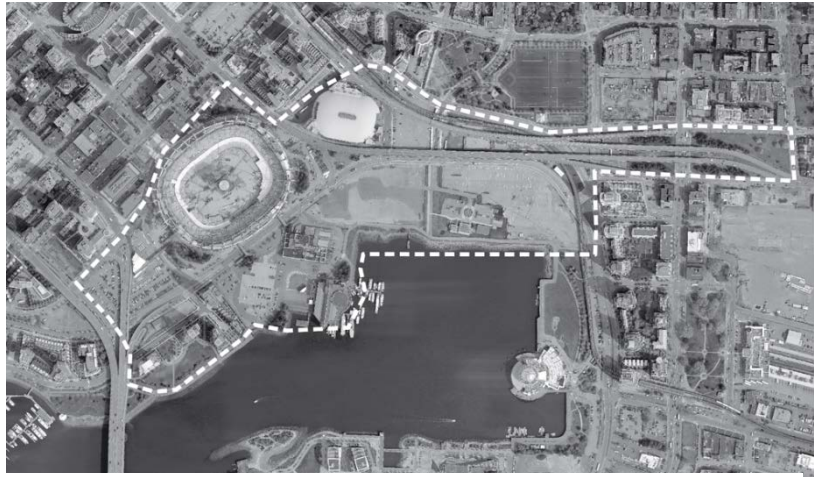


Figure 1: The NEFC Study Area is generally bounded by Cambie Bridge to Quebec Street and Expo Blvd to False Creek

OBJECTIVES

The planning in NEFC will be guided by Council policy including the Guiding Principles for Removing the Viaducts (Included in Appendix A). Some of these policies and directions include:

- Supporting and enhancing the role of the area as a city and regional hub of sports, entertainment and culture,
- Encouraging innovative architecture and built forms,
- Creating a new area in which to “play, work and live” including job space, new residential development, plazas, parks and other amenities, and
- Through viaduct removal, providing more park and more cohesive park space, repairing the “gap” on Main Street, providing more housing including affordable housing, and reconnecting communities to the creek and each other.

OVERVIEW OF INTERESTS

The consultation program will encompass the full range of interests that could be affected by this plan. Table 2 is a summary of the various stakeholder groups that staff are currently aware of in the area. Others may be added as the study proceeds.

Table 2 - NEFC Stakeholders: Interested Organizations, Agencies, Firms, and Individuals

Interests	Who/Details
Major Landholder/Developers	Concord Pacific, BC Pavilion Corporation, Canadian Metropolitan Properties, Aquilini , Province of B.C.
Event Venues	BC Place, Rogers Arena, Plaza of Nations, Science World, Edgewater Casino

Interests	Who/Details
Local Residents	Individual residents, stratas and property managers - False Creek Residents Association, Stadium Residents Association, Cross-Town Resident Association, Chinatown.
Businesses	BIA's, Chinatown Revitalization Committee, Merchants Association, Costco, False Creek Ferry's and Aquabus drivers
Parks and Open Space Users	Sports groups, skateboarding and youth groups, children and seniors groups, Non-motorized boating users, Accessibility, First Nations, Vancouver Public Space Network, Vancouver School Board
Community Groups and Centres, Charities	Dr. Sun Yat-Sen Garden Society, Creekside Community Centre, Roundhouse Community Centre
Commuters	People that walk, bike, drive or take transit to work.
Event Organizers	Taiwan festival, Dragon Boat Festival Society, , Vancouver International Marathon, Charity runs and Walks, Event producers
Adjacent Neighbourhoods	Citygate, International Village, Strathcona, DTES, Chinatown, Crosstown
Real Estate development and leasing	Individual development and real estate development/landowner firms in area, owner of future rental buildings (Aquilini), Urban Development Institute (UDI), Greater Vancouver Real Estate, Board, Architectural Institute of BC (AIBC)
Other Authorities	First Nations, Vancouver Coastal Health, Providence Health, Translink, Metro Vancouver, Vancouver School Board, Port Metro Vancouver, and other regional and provincial authorities

As reflected in Council's Guiding Principles, the City's objective is to ensure that everyone who is potentially affected by - or interested in - decisions gets a chance to have a say. Therefore, while the planning process will allow the broadest number of those interested to be informed and able to express opinions, it will ensure that we receive fulsome feedback from those most directly affected.

ROLES AND RESPONSIBILITIES

While the process will strive to engage the full range of affected groups, this plan also seeks to engage individuals with differing levels of interest: from active participation, to general awareness. The general roles and responsibility of the various groups are outlined below and illustrated on Figure 2.

Major Landowners / Developers

The replacement of the viaducts with a new at-grade road network and the creation of a new area plan will require negotiations with the two landowners most impacted by the new roads (Pavco and Concord Pacific). Pavco, the owner of BC Place, has operational concerns related to the replacement road network and the construction of the Georgia Ramp. These will be resolved to ensure the long term viability of the area. Land owned by Pavco and Concord Pacific is required to implement the replacement road network. In addition, negotiations will need to be conducted with the Provincial Government, which is responsible to manage environmental contamination on Concord's development sites and parks.

Northeast False Creek Joint Working Group

The NEFC Joint-Working Group was formed in 2010, to represent the broad interests affected through the planning in Northeast False Creek. It is composed of broad representation from the interests identified in Table 2 and is open to any agency or group with an interest in the planning of NEFC. City staff will continue to actively recruit new/replacement members when gaps in representation exist. The role and responsibilities of this group is to:

- Share information,
- Advance policy work that will inform rezoning applications,
- Provide a forum for discussing 'pre-rezoning applications' proposals and final rezoning applications, and
- Provide advice on the general public process.

The group will continue to be involved throughout the process. All land owners in the area will continue to be encouraged to use the NEFC Joint Working Group as a tool to share initial ideas and learn from community members about issues affecting the neighbourhood.

Topic Specific Advisory Groups

Topic Specific Advisory Groups will consist of smaller groups of stakeholders, for shorter periods of time, for the purpose of discussing and providing advice on specific topics, questions, or technical work related to viaduct replacement or the on-going development of NEFC. Members will be determined based on the question or topic.

The Community

The local community includes area residents, landlords and homeowners, other property owners, business owners, employees of local businesses and service agencies, representatives of neighbourhood associations, and sports and culture organizations active in the local area. Through their involvement in the viaducts discussions to date, the local community has helped to identify the objectives to be achieved through viaduct replacement and conceptual plan for NEFC. In this next stage of planning, the community will help shape detailed planning for the area including public space improvements, an updated Public Benefit Strategy, and street design options.

COV Staff Team and other regulatory bodies

Staff will manage the planning process and collaborate with the community on technical work related to viaduct replacement and the on-going build out of NEFC. Staff will draft reports and convey them to Council for approval. Ongoing support will be provided by representatives from a number of City departments, boards and external government agencies. Regulatory bodies like Metro Vancouver, Translink, Vancouver School Board, and the Province, will be sought out to assist with the resolution of technical issues as required.

City Council

City Council allocates the necessary resources the planning process will need to approve amendments to the False Creek North Official Development Plan (bylaw) and project budget as part of the final approval of a new conceptual plan.

Figure 2: NEFC Detailed Area Planning - General Roles, Rights and Actors Responsibilities*

		Manage Process	Process Check-in & Advice	Outreach	Creating Options	Testing Options	Selecting & Reporting on Preferred Option	Plan Approval
STAKEHOLDERS	The Community			✓		✓		
	NEFC Joint Working Group		✓	✓		✓		
	Topic Specific Advisory Groups		✓	✓		✓		
	Developers			✓	✓*	✓		
	City/Regional Stakeholders			✓		✓		
CITY STAFF		✓		✓	✓	✓	✓	
COUNCIL								✓

NOTE: This table outlines general roles associated with different actors; however, the work will overlap. For example, members of the NEFC Joint Working Group will also participate on topic specific advisory groups.

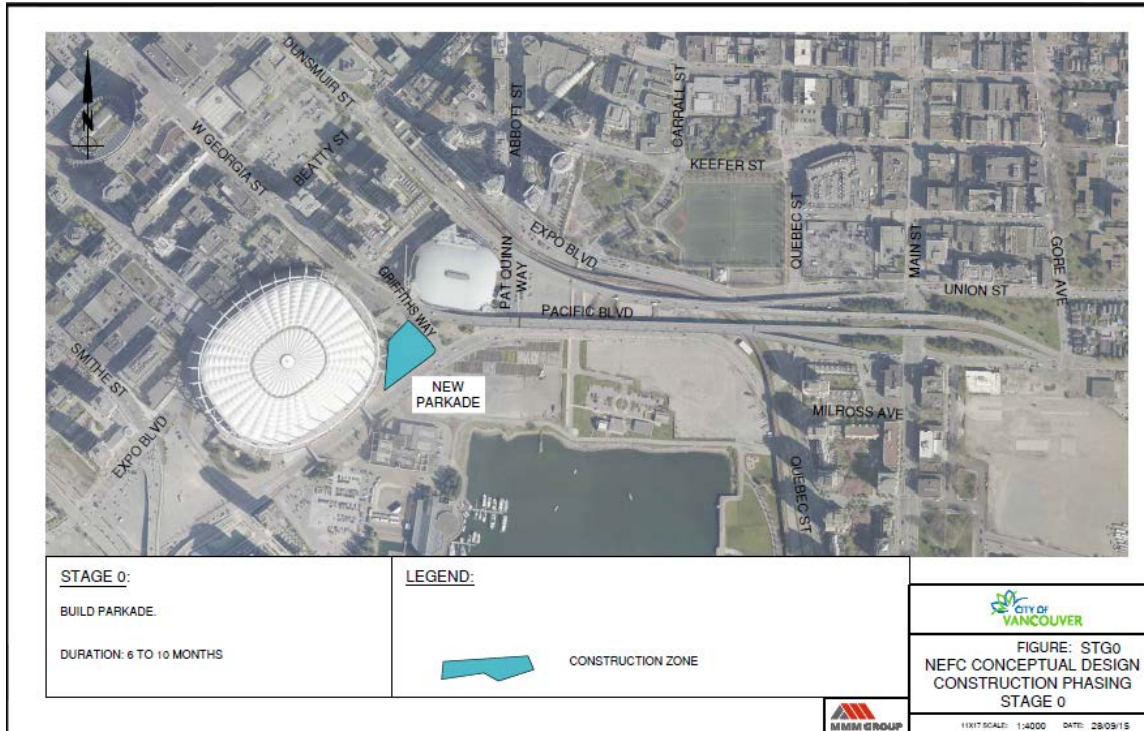
**Land owned by PavCo and Concord is required to implement replacement road network.*

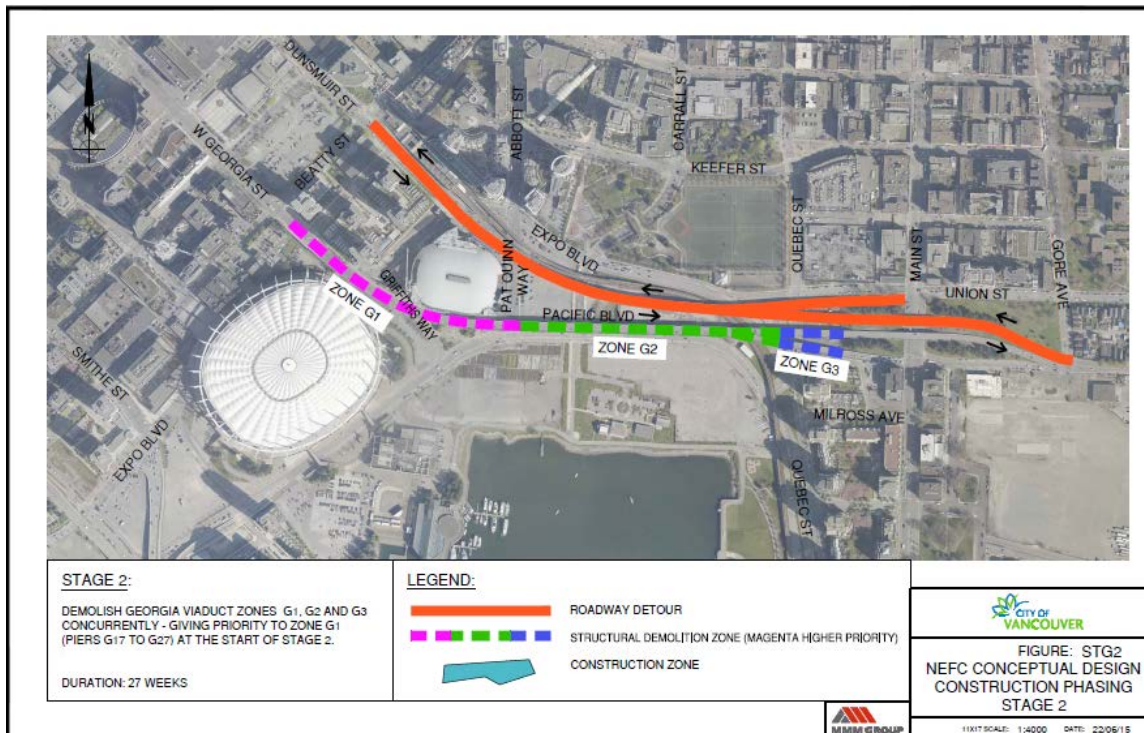
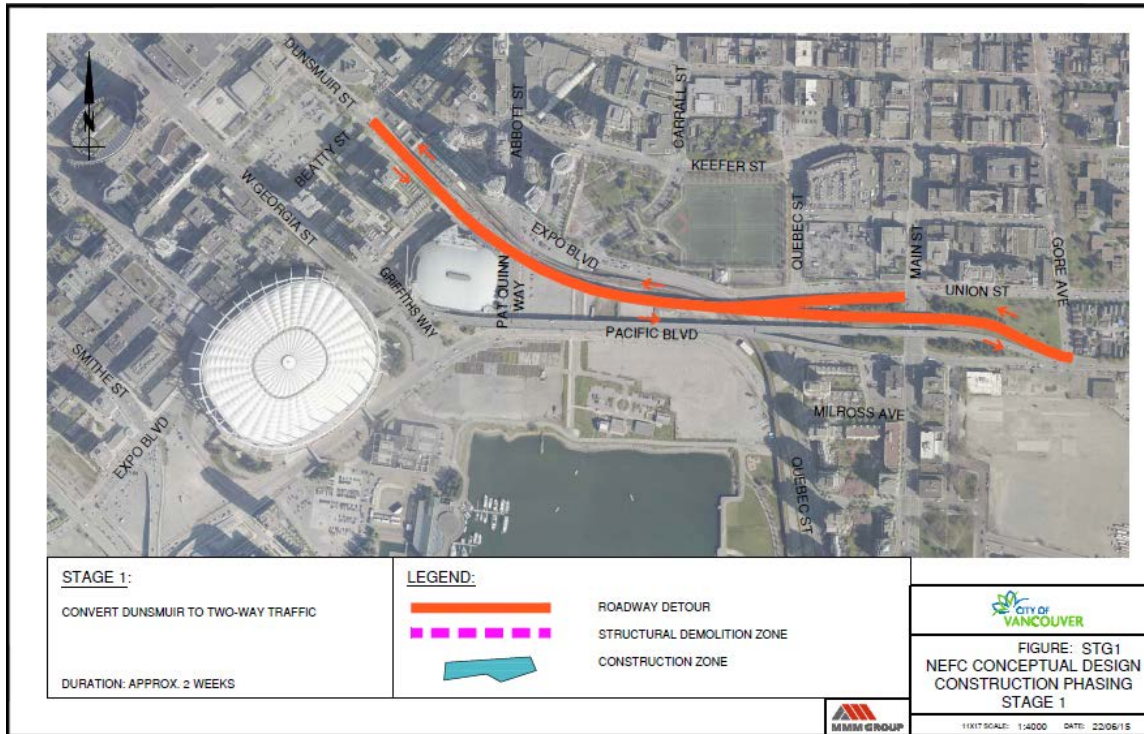
ACTION WHILE PLANNING

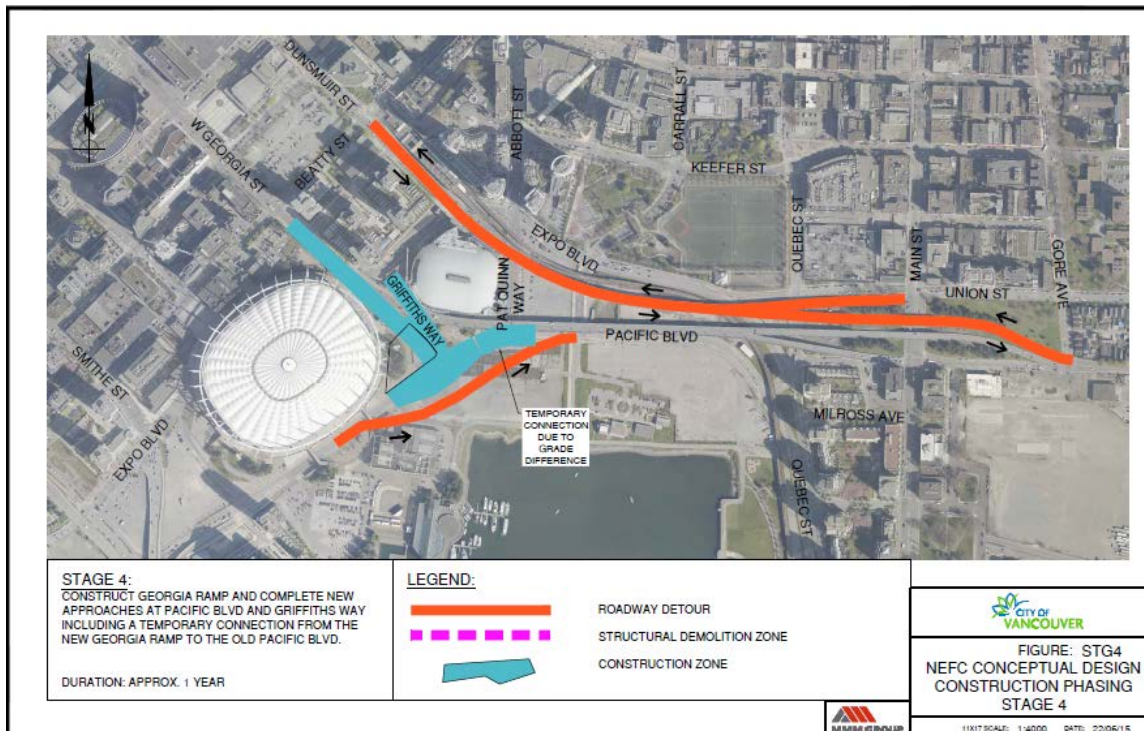
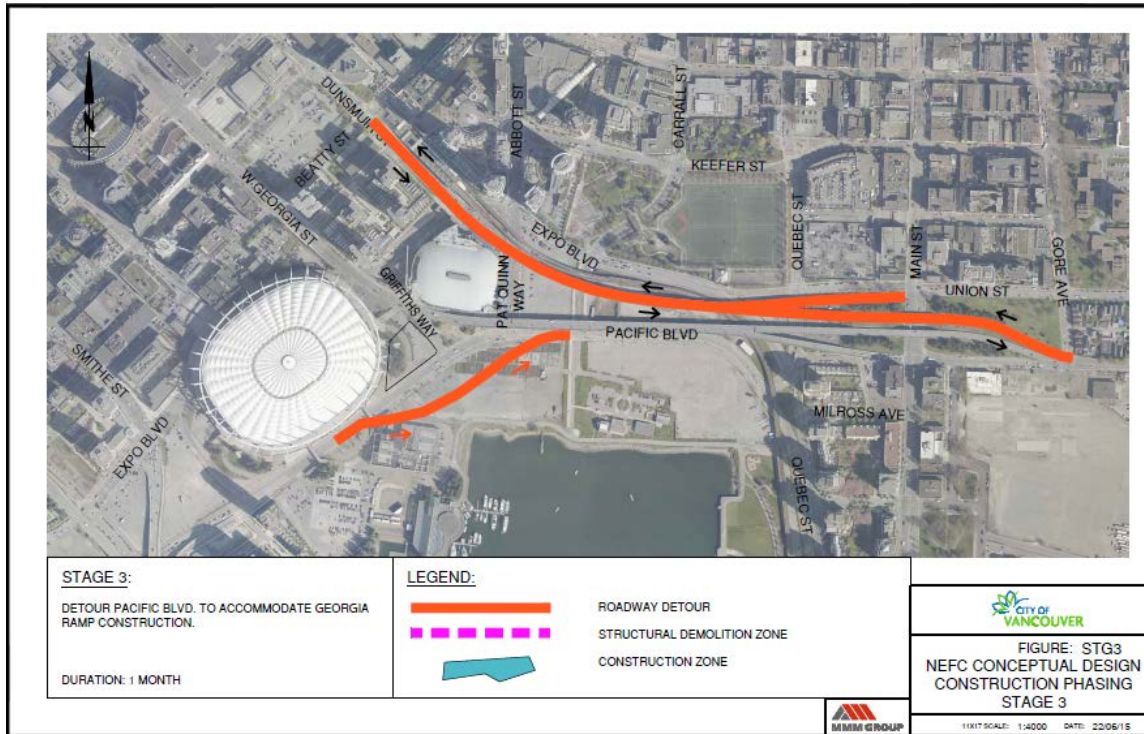
Action-while-planning is a tool that Staff can use to explore creative ideas for public space, as well as to 'pilot' interim options for creating new public spaces, prior to the final development of the area. Using this approach, staff can leverage opportunities to work with community groups and/or stakeholders to advance ideas through a variety of innovative community driven initiatives. Particular opportunities that improve and activate the waterfront lands and future parks and open space with interim improvements will be prioritized where there is cooperation with the appropriate landowner. A few examples that Staff have heard to date include: small temporary markets, gardens, kids festivals, doggy date nights, etc.

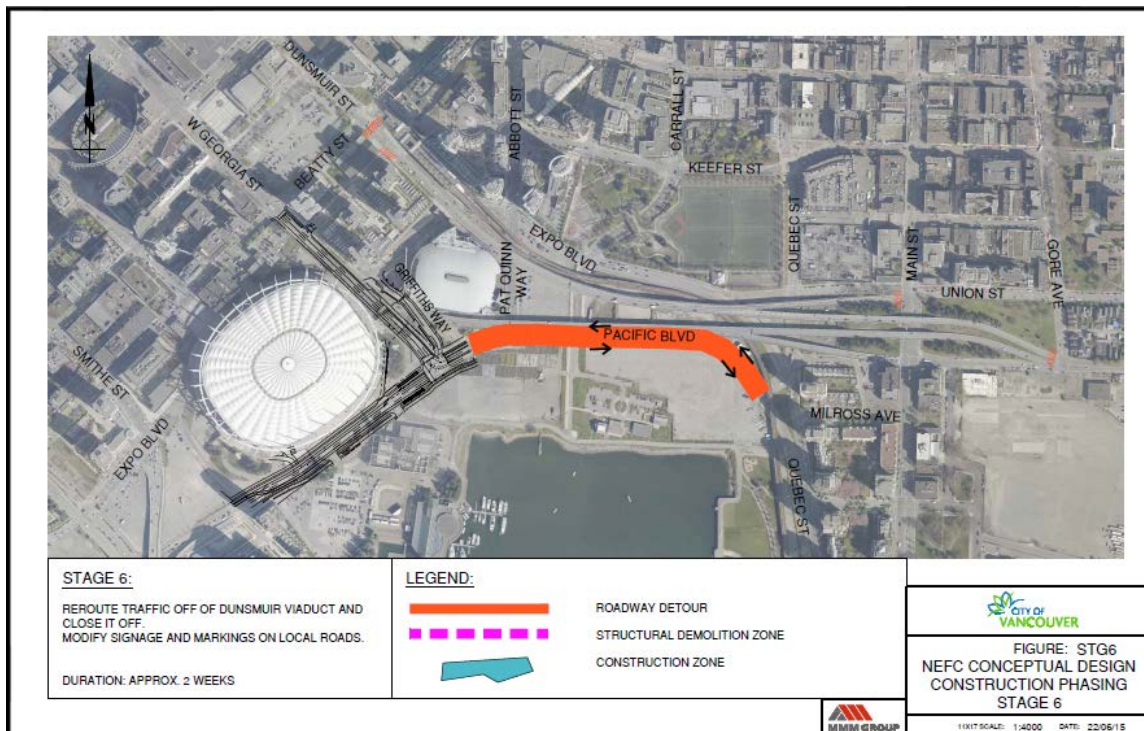
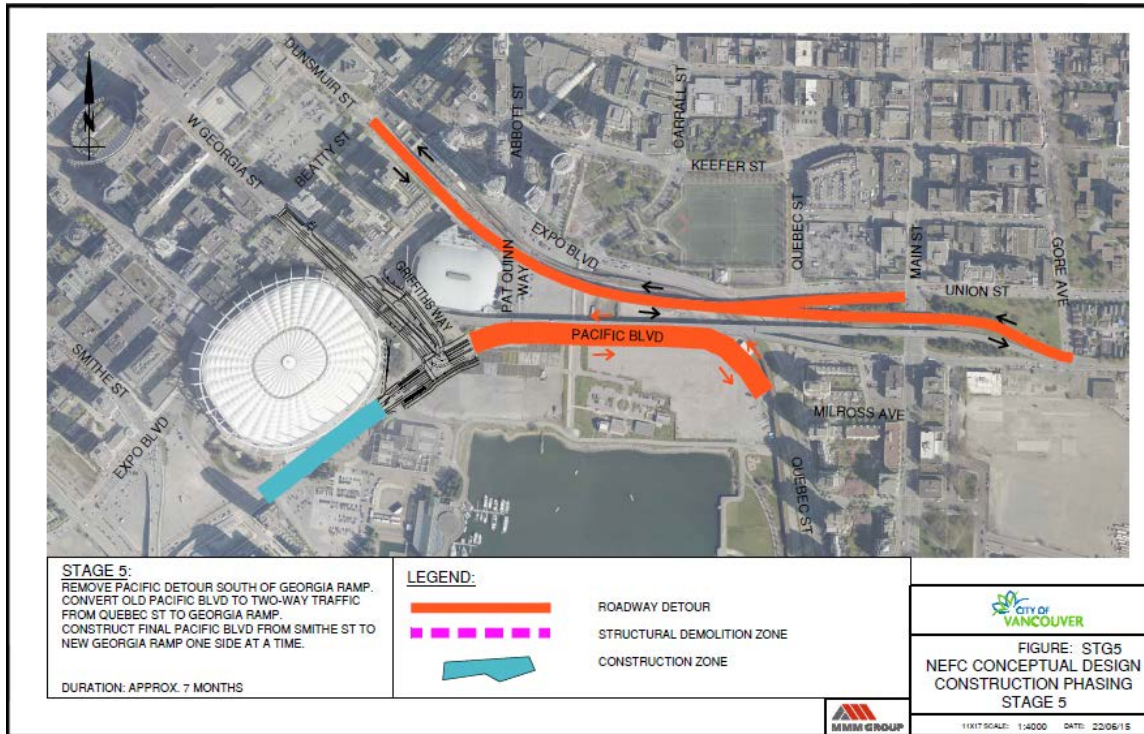
Proposed Georgia and Dunsmuir Viaducts Replacement Strategy

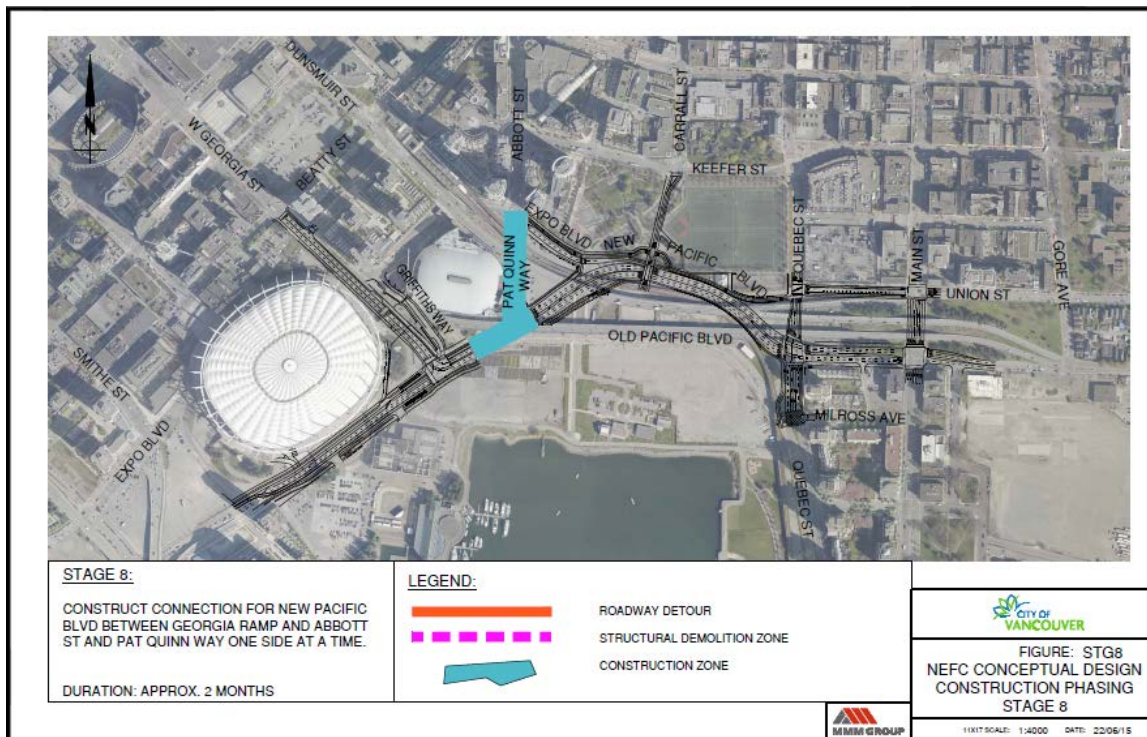
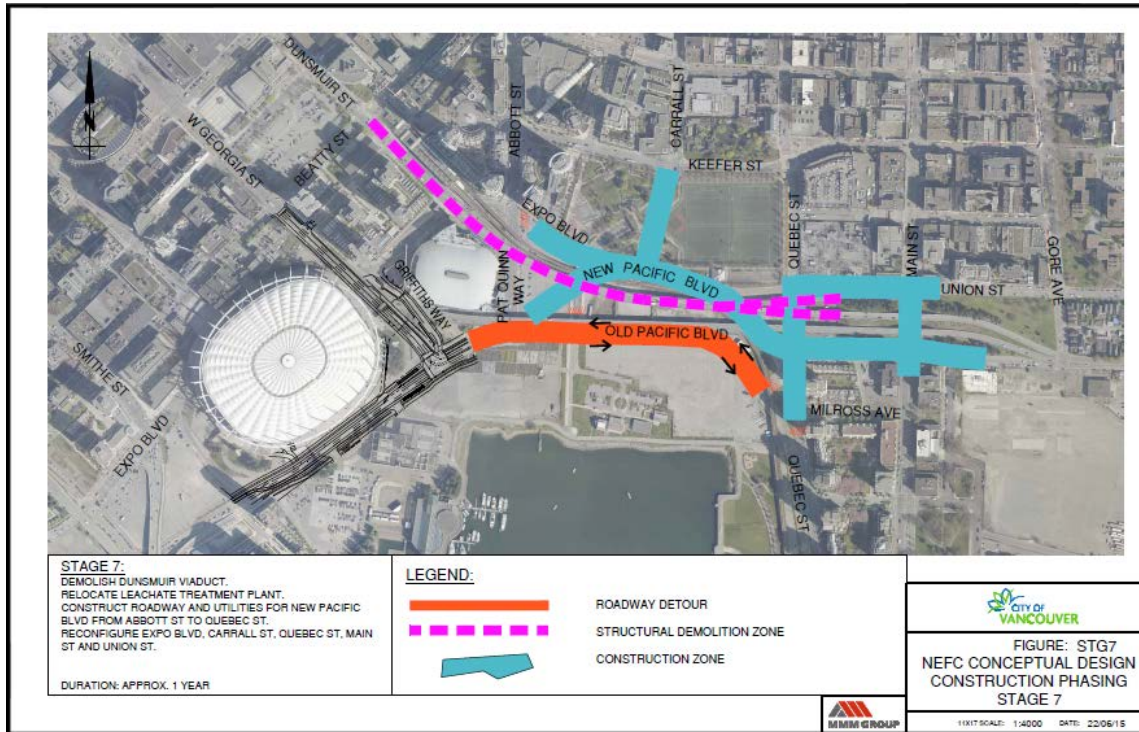
The following figures depict the conceptual phasing strategy for removal of the viaducts and construction of the replacement street network. It is anticipated that this process would be completed in two years and be phased to minimize disruptions to the adjacent businesses and traffic flow.





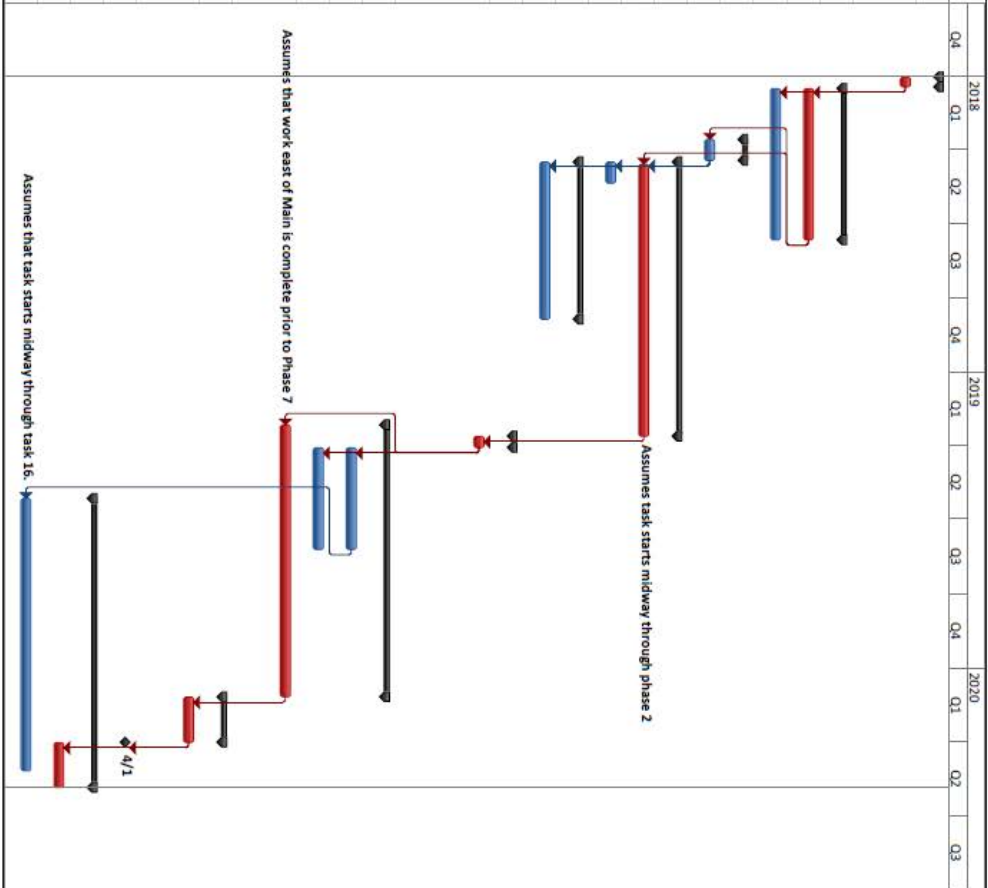






ID	Task Name	Duration	Start	Finish	Predecessors
1	Phase 1	10 days	Mon 1/1/18	Fri 1/12/18	
2	Convert Dunsnmur Viaduct to two-way & associated laning details downtown and east side of project area	10 days	Mon 1/1/18	Fri 1/12/18	
3	Phase 2	135 days	Mon 1/15/18	Fri 7/20/18	
4	Demolish Georgia Viaduct Beaty to Pat Quinn	27 wks	Mon 1/15/18	Fri 7/20/18	2
5	Demolish Georgia Viaduct Pat Quinn to west of Gore	27 wks	Mon 1/15/18	Fri 7/20/18	2
6	Phase 3	20 days	Mon 3/19/18	Fri 4/13/18	
7	Pacific Blvd detour around Georgia Ramp girder launch	1 mon	Mon 3/19/18	Fri 4/13/18	4FS-18 wks
8	Phase 4	242.5 days	Mon 4/16/18	Wed 3/20/19	
9	Georgia Ramp Construction	12 mons	Wed 4/18/18	Wed 3/20/19	4FS-13.5 wks, 7
10	Temporary Pacific Blvd Georgia Ramp to Pat Quinn	1 mon	Mon 4/16/18	Fri 5/11/18	7
11	Phase 5	140 days	Mon 4/16/18	Fri 10/26/18	
12	Pacific Blvd Ultimate Construction Smithie to Georgia Ra	7 mons	Mon 4/16/18	Fri 10/26/18	7
13	Phase 6	10 days	Wed 3/20/19	Wed 4/3/19	
14	Convert Ex. Pacific to two-way traffic Quebec to Georgia Ramp, close Dunsnmur Viaduct and associated laning in downtown and east side of project	2 wks	Wed 3/20/19	Wed 4/3/19	9
15	Phase 7	240 days	Wed 3/6/19	Wed 2/5/20	
16	Demolish Dunsnmur Viaduct Beaty to Pat Quinn	18 wks	Wed 4/3/19	Wed 8/7/19	14
17	Demolish Dunsnmur Viaduct Pat Quinn to west of Gore	18 wks	Wed 4/3/19	Wed 8/7/19	14
18	Construct New Pacific Blvd Pat Quinn to Main St includes side streets, utilities, bicycle facilities	12 mons	Wed 3/6/19	Wed 2/5/20	14FS-1 mon
19	Phase 8	40 days	Wed 2/5/20	Wed 4/1/20	
20	Construct Permanent Pacific Blvd Georgia Ramp to Pat Quinn including Pat Quinn	2 mons	Wed 2/5/20	Wed 4/1/20	18
21	Road Network Open	0 days	Wed 4/1/20	Wed 4/1/20	20
22	Phase 9	255 days	Wed 6/5/19	Wed 5/27/20	
23	Remove Old Pacific Blvd Georgia Ramp to Quebec	2 mons	Wed 4/1/20	Wed 5/27/20	20
24	Construct Bicycle Bridge Dunsnmur to NEFC Roads	12 mons	Wed 6/5/19	Wed 5/6/20	16FS-9 wks

Project: NEFC Preliminary Schedule No Acceleration Rev 1
 Date: Mon 8/31/15
 Note: IAVCO parade has been removed from this schedule and is assumed to have been completed prior to Georgia Ramp Construction.



Summary of 2013-2015 Consultancies

