CITY OF VANCOUVER

Northeast False Creek Transportation Study

Phase 3 Event Management Strategies

Submitted By:

PARSONS

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SW1227

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EXECUTIVE SUMMARY

The Northeast False Creek (NEFC) area is home to numerous annual events owing to the presence of two major stadia and components of special event routes. To accommodate these recurring events, special traffic control plans have been developed to manage three important components of the transportation impacts:

- The need to provide for adjacent on-street staging of tractor trailers during stadium load-in and load-out periods;
- The need to facilitate the movement of heavy pedestrian / participant event flows while minimizing traffic delays; and
- Facilitating the movement of private vehicles that are associated with through traffic and / or local residents / businesses.

The proposed Viaducts replacement network addresses the three above components by:

- Providing the same on-street staging capacity that is currently available;
- Improving pedestrian permeability in the network from the introduction of the Georgia Ramp connection between Beatty Street and Pacific Boulevard; and
- Maintaining acceptable traffic operations in the local and overall road network through the careful use of appropriate traffic management plans, well positioned advisory signage, and continued traffic monitoring before, during, and after events.

The current traffic control plans include a combination of delineated on-street staging lanes, no stopping zones, taxi zones, pick up / drop off zones, tour bus zones and street closures managed by traffic control personnel. Off-site staging for tractor trailers is also accommodated on the vacant Concord Pacific lands nearby. This process has achieved a reasonable balance between tractor trailer movements and event logistics, spectators and event participants, and between local access and through traffic movement.

With the plan for up to 5.4 M ft^2 of new residential and 2.6 M ft^2 of new non-residential development in the immediate area, event traffic management practices will be affected due to the additional traffic volume on the road network and the need to maintain local resident and business access during events. Many of these new residents and workers will need to travel on local streets that currently have access restrictions during special events.

In addition to the infill development planned for the area, the existing Georgia and Dunsmuir Viaducts will be replaced with a primarily at-grade arterial road network. This will present new opportunities and constraints for event traffic management, primarily due

to the introduction of a new Georgia Ramp connection between Beatty Street and Pacific Boulevard, and the consolidation of the existing Expo / Pacific one-way pair into a two-way arterial between Georgia Ramp and Quebec Street.

To accommodate the new developments and the Viaducts replacement road network, a number of traffic management changes are proposed, namely:

- For a BC Place event, local traffic only restrictions added along:
  - Smithe Street / Terry Fox Way north of Pacific Boulevard;
  - New Access south side of Pacific Boulevard west of Griffiths Way;
  - Abbott Street south of Pacific Boulevard;
  - The westbound left turn restriction from Expo Boulevard to Griffiths Way would need to be relaxed to allow local access; and
  - New Pacific westbound at Expo Boulevard slip lane.
- For a Rogers Arena event, local traffic only restrictions added along:
  - New Access south side of Pacific Boulevard west of Griffiths Way;
  - Abbott Street south of Pacific Boulevard;
  - The westbound left turn restriction from Expo Boulevard to Griffiths Way would need to be relaxed to allow local access; and
  - New Pacific westbound at Quebec Street and Main Street during outbound event flows only.
- For a Dual Event, local traffic only restrictions added along:
  - Smithe Street / Terry Fox Way north of Pacific Boulevard;
  - New Access south side of Pacific Boulevard west of Griffiths Way;
  - Abbott Street south of Pacific Boulevard;
  - The westbound left turn restriction from Expo Boulevard to Griffiths Way would need to be relaxed to allow local access; and
  - New Pacific westbound at Quebec Street and Main Street.
- The majority of running events can continue to be accommodated with some additional supplemental closures at the new Georgia Ramp and delineation of local block access lanes.
- Permanent changeable message signs are proposed at the following locations.
  - Terminal Avenue westbound east of Main Street;
  - Prior Street / Malkin Connector westbound east of Main Street;
  - Cambie Street northbound south of Cambie Bridge; and
  - Pacific Boulevard eastbound west of Cambie Street.
- A Memorandum of Understanding or similar agreement should be drafted between primary event management and local development entities in the area.

Following the implementation of the changes, the only significant differences between the existing and the Viaducts replacement network with respect to event management are

the reduction in the amount of off-site staging available and the increase in No Stopping at Any Time zones. Events will continue to be manageable and the reduction in surface parking lots combined with new pedestrian, cycling and transit infrastructure will reduce vehicular traffic impacts associated with stadium events. Traffic impacts to the surrounding road network due to traffic diversion are expected to be manageable due to the additional capacity available during the off-peak periods when events are typically held.

For the off-site staging, temporary accommodation may be made through vacant sites within the False Creek Flats industrial area. This area will become more accessible to NEFC stadia sites following the removal of the Viaducts footprint.

1.0 BACKGROUND & STUDY CONTEXT

The City of Vancouver is continuing to advance plans for the Northeast False Creek (NEFC) area. A number of previous studies have been completed in and around the area and have contemplated significant changes to land use as well as transportation network modifications. In order to provide technical support to the NEFC planning process, and address questions raised to date by stakeholders, a comprehensive transportation study is being undertaken by Parsons. The transportation study has been divided into three phases. The first phase focused on establishing baseline conditions within the study area transportation network. The second phase assesses the forecast transportation network related opportunities and constraints of alternative growth and transportation network modification scenarios. These first and second phases focus on the permanent road network changes and how the changes affect overall traffic flow and goods movement. The third phase, which is the subject of the current technical memo, provides an assessment of anticipated traffic and event management implications for major special events in the area and develops a strategy to address the recurrent events, such that these events can continue to be successfully conducted within the study area.

1.1 Study Area

The NEFC Transportation Study boundaries are shown in ***Figure 1.1***, with an inset showing the study area in the context of the overall City of Vancouver.

The area transportation network is multi-modal and complex, including the False Creek seawall recreational pathway, protected and painted on-street bikeways, small passenger ferries, a SkyTrain station and guideway, local transit stops, numerous service accesses, a pair of elevated viaducts, bi-directional roadways, and a high capacity one-way arterial couplet. The surrounding land use varies from commercial retail, to high density residential, to sports and entertainment facilities, and office space including two stadia and a casino complex. Numerous surface parking lots serve the traffic generated by events in this area. The focus of the subject event management strategy is on activities at and around the BC Place and Rogers Arena stadium facilities which are the primary existing trip generators for the area, as well as recurrent special events such as running and other mass participant events that make use of the area road network.

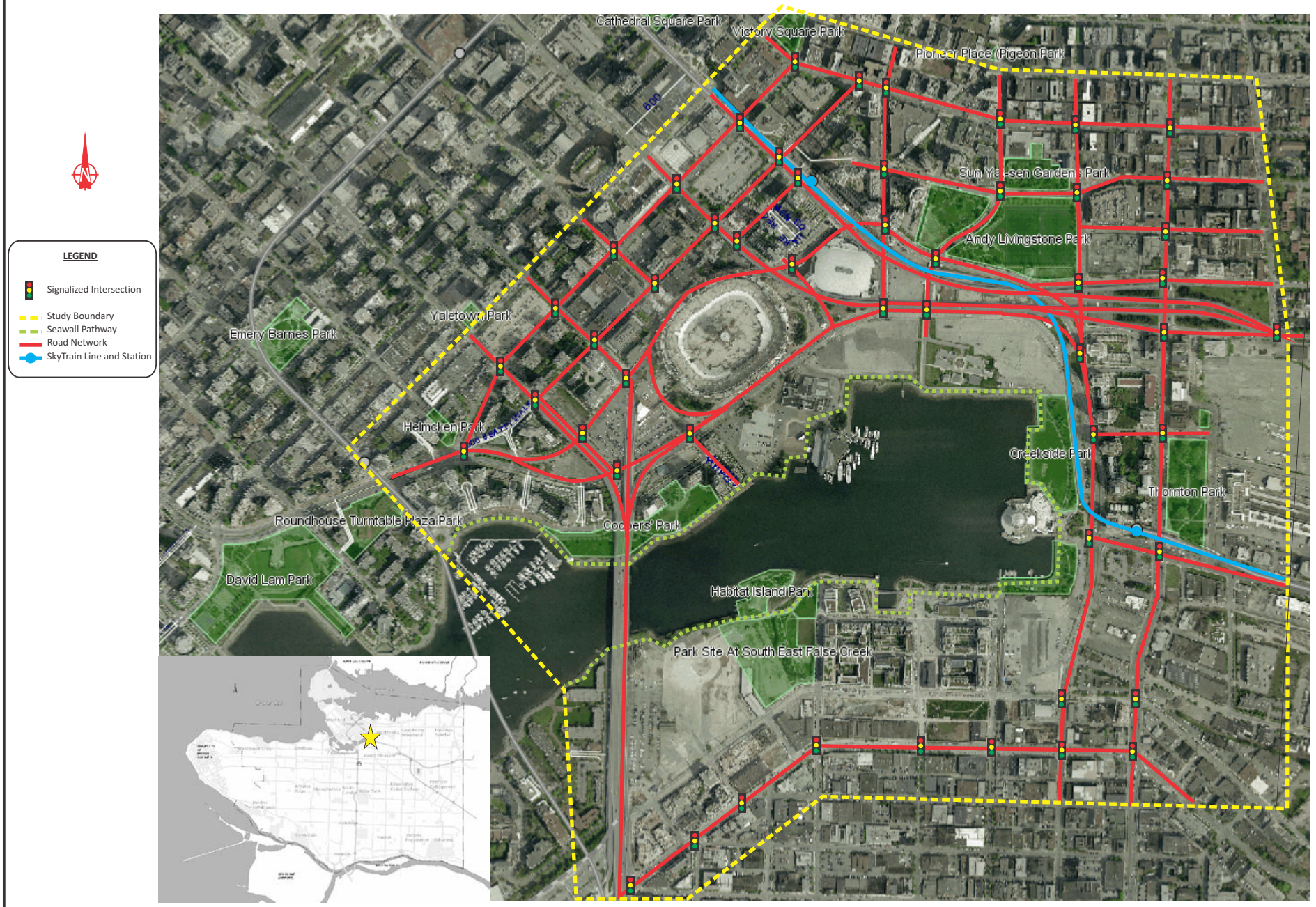
BC Place is accessed off of Pacific Boulevard, Griffiths Way, and Terry Fox Way, has a seating capacity of approximately 55,000, and is used for a variety of uses including football and soccer events, as well as major trade shows and concerts.

Rogers Arena is accessed off of Expo Boulevard and Griffiths Way, has a seating capacity of approximately 20,000, and is used for hockey, basketball, and concert events.

Rogers Arena had a Pacific Boulevard access that has since been removed to accommodate a new development on the southwest corner of the site.

Providence Health Care is also planning a new hospital on the currently vacant site east of Station Street directly north of the Pacific Central railway train station in the False Creek Flats area, adjacent to the study area. This new hospital is expected to replace St. Paul's Hospital in downtown Vancouver and is anticipated to open in 2022.

The focus of the transportation study is on the multi-modal transportation network between Cambie Street and Gore Avenue from west to east, and between Hastings Street and Terminal Avenue from north to south. However, the study area is much larger than the core focus area shown, as the entire street network has been captured in the macro-scopic analysis. As such, impacts on transportation facilities and communities outside of the core focus area, such as along 2nd Avenue on the south side of False Creek have also been quantified as appropriate in this study.



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Study Area Transportation Network

Figure 1.1

1.2 Proposed Road Network and Development Impacts

Changes that will impact the special events within the NEFC stadium district include modifications to both the land use and transportation network.

On the transportation network side, the existing Georgia and Dunsmuir elevated Viaducts and their ramp connections are proposed to be replaced with a new at-grade arterial street network. Details of this replacement network continue to evolve, but the core components of the plan include the following:

- Removal of the Georgia Viaduct between Citadel Parade and Gore Avenue including the off-ramp to Main Street;
- Removal of the Dunsmuir Viaduct and its protected two-way cycle track between Gore Avenue and the Rogers Arena north plaza including the Main Street ramp;
- Provision of a new two-way, four lane ramp connection between Citadel Parade and Pacific Boulevard (Georgia Street extension) with a new signalized "T" intersection combining Pacific Boulevard, Georgia Street and Griffiths Way;
- Removal of existing Pacific Boulevard between Abbott Street and Quebec Street;
- Realignment and reconfiguration of Expo Boulevard between Abbott Street and Quebec Street to provide a new two-way six lane arterial roadway (New Pacific Boulevard) with signalized intersections at Abbott Street and Carrall Street;
- Provision of a new four to six lane arterial roadway along the New Pacific Boulevard / Prior Street alignment with signalized intersections at Quebec Street, Main Street and Gore Avenue. Six lanes will be provided west of Main Street and four lanes will be provided east of Main Street;
- Closure of Carrall Street between Keefer Place and the Seawall to motorized traffic; and
- Provision of a new pedestrian and cycling connection between the Union Street bikeway and the Dunsmuir cycle track.

Figure 1.2 shows the proposed replacement network overlain on an existing aerial map. On the land use side, the type and intensity of land uses will change significantly with a mix of residential, office, commercial and recreational amenities expected to be delivered in the study area in the coming years, independently of any decision on potential Viaducts removal and replacement with a modified street network.

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Viaducts Replacement Network Conceptual Plan

Figure 1.2

Table 1.1 summarizes the potential mix and intensity of land uses being considered based on discussions with the City's planning department and directions emerging from NEFC planning studies. The proposed hospital in the False Creek Flats industrial area is also included for reference.

Table 1.1: Potential NEFC Development Totals (ft^2)

Block	Address	Residential	Non-Residential
5B West	998 Expo Boulevard	397,435	20,968
5B East	68 Smithe Street	303,209	44,993
6B	750 Pacific Boulevard (Plaza of Nations)	1,505,510	438,154
6C	n/a (Concord Pacific)	1,444,000	220,000
6D	Quebec – Gore Block	800,000	0
7A	800 Griffiths Way	401,698	215,278
9	n/a (Waterfront Park)	0	0
10A	39 Smithe Street	0	753,420
10C	n/a (BC Place)	310,000	85,000
11	701 Expo Boulevard	0	22,131
DD-CD1	720 Beatty (Central Heat Plant)	217,680	459,546
Totals		5,379,532	2,259,490
Proposed Hospital	Station Street and National Avenue	-	929,887

*note: these numbers remain speculative and for transportation analyses only. They do not necessarily reflect council approved densities or densities that would be supported by the City of Vancouver Planning Department.

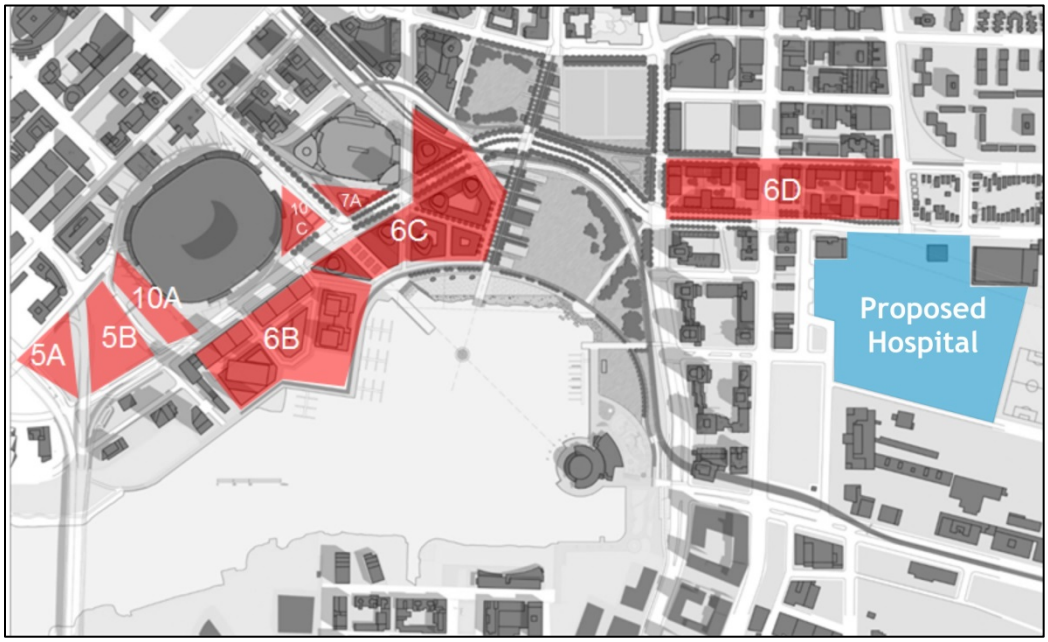
Figure 1.3 shows the development blocks superimposed on the conceptual Viaducts replacement transportation network.

As shown, the land use and transportation network changes pose significant challenges to the conduct of recurrent special events in and around the stadia. Specifically, these challenges include:

- Removal of links within the network which currently serve to redistribute through traffic away from the congestion generated by stadium events, i.e., the Viaducts;
- Provision of a replacement network which will provide for a higher degree of local accessibility and allow more flexible traffic distribution to external network links; and

- Introduction of new residential and employment trips to the area which will need to have access maintained to/from their properties at all times including during stadium events.

Figure 1.3: Viaducts Replacement Concept and NEFC Development Blocks



1.3 Guiding Principles and Study Objectives

In discussions with staff and area stakeholders, a number of guiding principles have emerged to direct the development of the NEFC area. These principles are listed as follows in no particular order:

- Reconnect the Historic Communities (Gastown, Chinatown, Downtown East Side) with the False Creek waterfront;
- Expand parks and open spaces;
- Repair the urban fabric;
- Explore housing development and place-making opportunities on the City blocks;
- Create a vibrant waterfront district;
- Increase efficiency of the street network;
- Improve connectivity between Downtown, NEFC, and the waterfront;
- Enhance pedestrian and cyclist movement;
- Develop a fiscally responsible approach; and
- Engage residents and stakeholders in a meaningful way.

With these guiding principles in mind and with consideration for outstanding questions to be resolved, the following transportation study objectives have been prepared:

1. Confirm the Viaduct replacement street network has sufficient capacity to accommodate forecast commuter vehicles and goods movement. The study should determine how existing neighbouring communities will be affected and how planned NEFC developments will impact the street network;
2. Identify ways that multiple events can be more effectively managed;
3. Identify where event support and delivery vehicles will be staged before, during and after events;
4. Determine effects on area parking supply and demand;
5. Assess the benefits / disbenefits of a new Stadium-Chinatown SkyTrain Station access to the southern side of Expo Boulevard;
6. Assess the interaction of pedestrian / cycling movements at New Pacific Boulevard;
7. Determine if there are viable alternatives to the realignment and use of Carrall Street;
8. Determine if there are viable alternatives to a dedicated pedestrian and cycling bridge connecting Dunsmuir Street directly to the Union / Carrall bikeways;
9. Determine a preferred configuration for dedicated transit lanes along New Pacific Boulevard;
10. Determine if there is an impact to pedestrian safety or capacity where dual turn lanes are provided; and
11. Confirm the number of lanes required for vehicle traffic on proposed NEFC streets.

Objectives 2 and 3 are addressed in the subject memo, with reference to Objectives 4 and 5.

2.0 STAKEHOLDER CONSULTATION

As a starting point, a review of existing event management plans and requirements was undertaken. This included discussions with the operational managers for each of BC Place and Rogers Arena. The discussion topics included confirmation of existing traffic generation parameters, current staging measures to accommodate goods and equipment movement pre and post-event, and any outstanding issues or concerns to be resolved. Meeting minutes have been provided in ***Appendix A***.

2.1 BC Place

Employee Numbers

The base employee numbers at BC Place include the administrative offices, the Sports Hall of Fame staff and Centerplate staff. This is typically around 100 people. In the ramp up to a major event or trade show this can increase to between 500 and 1,500. On the actual event day between 1,700 and 2,000 people can be on site at any one time.

Employee Shift Times

The base administrative staff work a typical Monday to Friday work week (arriving between 7:00 AM and 9:00 AM, leaving between 3:00 PM and 6:00 PM). An estimate of worker modal split is in the order of 50% non-auto given the SkyTrain accessibility. For events, most of the staff take transit as on-site spaces are reserved for suite holders. Event staff typically arrive one to two hours before and leave one hour after the event.

Deliveries and Service Visits

Over the course of a week, there are regular deliveries and service visits estimated at 35 to 40 trucks per week. A typical concert generates 60 to 70 trucks (noting that the BC Place stages are larger than those in the adjacent Rogers Arena), while a trade show generates 150 trucks and between 300 to 400 vehicles (assuming one vehicle per exhibitor). The boat show generates 200 to 300 vehicles. Other specialized events such as Monster Truck races generate up to 160 dump trucks to create a temporary dirt track within the stadium.

Deliveries and Service Schedule

Most deliveries and service visits are somewhat random throughout the week with slightly more activity before and after a scheduled event. For concerts and trade shows, the move in period can require half a day to three days before the actual event.

Figure 2.1 shows the current load-in traffic control plan which accommodates up to ten 20 m long tractor trailers in approximately 200 m of delineated eastbound fast lane along Pacific Boulevard.

Figure 2.2 shows the load-out traffic control plan which accommodates up to fifteen 20 m long tractor trailers in 300 m of delineated fast lane along Expo Boulevard.

Figure 2.1: BC Place Load-In Traffic Plan

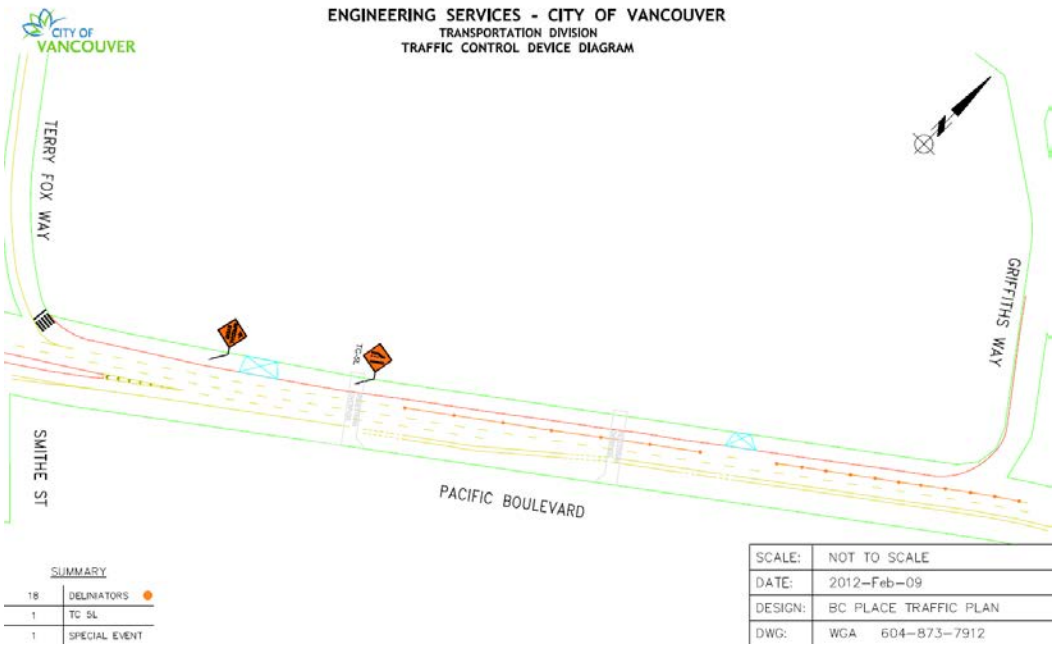
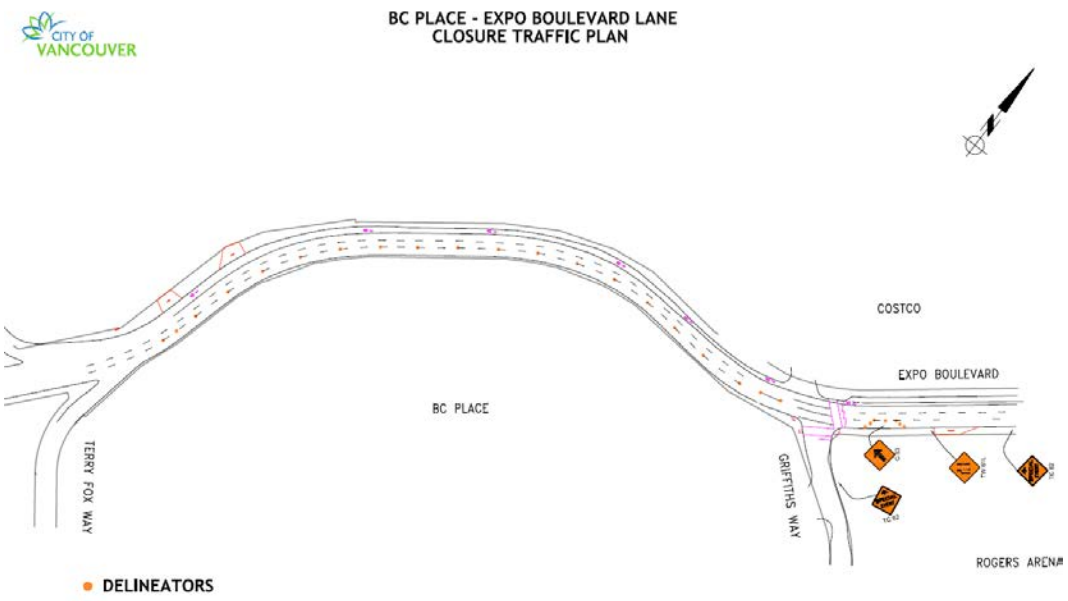


Figure 2.2: BC Place Load-Out Traffic Plan



Typical Service Vehicle Dimensions

Most regular delivery/service trucks are standard single unit vehicles such as garbage trucks and urban delivery trucks with lengths up to 12 m. Most tractor trailers are in the order of 20 m in total length; however, specialized trucks serving events like the boat show are towing cargo as long as 77 feet (23.5 m).

Typical Service Vehicle Origins and Designations

Regular delivery trucks use the service access provided off of Griffiths Way. For larger deliveries and concert setup, trucks enter from Pacific Boulevard eastbound and pull through the east gate to the interior of the stadium. They leave from the west gate to Terry Fox Way. There is no designated parking or staging area on site so trucks must enter the site, drop off their delivery, leave the site, and then return again to pick up and remove. Following an event where a stage is in place, the trucks cannot pull through the stadium and instead must use Terry Fox Way to enter / exit the stadium staging from the Expo Boulevard fast lane as per ***Figure 2.2***. Terry Fox Way will close to through traffic as part of an upcoming development. This will not affect BC Place as they will continue to have local access to the remaining portion of Terry Fox Way through a garage connection; however, the closure will affect the ability of trucks serving the stadium district to complete a turning maneuver from westbound Expo to eastbound Pacific. The majority of event trucks are destined to and from the nearest freeway (Highway 1) via

First Avenue / Terminal Avenue / Quebec Street. To access Pacific Boulevard, trucks make use of Terry Fox Way to connect from Expo Boulevard and all trucks currently making this movement will therefore be diverted to the Nelson Street slip lane which has limited width available in its current configuration.

Traffic Management Issues and Concerns

An ongoing area of concern is the overlap between special event plans and construction traffic management plans. Coordination of schedules within the entire area is essential as both BC Place and Rogers Arena make use of lane closures on Pacific Boulevard and Expo Boulevard. At the same time, construction on adjacent residential and office towers often requires the closure of a curb lane for site access. The cumulative effects can result in significant traffic congestion.

Pre-and-post event pedestrian flows are an ongoing concern due to friction with vehicle traffic. Locations include the Expo Boulevard westbound to Smithe Street northbound right-turn which has recently been modified to include a new bike lane and restricted right-on-red operation. A number of garages exit to Expo Boulevard including Costco, BC Place suite holders, and Pivotal, and congestion can be observed on event nights. There is an existing taxi stand on Pacific Boulevard south side which will move to Terry Fox with the new development. This has traditionally created conflicts as pedestrians try to cross Pacific at-grade. There is a potential to consider replacing the Pacific Boulevard overpasses with an at-grade crossing provided evacuation and handicap access requirements can be maintained.

2.2 Rogers Arena

Employee Numbers

There are four typical “modes” that Rogers Arena undergoes throughout the year. These include:

a) “Dark days” where there is no hockey game or other special event and only regular staff are on site;
b) Event preparation days where there is a ramp up in activity in advance of a hockey game or concert;
c) A hockey game day which features specific schedule and traffic generation considerations; and
d) A concert day which is different logistically than a game day.

On a “dark day”, the regular employees of the Canucks Hockey Team and Aquilini Developments total approximately 150. This “dark day” total could increase by 156 employees as a result of on-site office space development. The number of employees increases to over 1,000 part time staff on a game days.

Employee Shift Times

For a “dark day” there will be a significant amount of background traffic generation, particularly as new residential and office towers are completed and occupied on the Rogers Arena block. This will include traffic generated by employees in the new office towers (156 parking spaces off of Griffiths Way), residents of the primarily rental apartment towers (also accessed off of Griffiths Way), and employees of the Canucks / Aquilini (most park in the Griffiths Way parkade and are on site from 8:30 AM to 5:00 PM).

Deliveries and Service Visits

There are approximately six regular food and service vehicle deliveries daily as well as random garbage / waste hauling. With the new office and apartment towers there will also be first / last of month move-in / move-out at the loading dock.

On a game day, two to three broadcast trucks arrive from Expo Boulevard into the loading bay and the interior of the arena where they are stored inside.

With regards to permanent loading bay capacity, there will be 3 bays inside a covered area off of Expo Boulevard, two external loading bays off of Griffiths Way, three bays for the new south tower, and three bays for the existing Canucks retail store. There will be a total capacity of approximately 11 bays, but these are not all interconnected or interchangeable.

Deliveries and Service Schedule

For a preparation day, if the event is a Canucks game, there will typically be a practice held at 11:00 AM which generates a bus pick-up and drop-off along Griffiths Way via Expo Boulevard. There are also additional tractor trailers generated providing beverages and food supplies to the loading dock off of Expo Boulevard. Staff such as kitchen and food preparation staff can also increase by 25%. The core hours of this increased activity are 8:00 AM to 4:30 PM in the daytime but can still be random.

For a weekend game, the broadcast trucks arrive around 7:00 AM to 8:00 AM and for a weekday game, around 11:00 AM to noon. The number of trucks can increase depending

on the game (playoffs, all-star games and other major events can draw additional broadcast trucks).

During the game day, there are additional staff arriving throughout the day mostly walking or arriving by transit. Between 4:00 PM and 6:00 PM the majority of the temporary staff have arrived (>1,000 part time staff). Some permanent staff park off site as the on-site lot is full for season ticket holders. Overflow is traditionally accommodated at Concord Pacific surface lot.

Team buses arrive between 4:00 PM and 4:30 PM and park underneath the building. Two ambulances also arrive at this time and park underneath the building. The game day parkade access opens at 5:00 PM and guests enter until 7:00 PM.

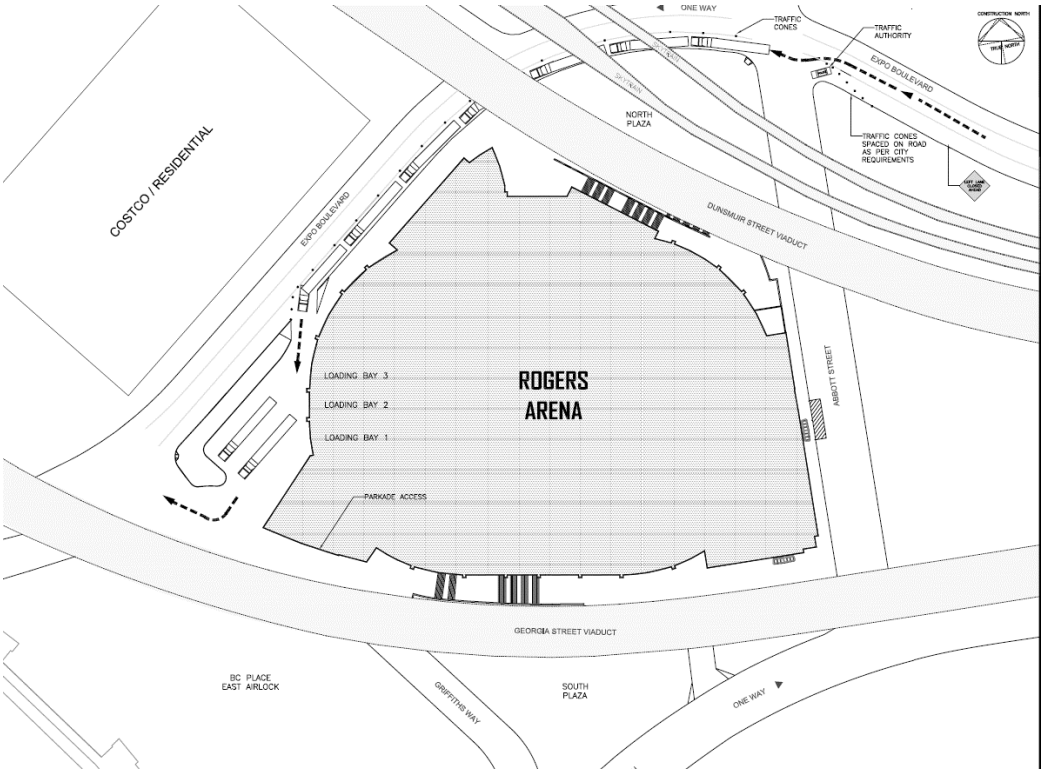
Game day crowds are as high as 18,000 people, mostly walking in from SkyTrain or downtown. Arrival peaks between 6:00 PM and 7:10 PM.

Following the game, crowds leave between 9:30 and 10:15 PM depending on the results (overtime, blowout, etc.). At 11:15 PM the broadcast trucks leave and the next day garbage is picked up.

For a concert day, the production trucks arrive between 7:00 AM and 9:00 AM. These fleets can range from five trucks to 28 trucks, although 15 is reported as a recent average.

The average of 15 trucks are staged off-site and are called up to the three Expo Boulevard loading bays as per ***Figure 2.3***. Typically one to two lanes are blocked off to allow up to seven 20 m trucks to be staged in the approximately 140 m of delineated fast lane along Expo Boulevard. A buffer lane is also provided for worker safety.

Figure 2.3: Rogers Arena Load-In Traffic Plan



By noon the trucks are unloaded and are moved off site. Buses then begin to arrive (five to seven buses carrying entertainers and support staff). Additional pick-ups and drop-offs occur throughout the day of the concert.

Concerts typically accommodate 12,000 to 14,000 attendees. Cars and guests arrive between 7:00 PM and 8:30 PM depending on the strength of the opening act. Temporary staffing is similar to a hockey game day.

Concerts typically end at 11:00 PM. Trucks come in afterwards to begin stage tear down. Seven trucks may be lined up at a time along Expo Boulevard in the temporary lane closures and another two to three trucks may be within the three loading bays. Within four hours (by 2:00 AM) all trucks have cleared the site and have proceeded to another venue. Occasionally there will be back to back shows which implies overnight parking and storage.

Typical Service Vehicle Dimensions

Most daily service / delivery trucks are single unit vehicles of up to 12 m in length with occasional tractor trailers. Tractor trailers are in the order of 20 m in length and tour buses of up to 14 m are used for hockey game broadcasting and concert events.

Typical Service Vehicle Origins and Designations

Based on the most recent five years of aerial imagery, trucks were observed staging off site at the following NEFC surface parking lots:

- Concord Pacific lot south of Pacific Boulevard between Griffiths Way and Quebec Street;
- Along Pacific Boulevard eastbound in the curbside parking lanes east of Carrall Street; and
- In the lot bound by Abbott Street, Carrall Street, Expo Boulevard and Pacific Boulevard.

Trucks were staged in a variety of configurations on these lots according to the available space. The number of vehicles appeared to be in the range reported for concerts. Note that some of the observed truck activity may also be related to Cirque de Soleil and other major temporary festivals / events on these lots.

Most of the arena external trips are derived from major freeways such as Highway 1 and Highway 99 via the City's truck route. Local truck routes Prior Street, Terminal Avenue and Great Northern Way do not permit truck traffic east of Clark Drive.

Traffic Management Issues and Concerns

A number of issues may arise due to the overlap of future development traffic with game day and concert event traffic. The game day arrival pattern for the parking garage will be complicated with the 156 office employees who may leave between 5:00 AM and 5:30 PM when hockey guests start to arrive. Apartment residents may also be returning home within the same window.

The Gate 3 (Expo Boulevard) crossing is an issue due to the SkyTrain access. During game nights, vehicle traffic must be controlled by police. Gate 7 currently has the lowest usage, but this could change with more redevelopment on the south side of Pacific Boulevard.

Concert fleets are growing in size and this could increase storage and staging requirements. Future needs must be met with the loading bays within the building and on Expo Boulevard, as well as room nearby for marshalling and call up (via Abbott Street). It is recommended to retain Expo Boulevard with spare lanes to be utilized for special events. With planned redevelopment of existing surface lots, alternative sites will need to be explored in close proximity.

3.0 EXISTING SPECIAL EVENT PLANS AND SCENARIOS

In this section, a review of the existing traffic control plans that are put in place for NEFC area events was undertaken. This section describes the special measures that are implemented to deal with the movement of people and to minimize traffic impacts and delays. Only the major recurring events are described; however, similar plans are put in place with other events that affect the same road network segments.

3.1 BC Place Event

For a single event at BC Place, access to Cambie Street and Beatty Street is closed from Georgia Street and Smithe Street. A similar closure is in place at Hamilton Street / Robson Street to allow Robson Street to carry heavy pedestrian flows and limit traffic infiltration to the stadium concourse. Entry to Griffiths Way is also restricted from either direction.

Taxi zones are located on the block of Georgia Street between Hamilton Street and Cambie Street and on Abbott Street northbound between Expo Boulevard and Pacific Boulevard.

Charter buses are staged on Cambie Street westbound west of Dunsmuir Street and on Expo Boulevard between Union Street and Carrall Street.

Passenger pick-up / drop-off zones are located on Abbott Street southbound between Expo Boulevard and Pacific Boulevard and on Pacific Boulevard adjacent to the Edgewater Casino.

The current traffic control plan is shown in ***Figure 3.1***.

3.2 Rogers Arena Event

During Rogers Arena Events, similar taxi, passenger pick-up / drop-off, and charter bus zones are developed as per the BC Place event. Stopping is prohibited on Beatty Street between Georgia Street and Dunsmuir Street, Pacific Boulevard between Griffiths Way and west of Quebec Street, and on Abbott Street between Expo Boulevard and West Pender Street.

Traffic authority personnel restrict access to Griffiths Way for bus and permit parking only, and to assist the crossing of Expo Boulevard at the SkyTrain station access.

The current traffic control plan is shown in ***Figure 3.2***.

3.3 Dual Event

For a Dual Arena Event, similar vehicle access restrictions are placed along Robson Street, Cambie Street, and Beatty Street as with the BC Place event. Additional no stopping zones are placed along Citadel Parade and Abbott Street north of Expo Boulevard. Westbound traffic on Expo Boulevard is barricaded west of Abbott Street. Additional traffic authority staff are also on duty at major intersections.

The current traffic control plan is shown in ***Figure 3.3***.

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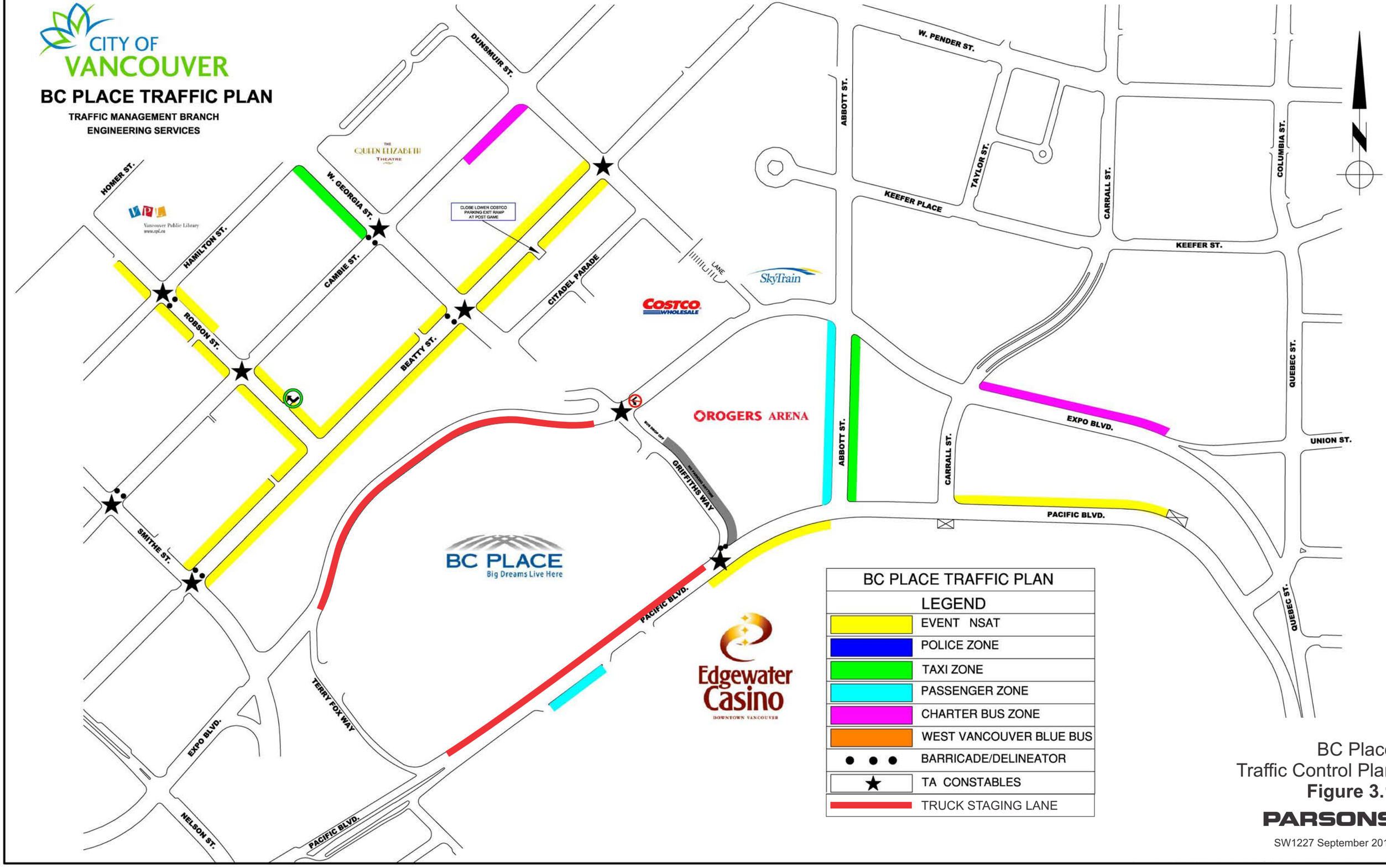
BC PLACE TRAFFIC PLAN

TRAFFIC MANAGEMENT BRANCH
ENGINEERING SERVICES



BC PLACE TRAFFIC PLAN
LEGEND
EVENT NSAT
POLICE ZONE
TAXI ZONE
PASSENGER ZONE
CHARTER BUS ZONE
WEST VANCOUVER BLUE BUS
BARRICADE/DELINEATOR
TA CONSTABLES
TRUCK STAGING LANE

BC Place
Traffic Control Plan
Figure 3.1

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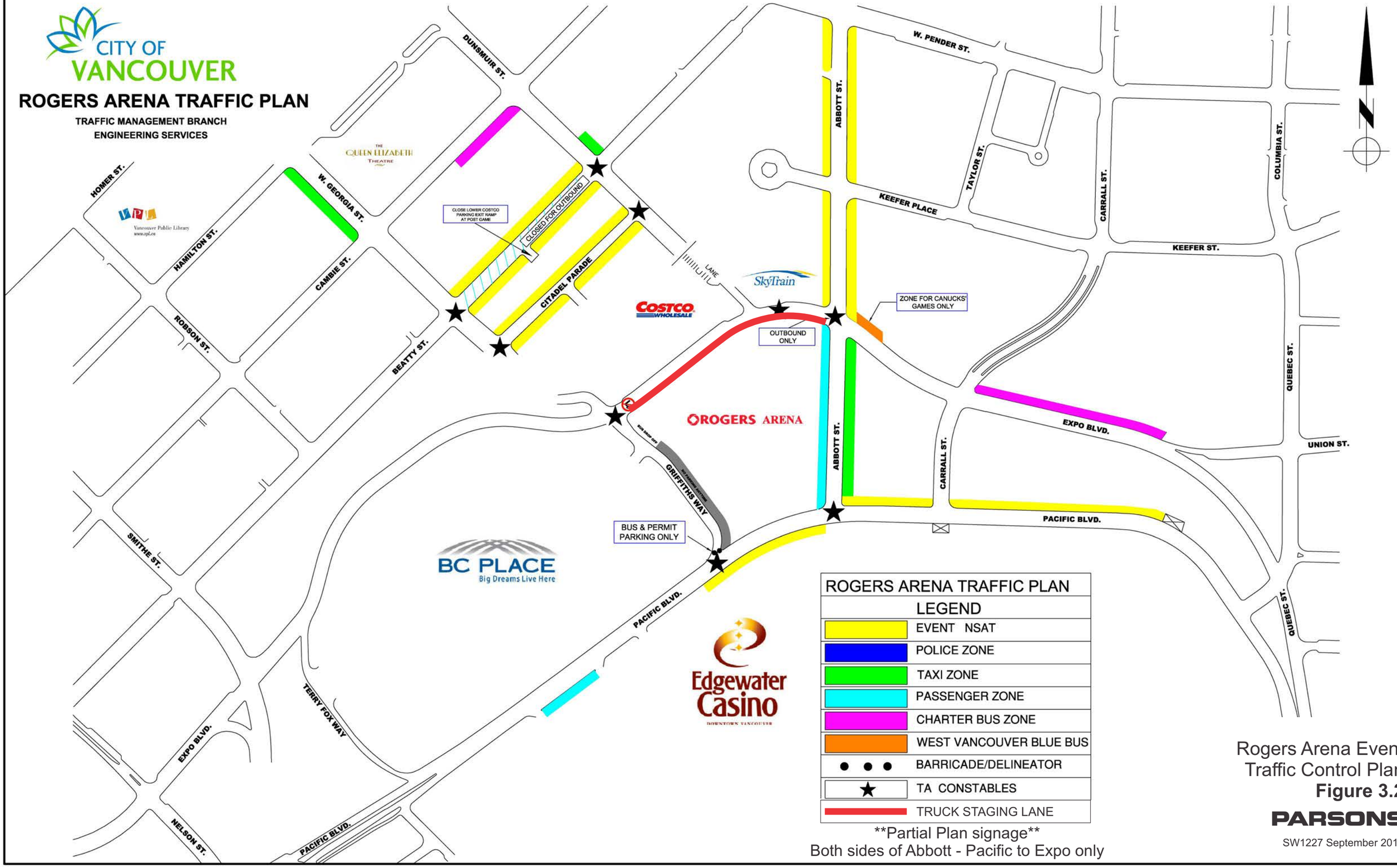
ROGERS ARENA TRAFFIC PLAN

TRAFFIC MANAGEMENT BRANCH
ENGINEERING SERVICES



ROGERS ARENA TRAFFIC PLAN
LEGEND
EVENT NSAT
POLICE ZONE
TAXI ZONE
PASSENGER ZONE
CHARTER BUS ZONE
WEST VANCOUVER BLUE BUS
BARRICADE/DELINEATOR
TA CONSTABLES
TRUCK STAGING LANE

Partial Plan signage
Both sides of Abbott - Pacific to Expo only

Rogers Arena Event
Traffic Control Plan
Figure 3.2

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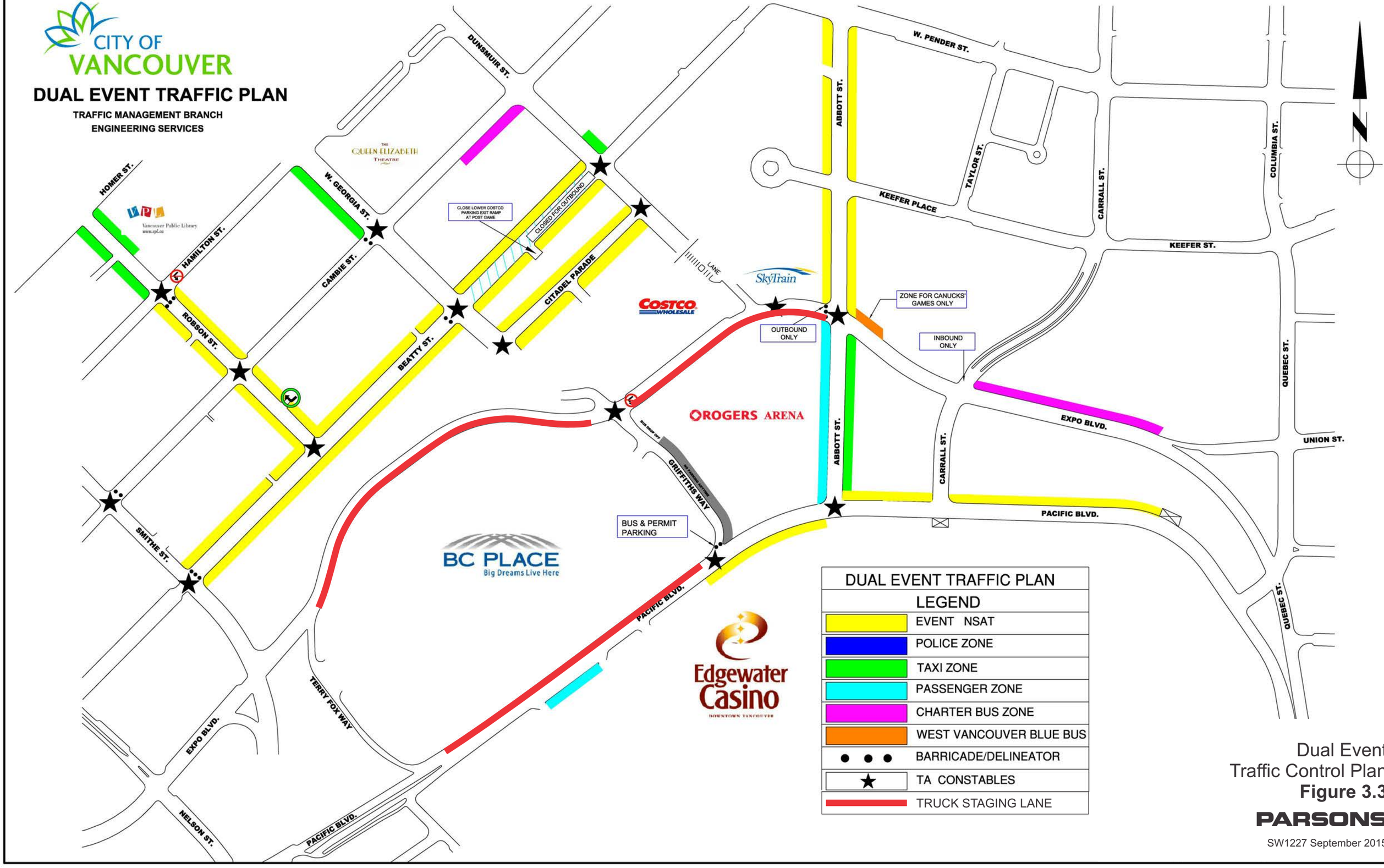
SW1227 September 2015

CITY OF VANCOUVER

DUAL EVENT TRAFFIC PLAN

TRAFFIC MANAGEMENT BRANCH
ENGINEERING SERVICES



DUAL EVENT TRAFFIC PLAN
LEGEND
EVENT NSAT
POLICE ZONE
TAXI ZONE
PASSENGER ZONE
CHARTER BUS ZONE
WEST VANCOUVER BLUE BUS
BARRICADE/DELINEATOR
TA CONSTABLES
TRUCK STAGING LANE

Dual Event
Traffic Control Plan
Figure 3.3

PARSONS

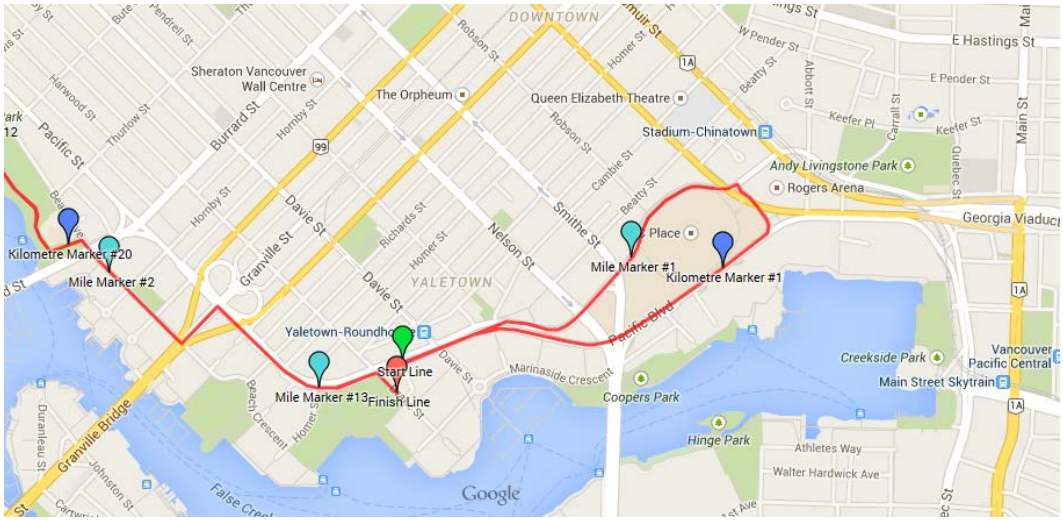
SW1227 September 2015

3.4 First Half

This 2,000 person running event occurs every February. It commences at the Yaletown Community Centre, traverses eastbound on Pacific Boulevard to Griffiths Way, turning left and looping back via Expo Boulevard before proceeding to the North False Creek seawall and Stanley Park.

Full closures of Pacific Boulevard and Expo Boulevard are implemented between Cambie Street and Abbott Street, and the northbound off ramp between Cambie Bridge and Pacific Boulevard is closed. These closures briefly restrict access (for approximately one hour) to/from BC Place, Edgewater Casino and Plaza of Nations, and Rogers Arena.

Figure 3.4: First Half Marathon Route



3.5 Run for the Cure

The annual CIBC Run for the Cure is a mass participation fundraising run / walk event hosted at BC Place every fall. The run start and finish line is located on Pacific Boulevard east of Abbott Street. No route map was available at the time of report preparation.

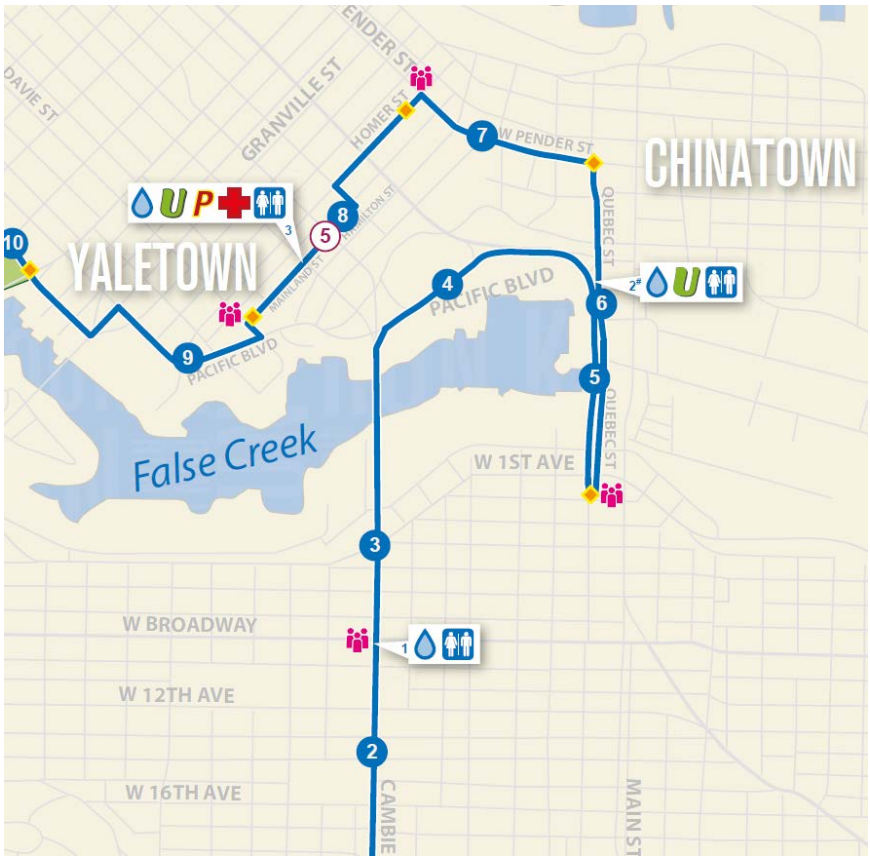
3.6 BMO Vancouver International Marathon

The annual Vancouver International Marathon features a Half Marathon course with 15,000 participants every May. The routing has significant impacts on the NEFC network between approximately 7:00 AM and 9:00 AM on the following streets:

- Full closure of Pacific Boulevard between Cambie Street and Quebec Street;
- Southbound closure of Quebec Street between Pender Street and Pacific Boulevard;
- Full closure of Quebec Street between National Avenue and West 2nd Avenue (northbound curb lane remains open north of Terminal Avenue for City Gate resident access); and
- Eastbound closure of Pender Street between Quebec Street and Homer Street.

The event creates a major split between East and West Vancouver, with a significant amount of vehicular and transit traffic detoured via Main Street.

Figure 3.5: Vancouver International Marathon Half Marathon Route (source: race website)



3.7 Vancouver Sun Run

The Vancouver Sun Run occurs annually in April, drawing up to 50,000 participants. Because of the scale of the event and its start/finish locations, the event has significant traffic impacts on the entire downtown core including the NEFC area.

Road and transit impacts affect the following streets:

- Pacific Boulevard closures (finish line and post-race area is on Pacific Boulevard between Terry Fox Way and Griffiths Way)
    - Nelson Street to Abbott Street 5:00 AM to 1:30 AM;
    - Abbott Street to Quebec Street 7:00 AM to 1:30 PM
- Expo Boulevard - closed Quebec Street to Terry Fox Way 7:30 AM to 9:00 AM;
- Cambie Bridge – closed to all northbound traffic 8:30 AM to 1:00 PM; and
- Quebec, Keefer & Abbott Streets – closed to all traffic 7:30 AM to 1:00 PM

Pender Street and Main Street form primary alternate routes around the closures.

Figure 3.6: Vancouver Sun Run Route (source: race website)

3.8 Lululemon Seawheeze Half Marathon

The Lululemon Seawheeze Half Marathon occurs in August and attracts over 10,000 participants.

The route starts and ends in Coal Harbour, utilizing the Dunsmuir Viaduct and a loop around Andy Livingstone Park to connect with the False Creek Seawall via Carrall Street. Closures include:

- Dunsmuir Viaduct westbound between Granville Street and Main Street - all lanes closed 7:00 AM to 9:00 AM;
- Main Street southbound between Dunsmuir / Union Street and Keefer Street - two southbound lanes closed 7:00 AM to 9:00 AM;
- Keefer Street between Main Street and Carrall Street – all lanes closed 7:00 AM to 9:00 AM; and
- Carrall Street between Keefer Street and False Creek Seawall - all lanes closed 7:00 AM to 9:00 AM.

Figure 3.7: Seawheeze Lululemon Half Marathon Route (source: race website)

3.9 Rock N' Roll Half Marathon

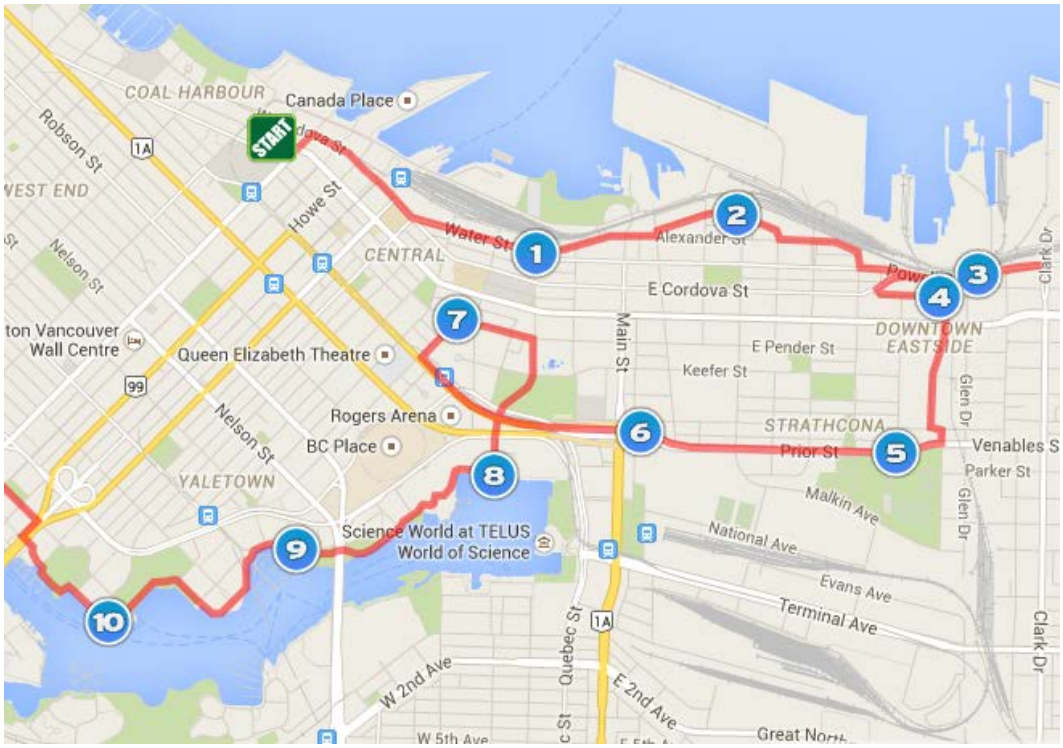
The Rock N' Roll Half Marathon held its inaugural event in October 2014, attracting 15,000 participants. The route starts in Coal Harbour and proceeds to East Vancouver, tracking back to the False Creek Seawall via Prior Street, the Dunsmuir Viaduct, Pender Street and Carrall Street.

Between approximately 8:00 AM and 11:00 AM, the following NEFC streets are impacted:

- Prior Street (westbound lanes) from Raymur Avenue to Dunsmuir Viaduct;
- Dunsmuir Viaduct from Gore Avenue to Beatty Street;
- Beatty Street from Dunsmuir Viaduct to Pender Street;
- Pender Street (eastbound lanes) from Beatty Street to Carrall Street;
- Carrall Street from Pender Street to Seawall; and
- Seawall from Carrall Street to Granville Street.

Detours are made via Clarke Drive, Terminal Avenue and Abbott Street.

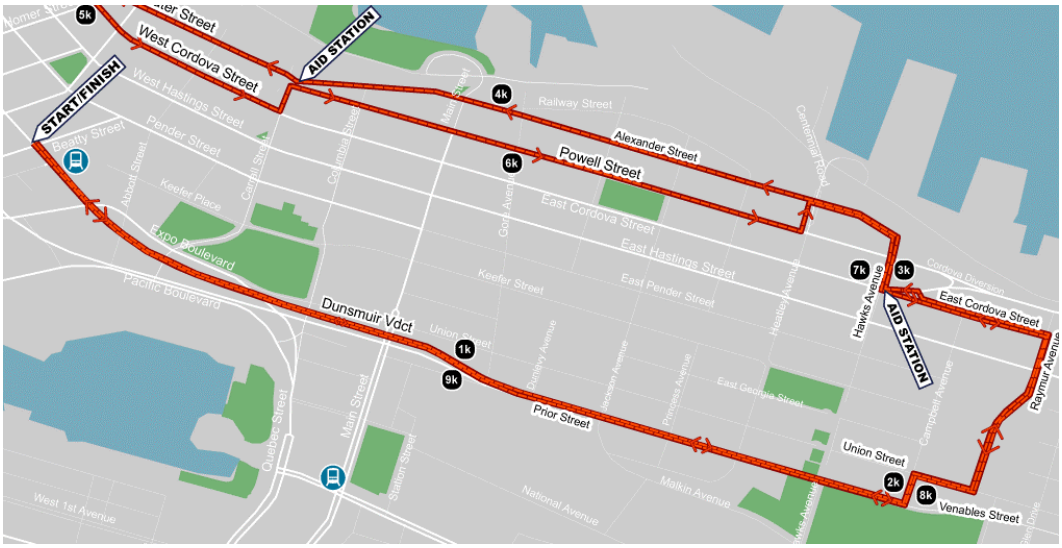
Figure 3.8: Rock N' Roll Half Marathon Route (source: race website)



3.10 Eastside 10K

The Vancouver Eastside 10K occurs every year in September. The event starts and ends on the Dunsmuir block between Cambie and Beatty and requires closure of the Dunsmuir Viaduct between 6:00 AM and 11:30 AM. Prior Street between Gore and Campbell is closed in both directions between 8:15 AM and 10:30 AM.

Figure 3.9: Vancouver Eastside 10K Route (source: race website)



4.0 PROPOSED TRAFFIC MANAGEMENT STRATEGIES

In this section, a proposed traffic management strategy has been developed to address the needs of the specified special events in the context of the new NEFC transportation network and land use context. Note that in addition to the existing known events, there is the potential for new events to be accommodated on NEFC infrastructure including the Viaducts replacement road network, as well as the new public plaza at the eastern foot of Georgia Street, and the new Waterfront Park. The strategy discussed in this section considers traffic-related impacts to the surrounding road network, such that delays to event-unrelated through trips are minimized. Provided that events typically occur during off-peak periods, the latent capacity available in the surrounding network is expected to accommodate potential traffic diversion of through trips.

The strategies in this section have been structured in accordance with the Traffic Management Plan components included in the BC Ministry of Transportation and Infrastructure's Traffic Management Guidelines for Work on Roadways.

Within these guidelines are four key components of a Traffic Management Plan:

- The Traffic Control Plan describes temporary measures to facilitate safe and efficient traffic movement through a work zone or special event. This sub plan includes diagrams, tables and maps illustrating the location and duration of temporary traffic control devices such as signs, delineators, and barricades. Traffic control personnel locations are included on the plans for context. Plans may also include traffic flow patterns, as well as parking and staging restrictions.
- The Public Information Plan describes means to inform event attendees and the general travelling public of expected traffic impacts and delays and advise of alternative routes or modes of travel. This may include temporary static and changeable message signage, radio, print, or social media outreach, and site wayfinding and direction.
- The Incident Management Plan describes the measures available to deal with unforeseen incidents which affect traffic in and around the event area. This could include minor incidents such as stalls or low speed traffic collisions, as well as more severe incidents such as major traffic collisions, fire, spills, natural disasters or area evacuations.
- The Implementation Plan identifies key personnel responsible for managing traffic during a construction project or special event. Each person's role, responsibility and required qualifications is outlined in addition to a reporting structure.

These four key Traffic Management Plan components have been included in the strategies as follows. The strategies focus on opportunities for optimization of the current event plans assuming the NEFC transportation network and land use has been significantly modified as described.

4.1 Traffic Control, Local Access, and Staging Plans

Traffic control plans have been developed in consideration of a number of key issues that will affect the Stadium District if future development plans are realized. These key issues include:

- Currently, the Stadium District sees the implementation of custom traffic control plans during events at BC Place, Rogers Arena or both. In the future, additional residential development sites and the removal of the Georgia and Dunsmuir Viaducts may necessitate the expanded use of local traffic only closure points to limit traffic infiltration on event days.
- The planned road network reduces the ability to quickly close the Dunsmuir or Georgia Viaducts as part of special event traffic management strategies requiring short duration road closures. Additional staging and marshalling areas will need to be identified.
- The road network reconfiguration offers the opportunity to slightly downgrade the use of Expo Boulevard, which is in keeping with its current function during concert load-in periods when curbside lanes are closed.
- Surface parking for major events and concert truck staging is expected to be significantly reduced as development progresses. While some underground parking is to be supplied as part of development agreements, these lots will have reduced capacity for accommodating non-local traffic related to stadium events. The implication is that vehicle traffic generated by visitors to the stadia and local event centres will need to decrease, with a shift to walking, cycling and transit modes.

For each major event, the current and proposed stopping and parking restrictions are described, along with staging areas and road closure requirements.

4.1.1 BC PLACE EVENT

Stopping and Parking Restrictions

The BC Place Event traffic plan currently features the following No Stopping at Any Time restrictions:

- 175 m of Robson Street from Hamilton Street to Beatty Street (350 m both sides);

- 120 m of Pacific Boulevard from Griffiths Way to Abbott Street (south side only);
- 500 m of Beatty Street from Smithe Street to Dunsmuir Street (1,000 m both sides); and
- 170 m of Pacific Boulevard from Carrall Street easterly (north side only).

As of December 2014, temporary "No Stopping" signs are also posted on both sides of Abbott Street from Expo Boulevard to East Pender Street and will be in effect from 8:30 PM to Midnight on event nights. Stopping is also prohibited on Citadel Parade from 5:00 PM to 10:00 PM.

Taxi Zones are currently provided at the following locations:

- 140 m of Abbott Street between Expo Boulevard and Pacific Boulevard (east side); and
- 75 m of West Georgia Street between Hamilton Street and Cambie Street (south side).

Passenger Pick Up and Drop Off Zones are currently provided at the following locations:

- 80 m of Pacific Boulevard between the existing pedestrian overpasses (south side); and
- 140 m of Abbott Street (west side).

Charter Bus Zones are currently provided at the following locations:

- 75 m of Cambie Street west of Dunsmuir Street (south side); and
- 150 m of Expo Boulevard between Carrall Street and Union Street (north side).

With the introduction of the new NEFC transportation network and land use plan, there will be a need to manage traffic along the Georgia Ramp which is directly adjacent the BC Place, as well as along New Pacific Boulevard (which will be sole remaining east-west arterial connection in NEFC once the Viaducts are removed) and new local residential streets within walking distance of the stadium.

The following changes would therefore be recommended to the BC Place traffic control plan:

- Additional No Stopping at Any Time restrictions along Georgia Street (Georgia Ramp) between Beatty Street and Pacific Boulevard (+600 m both sides); and
- Additional No Stopping at Any Time restrictions along New Pacific Boulevard between the new development access west of Griffiths Way and Quebec Street (+1,200 m both sides).

Special Staging Areas

For concert and event load-in activities, a single fast lane closure is currently provided on Pacific Boulevard eastbound between Terry Fox Way and Griffiths Way as shown previously in ***Figure 2.1***. For load-out activities, a single fast lane closure is currently provided on Expo Boulevard westbound between Griffiths Way and Terry Fox Way as shown previously in ***Figure 2.2***.

With the introduction of the new NEFC transportation network and land use plan, the 200 m eastbound Pacific Boulevard staging area will be moved from the curb side to a double stacked configuration on the two left-most lanes that can accommodate a total of 200 m (100 m x 2 lanes). In addition, there will be nine loading bays available underneath the Georgia Ramp with the new network that can accommodate 20 m long tractor trailers. A transit priority lane will also be permanently constructed to allow counterflow along the north side of Pacific Boulevard.

The removal of surface parking lots in the blocks to the east and south of the stadium will eliminate current temporary staging opportunities for larger concert and event fleets. However, temporary staging opportunities exist in the nearby False Creek Flats industrial area or across the Greater Metro Vancouver region exist.

A tabular summary of the changes in BC Place staging capacity is provided in ***Table 4.1***.

Table 4.1: BC Place Staging Capacity Changes

Component	Existing Network	Viaducts Replacement Network
On-Site	No change	
On-Street Staging	• 200 m load-in on Pacific Boulevard eastbound fast lane • 300 m load-out on Expo Boulevard westbound fast lane	• 200 m load-in double stacked on Pacific Boulevard eastbound left-most lanes • 300 m load-out on Expo Boulevard westbound fast lane • Loading bays underneath the new Georgia Ramp accommodating up to nine 20 m long tractor trailers
Off-Site Staging	• Storage for 60 to 70 tractor trailers	• False Creek Flats
Additional Staging Required	• n/a	• 54 to 64 tractor trailers

Road Closures and Traffic Control Personnel

Managing inbound and outbound BC Place pedestrian and vehicle flows currently necessitates a number of road closures and personnel deployment. These closure points include:

- Robson Street between Hamilton Street and Beatty Street;
- Cambie Street between Smithe Street and West Georgia Street;
- Beatty Street between Smithe Street and West Georgia Street;
- Griffiths Way between Pacific Boulevard and Expo Boulevard; and
- The Vancouver Traffic Authority manages the following intersections where duties include override of signal displays to assign right-of-way between pedestrians and vehicles, enforcement of turning restrictions and maintenance of local or special priority access to restricted areas:
  - Hamilton Street / Robson Street;
  - Smithe Street / Cambie Street;
  - Smithe Street / Beatty Street;
  - Robson Street / Cambie Street;
  - Cambie Street / West Georgia Street;
  - Beatty Street / West Georgia Street;
  - Beatty Street / Dunsmuir Street;
  - Expo Boulevard / Griffiths Way; and
  - Pacific Boulevard / Griffiths Way.

Additional road closure and traffic management access points would include the following:

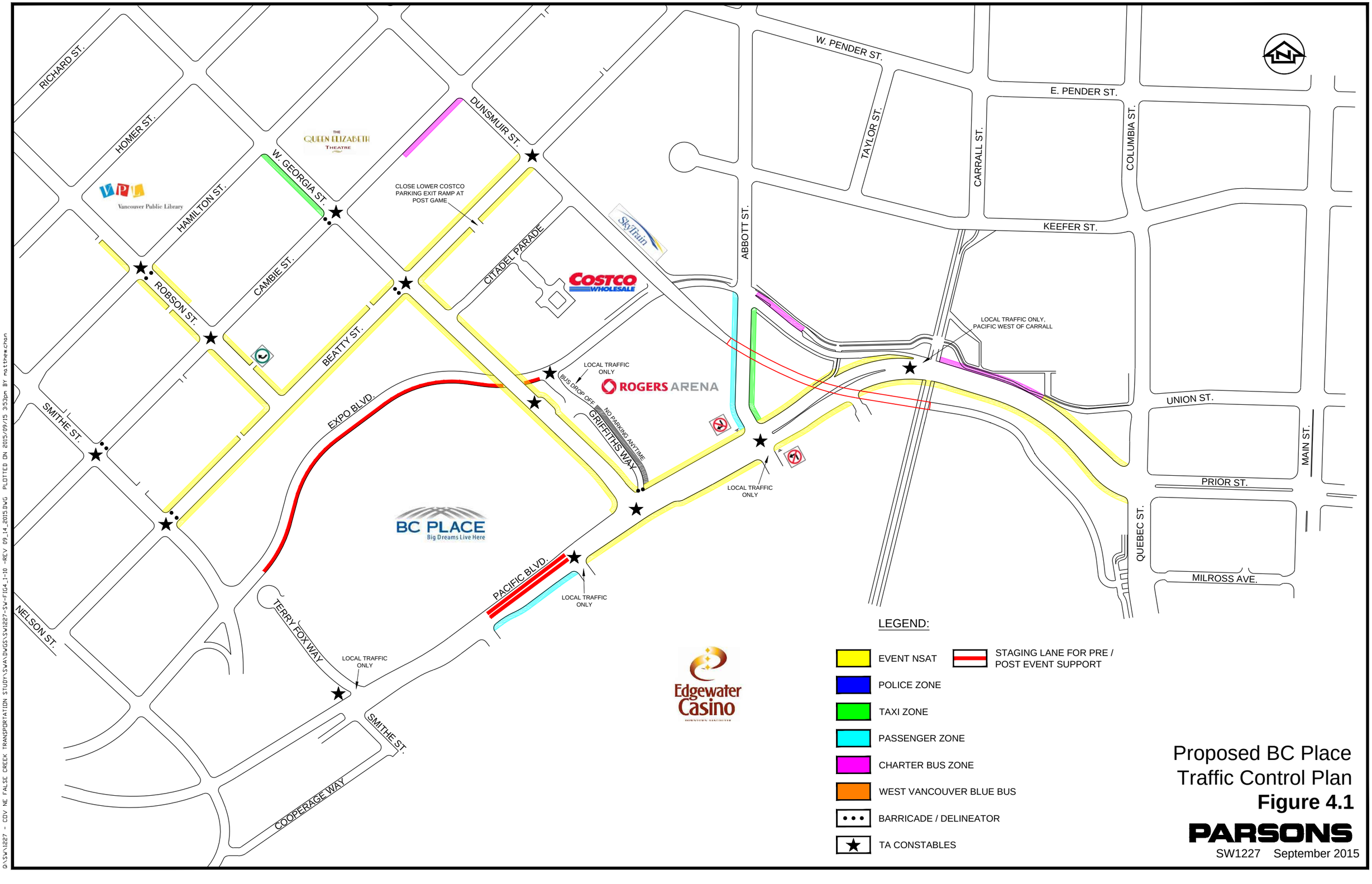
- Smithe Street / Terry Fox Way north of Pacific Boulevard to restrict to local traffic only and minimize drop-off / pick-up / parking circulation;
- New Access south side of Pacific Boulevard west of Griffiths Way to restrict to local traffic only and minimize drop-off / pick-up / parking circulation;
- Abbott Street south of Pacific Boulevard to restrict to local traffic only and minimize drop-off / pick-up / parking circulation. Northbound left and southbound right-turns would also be restricted at Abbott / Pacific to reduce traffic impact on the Georgia Ramp;
- The westbound left turn restriction from Expo Boulevard to Griffiths Way would need to be relaxed to allow local access for new residents and businesses; and
- A new local traffic only closure for New Pacific westbound at Expo Boulevard slip lane. This closure point will limit infiltration to the critical section of Pacific

Boulevard and avoid leading through traffic to a point of congestion failure along the Georgia Ramp.

To manage these new closures, additional Traffic Authority staff will be required at the following intersections:

- Pacific Boulevard / Smithe Street (Terry Fox Way);
- Pacific Boulevard / New Block Access;
- Abbott Street / Pacific Boulevard;
- Pacific Boulevard / Expo Boulevard; and
- Georgia Ramp at mid-block pedestrian signal.

The proposed BC Place Event traffic control plan is shown in ***Figure 4.1***.



LEGEND:

- EVENT NSAT
- STAGING LANE FOR PRE / POST EVENT SUPPORT
- POLICE ZONE
- TAXI ZONE
- PASSENGER ZONE
- CHARTER BUS ZONE
- WEST VANCOUVER BLUE BUS
- BARRICADE / DELINEATOR
- TA CONSTABLES

Proposed BC Place Traffic Control Plan

Figure 4.1

PARSONS

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4.1.2 ROGERS ARENA EVENT

Stopping and Parking Restrictions

The Rogers Arena traffic plan currently features the following No Stopping at Any Time restrictions:

- 150 m of Beatty Street from Georgia Street to Dunsmuir Street (300 m both sides);
- 250 m of Abbott Street from Expo Boulevard to East Pender (500 m both sides);
- 150 m of Citadel Parade from Georgia Street to Dunsmuir Street (300 m both sides);
- 120 m of Pacific Boulevard from Griffiths Way to Abbott Street (south side); and
- 250 m of Pacific Boulevard from Abbott Street easterly (north side).

Taxi Zones are provided at the following locations:

- 140 m of Abbott Street between Expo Boulevard and Pacific Boulevard (east side);
- 75 m of West Georgia Street between Hamilton Street and Cambie Street (south side); and
- 75 m of Robson Street from Homer Street to Hamilton Street (both sides).

Passenger Pick Up and Drop Zones are provided at the following locations:

- 80 m of Pacific Boulevard between the existing pedestrian overpasses (south side); and
- 140 m of Abbott Street (west side)

Charter Bus Zones are provided at the following locations:

- 150 m of Expo Boulevard between Carrall Street and Union Street (north side);
- 75 m of Cambie Street west of Dunsmuir Street (south side); and
- A West Vancouver Blue Bus zone is also provided for Canucks games on Expo Boulevard east of Abbott Street (east side).

As of December 2014, temporary "No Stopping" signs are posted on both sides of Abbott Street from Expo Boulevard to East Pender Street and will be in effect from 8:30 PM to Midnight on event nights. Stopping is prohibited on Citadel Parade from 5:00 PM to 10:00 PM.

With the introduction of the new NEFC transportation network and land use plan, there will be a need to manage traffic along the Georgia Ramp which is directly adjacent the Rogers Arena, as well as along New Pacific Boulevard (which will be sole remaining east-west arterial connection in NEFC once the Viaducts are removed) and new local residential streets within walking distance of the stadium.

The following changes would therefore be recommended to the Rogers Arena traffic control plan:

- Additional No Stopping at Any Time restrictions along Georgia Street (Georgia Ramp) between Beatty Street and Pacific Boulevard (+600 m both sides); and
- Additional No Stopping at Any Time restrictions along New Pacific Boulevard between the new development access west of Griffiths Way and Quebec Street (+1,200 m both sides); and
- With the potential realignment of Carrall Street as a pedestrian and cyclist only link, the western portion of the existing Charter Bus Zone may be shifted west to utilize the lay-by space when not in conflict with school activities.

Special Staging Areas

For concert load-in activities, the 140 m single lane closure can be retained for the Expo Boulevard westbound fast lane between Abbott Street and the Rogers Arena loading bay entrance. This can be supplemented with a second buffer lane closure, leaving a single lane available for Expo Boulevard through traffic.

The removal of surface parking lots in the blocks to the east and south of the stadium will eliminate current temporary staging opportunities for larger concert and event fleets.

A tabular summary of the changes in Rogers Arena staging capacity is provided in ***Table 4.2***.

Table 4.2: Rogers Arena Staging Capacity Changes

Component	Existing Network	Viaducts Replacement Network
On-Site	No Change	
On-Street Staging	• 140 m load-in on Expo Boulevard westbound fast lane	• 140 m load-in on Expo Boulevard westbound fast lane
Off-Site Staging	• Storage for average of 15 tractor trailers	• False Creek Flats
Additional Staging Required	• n/a	• 11 tractor trailers

Road Closures and Traffic Control Personnel

Managing inbound and outbound Rogers Arena pedestrian and vehicle flows currently necessitates a number of road closures and personnel deployment. These closure points include:

- Griffiths Way between Pacific Boulevard and Expo Boulevard;
- Beatty Street between West Georgia Street and Dunsmuir Street (for outbound post-event flows only);
- Expo Boulevard between Abbott Street and Griffiths Way (for outbound post-event flows only); and
- The Vancouver Traffic Authority manages the following intersections where duties include override of signal displays to assign right-of-way between pedestrians and vehicles, enforcement of turning restrictions and maintenance of local or special priority access to restricted areas:
  - Beatty Street / West Georgia Street;
  - Citadel Parade / West Georgia Street;
  - Citadel Parade / Dunsmuir Street;
  - Beatty Street / Dunsmuir Street;
  - Expo Boulevard / Griffiths Way;
  - Pacific Boulevard / Griffiths Way;
  - Abbott Street / Pacific Boulevard;
  - Abbott Street / Expo Boulevard; and
  - Expo Boulevard / SkyTrain entrance.

Additional road closure and traffic management access points following NEFC redevelopment would include the following:

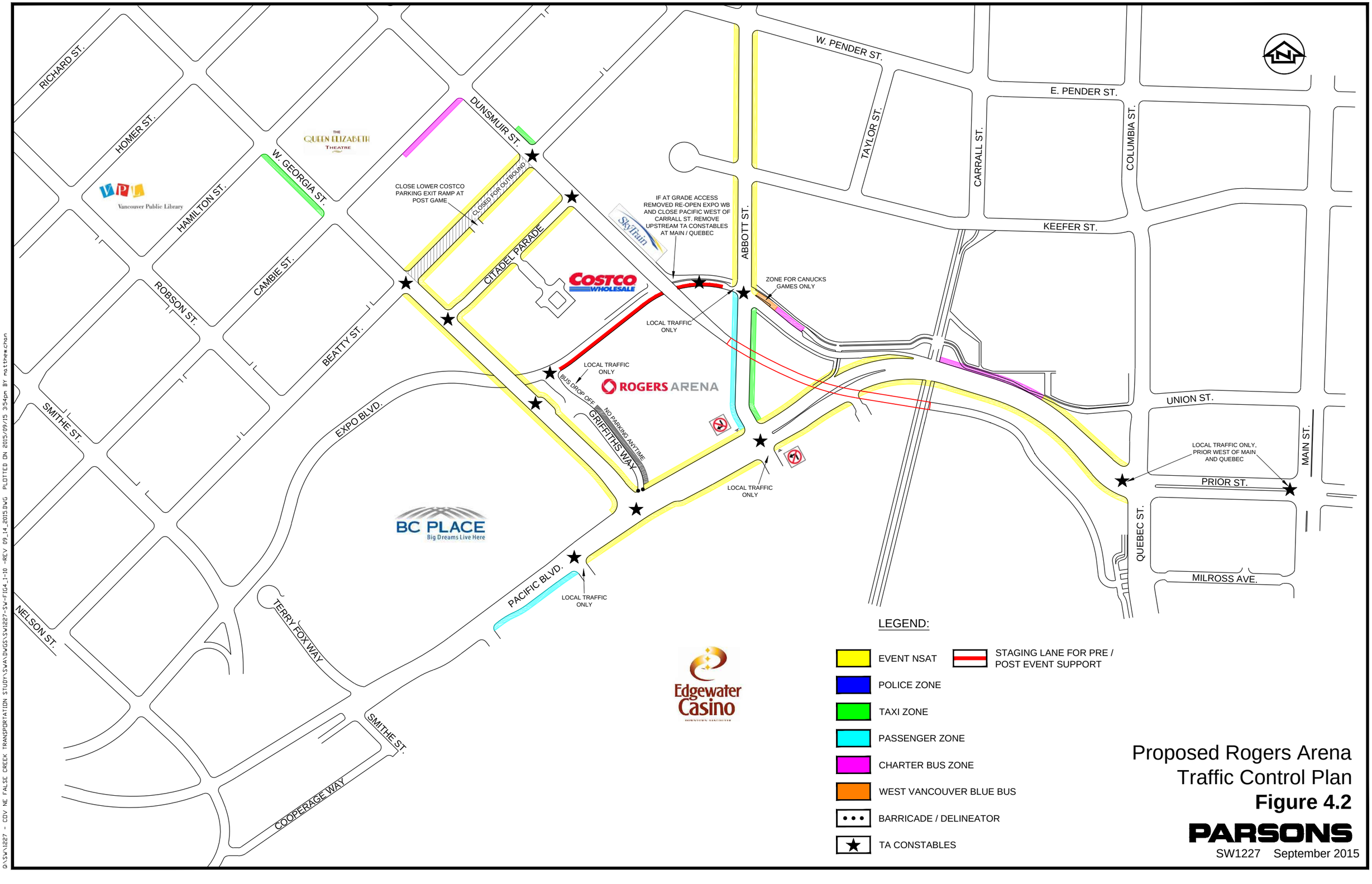
- New Access south side of Pacific Boulevard west of Griffiths Way to restrict to local traffic only and minimize drop-off/pick-up/parking circulation;
- Abbott Street south of Pacific Boulevard to restrict to local traffic only and minimize drop-off/pick-up/parking circulation. Northbound left and southbound right-turns would also be restricted at Abbott / Pacific to reduce traffic impact on the Georgia Ramp;
- The westbound left turn restriction from Expo Boulevard to Griffiths Way would need to be relaxed to allow local access for new residents and businesses in this block; and
- A new local traffic only closure for New Pacific westbound at Quebec Street and Main Street during outbound event flows only. This would avoid leading through traffic to a point of congestion failure at either Expo Boulevard at the SkyTrain entrance or along the Georgia Ramp. In the event that a new SkyTrain

connection between Stadium Station and Rogers Arena is provided, these supplemental closures could be avoided.

To manage these new closures, additional Traffic Authority staff will be required at the following intersections:

- Pacific / New Block Access;
- Georgia Ramp at new mid-block pedestrian crossing;
- Pacific / Quebec; and
- Pacific / Main.

The proposed Rogers Arena Event traffic control plan is shown in ***Figure 4.2***.



LEGEND:

- EVENT NSAT
- STAGING LANE FOR PRE / POST EVENT SUPPORT
- POLICE ZONE
- TAXI ZONE
- PASSENGER ZONE
- CHARTER BUS ZONE
- WEST VANCOUVER BLUE BUS
- BARRICADE / DELINEATOR
- TA CONSTABLES

Proposed Rogers Arena Traffic Control Plan

Figure 4.2

PARSONS

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4.1.3 DUAL EVENT

The Dual Event traffic control plan will continue to be a combination of features of the BC Place and Rogers Arena plans. Because of the sheer volume of attendees over the course of a Dual Event day, pedestrian movement takes priority and through traffic should be discouraged from entering the area.

Stopping and Parking Restrictions

The Dual Event traffic plan currently features the following No Stopping at Any Time restrictions:

- 500 m of Beatty Street from Smithe Street to Dunsmuir Street (1,000 m both sides);
- 175 m of Robson Street from Hamilton Street to Beatty Street (350 m both sides);
- 250 m of Abbott Street from Expo Boulevard to West Pender (500 m both sides);
- 150 m of Citadel Parade from Georgia Street to Dunsmuir Street (300 m both sides);
- 120 m of Pacific Boulevard from Griffiths Way to Abbott Street (south side); and
- 250 m of Pacific Boulevard from Abbott Street easterly (north side).

Taxi Zones are provided at the following locations:

- 140 m of Abbott Street between Expo Boulevard and Pacific Boulevard (east side);
- 75 m of West Georgia Street between Hamilton Street and Cambie Street (south side); and
- 75 m of Robson Street from Homer Street to Hamilton Street (both sides).

Passenger Pick Up and Drop Zones are provided at the following locations:

- 80 m of Pacific Boulevard between the existing pedestrian overpasses (south side); and
- 140 m of Abbott Street (west side).

Charter Bus Zones are provided at the following locations:

- 150 m of Expo Boulevard between Carrall Street and Union Street (north side);
- 75 m of Cambie Street west of Dunsmuir Street (south side); and
- A West Vancouver Blue Bus zone is also provided for Canucks games on Expo Boulevard east of Abbott Street (east side).

The following changes would be recommended to the Dual Event traffic control plan following the establishment of a new NEFC transportation and land use network:

- Additional No Stopping at Any Time restrictions along Georgia Street (Georgia Ramp) between Beatty Street and Pacific Boulevard (+600 m both sides); and
- Additional No Stopping at Any Time restrictions along New Pacific Boulevard between the new development access west of Griffiths Way and Quebec Street (+1,200 m both sides).

Special Staging Areas

For the dual event, there is currently a potential for overlap in the single lane closures provided on Expo Boulevard westbound between Griffiths Way and Terry Fox Way (for BC Place) and on Expo Boulevard westbound between Abbott Street and the Rogers Arena loading bay entrance east of Griffiths Way (for Rogers Arena). Both of these staging lanes can be retained with the Viaducts replacement network.

Road Closures and Traffic Control Personnel

Managing inbound and outbound Dual Event pedestrian and vehicle flows currently requires a number of road closures and personnel deployment. The closure points include:

- Robson Street between Hamilton Street and Beatty Street;
- Cambie Street between Smithe Street and West Georgia Street;
- Beatty Street between Smithe Street and West Georgia Street;
- Griffiths Way between Pacific Boulevard and Expo Boulevard;
- Beatty Street between West Georgia Street and Dunsmuir Street (for outbound post-event flows only);
- Expo Boulevard between Abbott Street and Griffiths Way (for outbound post-event flows only); and
- The Vancouver Traffic Authority manages the following intersections where duties include override of signal displays to assign right-of-way between pedestrians and vehicles, enforcement of turning restrictions and maintenance of local or special priority access to restricted areas:
    - Hamilton Street / Robson Street;
    - Smithe Street / Cambie Street;
    - Smithe Street / Beatty Street;
    - Robson Street / Cambie Street;
    - Robson Street / Beatty Street;
    - Cambie Street / West Georgia Street;
    - Beatty Street / West Georgia Street;

- Citadel Parade / West Georgia Street;
- Citadel Parade / Dunsmuir Street;
- Beatty Street / Dunsmuir Street;
- Expo Boulevard / Griffiths Way;
- Pacific Boulevard / Griffiths Way;
- Abbott Street / Pacific Boulevard;
- Abbott Street / Expo Boulevard; and
- Expo Boulevard / SkyTrain entrance.

Additional Dual Event road closure and traffic management access points recommended after NEFC redevelopment would include the following:

- Smithe Street / Terry Fox Way north of Pacific Boulevard to restrict to local traffic only and minimize drop-off/pick-up/parking circulation;
- New Access south side of Pacific Boulevard west of Griffiths Way to restrict to local traffic only and minimize drop-off/pick-up/parking circulation;
- Abbott Street south of Pacific Boulevard to restrict to local traffic only and minimize drop-off/pick-up/parking circulation. Northbound left and southbound right-turns would also be restricted at Abbott / Pacific to reduce traffic impact on the Georgia Ramp;
- The westbound left turn restriction from Expo Boulevard to Griffiths Way would need to be relaxed to allow local access for new residents and businesses in this block;
- A new local traffic only closure for New Pacific westbound at Quebec Street and Main Street. This would avoid leading through traffic to a point of congestion failure at either Expo Boulevard at the SkyTrain entrance or along the Georgia Ramp; and
- In the event that a new SkyTrain connection between Stadium Station and Rogers Arena is provided, supplemental upstream closures at Quebec Street and Main Street could be removed and westbound through traffic diverted to Expo Boulevard west of Pacific Boulevard. Pacific Boulevard west of Expo Boulevard could be restricted to local traffic only.

To manage these new closures, additional Traffic Authority staff will be required at the following intersections:

- Georgia Ramp at new mid-block pedestrian crossing;
- Pacific Boulevard / Smithe Street (Terry Fox Way);
- Pacific Boulevard / New Block Access;
- Pacific Boulevard / Quebec Street; and
- Pacific Boulevard / Main Street.

The proposed Dual Event traffic control plan is shown in ***Figure 4.3***.

RICHARD ST.
HOMER ST.
HAMILTON ST.
W. GEORGIA ST.
DUNSMUIR ST.
W. PENDER ST.
E. PENDER ST.
TAYLOR ST.
CARRALL ST.
COLUMBIA ST.
KEEFER ST.
ABBOTT ST.
CAMBIE ST.
ROBSON ST.
BEATTY ST.
CITADEL PARADE
UNION ST.
MAIN ST.
SMITHE ST.
EXPO BLVD.
GRIFFITHS WAY
PRIOR ST.
QUEBEC ST.
MILROSS AVE.
PACIFIC BLVD.
NELSON ST.
TERRY FOX WAY
COOPERAGE WAY

THE QUEEN ELIZABETH THEATRE

VPL Vancouver Public Library

CLOSE LOWER COSTCO PARKING EXIT RAMP AT POST GAME

CLOSED FOR OUTBOUND

SkyTrain

IF AT GRADE ACCESS REMOVED RE-OPEN EXPO WB AND CLOSE PACIFIC WEST OF CARRALL ST. REMOVE UPSTREAM TA CONSTABLES AT MAIN / QUEBEC

COSTCO WHOLESALE

ZONE FOR CANUCKS GAMES ONLY

LOCAL TRAFFIC ONLY

LOCAL TRAFFIC ONLY

BUS DROP OFF

NO PARKING ANYTIME

ROGERS ARENA

LOCAL TRAFFIC ONLY

LOCAL TRAFFIC ONLY, PRIOR WEST OF MAIN AND QUEBEC

BC PLACE Big Dreams Live Here

LOCAL TRAFFIC ONLY

LOCAL TRAFFIC ONLY

Edgewater Casino DOWNTOWN VANCOUVER

LEGEND:

- EVENT NSAT
- STAGING LANE FOR PRE / POST EVENT SUPPORT
- POLICE ZONE
- TAXI ZONE
- PASSENGER ZONE
- CHARTER BUS ZONE
- WEST VANCOUVER BLUE BUS
- BARRICADE / DELINEATOR
- TA CONSTABLES

Proposed Dual Event Traffic Control Plan

Figure 4.3

PARSONS

SW1227 September 2015

4.1.4 FIRST HALF

Current event stopping and parking restrictions for this event will be able to be retained following the redevelopment of NEFC. These include stopping and parking restrictions along Pacific Boulevard and Expo Boulevard between Cambie Street and Griffiths Way.

There are no special staging areas required for this event that would entail occupying NEFC roadways for setup and takedown. Traffic impact schedules would likely remain as today with relatively short duration.

Additional road closures and traffic control personnel would be required for the new Georgia Ramp connection between Beatty Street and Pacific Boulevard. Eastbound traffic would be diverted right or left to utilize the either the Cambie Bridge or Pender Street. This closure would also apply to traffic exiting Citadel Parade onto Georgia Street.

The event would fully restrict access to/from the new development block on Terry Fox / Smithe Street which has only a single vehicular connection to Pacific Boulevard. A second development block on the current Edgewater Casino site would also be restricted access to Pacific Boulevard; however, a secondary connection to the adjacent eastern development block would allow for full movements at the Abbott Street intersection during the event.

The proposed First Half traffic control plan is shown in ***Figure 4.4***.

Proposed First Half
Traffic Control Plan
Figure 4.4

PARSONS

SW1227 September 2015

4.1.5 RUN FOR THE CURE

Current event stopping and parking restrictions for this event will be able to be retained following the redevelopment of NEFC. These include stopping and parking restrictions along Pacific Boulevard east of Griffiths Way.

The most significant change would be the impacts due to start line and finish line staging. As these operations can often involve lengthy setup and takedown times, the affected section of Pacific Boulevard would need to be detoured for a long period of time. Road closures would need to be implemented at the Georgia Ramp east of Beatty Street and at Pacific Boulevard west of Quebec Street and Main Street. New development blocks on the south side of Pacific Boulevard would be significantly affected by the street closure. The development of the Concord Pacific surface parking lots may also significantly affect space for storage and event logistics.

A potential concern would be the physical width requirements to safely manage the mass start and finish line reception area. The current width of Pacific Boulevard is just over 13 m which features three travel lanes, a bike lane and a parking lane. The future eastbound lanes of Pacific Boulevard will consist of three travel lanes totaling approximately 10 m. An alternative would be to shift these functions to within BC Place; however, other logistical, physical, and financial obstacles could arise as a result.

The proposed Run for the Cure traffic control plan is shown in ***Figure 4.5.***

Proposed Run for the Cure
Traffic Control Plan
Figure 4.5

PARSONS

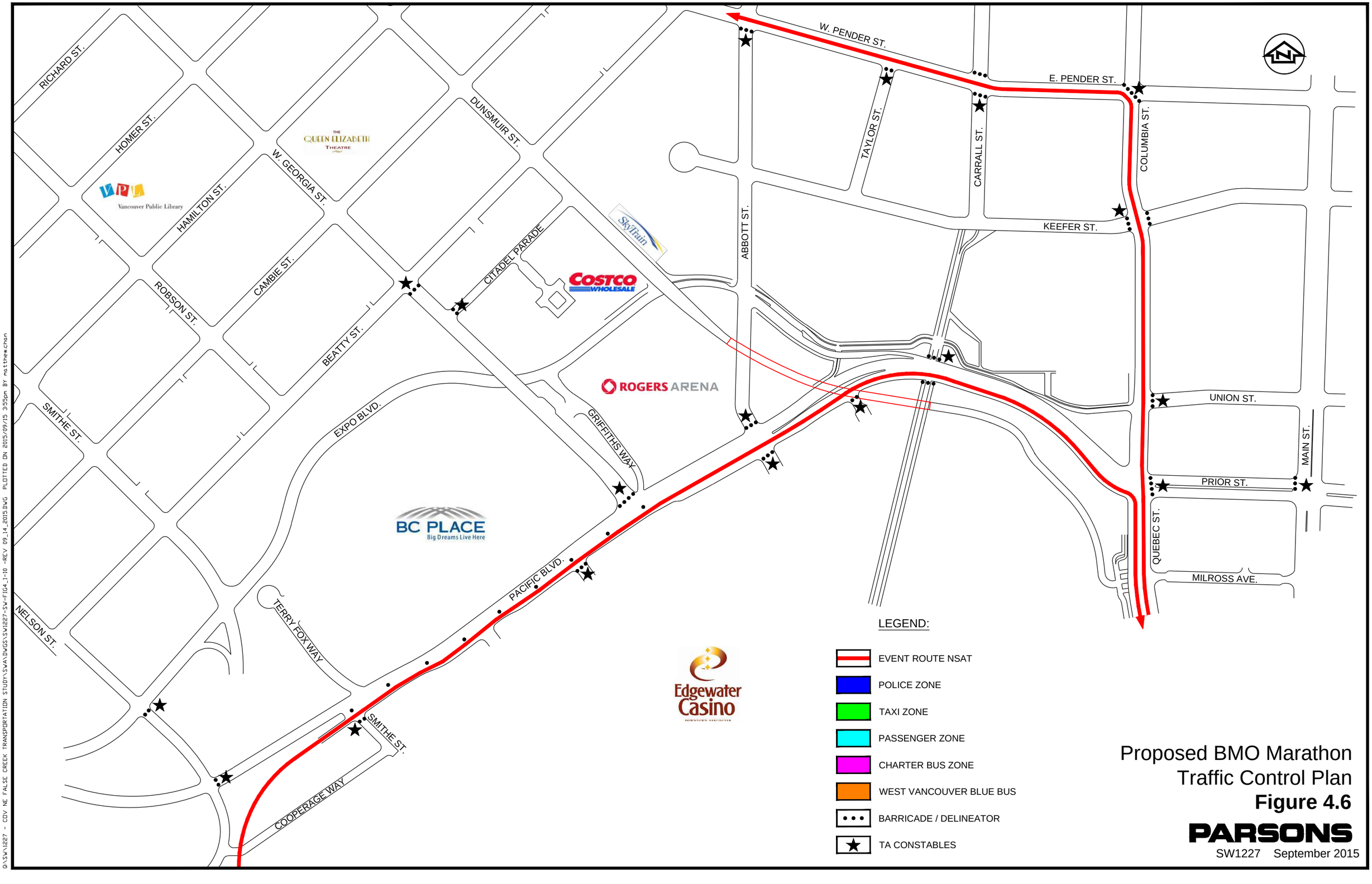
SW1227 September 2015

4.1.6 BMO VANCOUVER INTERNATIONAL MARATHON

There would be no significant changes to this event's stopping and parking restrictions or road closures with the redevelopment of NEFC. The event currently closes both the Georgia and Dunsmuir Viaducts to accommodate the route crossing at Homer Street. Traffic is detoured at Richards Street (for eastbound traffic) and Main Street (for westbound traffic). Pacific Boulevard and Expo Boulevard are also closed between Cambie Street and Quebec Street, respectively.

The key changes would be managing access / egress for new development blocks affected by the road closures. Blocks on the south side of Pacific Boulevard east of Nelson Street would have both entering and exiting movements restricted during the event and would require traffic control personnel to ensure closures are respected. For blocks on the north side of Pacific Boulevard, there may be the opportunity to cone out a local access / egress lane to allow movement to Griffiths Way and Expo Boulevard westbound. Local traffic only could be permitted east of the Pacific / Cambie intersection by the Vancouver Traffic Authority.

The proposed BMO Vancouver International Marathon Event traffic control plan is shown in ***Figure 4.6***.



Proposed BMO Marathon
Traffic Control Plan
Figure 4.6

PARSONS

SW1227 September 2015

4.1.7 VANCOUVER SUN RUN

Current event stopping and parking restrictions for this event will be able to be retained following the redevelopment of NEFC. These include stopping and parking restrictions along Pacific Boulevard east of Nelson Street.

The most significant change would be the impacts due to finish line staging. As this operation can often involve lengthy setup and takedown times, the affected finish line section of Pacific Boulevard would need to be closed for a long period of time. Road closures would need to be implemented at the Georgia Ramp east of Beatty Street and at Pacific Boulevard west of Quebec Street and Main Street. New development blocks on both sides of Pacific Boulevard would be significantly affected by the street closure as the one-way couplet system would not allow for use of Expo Boulevard as an alternate exit route. The development of the Concord Pacific surface parking lots may also significantly affect space for storage and post-event logistics.

A potential concern would be the physical width requirements to safely manage the mass finish line reception area, particularly if raised medians or other physical obstructions are placed within the Pacific Boulevard right-of-way. An alternative would be to shift these functions to within BC Place; however, this could pose other logistical, physical, and financial obstacles.

The proposed Sun Run Event traffic control plan is shown in ***Figure 4.7***.

Proposed Sun Run Traffic Control Plan

Figure 4.7

PARSONS

SW1227 September 2015

4.1.8 LULULEMON SEAWHEEZE HALF MARATHON

The race route will be significantly affected by the removal of the Dunsmuir Viaduct as part of the NEFC network reconfiguration as there will be an at-grade conflict point where the route loops around on itself in the vicinity of Carrall Street and Pacific Boulevard. Should a pedestrian and cyclist bridge replace the Dunsmuir Viaduct in a similar location; however, the route could be accommodated on its current alignment.

The event currently closes the Dunsmuir Viaduct to accommodate a portion of the route, as well as Expo Boulevard Westbound west of Quebec Street, and Pacific Boulevard eastbound from Cambie Street to Carrall Street. Additional closures would be required at Georgia Street eastbound at Beatty Street.

The most significant changes would be managing access / egress for new development blocks affected by the road closures. Blocks on Pacific Boulevard east of Nelson Street would have both entering and exiting movements restricted during the event and would require traffic control personnel to ensure closures are respected. For blocks on the south side of Pacific Boulevard, there may be the opportunity to cone out a local access / egress lane to allow movement to Pacific Boulevard eastbound as well as access from the Cambie Bridge northbound ramp.

The proposed Lululemon Seawheeze traffic control plan is shown in ***Figure 4.8***.

Proposed Lululemon Seawheeze
Traffic Control Plan
Figure 4.8

PARSONS

SW1227 September 2015

4.1.9 ROCK 'N ROLL HALF MARATHON

The race route will be significantly affected by the removal of the Dunsmuir Viaduct as part of the NEFC network reconfiguration as there will be an at-grade conflict point where the route loops around on itself in the vicinity of Carrall Street and Pacific Boulevard. Should a pedestrian and cyclist bridge replace the Dunsmuir Viaduct in a similar location; however, the route could be accommodated on its current alignment.

The event currently closes the Dunsmuir Viaduct to accommodate a portion of the route, as well as Expo Westbound west of Quebec Street, and Pacific Boulevard eastbound east of Griffiths Way (local traffic only east of Cambie Street). Additional closures would be required at Georgia Street eastbound at Beatty Street.

Development blocks on Pacific Boulevard east of Nelson Street would preserve accessibility as the event proceeds directly to the Seawall at Carrall Street, but would have to detour via Griffiths Way and Expo Boulevard westbound.

The proposed Rock 'N Roll Half Marathon traffic control plan is shown in ***Figure 4.9.***

Proposed Rock 'n Roll Half Marathon
Traffic Control Plan
Figure 4.9

PARSONS

SW1227 September 2015

4.1.10 EASTSIDE 10K

The start area for the Eastside 10K would be compatible with the new NEFC transportation network as Dunsmuir Street will be closed east of Citadel Parade which will reduce traffic diversion requirements. Retaining the current route would only be viable if a pedestrian / cycling bridge were to replace the existing Dunsmuir Viaduct.

Assuming the current route could be retained, the most significant network traffic impacts would involve the closure of Main Street and Quebec Street during the event as these crossings would now occur at grade. Counterflow traffic in the eastbound lanes of Pacific Boulevard / Prior Street could be utilized to maintain east-west access for through traffic and local development traffic.

The proposed Eastside 10K Event traffic control plan is shown in ***Figure 4.10***.

Proposed Eastside 10K
Traffic Control Plan
Figure 4.10

PARSONS

SW1227 September 2015

4.2 Public Information Plans

Coupled with the local traffic only restrictions described above, there is the opportunity to provide additional driver information at key entry points to the area in order to provide positive guidance on special event days. Changeable Message Signs could target drivers destined to the event or on through trips along approach streets such as Prior Street or future Malkin Avenue (a primary source of current Viaduct traffic) and Terminal Avenue (a primary source of current Expo Boulevard / Pacific Boulevard traffic).

A tabular description of current and proposed public information signage for area special events is provided in ***Table 4.3***. This table only refers to existing signage for streets within the general NEFC project area. Proposed signage is based on the closures and impacts identified above.

Table 4.3: NEFC Event Public Information Signage – Current and Proposed

Event	Existing NEFC Signage	Proposed NEFC Signage
BC Place Event	n/a	Changeable Signage: -Terminal WB east of Main Street -Prior / Malkin WB east of Main Street -Cambie NB south of Cambie Bridge -Pacific EB west of Cambie Street
Rogers Arena Event	n/a	Changeable Signage: -Terminal WB east of Main Street -Prior / Malkin WB east of Main Street -Cambie NB south of Cambie Bridge -Pacific EB west of Cambie Street
Dual Event	n/a	Changeable Signage: -Terminal WB east of Main Street -Prior / Malkin WB east of Main Street -Cambie NB south of Cambie Bridge -Pacific EB west of Cambie Street
First Half	n/a	Static Signage: -Griffiths Way between Expo and Pacific -Nelson Street between Expo and Pacific -Pacific EB between Cambie and Griffiths -Expo WB between Cambie and Griffiths -New development blocks intersecting Pacific
Run for the Cure	n/a	Changeable Signage: -Terminal WB east of Main -Prior / Malkin WB east of Main -Cambie NB south of Cambie Bridge -Pacific EB west of Cambie Street

Event	Existing NEFC Signage	Proposed NEFC Signage
BMO Vancouver International Marathon	Static Signage: -Pender EB between Homer and Quebec -Quebec SB between Pender and West 1st Changeable Signage: -Cambie NB south of Cambie Bridge -Pacific EB east of Smithe Street	Static Signage: -Pender EB between Homer and Quebec -Quebec SB between Pender and West 1st -Pacific EB between Cambie and Griffiths -Nelson Street between Expo and Pacific -New development blocks intersecting Pacific Changeable Signage: -Cambie NB south of Cambie Bridge -Pacific EB west of Cambie -Terminal WB east of Main -Prior / Malkin WB east of Main
Sun Run	n/a	Static Signage: -Pacific EB between Cambie and Griffiths -Griffiths Way between Expo and Pacific -Nelson Street between Expo and Pacific -New development blocks intersecting Pacific Changeable Signage: -Cambie NB south of Cambie Bridge -Pacific EB west of Cambie -Terminal WB east of Main -Prior / Malkin WB east of Main
Lululemon Seawheeze	Static Signage: -Carrall NB and SB between Keefer and Pacific -Pacific EB between Granville and Cambie Changeable Signage: -Pender WB east of Main Street -Prior WB at Raymur -Terminal WB east of Main Street -Pacific EB between Drake and Davie	Static Signage: -Carrall NB and SB between Keefer and Pacific -Pacific EB between Cambie and Griffiths -Nelson Street between Expo and Pacific -New development blocks intersecting Pacific Changeable Signage: -Pender WB east of Main Street -Prior WB at Raymur -Terminal WB east of Main Street -Pacific EB between Drake and Davie -Cambie NB south of Cambie Bridge
Rock N' Roll Half Marathon	Static Signage: -Pender EB Beatty to Carrall -Carrall SB between Pender and Expo -Pacific EB between Granville and Cambie -Prior WB at Gore Changeable Signage: -Prior / Venables WB east of Clarke Drive -Pacific EB west of Cambie	Static Signage: -Pender EB Beatty to Carrall -Carrall SB between Pender and Expo -Pacific EB between Granville and Cambie -Prior WB at Gore -New development blocks intersecting Pacific Changeable Signage: -Prior / Venables WB east of Clarke Drive -Pacific EB west of Cambie -Cambie NB south of Cambie Bridge -Terminal WB east of Main Street

Event	Existing NEFC Signage	Proposed NEFC Signage
Eastside 10K	n/a	Changeable Signage: -Prior / Venables WB east of Clarke Drive -Terminal WB east of Main Street

n/a means the information was not applicable or not available

As shown, several locations are common to all of the proposed special events plans for the future NEFC network. These locations are shown in ***Figure 4.11*** and could be considered candidates for future permanent traveler information signage, including:

- Terminal Avenue westbound east of Main Street;
- Prior Street / Malkin Connector westbound east of Main Street;
- Cambie Street northbound south of Cambie Bridge; and
- Pacific Boulevard eastbound west of Cambie Street.

Figure 4.11: Candidate Permanent Traveler Information Sign Locations

Should permanent changeable messaging be installed in the future, the locations could provide traffic and emergency management for a variety of events, construction and incidents. The signs could be left blank during normal operations to maintain

effectiveness and reduce visual distraction. A typical advisory message would need to fit within the constraints of the display (3 lines x 8 characters for roadside mounts and 2 x 22 characters for overhead signs). The display visibility and message conciseness should allow it to be read twice at a 50 km/h speed. A sample message set prior to and after the event is as follows:

Pre-Event

Phase 1: “BC PLACE / ROGERS EVENT SEP 13”

Phase 2: “EXPECT DELAYS 6PM – 11PM”

Post-Event

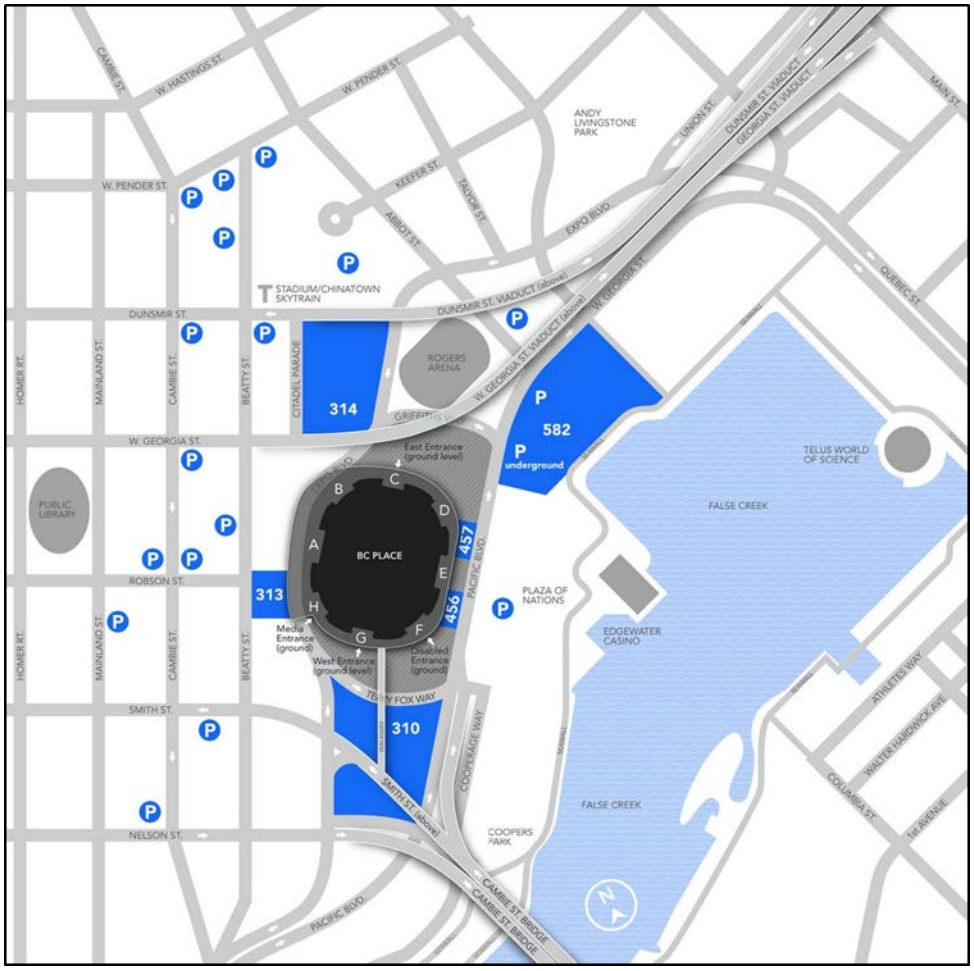
Phase 1: “EXPO CLOSED @ ABBOTT”

Phase 2: “EXPECT DELAYS / USE ALT ROUTE”

In addition to the advisory signage above, there is a need to provide communications to the public through traditional and social media channels. The City of Vancouver’s Road Ahead website and mobile application (http://app.vancouver.ca/roadahead_net/) provides a map of upcoming construction and special event closures. The site features a searchable listing of events and specific parking and traffic restrictions associated with them. Ongoing management and promotion of this application will be required to ensure it remains an “official” source of information supplemental to information provided by event promoters. Additional targeted mail-outs and flyers will be required for future residents and businesses in the NEFC area. Given the frequency of events in the area and the potential for messaging fatigue, direct meetings with strata boards and residents associations will be required as part of the future event planning.

Of particular interest to the BC Place and Rogers Arena events are guidance to available parking areas within walking distance. Currently, the stadium websites guide visitors to the surface and structured parking in the general area, with an example from the BC Place website shown in ***Figure 4.11***.

Figure 4.11: Parking Lots Serving BC Place Area (source: stadium website)



The most significant changes will occur to the blocks situated south of Pacific Boulevard between Griffiths Way and Carrall Street and between Terry Fox Way and Nelson Street. Each of these surface parking locations will be replaced with a development block as part of the NEFC development considerations.

Of note are the land parcels which are under the management of One West Holdings Ltd (formerly Concord Pacific). As development occurs, an agreement is in place between the City of Vancouver and One West Holdings Ltd. to replace a portion of the parking spaces either through new construction or cash-in-lieu payments. The current agreement pertains to 1,322 spaces in the area, of which new 300 spaces will be created with the Vancouver Urban Resort (VUR) and the remainder to paid as cash-in-lieu. It is also noted that additional parking may be provided on the Canadian Metropolitan site (Plaza of Nations) to offset the net loss of parking; however, the number of stalls to be provided is currently unconfirmed. ***Table 4.4*** summarizes the parking locations and replacement agreement.

Table 4.4: Existing Parking Space Locations and Replacement Agreement

Location	Total Stalls	Stalls to be Built as part of Future Development	Stalls to be Paid-in-Lieu
1. 900 Beatty Street	100	0	100
2. 858 Beatty Street	100	0	100
3a. Cambie Bridgehead West	48	0	48
3b. Cambie Bridgehead East	49	0	49
4. International Village	350	350	0
5. Costco Site	200	0	200
6. Rogers Arena / GM Place	250	150	150
7. Expo / Pacific / Carrall / Abbott block	225	0	225
8. Lands beneath Viaducts	0	0	0
Subtotal (Stadium Agreement)	*1,322*	*500*	*822*
Vancouver Urban Resort (Future)	300	300	0
Total	1,622	800	822

As shown, a significant reduction in physical parking spaces is anticipated as redevelopment occurs. While this reduction in parking supply may result in reduced traffic volumes for events in and around the Stadium area, there may be additional pressures outside of the immediate area for staging locations, as well as potential park 'n ride locations. Over time, messaging to visitors will need to be adjusted to reflect the reduced parking supply and the location of this supply, which will be increasingly focused away from Pacific Boulevard and Expo Boulevard and into the adjacent downtown and Chinatown neighbourhoods. It is expected that with the continued improvements in area transit, walking and cycling infrastructure, the infill of nearby residents and employees will serve to reduce vehicle traffic generated by stadium events and display a downward trend consistent with overall vehicle trips throughout the City.

4.3 Incident Management Plans

Incident Management Plans are intended to deal with two separate possibilities – an incident occurring on the road which affects traffic circulation but not the event itself, and an incident occurring on the race course or in the arena which affects the event but not general traffic. In a serious incident, both the event venue and highway travel will be impacted. The Incident Management Plan provides a standard procedure for quickly responding to any incidents that may disrupt operations or exacerbate traffic congestion through the affected closure / detour areas.

The Incident Management Plan typically includes the following general directives:

- The Incident Management Plan is to be implemented if necessary by the Traffic Control Supervisor who is responsible for general traffic management device setup and monitoring and management of traffic control personnel.
- The on-site Traffic Control Supervisor will be responsible for determining if the incident is Level 1 (e.g., fire, accidents, natural disaster, spills) or Level 2 (e.g., vehicle breakdown, debris). Level 1 is more severe and requires the immediate notification of emergency response agencies, as well as, the appropriate municipal and provincial representatives; and
- If emergency vehicle access is required, the on-site Traffic Control Supervisor shall be responsible for coordinating access into / through the closed lanes if necessary.

For outdoor events where an incident occurs on the event course, course marshals are responsible for confirming the extent of the incident, and if necessary contact the event Traffic Manager and Traffic Control Supervisor to coordinate a response. First aid is available along the length of most event routes, with varied response times.

For stadium events where a medical emergency occurs, traffic control personnel will provide priority access to the area and standard venue access procedures will be followed. For larger security threats or emergency evacuation requirements, supplemental road closures adjacent to stadium exit points will be required to be implemented by police in order to assist with marshalling and protect emergency priority routing to / from the site.

With regards to fire hall impacts, there are four fire halls which serve each of the cardinal directions stemming from the NEFC area. These include:

- Hall #1 – Strathcona – 900 Heatley Avenue;
- Hall #2 – Downtown East Side – 199 Main Street;
- Hall #3 – Mount Pleasant – 2801 Quebec Street; and
- Hall #8 – Yaletown - 895 Hamilton Street.

Each of the above halls should be contacted to review future event impacts and determine contingency measures during the course of the road and lane closures.

4.4 Implementation Plans

All Traffic Management Plans require an Implementation Plan to identify key roles and responsibilities with respect to traffic management as well as a reporting structure.

For the majority of events at BC Place and Rogers Arena, traffic management duties fall under the responsibility of the Vancouver Police Traffic Authority with support from the City of Vancouver's Streets Department (signs and equipment) and coordination with the venue managers. For larger special events requiring road closures, the event is responsible for hiring a traffic control contractor and assigning a Traffic Manager to oversee implementation and removal of plan elements. The Traffic Manager is in contact with other experienced Traffic Control Supervisors and individual Traffic Control Personnel (depending on the geographic scope of the event, this could include several hundred traffic control staff), as well as City of Vancouver staff, and event management representatives.

Typical responsibilities of the key Traffic Management staff are as follows:

Event Manager / Venue Manager

The Event Manager (or Venue Manager) will have ultimate responsibility for organizing, funding and implementing the event.

The Event Manager responsibilities include:

- Ensure that suitably qualified persons are appointed to the positions of Traffic Manager;
- Follow the Public Information Plan to keep the general public, stakeholders and event visitors / participants informed of planned and unforeseen incidents that may impact traffic operations;
- Be in regular consultation with City, agency and emergency response officials to ensure concerns are addressed prior to event approval;
- Advise the Ministry or City immediately of any issues arising due to event plan changes; and
- Be the point of contact for all media inquiries and news releases.

Traffic Manager (TM)

The Traffic Manager will supervise all traffic operations on behalf of the Event Manager. The TM will also be responsible for roadway work zone safety and the safety of the

traveling public. He / she will report any safety issues arising with regards to the TMP to the Event Manager or TCS and assist the TCS in the event of an incident.

The Traffic Manager responsibilities include:

- Provide input into the finalization of the Traffic Management Plan;
- Review drawings, plans and driver messages that have been prepared and sealed by the Traffic Engineer (if applicable) in the Traffic Control Plan. Provide feedback and obtain review and approval for any proposed changes;
- Share responsibility for the implementation of the TMP with the designated TCS;
- Oversee the TCS and Traffic Control Personnel;
- Direct the Incident Management Plan and liaise with the City and event staff to coordinate a response if required;
- Provide traffic condition updates to municipal representatives as appropriate;
- Ensure compliance with the appropriate WorkSafe BC regulations for traffic control and work on roadways;
- Review and approve traffic-related Incident Reports prepared by the Traffic Control Supervisor;
- Monitor the effectiveness of the Traffic Control Plan with regard to safety, delays and queue lengths and discuss any proposed changes to the Plan with the Traffic Engineer;
- Attend coordination meetings with the Event Manager, City of Vancouver and other agencies, the Traffic Engineer and relevant stakeholders as appropriate to discuss issues and any proposed changes; and
- Complete and submit the Traffic Manager's Activity Report, Incident Management Report and Traffic Manager's Daily Report as per the Traffic Management Guidelines for Work on Roadways.

Traffic Engineer (TE)

If a custom signed and sealed traffic control plan is required for major events or detours, the Traffic Engineer will:

- Prepare the Traffic Management Plan and seal the final document prior to implementation;
- Maintain communication with the Event Manager and Traffic Manager; and
- Provide advice and recommendations to the Event Manager and Traffic Manager if / as required.

Traffic Control Supervisor (TCS)

The Traffic Control Supervisor will:

- Direct all Traffic Control Persons at temporary traffic control locations;
- Ensure Traffic Control Personnel follow relevant safety guidelines including reflective vests and protective equipment;
- Finalize traffic control measures with the Traffic Manager (including any modifications/updates as necessary) and supervise the Traffic Control Personnel in the implementation of the Traffic Control Plan;
- Follow appropriate clauses included in the Traffic Control Manual for Work on Roadways;
- Ensure required traffic control devices are in place and are in safe working conditions;
- Detect and respond to incidents if / when they should arise, including notification of the Traffic Manager and completion of Incident Report Forms;
- Liaise with the Traffic Manager as required to discuss traffic control issues; and
- Instruct the Traffic Control Personnel to work as a team and in a courteous and professional manner.

Traffic Control Personnel (TCP)

The Traffic Control Personnel will:

- Attend and participate in on-site safety and coordination meetings with the TCS;
- Confirm daily activities and responsibilities with the TCS;
- Setup and take down Traffic Control Layouts in accordance with regulatory standards; and
- Maintain good communication with other TCPs and be prepared to respond rapidly to emergencies, incidents or changes to the Traffic Control Plan.

For the completion of the Implementation Plan, an event communications chart is typically prepared summarizing other key stakeholders and their contact information during the event. These stakeholders include names and contact information for the following:

- Traffic Manager;
- Traffic Engineer;
- Vancouver Police Department;
- Coast Mountain Bus Company;

- BC Rapid Transit Corporation (SkyTrain Expo and Millenium Lines);
- Protrans BC (Canada Line);
- City of Vancouver Parks;
- City of Vancouver Streets;
- Venue Managers;
- Event Managers;
- Waste Disposal;
- BC Ambulance;
- Vancouver Fire Department; and
- Regional Transportation Management Centre (BC Ministry of Transportation and Infrastructure).

In recent experience, the overlap of both construction and special events on adjacent BC Place and Rogers Arena properties has led to the establishment of a common calendar of activities. The calendar allows both venue managers to view each other's schedule in a shareable format and quickly identify construction or staging activities requiring daytime lane closures. The calendar can also be distributed to City departments for inclusion in the Road Ahead public advisories and for consideration in scheduling other traffic management works and event plans. Maintenance of the common calendar will be essential as redundant road and staging capacity is gradually repurposed and the day-to-day population and employment totals increase in NEFC.

To further guide the future traffic management activities in NEFC as the road network and land uses changes, a formal Memorandum of Understanding (MoU) or similar agreement should be prepared. The MoU should establish an agreed basis for the following principles:

- General traffic management strategies for the primary event types in and around NEFC, including full or partial closures and recommended detours;
- Preferred parking locations and common wayfinding maps to direct drivers most efficiently to available lots;
- The scope (geographic and temporal extents, traffic control plan, public information plan, incident management plan, implementation plan, and risk assessment) and funding for the development a comprehensive traffic management plan for the single and dual stadium events;
- Funding contributions to temporary traffic controls and personnel, as well as temporary advisory signage;
- Content and format for communications and outreach to the local neighbourhood and broader public;

- Traffic performance criteria including maximum delays and queue lengths, as well as contingencies for mitigating excessive delays;
- Minimum notification timeframes for local residents and employees for area street closures;
- Maintenance of access for local residents and employees and mitigation of noise and parking/traffic impacts;
- Public transit service requirements and staging areas for major events;
- Construction and maintenance activity requirements; and
- Emergency response plans including incidents on public roadways and building evacuation plans.

The MoU should be drafted between the following primary entities:

- BC Place;
- Rogers Arena;
- Proposed Casino / Hotel complex;
- Concord Pacific and area developers (for temporary construction activities and to represent the future residents and employees); and
- City of Vancouver.

Timing and phasing of the construction impacts associated with the Viaducts replacement should be developed in consideration of the unique existing and future constraints of the area. Specifically, the following issues will require attention:

- Maintaining both light and heavy vehicle access to the stadia during construction. This will require maintenance of access to / from on-site loading bays, provision of on-street staging areas, and ideally maintenance of nearby off-site staging.
- Temporary detour configurations may involve the conversion of Expo Boulevard and / or Pacific Boulevard to two-way operation while the Viaducts are removed and replaced. Analysis suggests the two-way couplets could provide additional network capacity and accessibility as part of a permanent solution. If proved to be geometrically feasible as part of the final design, the temporary construction phasing plans offer an excellent opportunity to acclimatize motorists to the new operations and refine any residual capacity or access issues while traffic settles into final patterns.
- Off-site staging areas may be occupied by construction vehicles and activity at various times through the project. As an alternative, arrangements could be made to store trucks within the False Creek Flats industrial area to the east.
- Viaducts removal and replacement network construction should occur in advance of significant planned development within the NEFC and adjacent False Creek

Flats. This will reduce the amount of background traffic and individual site accesses that need to be maintained during construction, and will increase the flexibility for temporary construction and event staging areas.

- A summary table of existing and proposed loading and staging capacity is provided below in ***Table 4.5***. Generally, the replacement network provides the same capacity as the current network and allows for better connectivity to alternative off-site staging areas in False Creek Flats.

Table 4.5: Existing and Proposed Network Loading and Staging Capacity

Metric	BC Place Event		Rogers Arena Event		Dual Event	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
On-Site Loading	No Change					
On-Street Staging	500 m	500 m + nine loading bays	140 m	140 m	640 m	640 m + nine loading bays
Off-Site Staging	60 to 70 tractor trailers	False Creek Flats	15 tractor trailers	False Creek Flats	75 to 85 tractor trailers	False Creek Flats
No Stopping at Any Time	1,640 m	3,440 m	1,470 m	3,270 m	2,520 m	2,385 m
Taxi Zone	215 m	215 m	290 m	290 m	290 m	290 m
Passenger Pick Up and Drop Zones	220 m	220 m	220 m	220 m	220 m	220 m
Charter Bus Zones	225 m	225 m	225 m	225 m	225 m	225 m

As shown, the only significant differences between the existing and the Viaducts replacement network are the reduction in the amount of off-site staging available and the increase in No Stopping at Any Time zones.

4.5 Stadia Pedestrian Access

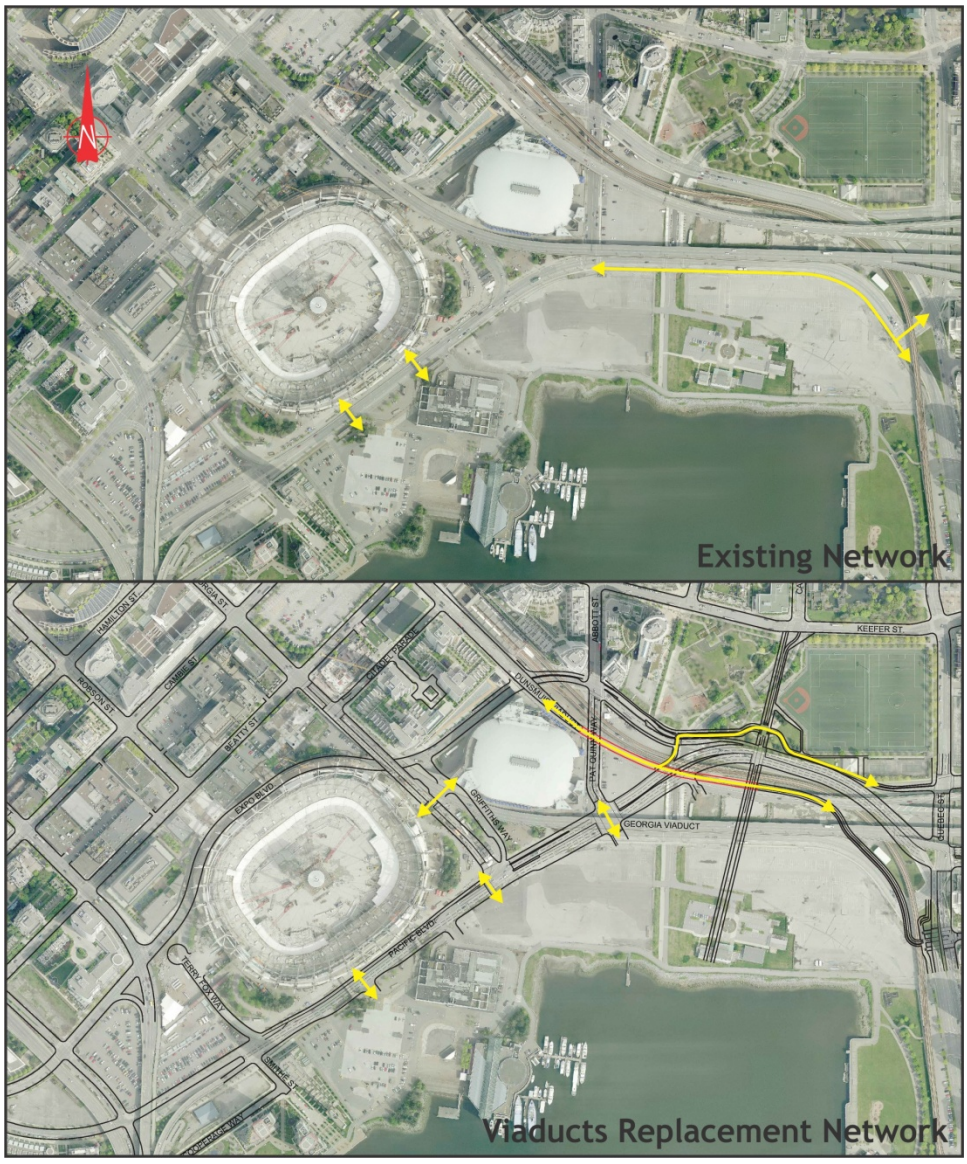
The general impact to pedestrians accessing the stadia is examined in this subsection. There are multiple benefits to stadia pedestrian access with the Viaducts replacement network. Access to and from the south and east of BC Place and Rogers Arena will mainly be affected with the new network while access to and from the north and west will largely remain unchanged.

The new developments south of Pacific Boulevard will also have the added effect of attracting trips to and from the stadia, potentially balancing the flow of inbound and outbound attendees to stadia accesses previously underutilized. This effect could help reduce pedestrian delays at the heavily used north accesses to the stadia. Currently, there are few trip attractors south of Pacific Boulevard, resulting in a low pedestrian desire line to the south or east of the stadia.

Overall, pedestrian permeability improves with the Viaducts replacement network. The proposed multi-use paths along the north and south sides of New Pacific and their at-grade connections to the network will increase the attractiveness of those routes. The introduction of the Georgia Ramp between Beatty Street and Pacific Boulevard will also enhance both access to and between the two stadia. Additionally, it will provide an alternate north/south route to the stadia, potentially relieving pressure on Robson Street.

These general pedestrian flows and routes on the south and east sides of the stadia are illustrated in ***Figure 12***.

Figure 4.12: Stadia Pedestrian Access



5.0 FINDINGS AND RECOMMENDATIONS

Based on the preceding analysis, the following findings and recommendations are provided with respect to special event management.

1. Changes to both the transportation network and the land uses within Northeast False Creek pose significant challenges to the conduct of recurrent special events in and around the stadium district. These include removal of redundant network capacity and the introduction of new local residential and employment trips.
2. The two largest trip generators in the area are BC Place and Rogers Arena. Each of these stadia have distinct trip generation rates, profiles, and distributions for a non-event day, an event day, as well as load-in and load-out periods. A dual event occurs when there is overlap between inbound and/or outbound trips for events scheduled at the adjacent stadia.
3. Other recurring special events utilizing the area road network are primarily running races. These include the First Half, Run for the Cure, BMO Vancouver International Marathon, Vancouver Sun Run, Lululemon Seawheeze Half Marathon, Rock N' Roll' Half Marathon, and the Eastside 10K.
4. For BC Place, there are approximately 100 employees on site throughout a typical week, with a ramp-up to 2,000 staff for a major event or trade show. Truck traffic is in the order of five to six trucks per day, with concerts generating 60 to 70 trucks and trade shows or other special events generating several hundred additional vehicles.
5. For Rogers Arena, there are approximately 150 regular employees and staff on site throughout a typical week, with a ramp-up to over 1,000 staff for a hockey game or concert. Truck traffic is in the order of six trucks per day, with concerts generating an average of 15 additional tractor trailers. Future traffic flows will include resident and employee traffic for the new developments on the corners of the arena block.
6. The proposed NEFC transportation network will be able to continue to accommodate on-street lane closures for load-in and load-out staging activities; however, off-site staging in existing surface parking lots will no longer be available for convenient truck call-up. Some replacement staging may be able to be provided in the False Creek Flats industrial area. Outside of these off-site changes and additional event no stopping zones, the total amount of staging lanes, taxi stands, pick-up / drop-off space and tour bus space will remain the same.

7. For a BC Place event, additional road closure and traffic management access points would be recommended following the redevelopment of NEFC including:
    - Smithe Street / Terry Fox Way north of Pacific Boulevard to restrict to local traffic only and minimize drop-off/pick-up/parking circulation;
    - New Access south side of Pacific Boulevard west of Griffiths Way to restrict to local traffic only and minimize drop-off/pick-up/parking circulation;
    - Abbott Street south of Pacific Boulevard to restrict to local traffic only and minimize drop-off/pick-up/parking circulation. Northbound left and southbound right-turns would also be restricted at Abbott / Pacific to reduce traffic impact on the Georgia Ramp;
    - The westbound left turn restriction from Expo Boulevard to Griffiths Way would need to be relaxed to allow local access for new residents and businesses in this block; and
    - A new local traffic only closure for New Pacific westbound at Expo Boulevard slip lane. This closure point will limit infiltration to the critical section of Pacific Boulevard and avoid leading through traffic to a point of congestion failure along the Georgia Ramp.
8. For a Rogers Arena event, additional road closure and traffic management access points would be recommended following the redevelopment of NEFC including:
    - New Access south side of Pacific Boulevard west of Griffiths Way to restrict to local traffic only and minimize drop-off/pick-up/parking circulation;
    - Abbott Street south of Pacific Boulevard to restrict to local traffic only and minimize drop-off/pick-up/parking circulation. Northbound left and southbound right-turns would also be restricted at Abbott / Pacific to reduce traffic impact on the Georgia Ramp;
    - The westbound left turn restriction from Expo Boulevard to Griffiths Way would need to be relaxed to allow local access for new residents and businesses in this block; and
    - A new local traffic only closure for New Pacific westbound at Quebec Street and Main Street during outbound event flows only. This would avoid leading through traffic to a point of congestion failure at either Expo Boulevard at the SkyTrain entrance or along the Georgia Ramp. In the event that a new SkyTrain connection between Stadium Station and Rogers Arena is provided, these supplemental closures could be eliminated.

9. Additional Dual Event road closure and traffic management access points recommended after NEFC redevelopment would include the following:
    - Smithe Street / Terry Fox Way north of Pacific Boulevard to restrict to local traffic only and minimize drop-off/pick-up/parking circulation;
    - New Access south side of Pacific Boulevard west of Griffiths Way to restrict to local traffic only and minimize drop-off/pick-up/parking circulation;
    - Abbott Street south of Pacific Boulevard to restrict to local traffic only and minimize drop-off/pick-up/parking circulation. Northbound left and southbound right-turns would also be restricted at Abbott / Pacific to reduce traffic impact on the Georgia Ramp;
    - The westbound left turn restriction from Expo Boulevard to Griffiths Way would need to be relaxed to allow local access for new residents and businesses in this block;
    - A new local traffic only closure for New Pacific westbound at Quebec Street and Main Street. This would avoid leading through traffic to a point of congestion failure at either Expo Boulevard at the SkyTrain entrance or along the Georgia Ramp; and
    - In the event that a new SkyTrain connection between Stadium Station and Rogers Arena is provided, supplemental upstream closures at Quebec Street and Main Street could be avoided by diverting westbound traffic to Expo Boulevard.
10. Following the redevelopment of NEFC, the majority of running events can continue to be accommodated with some additional supplemental closures at the new Georgia Ramp and delineation of local block access lanes. For the Vancouver Sun Run, and Run for the Cure events; however, start / finish area setups may be compromised by the physical changes to the width of Pacific Boulevard, as well as the difficulty in locking off local access for longer than several hours.
11. For consistency during major special events in the NEFC area, permanent changeable message signs are proposed to improve traffic detour capabilities. Several locations are common to all events and should be considered for permanent message centre installations.
    - Terminal Avenue westbound east of Main Street;
    - Prior Street / Malkin Connector westbound east of Main Street;
    - Cambie Street northbound south of Cambie Bridge; and
    - Pacific Boulevard eastbound west of Cambie Street.

12. Traffic impacts to the surrounding road network and parallel routes due to traffic diversion are expected to be manageable due to the spare capacity available during the off-peak periods in which events are typically held.
13. A significant reduction in physical parking spaces is anticipated as redevelopment occurs. Although in conjunction with proposed new walking, cycling and transit infrastructure, this may have the beneficial effect of reduced local traffic volumes during special events, there is a need to adjust visitor messaging to reflect the location of this supply away from the current Pacific Boulevard and Expo Boulevard surface lots.
14. Pedestrian access to the stadia are improved with the Viaduct replacement network due to the rebalancing of trip origins and destinations south of New Pacific and the increased pedestrian permeability from the Georgia Ramp.
15. Implementation of future NEFC traffic management plans should consider a common calendar of events to facilitate coordination between adjacent event managers. In addition, as part of the redevelopment process, a Memorandum of Understanding or similar agreement should be drafted between primary event management and local development entities in the area. The MoU should establish an agreed basis for the following principles:
    - General traffic management strategies for the primary event types in and around NEFC, including full or partial closures and recommended detours;
    - Preferred parking locations and common wayfinding maps to direct drivers most efficiently to available lots;
    - The scope and funding for a comprehensive traffic management plan for the single and dual stadium events;
    - Funding contributions to temporary traffic controls and personnel, as well as temporary advisory signage;
    - Content and format for communications and outreach to the local neighbourhood and broader public;
    - Traffic performance criteria including maximum delays and queue lengths, as well as contingencies for mitigating excessive delays;
    - Minimum notification timeframes for local residents and employees for area street closures;
    - Maintenance of access for local residents and employees and mitigation of noise and parking/traffic impacts;
    - Public transit service requirements and staging areas for major events;
    - Construction and maintenance activity requirements; and
    - Emergency response plans including incidents on public roadways and building evacuation plans.

Appendix A

Meeting Minutes

Northeast False Creek Transportation Study

Aquilini Developments Meeting Minutes

Held On: August 15, 2014 at 9:00 a.m.

Held At: Canucks Offices, Abbott Street

Present:

For CoV
Peter Cohen (PC)

For Delcan/Parsons
Jason Jardine (JJ)

For Aquilini / Canucks
Al Hutchings (AH)
Harvey Jones (HJ)

Circulate: All Above
Prepared By: Jason Jardine, Delcan

ITEM DISCUSSED	***ACTION BY:***

1. Introductions / Background

- Introductions were made by CoV and Delcan. Delcan has recently been acquired by Parsons Corporation and will be responsible for conducting a transportation planning study for the Northeast False Creek area. PC provided an overview of council direction, current assignment scope and supporting studies. Study will proceed through the first quarter of 2015.

2. Transportation Requirements

- JJ explained the key questions the team was reviewing. Most of these relate to traffic volumes generated by the stadium and residential / office development. An important consideration is peak versus average days. We are examining peak traffic hours but need to consider functionality for local access during off peak times as well.

- HJ described four typical “modes” the stadium undergoes throughout the year. These include a) “dark days” where there is no event and only regular staff on site, b) event prep days where there is a ramp up in activity in preparation for a game or concert, c) hockey game day which specific schedule and traffic generation considerations, and d) concert day which is different logistically than a game day.

- For a “dark day” there is and will be a significant amount of background traffic generation. There will be employees in the new office towers (156 parking spaces), residents of the apartment towers (mostly rentals – parked

ITEM DISCUSSED	***ACTION BY:***

off of Griffiths Way), and employees of the Canucks / Aquilini (150 staff – most park in the Griffiths Way parkade and are on site from 8:30 AM to 5:00 PM). There are regular food and service vehicle deliveries (about 6 trucks daily, mostly smaller single unit vehicles but some tractor trailers), and random garbage / waste hauling. With the new office and apartment towers there will also be first / last of month move-in / move-out at the loading dock. Could be 20% turnover if mostly rentals.

- With regards to permanent loading bay capacity, there will be 3 inside the covered area off of Expo Boulevard, 2 external loading bays, 3 for the new south tower, and 3 for the existing retail store. There is a total capacity of approximately 11 bays, but these are not all interconnected or interchangeable.

- For a preparation day, if the event is a Canucks game, there will typically be a practice held at 11:00 AM which generates a bus pick-up and drop-off along Griffiths Way via Expo Boulevard. There are also a few more tractor trailers generated providing beverages and food supplies to the loading dock off of Expo Boulevard. Staff such as kitchen and prep staff can also increase by 25%. The core hours of this increased activity are 8:00 to 4:30 in the daytime but can still be random.

- On a game day, there are 2 to 3 broadcast trucks arrive from Expo into the loading bay and the interior of the arena (stored inside). For a weekend game, the trucks arrive around 7 to 8 AM and for a weekday game, the trucks arrive around 11 to 12 PM. The number of trucks can increase depending on the game (playoffs, all-star games and other major events can draw additional broadcast trucks).

- During the game day, there are a few more staff arriving throughout the day mostly walking or by transit. Between 4 and 6 PM the majority of the temporary staff have arrived (>1,000 part time staff). Some permanent staff park off site as the on-site lot is full for season ticket holders. Overflow is traditionally accommodated at Concord Pacific surface lot.

- The game day parkade access opens at 5 PM and guests enter until 7 PM. This will be complicated with the 156 office employees who may leave at 5 to 5:30 PM. Team buses arrive between 4 to 4:30 PM and park underneath the building. 2 ambulances also arrive and park underneath the building.

- Game day crowds are as high as 18,000 people, mostly walking in from Skytrain or downtown. Arrival peaks between 6 and 7:10 PM. The Gate 3 (Expo) crossing is an issue due to the Skytrain access. Gate 7 has the lowest usage. Gate count information can be supplied.

- Following the game, crowds leave between 9:30 and 10:15 PM depending on the results (overtime, blowout, etc.). At 11:15 the broadcast trucks leave

ITEM DISCUSSED	***ACTION BY:***

and the next day garbage is picked up.

- For a concert day, the production trucks arrive between 7 and 9 AM. These fleets can range from 5 trucks to 28 trucks, although 15 seems to be a recent average. Fleets are growing in size.

- Trucks are staged off-site and are called up to the Expo loading bays. Typically 1 to 2 lanes are blocked off to allow a staging lane and a buffer lane for worker safety. By 12 noon the trucks are unloaded and are moved off site. Buses then begin to arrive (5 to 7 buses carrying entertainers and support staff). There are some additional pick-ups and drop-offs throughout the day.

- Cars and guests arrive between 7 and 8:30 depending on the strength of the opening act. Concerts typically accommodate 12 to 14,000 attendees. Temporary staffing is similar to a hockey game day.

- Concerts typically end at 11:00 PM. Trucks come in afterwards to tear down. 10 to 15 may be lined up at a time along Expo Boulevard in the temporary lane closures. Within 4 hours (2 AM) all trucks are gone from the site and on to another venue. Occasionally there will be back to back shows.

- Trucks currently stage off site at Concord Pacific surface lot but this will have to be reconsidered with development coming.

- Future needs will remain somewhat the same. 2 loading bays within the building, 2 on the street and room nearby for marshalling and call up (e.g. Abbott Street). Keep Expo boulevard as one way with spare lanes to be utilized for special events.

"The foregoing is the writer's interpretation of the proceedings. If there are any discrepancies or omissions, please bring them to our attention within five days of receipt of these minutes."

PARSONS

Metrotower 1, 4710 Kingsway, Suite 2300 • Burnaby, British Columbia V5H 4M2 • (604) 438-5300 • Fax: (604) 438-5350 • www.parsons.com

Northeast False Creek Transportation Study

Pavco Meeting Minutes

Held On: October 3, 2014 at 2:00 p.m.

Held At: Pavco Administrative Offices, Pacific Boulevard

Present:

For City of Vancouver
Peter Cohen (PC)

For Parsons
Jason Jardine (JJ)

For Pavco
Brian Griffin (BG)
Kathy deLisser (KdL)

Circulate: All Above
Prepared By: Jason Jardine, Parsons

ITEM DISCUSSED | ***ACTION BY:***

1. Introductions / Background

- Introductions were made by CoV and Parsons. Parsons will be responsible for conducting a transportation planning study for the Northeast False Creek area which includes the replacement Viaducts street network and a review of existing special event traffic management plans. PC provided an overview of council direction, current assignment scope and supporting studies. Study will proceed through the first quarter of 2015.

2. Transportation Requirements

- JJ explained the key questions the team was reviewing. Most of these relate to traffic volumes generated by the stadium functions and administrative operations. An important consideration is peak versus average days. We are examining peak traffic hours but need to consider functionality for local access during off peak times as well.

a. What are the maximum number of employees on site at one time (average day and special event day)?
The base employee numbers include the administrative offices, the Sports Hall of Fame staff and Centreplate staff. This is typically around 100 people.
In the ramp up to a major event or trade show this can increase to between 500 and 1,500. On the actual event day between 1,700 and 2,000 people can be on site at any one time.

b. What are the employee shift times (average day and special event day)?
For the base administrative staff, it is a typical Monday to Friday work week (7-9 AM arrive, 3-6 PM leave). Difficult to estimate modal split but given the SkyTrain accessibility it is likely in the order of 50% non-auto. For events, most of the staff take transit as the on-site spaces are reserved for suite holders. Event staff typically arrive 1 to 2 hours before and leave 1 hour after the event.

ITEM DISCUSSED | ***ACTION BY:***

c. How many truck deliveries / service visits does the site require per day (average day and special event day)?
Over the course of the week, there are regular deliveries/garbage trucks/service vehicles estimated at 35 to 40 trucks per week. A typical concert generates 60 to 70 trucks (note that the BC Place stages are larger than those in Rogers Arena), a trade show generates 150 trucks and up to 300 to 400 vehicles (assuming 1 per exhibitor). Other specialized events such as Monster Truck races generate up to 160 dump trucks to create temporary dirt track. The boat show generates 200 to 300 vehicles.

d. What is the typical delivery / service visit schedule and turnaround time?
Most are random throughout the week with slightly more activity before and after an event. For concerts and trade shows, the move in period can require 0.5 to 3 days.

e. What is the typical size distribution of delivery trucks / service vehicles (e.g. single unit vehicles versus tractor trailers, as well as any dimensions for specialized vehicles)?
Most regular delivery/service trucks are standard single unit vehicles. Specialized trucks serving events like the boat show are towing cargo as long as 77 feet.

f. What are the key truck origins / destinations?
This is an area of concern as the majority of trucks are destined to and from the nearest freeway (Highway 1). There is no designated parking or staging area so trucks must enter the site, drop off delivery, leave the site, and then return again to pick up and remove. Regular delivery trucks use the access off of Griffiths Way. For larger deliveries and concert setup, trucks enter from Pacific Boulevard eastbound and pull through the east gate to the interior of the stadium. They leave from the west gate to Terry Fox. Following an event where a stage is in place, the trucks cannot pull through the stadium and instead must use Terry Fox to enter / exit. Terry Fox will close to through traffic as part of an upcoming development. This will not affect BC Place as they will continue to have local access, however, the closure of Terry Fox will affect the ability of trucks serving the stadium district to complete a turning maneuver from westbound Expo to eastbound Pacific. All trucks currently making this movement will be diverted to the congested Nelson Street slip lane which does not have sufficient width to accommodate truck turns.

3. Special Event Traffic Management Considerations

Another major area of concern is the overlap between special event plans and ongoing construction traffic management plans. Coordination of schedules within the entire area is essential as both BC Place and Rogers Arena make use of lane closures on Pacific Boulevard and Expo Boulevard, respectively during event load-in. At the same time, construction on new towers often requires the closure of a curb lane for site access. The cumulative effects can significantly congest traffic. The planned review of special event plans including the dual event plan is welcome as conditions have changed since the time the plan was first developed.

Pedestrian flows are an ongoing concern. JJ noted that updated dual event count was completed in early September. This count will assess changes in pedestrian flows at four SkyTrain stations, cordon counts along local streets, traffic volumes over the course of the week, and an updated user survey. It is expected that changes will be observed due to the Canada Line usage.

KdL brought up a number of areas where pedestrian and traffic flows are an issue during events. These include the Expo westbound to Smithe northbound right-turn (with new bike lane and restricted right-on-red). A number of garages exit to Expo (Costco, BC Place suiteholders, and Pivotal) and congestion can be observed. There

ITEM DISCUSSED	***ACTION BY:***
is an existing taxi stand on Pacific Boulevard south side which will move to Terry Fox with the new development. This has traditionally created conflicts as pedestrians try to cross Pacific at-grade. There is a potential to consider replacing the Pacific Boulevard overpasses with an at-grade crossing provided evacuation and handicap access requirements can be maintained.	

"The foregoing is the writer's interpretation of the proceedings. If there are any discrepancies or omissions, please bring them to our attention within five days of receipt of these minutes."