

File No.: 04-1000-20-2022-125

August 29, 2022

s.22(1)

Dear s.22(1)

Re: **Request for Access to Records under the Freedom of Information and Protection of Privacy Act (the "Act")**

I am responding to your request of March 9, 2022 under the ***Freedom of Information and Protection of Privacy Act, (the Act)***, for:

Records regarding the closure of Alexander Street eastbound at Main Street to vehicles and the erection of bollards, barriers, and concrete partitions, specifically:

- 1. Records of public consultation including groups surveyed and feedback; and**
- 2. Correspondence and records of City of Vancouver meetings within:**
 - a. Planning;**
 - b. Engineering;**
 - c. Development, Buildings & Licensing.**

Date range: January 1, 2015 to March 8, 2022.

All responsive records are attached. Some information in the records has been severed, (blacked out), under s.13(1), s.14, s.15(1)(l), s.22(1), and s.22(3)(d) & (g) of the Act. You can read or download these sections here:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/96165_00

Under section 52 of the Act, and within 30 business days of receipt of this letter, you may ask the Information & Privacy Commissioner to review any matter related to the City's response to your FOI request by writing to: Office of the Information & Privacy Commissioner, info@oipc.bc.ca or by phoning 250-387-5629.

If you request a review, please provide the Commissioner's office with: 1) the request number (#04-1000-20-2022-125); 2) a copy of this letter; 3) a copy of your original request; and 4) detailed reasons why you are seeking the review.

Yours truly,

[Signed by Cobi Falconer]

Cobi Falconer, MAS, MLIS, CIPP/C
Director, Access to Information & Privacy
cobi.falconer@vancouver.ca
453 W. 12th Avenue Vancouver BC V5Y 1V4

If you have any questions, please email us at foi@vancouver.ca and we will respond to you as soon as possible. Or you can call the FOI Case Manager at 604-871-6584.

Encl. (Response Package)

:ag

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Magnusson, Rachel" <Rachel.Magnusson@vancouver.ca>
Date: 8/24/2017 10:29:49 AM
Subject: 102 Main/Alexander Translations Bullet Points

- ☐ Our Transportation 2040 plan and the Downtown Eastside Plan identified Alexander St as a priority for a new bicycle route, as well as improvements for walking
- ☐ Alexander connects protected bike lanes which currently end on Carrall St at Water and Powell St at Hawks
- ☐ Most of the route is expected to consist of people cycling on the roadway with traffic calming to reduce motor vehicle speeds and volume (similar to Union St)
- ☐ The block of Alexander St in front of your building has the most motor vehicle traffic, and so we are looking at restricting some turns

Options

1. No motor vehicle access via Alexander between Main St and the lane east alongside your building, including removing parking spaces on this section. Parking along the lane could be accessed from Powell and from the east along Alexander, such as via Gore. A new northbound left turn lane on Main at Alexander and two-way motor vehicles on Cordova would replace the current northbound right turn lane as the alternative to crossing the overpass.
 2. Turn restrictions would be added at Main/Alexander and Gore/Alexander such that clockwise circulation around your block and access via the lane would be maintained
 3. Similar to #2 with slightly different turn restrictions and a two-way protected bike lane on the north side of Alexander
-
- ☐ In each case, the parking in front of your building on Main Street would remain, and we would be interested knowing how any of the nearby parking is used by visitors, for pick-up and drop-off, or for resident parking
 - ☐ We are open to discussing changes to the type of on-street parking (metered, time-limited, loading/passenger zone, etc), particularly with Option 1

From: "Liaw, Alex" <Alex.Liaw@vancouver.ca>
To: "Durnford, Jack" <Jack.Durnford@vancouver.ca>
CC: "Borger, Ron" <ron.borger@vancouver.ca>
"Kenny, Ross" <Ross.Kenny@vancouver.ca>
"Gould, Brian" <Brian.Gould@vancouver.ca>
"Keating, Fiona" <Fiona.Keating@vancouver.ca>
"Mate, Tibor" <tibor.mate@vancouver.ca>
"O'Donnell, Ryan" <Ryan.O'Donnell@vancouver.ca>
Date: 6/22/2018 8:53:25 AM
Subject: Alexander & Main - Site Instruction 001 - Install Gravity Barriers
Instead of Cast-in-Place
Attachments: ENG - TDE - 143224 - Alexander St & Main St - Site Instruction Form
001 - 2018-06-20.tr5

Hi Jack,

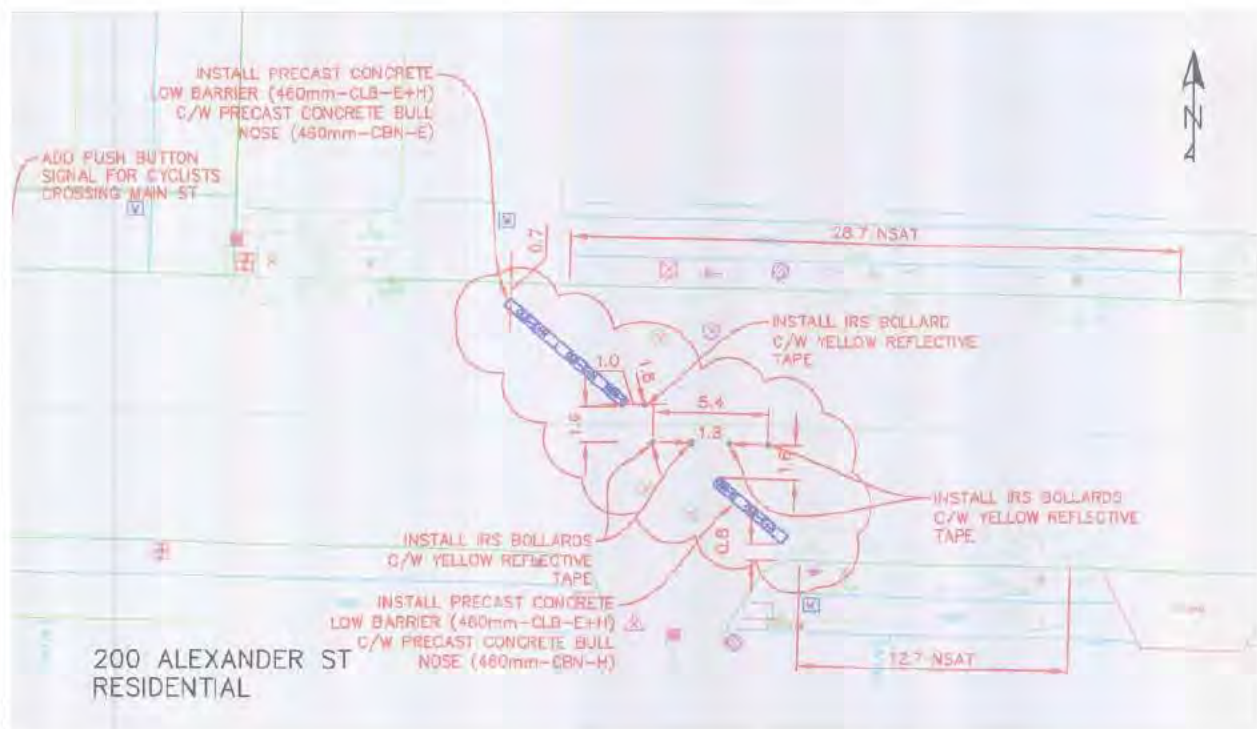
Please find attached site instruction 01 for the installation of gravity barriers instead of cast-in-place medians for the closure on Alexander between Main and Gore.

Regards,
Alex

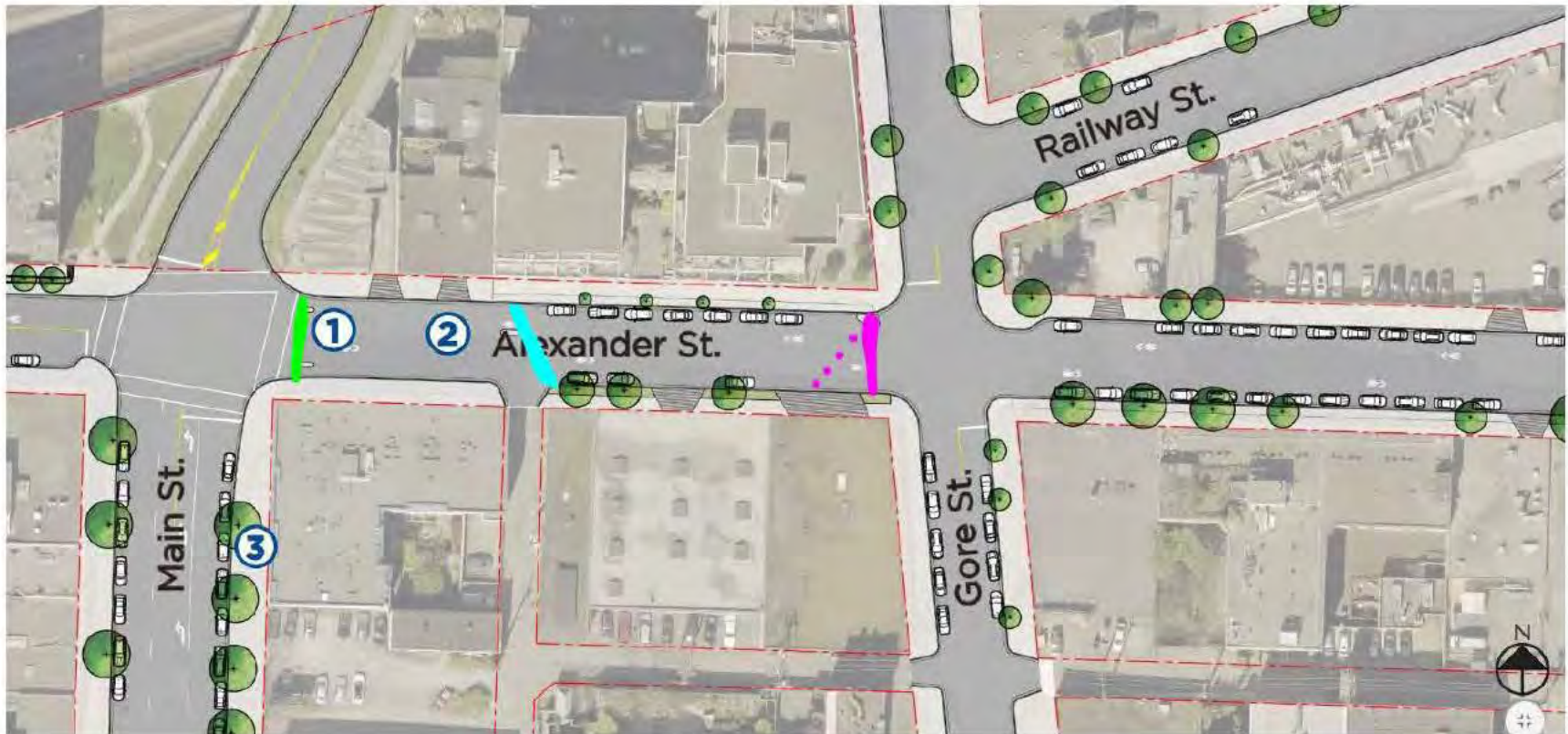
Project Number and Name <i>e.g. VanDocs container # and name</i>	13-1400-30/0000127 ENG - TDE - Alexander-Powell - 2017		
Design Number <i>e.g. ENGIS #(s), Hansen #, Posse #</i>	2014-87	Other Numbers <i>e.g. DE#, RE#, etc.</i>	
Site Instruction Number <i>(coding is project-specific)</i>	01	Drawing Number <i>(related drawings or specs)</i>	2014-87-C-G-02 143224C
Date (YYYY-MM-DD)	2018-06-20	Time Issued	5:00 pm

Instructions:

Install gravity barriers on Alexander St between Main St and Gore St as per design revision (DOC/2018/262460) below. Concrete medians have been deleted to allow modifications in the future. Survey to lay out the location of concrete barriers.



	<i>Name</i>	<i>Signature</i>	<i>Date (YYYY-MM-DD)</i>
Issued by	Alex Liaw	Alex Liaw	2018-06-20
Instructed by	Fiona Keating	Fiona Keating	2018-06-21
Checked by (as required)			
Issued to	Jack Durnford		2018-06-20



From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
"Lewis, Toby" <Toby.Lewis@vancouver.ca>
Date: 1/11/2018 5:10:02 PM
Subject: Alexander east of Main

Hi Toby,

I've worked through a variety of unsatisfying alternatives to address TDM concerns with the full closure on Alexander just east of Main. Unfortunately I've encountered a few dead-ends along the way. We need to discuss what might be workable, and preferably we can identify one or more supportable by TDM. This can be a preliminary conversation, or we can expand if you want to bring in more folks.

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "McNeely, Stephanie" <Stephanie.McNeely@vancouver.ca>
"Tamashiro, Kati" <Kati.Tamashiro@vancouver.ca>
"Kong, Carol" <Carol.Kong@vancouver.ca>
"Yau, Adrian" <Adrian.Yau@vancouver.ca>
Date: 3/21/2017 4:16:09 PM
Subject: Alexander St (and context)

Adrian has drawn up quite a few variations on scope for an Alexander St bikeway, from things we could implement immediately, through 2017-18 construction after some consultation, and some of the way for future-proofing (e.g. Main St overpass).

A conversation about which pieces to push before we build a consultation plan around all the pieces.

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Clark, Rick" <Rick.Clark@vancouver.ca>
CC: "Swanigan, Sandi" <Sandi.Swanigan@vancouver.ca>
"Magnusson, Rachel" <Rachel.Magnusson@vancouver.ca>
Date: 8/31/2017 9:51:14 AM
Subject: Alexander St Bikeway

Hi Rick,

We have completed a preliminary round of engagement with businesses along Alexander St for a bikeway project (identified and mapped through Transportation 2040). It would seem that we've got something workable to take out to an open house this fall, so are doing a round of internal confirmation.

In addition to already expecting significant filming around Gastown, many of the businesses and BIAs have added emphasis. In particular, I'd like to provide an update on where we seem to be headed for the section from Carrall to just east of Main:

- Conversion of 0 Block Alexander from one-way WB for motor vehicles to one-way EB
 - primarily to convert the head-in angle parking on the left side to back-in angle parking on the right-hand side (safer when we allow cycling in both directions)
 - also provides some traffic calming benefit, but many businesses appreciate the new circulation pattern so it's a bit win-win
 - main implication is that a soft turn onto Water Street (easy enough for coach buses and semi-trucks as needed) is replaced by a tight turn from Powell (good for large box trucks and garbage trucks)
- Conversion of Columbia to two-way traffic
 - at least Alexander to Powell given the above change, but potentially all the way to Pender
- Full closure to general motor vehicle traffic between Main and the lane east
 - we will be following up with Cal at Ironwork Studio with a plan to allow him access for large trucks from Main St with a key for a row of bollards
 - he was really opposed to our alternative plans involving one-ways, so this may be the best we can do while addressing this block that's several times over our AAA thresholds for traffic
- No changes beyond a stop sign rotation until past Heatley
 - still working on Hawks and a turn restriction, but no significant impacts on access east along Alexander, Railway, etc

I think most of the changes with special event implications are at Maple Tree Square which we're working on somewhat separately (e.g. GGP), but any insight on that side would also be appreciated.

Thanks,
Brian

Brian Gould, MCP, P.Eng.

Senior Transportation Design Engineer
City of Vancouver
tel 604.871.6277
e-mail brian.gould@vancouver.ca

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Moore, Tyler" <tyler.moore@vancouver.ca>
"Young, Sheldon" <sheldon.young@vancouver.ca>
Date: 10/11/2018 11:48:44 AM
Subject: Alexander/Main and Experimental Barrier Testing
Attachments: IMG_0156.jpg
IMG_0160.jpg

Hi Tyler and Sheldon,

Thank you for your help reviewing design concepts for Alexander and testing barriers for emergency vehicle permeability respectively. We're having some operational issues on Alexander and Main, and I'd appreciate your feedback on a different approach.

The short version is that the **current design** that relies on IRS bollards that are not holding up, and Traffic Ops are having a hard time keeping up with replacements. It's not immediately clear how much damage may be from general motor vehicle traffic, but since we've been replacing as frequently as twice in one week, it seems likely that even just fire apparatus would be too much for them to bear over the long term.

We would like to begin using automated bollards in this sort of situation, but there are a lot of cost and operational questions yet to answer for what is a relatively interim installation. We also began thinking about alternate "knock-down" options such as a fence or gate that would be designed to be struck and then reset themselves slowly, but as much as EQS are interested in helping, we're not aware of a product off the shelf and may just find maintenance issues there as well.

When I raised this with our Transportation branch heads and Lon, the preference was to explore an approach that is based on ground clearance and would allow us to just use durable fixed objects. I'm most familiar with these **sorts of arrangements** with concrete or steel, but I think we have an opportunity to put the 13cm high **rubberized curb product** we tested into use. I've attached photos that illustrate the remaining clearance to the two vehicles Sheldon brought to the test.

I believe we only tested perpendicular and oblique; however, I am hoping we could actually go parallel to the direction of travel, particularly given that vehicles would be travelling straight with plenty of space to straddle. This would avoid needing to actually drive wheels over the rubber curb, or the questions of how bikes pass by the curb. Should some part of the apparatus contact the curb, the rubber did show to have some give, but I am not clear on all your considerations.

One other thought I had was adding "except emergency vehicles" to the traffic regulations – I've seen non-responding ambulances making the long way around and wouldn't mind making lights and sirens at the discretion of the first responders here (though I've also taken a resident complaint about the noise of the bollards being driven over, so can't please 'em all).

All thoughts welcome, and I'd be happy to proceed by, for example, installing the rubber curb and coordinating with Hall #2 to test it immediately and remove if needed.

Thanks,
Brian

-----Original Appointment-----

From: Khayat, Jad

Sent: Monday, April 30, 2018 3:04 PM

To: Khayat, Jad; Gould, Brian; Clelland, John; Tseng, Ken; Young, Sheldon

Cc: Storer, Paul; Zipf, Mike; Wong, Winnie; Lao, Dominic

Subject: Experimental Barrier Testing

When: Monday, May 07, 2018 1:30 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).

Where: Concord Pacific Lands

Testing of experimental barriers in real world conditions to determine suitability and if they are able to withstand and accommodate full size North American style fire trucks.

Two products will be tested; a flexible barrier product from South Korea to determine if the product is able to not only deal with its advertised claims of mid-size commercial vehicles but is also able to deal with the weight of fire trucks. The other product from the UK is made out of rubber and meant to resemble an extruded concrete curb. While not an advertised benefit of this product, the goal with this test is to determine if it is in fact able to compress enough under the weight of a fire truck for the drivetrain and chassis to be able to comfortably pass over it.





From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Rahmani, Banafsheh" <Banafsheh.Rahmani@vancouver.ca>
"Stubbington, James" <james.stubbington@vancouver.ca>
Date: 7/23/2018 10:55:26 AM
Subject: Alexander/Main diverter origin-destination
Attachments: Alexander Main O-D Proposal.JPG

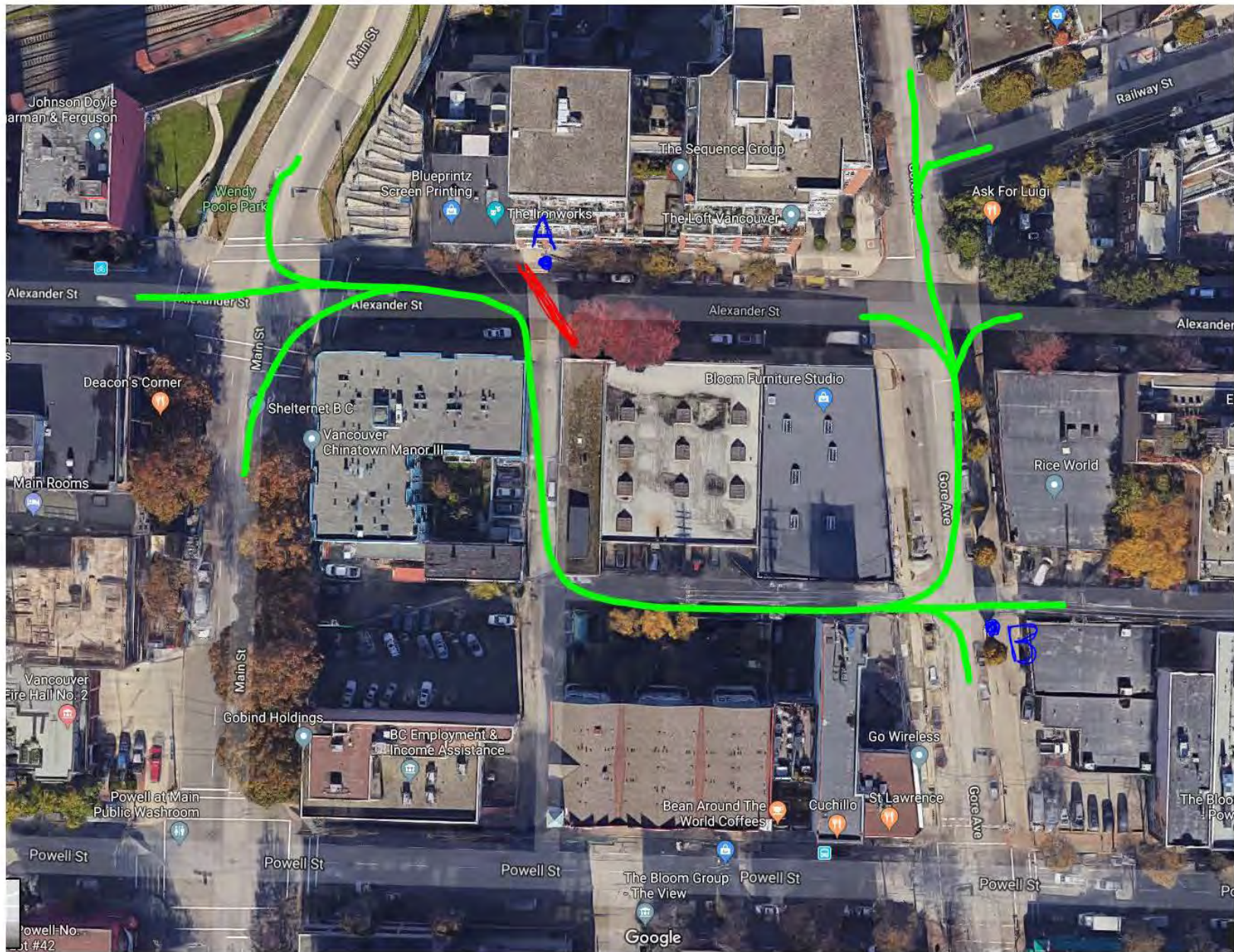
Hi Banafsheh and James,

I'd appreciate some advice on some sort of count I can request of how drivers are short-circuiting our interim diverter east of main (red line on the attached). Resident reports are that drivers that we're deflecting into the lane are mostly just popping back up on Gore, and I've seen similar things on site.

I think we might be able to manage a mini O-D study to try and figure out the magnitude of the behaviour as well as what other movements at other intersections we might be able to target since we didn't really have other options for this diverter that branch heads and neighbours were happy with. So, does the following seem plausible for some spare Monday/Friday TA shifts:

- ☐ From point A, watch for traffic from Main/Alexander arriving at diverter, record plate and direction of approach; likewise, record plate for departures from lane and direction of departure at Main/Alexander. I suggest only point A because they could additionally record turns at the alley T, but any location between the lane and Main on Alexander could otherwise work.
- ☐ From point B, watch for traffic exiting the lane, record plate and direction of departure (there are a lot of options here, and we would at least want to know whether they headed north); likewise, at least record which way they entered the lane from along with plate for WB

Volumes on this block of Alexander used to be 4000/day, and there seem to be up to 3-4 vehicles per signal cycle using the lane during peak with confounding background traffic, particularly at B. Please advise on whether this is realistic/cost/timeline, I'm certainly open to alternatives.



From: "Khayat, Jad" <Jad.Khayat@vancouver.ca>
To: "Khayat, Jad" <Jad.Khayat@vancouver.ca>
"Gould, Brian" <Brian.Gould@vancouver.ca>
"Keating, Fiona" <Fiona.Keating@vancouver.ca>
"Clelland, John" <john.clelland@vancouver.ca>
"Lee, Joyce \ (ENG\)" <joyce.w.lee@vancouver.ca>
"Biagini, Marco" <marco.biagini@vancouver.ca>
"Liaw, Alex" <Alex.Liaw@vancouver.ca>
Date: 11/6/2017 3:45:07 PM
Subject: Automated Retractable Bollard Meeting

Hello,

I am setting up a meeting to discuss the possible install of powered retractable bollards at Main & Alexander Streets. Please feel free to forward this invite to anyone else who you believe should also be at this meeting. Thanks,

Agenda for the meeting will be as follows:

- a. Preferred access mechanism (RFID, keypad etc)
- b. Electric vs Hydraulic vs Pneumatic (Electric seems to be the winner)
- c. Who would be authorized users
- d. Administration and policing of access
- e. Coordination with existing traffic signals
- f. Signage and markings to be associated with this
- g. Emergency Vehicle access
- h. Overall intended look – visibility?
- i. Supplier availability - part availability and lead times
- j. Installation and Maintenance Training
- k. Maintenance costs and frequency

Alexander Bikeway

Below is the public feedback staff received on the Central Section of Alexander St. in relation to the three design options presented at the Public Open house on November 21, 2017.

In addition to the input below, we received feedback on the three design options in our conversations and email exchanges with BIAs, local businesses, Vancouver Fire and Rescue Services, and local residents. We also received input on the other sections of Alexander St. and the bikeway as a whole.

For reference, please see diagrams of design options at vancouver.ca/bikeupgrades

Comments on design options for the Central Section of Alexander St.:

- Gore + Alexander is a busy intersection, vehicles don't stop at intersection going south.
- Closure @ Main Street means having to drive all the way to Cordova to access Gore. Gore is busy (especially with traffic from sunrise market).
- Sunrise Market at Gore + Powell already really busy.
- Marked crosswalk needed on Alexander St.
- I prefer Option 1 but make Main St open + traffic calm Gore substantially for pedestrians and cyclists
- Need to consider options together. If Option 1 at Main and Option 2 at Hawks, where will westbound vehicles experience traffic calming? If at Main St. will they not shortcut to Cordova?
- Don't like Central Section Option 2. Either go all the way to protect or use cheapest Option 1.
- Left eastbound turns from Alexander to Railway taken very sharp. Dangerous for active travel modes.
- Alexander and Main: This intersection is very bad/dangerous. Cyclists risk themselves, the main problem is because of free downhills, with vehicles not heeding yellow lights and running total reds. Especially southbound over the railroad crossing very steep incline and they are still accelerated from going the uphill and not intending to stop. I have witnessed cyclists down waiting for ambulance. Cyclists are also running the signal westbound on Alexander St. and they are so close to being struck by vehicle that are way over speed limit coming down south through the signalled intersection. I would limit and monitor traffic to a lower speed limit, on the overpass.
- I agree with the central Alexander being kept the way it is, and the 30 km/hr. Alexander Street is also a main artery for ER vehicles and there is almost continuous use, very frequently. Any time they could set radar and intersection monitoring for running into the corners they would be busy to say the least.

- The addition of bollards would reduce traffic on Alexander St. and hopefully speed [of vehicles]. Highly prefer this option.
- Option 1 would be the most effective way of stopping through traffic
- Don't Like: As a 10 year resident, I simply do not see the cycling traffic on this street. The better course would be to remove parking on one side of Cordova and install a 2 way bike lane there, similar to Dunsmuir. Otherwise, where are the cyclists going? Once over the Powell street overpass, cyclists are then back on Powell with no bike lane. Been there, done that. Better on Union to Kaslo. Creating more cycling traffic on Powell is not a good idea.
- Don't Like: I would prefer to see a bike lane on Powell or Cordova and install a 2 way bike lane there, similar to Dunsmuir.
- Physically separated bike lanes are always a good thing. There should be more of them.
- Like: reduce non-resident traffic volume. Don't like: Will make access to Alexander much more difficult for residents coming from Main st/downtown. Resident will have to use Powell or Cordova which is already over congested.
- It seems fine. Quick and cheap. It can be upgraded later.
- Like: This still allows access to my business. Don't Like: This will make it harder to receive deliveries and ship final product
- Looks confusing for drivers. Heavy trucks currently delivering goods to Burrard Iron Works have to make three-point turns to get out? Accidents waiting to happen with cyclists and trucks backing up.
- Like: Cut down traffic to make cyclists safer. Don't like: I can't go directly from Alexander to east of main, but it's a compromise.
- Cut down traffic to make cyclists safer and also we definitely need more residential/permit parking!
- Bike numbers do not justify the functional closing to traffic of a very important street to the community. Other methods can be used such as reduced speeds, speed bumps, etc. The proposal is not evidence based.
- Our preference is for Option 1, without curb protected bike lanes. We expect that this option will have the greatest calming effect of the options presented. The issue we see is that if diversions are applied at only one point, they will have a reduced effect the farther one goes from that point, with little to no impact on traffic volumes at the other (east) end of Alexander. To be successful, diversions must be installed at more than one location. We heard at the Open House that current vehicle traffic volumes are up to ten times the volumes acceptable for a AAA route. If diversions are successfully applied, and vehicle traffic reduced as per the project goals, ideally to AAA levels, then protected bike lanes and concrete curbs are not required, reducing costs.
- I'm not clear on what the proposed bollards in the recommended option will restrict. I would like to see motorized traffic restricted to emergency and business access at the Alexander/Main intersection (i.e., no eastbound or westbound through traffic on Alexander and no right or left turns onto Alexander from Main or onto Main from Alexander.

- Hi ... I had the opportunity to view your bike way proposals yesterday... I have to say that all of the proposals would create a significant adverse effect on our community.. This is a very sensitive area and I do not feel you adequately understand the pressures we are already dealing with... The last thing we need is to restrict entry into our community for our residents , businesses and customers.. No one I have spoken with and myself included feel that a dedicated bike lane is needed in the first place... Traffic slowing measures would suffice and cyclists can share the roadway as they always have..... Please do the right thing for our community and rethink everything... Thanks
- Due to my commute route, I'm most interested in the Main/Alexander area improvements to the bike lane plans. Options 2 and 3 are just plain terrible for the businesses in the area. There are a lot of businesses here who ship things in and out of their facilities throughout the day. Restricting the directional flow of traffic will be a nightmare for businesses who need accessibility for deliveries. Fortunately Option 1 isn't as much of a terrible idea as the other options, except it blocks off efficient access when coming over the bridge from the north. Setting the street speed limit to 30km/h is a good idea.
- I'm fine with all the recommended upgrades, except for Section 2 (east of main street) where I prefer Option 2, as I think having alternating one-way blocks will more effectively deter traffic shortcutting. Currently I see many people in the morning take Alexander westbound, turn north on Main Street and then take the route under the convention centre to downtown.
- My feedback for your planners is this: I live and work near Alexander and Gore. This intersection has always been dangerous and doubly so for cyclists. When coming up the hill, going South from our garage at the North end of Gore there is frequently very little visibility to see the fast moving traffic moving along Alexander. You have to put the nose of the car or bike into the oncoming traffic practically because parked cars, trees and people can be blocking the view of the street, and coming up a hill also hinders the sightlines. Our building has asked the city several times over the years to put in a four-way stop here but they have always refused. It is good now that they are making some changes, hopefully for the better. A four-way stop would help. I'm not sure which of your options is best but as residents we definitely still need easy access to our two garage entries (on the west side of Gore) and to the passenger/loading. As well we need to maintain access to Main St. and Powell St. in both directions to leave the area and to return.
- Thank you, my main concern is that most of my clientele accesses my studio by way of Main St. or coming east on Alexander through Gastown. To direct them over to Gore St will not only be a complicated route but with most traffic into Railtown using Gore this will be an extremely crowded entry to Alexander.
- Neutral *3
- Ok * 4
- Supportive *6
- Good

November 29, 2017

City of Vancouver
Transportation Engineering and Planning
By email: bikeupgrades@vancouver.ca

Re: Proposed Alexander Street Bikeway Improvements

Dear Sir/Madam;

HUB Cycling is a charitable organization that works to make cycling better through education, events and collaboration. We are Metro Vancouver's leader in making cycling an attractive choice for everyone. We are writing with comments on the proposed improvements to the Alexander Street Bikeway.

Overview

HUB Cycling representatives attended the Open House event that City staff held on November 21st, 2017 regarding the Alexander Street Bikeway project. We have reviewed the display boards.¹ We wholeheartedly support the creation of this bikeway. We particularly support the project goals of resolving a major gap in the bike network by making Alexander Street safer and more comfortable for people of all ages and abilities to cycle. We do have suggestions on how to best accomplish this as this project moves forward.

Context

HUB Cycling is currently supporting the Strathcona Business Improvement Association (BIA) in the creation of their Mobility Advocacy Plan, focusing on sustainable transportation improvements in the BIA area. That work has highlighted the opportunity of better utilizing Alexander as a bike route. We fully understand the need to be sensitive to business requirements for loading and parking. We see the biggest challenge with the Alexander Street route being vehicles short cutting Powell, often at higher speeds.

HUB Cycling has created a Gap Priority List for routes within the City of Vancouver, and throughout Metro Vancouver. We itemize gaps in the existing cycling network, and evaluate them in terms of the extent to which improvements to these routes would impact our goal of getting more people riding, more often. We have a current priority gap listed that we call the Powell Corridor, which we have defined as

¹ Alexander Street Bikeway Open House display boards: <http://vancouver.ca/files/cov/alexander-bikeway-preliminary-design-proposals.pdf>

running from Water Street in Gastown to Wall and Semlin at Powell, and utilizing the new protected bike lanes on the Powell Overpass. We are not specifically selecting any one street for resolving this gap, and so refer to the corridor in general. For the stretch from Water Street to the Powell Overpass, Alexander Street is the obvious link, and so improvements here would go a long way towards resolving this current gap. This route is important as it serves as an important connector for people in East Vancouver, and because it is a regional connector for people travelling between downtown, and the North Shore and Burnaby. We also understand that Water Street is the subject of future improvements, and so the connectivity at the west end of this project is subject to some change in future.

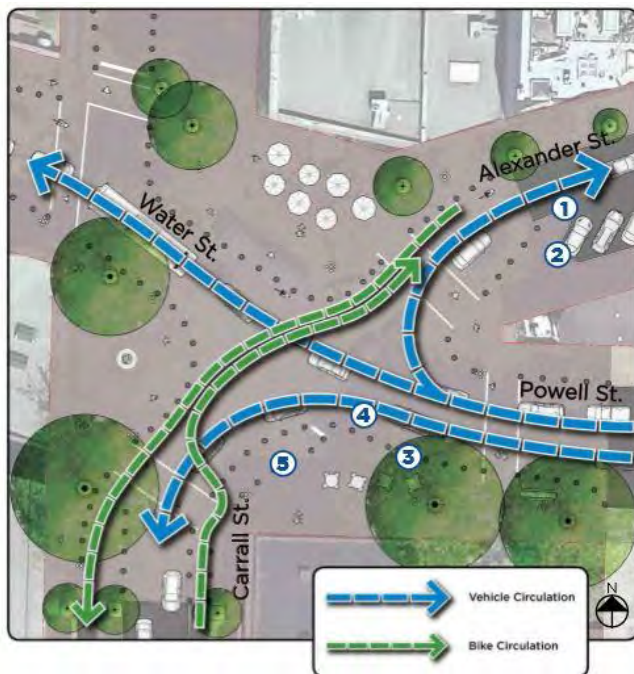
HUB Cycling previously completed an Assessment Ride of the Powell Corridor, and submitted our recommendations to the City in a report dated May 31, 2017.

This route follows the path of the proposed Portside Greenway, as outlined in the City Greenway plan.² As such, while a full Greenway construction is not being proposed here, the route should at least provide a safe protected route for all ages and abilities until the City does construct the Portside Greenway.

Recommendations

Our recommendations are divided into the three sections with alternatives presented at the Open House.

Section 1: West Alexander (Maple Tree Square to Columbia Street)



² City of Vancouver Proposed Greenway Plan, April 2011 <http://vancouver.ca/files/cov/city-greenways-network-map.pdf>

We support the change to make Alexander Street one way eastbound from Water to Columbia. We consider the proposed intersection bike path routing at Maple Tree Square to be a problem, as it is non-intuitive for users. We expect people on bikes would use it in a wide variety of ways if constructed as shown, with a resulting risk of crashes for both people on bikes and people walking. We suggest painting two green carpet crossings like those proposed for the intersection of Beatty and Nelson for the new Cambie Bridge protected lanes. We understand that this is not a signalized intersection, but have noted the use of green paint at other than signalized intersections. Separate from the issue of green paint, the bike crossings need to be straight, and marked, whether with green paint or crossbike stencils.

Section 2: Central Alexander (East of Main Street)



We support the traffic calming of Alexander with diversions. Our preference is for Option 1, without curb protected bike lanes. We expect that this option will have the greatest calming effect of the options presented. The issue we see is that if diversions are applied at only one point, they will have a reduced effect the farther one goes from that point, with little to no impact on traffic volumes at the other (east) end of Alexander. To be successful, diversions must be installed at more than one location. We heard at the Open House that current vehicle traffic volumes are up to ten times the volumes acceptable for a AAA route. If diversions are successfully applied, and vehicle traffic reduced as per the project goals, ideally to AAA levels, then protected bike lanes and concrete curbs are not required, reducing costs. This also respects the desire to tie improvements here into future improvements along Water Street as that Complete Street project progresses, as it avoids the construction of concrete curbs that may need to be changed in future.

Section 3: East Alexander (Heatley Avenue to Powell Street Overpass)



We support the addition of a protected bidirectional bike lane on Hawks, tying into the protected lanes on Powell. Our preference is for Option 1. We recommend running the protected lane slightly farther west on Alexander before exiting to the street. This will have minimal cost, no net impact on the number of parking spaces, and for people heading east, shifts the bike crossing into the protected lane farther away from the blind corner. As noted in our comments to Section 1, we recommend applying traffic diversions at the east end, near Heatley, and if traffic measurements taken post construction warrant it, mid way between the two installed diversions. With vehicle traffic currently reported to be up to ten times the daily maximum for a AAA bike route, a single set of bollards simply won't get us there. We note that the display boards indicate that the intent for Section 3 – East Alexander is to “Restrict vehicle access to reduce shortcutting.”

Thank you for the opportunity to provide our input to this process. We would be pleased to meet and discuss the above at your convenience.

Sincerely,

Jeff Leigh
Chair, Vancouver UBC Local Committee
HUB Cycling
Vancouver@bikehub.ca

Alexander Bikeway Engagement Summary

April 19, 2018

PROCESS TIMELINE

- 2012

Alexander St. identified as future all ages and abilities cycling route
Alexander St. identified in the City Council adopted Transportation 2040 Plan as a future all ages and abilities cycling route.
- Summer 2017

Exploring design options for Alexander St. bikeway
The City had conversations about potential changes to the street with local businesses and residents at key locations, as well as the Gastown, Hastings Crossing and Strathcona Business Improvement Associations (BIAs).

Overall, staff had 24 individual meetings with 58 people.
- Fall 2017

Public open house to share design options
The City held a public open house to share the design options for each section of Alexander St. and received public feedback. To see the presentation boards visit vancouver.ca/spotimprovements.

73 people attended the open house, and an additional 49 emails or comment forms were submitted.
- Winter 2018

Revise and refine designs
The City revised designs based on feedback and had further discussions with residents and businesses at key locations, as well as local BIAs.
- Spring 2018

Construction and implementation
Design changes will be implemented to make Alexander St. a local street bikeway. In Maple Tree Square, the changes will be revisited through the Gastown Streets transportation planning process.

The strategic traffic calming between Main St. and Gore Ave. will also be monitored to ensure it effectively reduces vehicle volumes on Alexander St. Depending on results, the design may be modified with more permanent materials and sidewalk corner bulges.

The first phase of the eastern section at Alexander St. and Hawks Ave. will be constructed in 2018, and the second phase in 2019.

DESIGN CHANGES BASED ON PUBLIC AND STAKEHOLDER FEEDBACK

In our discussions with the community, there was general support for making Alexander St. a local street bikeway. People were generally supportive of changes to improve safety and slow traffic on Alexander St., and there was a strong interest in maintaining parking and access to homes and businesses.

The final designs for Alexander St. try to respond to the feedback we received from residents and local businesses.

West Alexander St. **Please see design diagrams in the notification letter.*

What we heard	How the final designs respond
There needs to be clear travel lanes and signage to direct the flow of traffic through Maple Tree Square.	There will be clearly marked lanes on Powell St. to direct vehicles into either the left lane for Carrall St. or the right lane for Water St. or Alexander St.
Maple Tree Square is an important destination and the design should emphasize that this is a place for people.	The interim design for Maple Tree Square will expand public space to make more room for people. The design attempts to use a ‘light touch’ to delineate space for cycling and walking.
There is no intuitive connection for people walking and cycling through Maple Tree Square. It can feel unsafe	The interim design for Maple Tree Square is based on where people feel safe crossing traffic today – at crosswalks. Staff have added an additional crosswalk

and confusing.	between Gassy Jack and the public space in front of the Local where there's a desire to cross today.
Some concern from residents about the change in direction of the one-way and its impacts on access. Other residents and businesses liked the proposed change to the traffic flow because they felt like it would improve circulation.	The change in direction of the one-way on Alexander St. will likely make it less convenient for residents driving home, but more convenient on their way out. It will also improve the circulation for visitors to the area, and the back-in parking will be safer for people cycling.
Support for two-way of Columbia St.	Initially, Columbia St. will be two-way to Powell St., and there is an opportunity to extend the two-way further south on Columbia St. in the future.

Central Alexander St.

What we heard	How the final designs respond
There was mixed feedback on the proposed options for this section of Alexander St., but many preferred the closure east of the lane as it involved no separated bike lanes and a minimal loss of parking.	The design will strategically traffic calm the busiest section of Alexander St. This design has no separated bike lanes and involves a minimal reduction in parking – in total 6 parking spaces will be removed to ensure vehicles will have space to turn around mid-block. Staff will monitor the design to ensure that: 1) it effectively reduces motor vehicle volumes on Alexander St. and 2) it works for local business loading and delivery needs.
There was interest in a passenger loading zone in front of the senior’s residence at Main St. and Alexander St.	A passenger loading zone will be created in front of the senior's residence on Main St.
Residents near the intersection of Gore Ave., Alexander St., and Railway St., noted that this is a difficult intersection due in part to angled turns and poor sightlines. There was concern about how traffic calming on Alexander St. would impact this intersection, as well as Gore Ave.	Staff expect the traffic diverter to reduce motor vehicle volumes on Alexander St., which will help reduce the conflicts at this intersection. Once we know that the design is working, there is an opportunity for corner sidewalk bulges and crosswalks to improve this intersection.
There was some concern from local businesses about how strategic traffic calming would impact their businesses.	To have the least impact on local businesses, the location of the traffic calming was moved from the Main St. intersection to mid-block between Main St. and Gore Ave. The traffic diverter will also be angled to allow trucks to back in to adjacent driveways.
The Japanese Language School and Daycare also noted that the intersection Alexander St. often feels unsafe to cross for families walking to the school.	Staff expect the traffic diverter to reduce motor vehicle volumes on Alexander St., which will help reduce the conflicts at this intersection. Once we know that the design is working, there is an opportunity for corner sidewalk bulges and crosswalks to improve the design of the intersections with Jackson Ave. and Dunlevy Ave.

East Alexander St.

What we heard	How the final designs respond
There was strong support for the recommended design option, rather than the alternate option which involved a significant loss of parking on Powell St.	The project will move ahead with the recommended design option at Hawks Ave. and Alexander St. The design has been modified, primarily to address BC Hydro requirements for pole locations.
The intersection of Hawks Ave. and Alexander St. is a difficult intersection due in part to cycling and driving connections with the Powell St. overpass and regular loading and deliveries with large trucks.	The design at this intersection introduces a protected path for cycling. This reduces potential conflicts with vehicles. The protected path has minimal impact on the width of the road, maintains parking and allows for loading and delivery.
There was interest in understanding how the Heatley Overpass coming down would impact the Alexander Bikeway and traffic circulation in the neighbourhood.	At this time there is no firm timeline on the removal of the Heatley Overpass. When the overpass does come down, the impacts and opportunities of this change will need to be assessed.

This notice contains important information that may affect you. Please ask someone to translate it for you.

此通告刊載有可能影響閣下的重要資料。請找人為你翻譯。

ਇਸ ਨੋਟਿਸ ਵਿਚ ਮਹੱਤਵਪੂਰਨ ਜਾਣਕਾਰੀ ਹੈ ਜੋ ਕਿ ਤੁਹਾਡੇ ਲਈ ਜ਼ਰੂਰੀ ਹੋ ਸਕਦੀ ਹੈ। ਕਿਰਪਾ ਕਰਕੇ ਕਿਸੇ ਨੂੰ ਇਸ ਦਾ ਉਲੱਥਾ ਕਰਨ ਲਈ ਆਖੋ।

Thông báo này có tin tức quan trọng có thể ảnh hưởng đến quý vị. Xin nhờ người phiên dịch hộ.

Este aviso contiene información importante que puede afectarle personalmente. Pídale a alguien que se lo traduzca.

Ce document contient des renseignements importants qui pourraient vous concerner. Veuillez demander à quelqu'un de vous le traduire.

OWNER/OCCUPANT
ADDRESS
CITY
POSTAL CODE

April 19, 2018

Dear Resident/Business owner,

The City of Vancouver is making Alexander St. a local street bikeway to make it safer and more comfortable for people of all ages and abilities to cycle. Alexander St. has been an informal cycling route for years, and it is an important east-west cycling connection between the Powell St. overpass and the Carrall St. bike route. In 2012, Alexander St. was identified in the City Council adopted Transportation 2040 Plan as a future all ages and abilities cycling route.

In the summer of 2017, the City began conversations with local businesses and residents at key locations about making Alexander St. a local street bikeway. In the fall of 2017, the City held a public open house where it shared design options for each section of the bikeway. To view these preliminary design options please visit vancouver.ca/bikeupgrades.

Staff received general support for making Alexander St. a local street bikeway. Businesses and residents were generally supportive of changes to improve safety and slow traffic on Alexander St., and there was a strong interest in maintaining parking and access to homes and businesses.

The final designs for Alexander St. respond to the feedback we received from residents and local businesses. For a detailed summary of how the final designs respond to public input, please see attached *Alexander Bikeway Engagement Summary*.

In late spring 2018, the City will:

- Add signs to identify Alexander St. as a local street bikeway.
- Reduce the speed limit to 30km/hr.
- Introduce strategic traffic calming between Main St. and Gore Ave. to reduce the number of vehicles traveling along Alexander St, making the street safer and more comfortable for people of all ages to cycle.
- Improve connections to existing bike lanes: east of the Powell St. Overpass, and at Carrall St. through Maple Tree Square.
- Make Columbia St. two-way between Alexander St. and Powell St. to improve motor vehicle circulation.
- Rotate the two-way stop at Alexander St. and Dunlevy Ave. to favour Alexander St.
- Change the direction of the one-way westbound to one-way eastbound on the first block of Alexander St. between Maple Tree Square and Columbia St., in order to improve motor vehicle circulation and make it safer for people cycling.

**For details, see diagrams of design changes*



West Section - Alexander St.

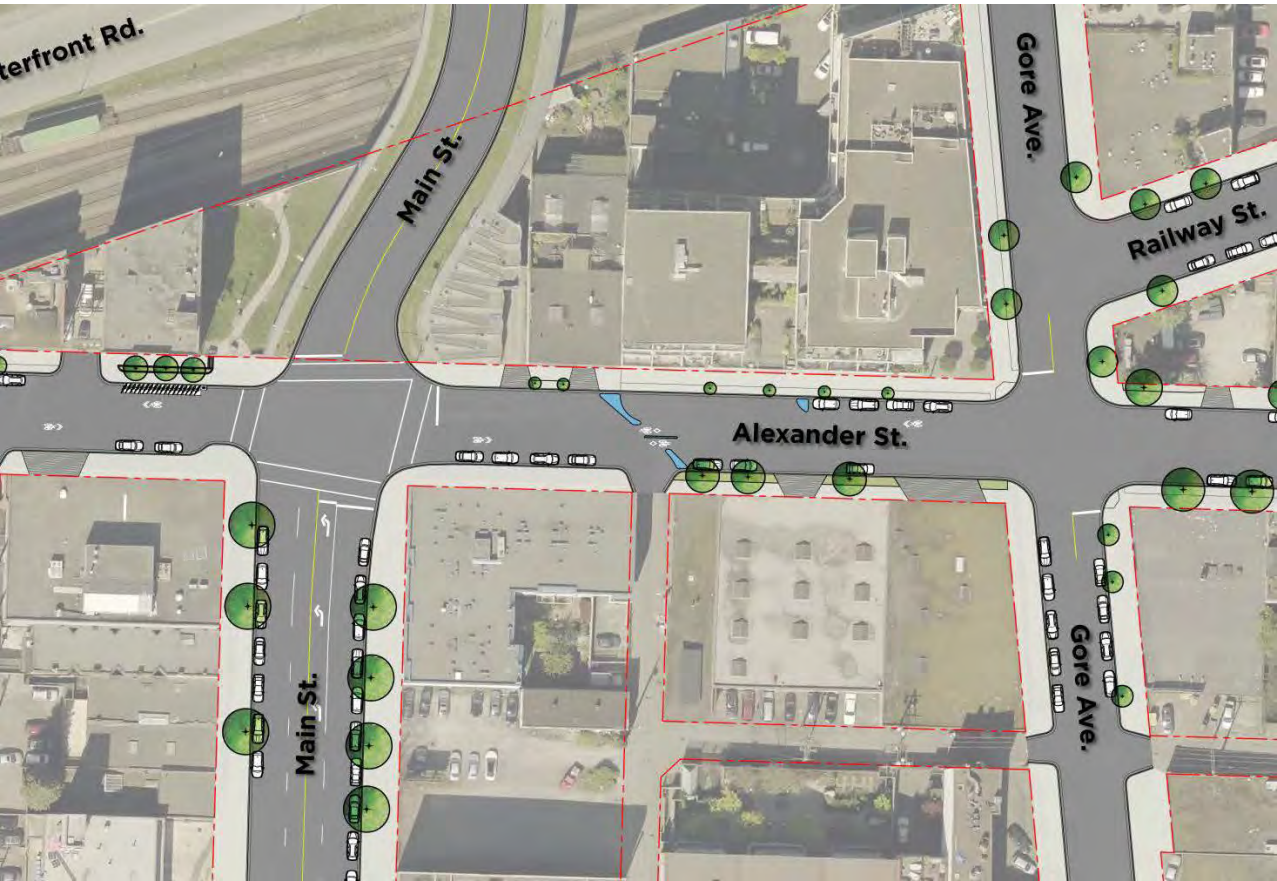
The changes in this section of Alexander St. will be revisited through the Gastown Streets transportation planning process. The design aims to expand public space, create safer and more intuitive connections across the square for people walking and cycling, and improve the safety and circulation of vehicle traffic.

People walking and cycling will be lightly separated within the square with benches and bike crossings at the crosswalks. There is also a new crosswalk and bike crossing in the middle of the square where people want to cross today, which will provide a connection between Alexander St. and the Carrall St. bike lanes. The one-way on Alexander St. will switch from westbound to eastbound, and Columbia St. will become two-way to Powell St. with the possibility to extend the two-way in the future.



Central Section - Alexander St.

This is the busiest section of Alexander St. To reduce vehicle volumes and slow speeds, there will be a closure to motor vehicles east of the lane between Main St. and Gore Ave. The design allows for large trucks to access adjacent businesses for loading and delivery, accommodates emergency vehicles, and has a minimal impact on parking. Staff will monitor the design to ensure that it is working effectively, and may introduce further improvements such as crosswalks and sidewalk bulges to the intersection of Alexander St. and Gore Ave.



East Section - Alexander St.

The intersection of Alexander St., Hawks Ave. and Powell St. is a busy and challenging intersection for people cycling and driving. The design at this intersection introduces a protected path for cycling to create a safe connection for people cycling to the Powell St. Overpass. The protected path has minimal impact on the width of the road, maintains parking and allows for loading and delivery. The right turn off the Powell St. Overpass onto Hawks Ave. will be banned to reduce conflicts at this intersection.

The work will be implemented in two phases. The first phase will be implemented in 2018 and will include the driveway on the east side of Hawks Ave south. The remainder of the work delivered in 2019.



If you have any questions or comments about Alexander Bikeway, please contact us by calling 311 or emailing bikeupgrades@vancouver.ca.

Sincerely,

Alexander Bikeway team



We want to hear from you!

<BLURB FROM WELCOME BOARD>

We'd like to know what you think of the proposed improvements. Please take the time to review the project materials here today or online at [vancouver.ca/??](#). The feedback you provide will help us refine the recommended designs before we move forward with implementation.

Project Goals

Share your feedback

Please place the form in the drop box here today or through any of the following methods:

Email: bikeupgrades@vancouver.ca

Complete online: [vancouver.ca/??](#)

Mail: City of Vancouver
Attention: Transportation Planning
Engineering Services
320-507 W Broadway, Vancouver, BC V5Z 0B4

Drop off at: City Hall brass box
453 W 12th Avenue, Vancouver
Attention: Transportation Planning
Engineering Services

Please submit your comments by
DATE, 2017

Section 1: Changes proposed for Maple Tree Square to Columbia Street

See Board 5

1. How do you feel about the recommended changes between Maple Tree Square and Columbia Street?

	Very Supportive	Supportive	Neutral	Concerned	Very Concerned	Don't know
Better defining motor vehicle lanes and bicycle crossings within Maple Tree Square	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Changing parking from drive-in angled to back-in angled	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Changing motor vehicle direction from one-way westbound to one-way eastbound	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. How does the recommended design meet the project goals for the Alexander Street Bikeway?

	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
Recommended design makes it safe and comfortable for people of all ages and abilities to cycle and addresses a major gap in our bike network	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recommended design maintains access to home and businesses and ensures that loading and delivery needs are addressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recommended keeps as much on-street parking as possible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Do you have any additional comments about the recommended changes for this section?

Section 2: Changes proposed for Columbia Street to Dunlevy Street

See Board 6

4. How do you feel about the changes proposed in Option 1 between Columbia Street and Dunlevy Street?

Option 1 (Recommended): Restrict vehicles from traveling east on Alexander St at Main St

	Very Supportive	Supportive	Neutral	Concerned	Very Concerned	Don't know
Element 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Element 2						

5. How do you feel about the changes proposed in Option 2 between Columbia Street and Dunlevy Street?

Option 2: Add a median diverter at Main St

	Very Supportive	Supportive	Neutral	Concerned	Very Concerned	Don't know
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. How do you feel about the changes proposed in Option 3 between Columbia Street and Dunlevy Street?

Option 3: Add a two-way protected bike lane east of Main St

	Very Supportive	Supportive	Neutral	Concerned	Very Concerned	Don't know
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Do you have any additional comments about the proposed options for this section?

Additional Comments

8. Do you have any additional comments that you would like to provide on the project?

Tell us a little about yourself

It is important to us that we hear from a diversity of people and perspectives. The following questions help us to determine how the feedback we receive represents the community. Please note that individual responses are treated as anonymous and demographic information is always kept separate from personal identifiers.

What is your connection to the Union-Adanac Corridor? *Select all that apply.*

☐ I live on Union or Adanac Street

☐ I live near the Corridor

☐ I work on Union or Adanac Street

☐ I work near the Corridor

☐ I own a business on Union or Adanac Street

☐ I own a business near the Corridor

☐ I attend school in the area

☐ I shop/dine/socialize in the area

☐ I walk/cycle along the Union-Adanac Corridor

☐ I don't have a connection to the project area

☐ Other (please specify):

What mode of transportation do you most often use to travel along the Union-Adanac Corridor? *Select one.*

☐ Walk (including wheelchair or other assistive device)

☐ Bicycle

☐ In-line skate or skateboard

☐ Nearby transit (e.g. bus, HandyDART)

☐ Driver or passenger in a car, truck, or van

☐ Other (please specify):

What other modes of transportation do you use to travel along the Union-Adanac Corridor? *Select all that apply.*

☐ Walk (including wheelchair or other assistive device)

☐ Bicycle

☐ In-line skate or skateboard

☐ Nearby transit (e.g. bus, HandyDART)

☐ Driver or passenger in a car, truck, or van

☐ I don't use any other modes of travel

☐ Other (please specify):

How did you find out about the Union-Adanac Corridor Open House events? *Select all that apply.*

- ☐ Attended a City event
- ☐ Mail (postcard/letter)
- ☐ E-mail/Listserve
- ☐ Talk Vancouver
- ☐ Newspaper ad
- ☐ Vancouver.ca
- ☐ Other Website (please specify):

- ☐ Media article
- ☐ Electronic sign
- ☐ Poster
- ☐ Facebook
- ☐ Twitter
- ☐ Family/Friend (word of mouth)
- ☐ Don't know
- ☐ Other (please specify):

Do you primarily identify as?

- ☐ Male
- ☐ Female
- ☐ Transgender
- ☐ None of the above. I identify as _____
- ☐ Prefer not to answer

What age category do you fall in?

- ☐ 19 yrs or under
- ☐ 50-59 yrs
- ☐ 20-29 yrs
- ☐ 60-69 yrs
- ☐ 30-39 yrs
- ☐ 70 yrs or over
- ☐ 40-49 yrs
- ☐ Prefer not to answer

Reflecting on your experience with the consultation for the Union-Adanac Corridor Spot Improvement project, how would you rate the following?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The information presented was clear and understandable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand how my input will be used in this process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that my input will make a difference	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that participating was a valuable experience for me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had the opportunity to share my views	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I learned something new	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Union-Adanac Corridor Email List

☐ Yes, I would like to receive updates on this project (Gore Avenue to Kamloops Street) and any future improvements on the Union-Adanac Corridor (Carrall Street to Boundary Road)

Name: _____ Email: _____

By providing your contact information above, you are subscribing to an email list regarding the Union-Adanac Corridor. You acknowledge that you can unsubscribe at any time by emailing adanac@vancouver.ca with "unsubscribe Union-Adanac Corridor" in the subject line.

THANK YOU FOR YOUR PARTICIPATION!

1 ALEXANDER STREET BIKEWAY

Project Overview

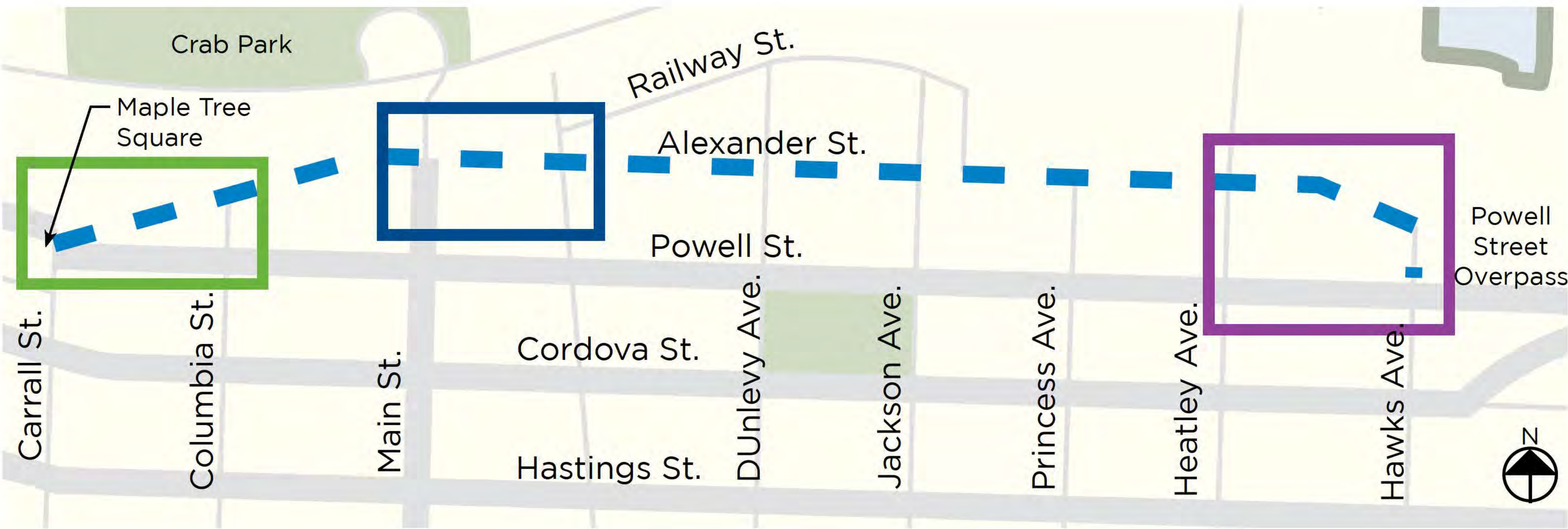
The City of Vancouver wants to address a major gap in the bike network by making Alexander Street safer and more comfortable for people of all ages and abilities to cycle. The project’s goals are to calm traffic to make it safer for everyone to share the road, and create better cycling connections between Strathcona and Gastown.

Recommended changes include:

- Address safety at key intersections with traffic calming measures
- Introduce 30 km/hr speed limit
- Add signs to mark the street as a local bikeway
- Improve connections to protected bike lanes on the Powell Street Overpass and Carrall Street in Gastown

Location of Route

Locations of proposed changes to vehicle movements are highlighted below.



Project Goals

- Make Alexander Street safe and comfortable for people of all ages and abilities to cycle and address a major gap in the bike network.
- Maintain access to homes and businesses, and ensure that loading and delivery needs are addressed.
- Keep as much on-street parking as possible.

We are here



NEIGHBOURHOOD CONTEXT

The neighbourhood around Alexander Street is a unique mix of industry, community services and residences.

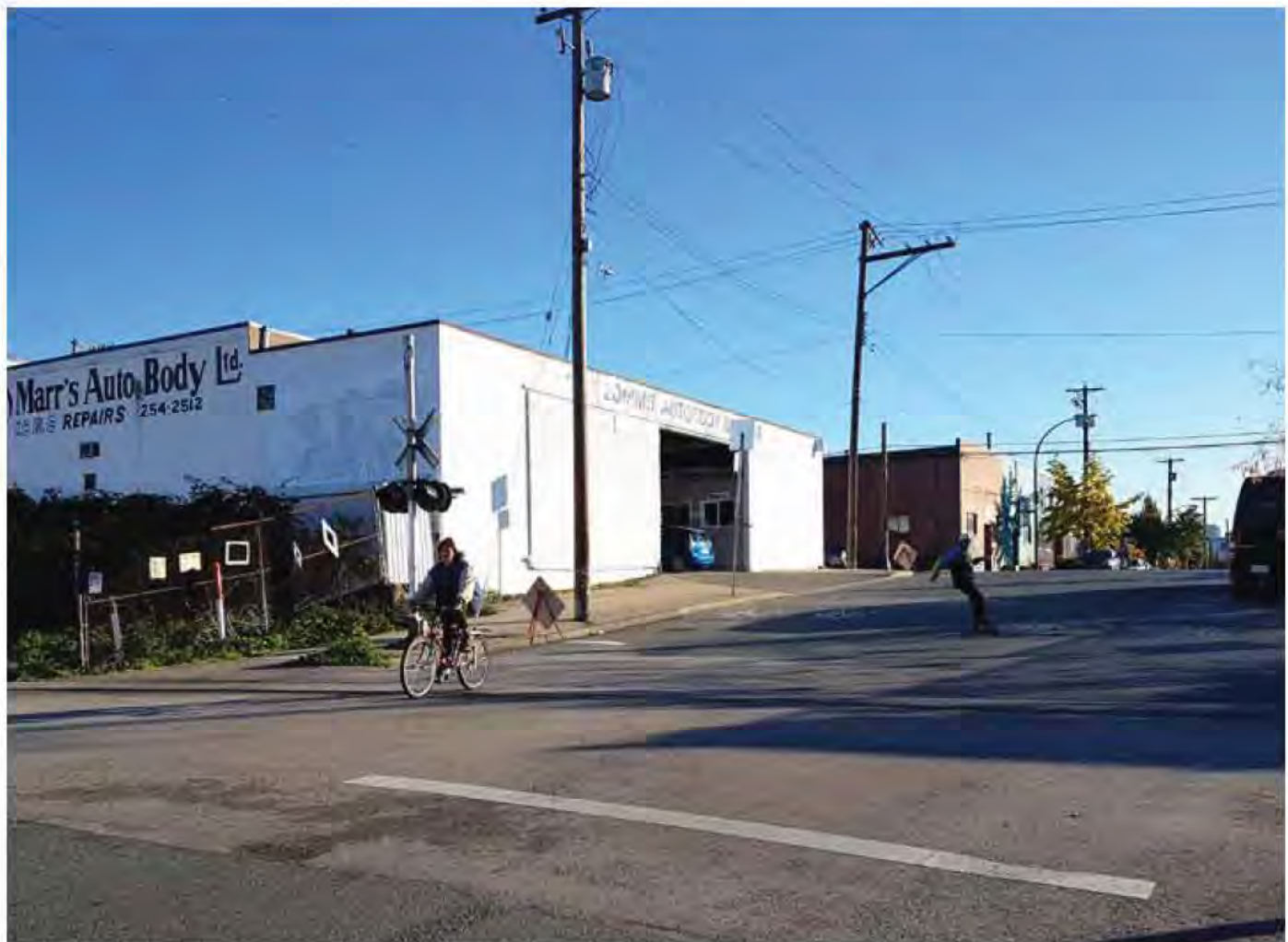
Industry includes a range of businesses that use on- and off-street parking for customers and employees, as well as vehicle loading space for all sizes of trucks. Changes to Alexander Street need to be sensitive to this unique mix and support the vitality of the neighbourhood.



CYCLING CONNECTIONS

Currently, the Adanac bikeway is the only All Ages and Abilities (AAA) cycling route connecting East Vancouver to Downtown. An average of 4,000 people cycle this route every day, many of them Strathcona residents who make more trips by bike than in any other neighbourhood in Vancouver — 17% of trips according to the 2016 Panel Survey.

An increase in rail traffic at the railway crossing on Adanac has increased delays for those cycling the bike way the route and accelerated the need for an alternative East-West cycling route.

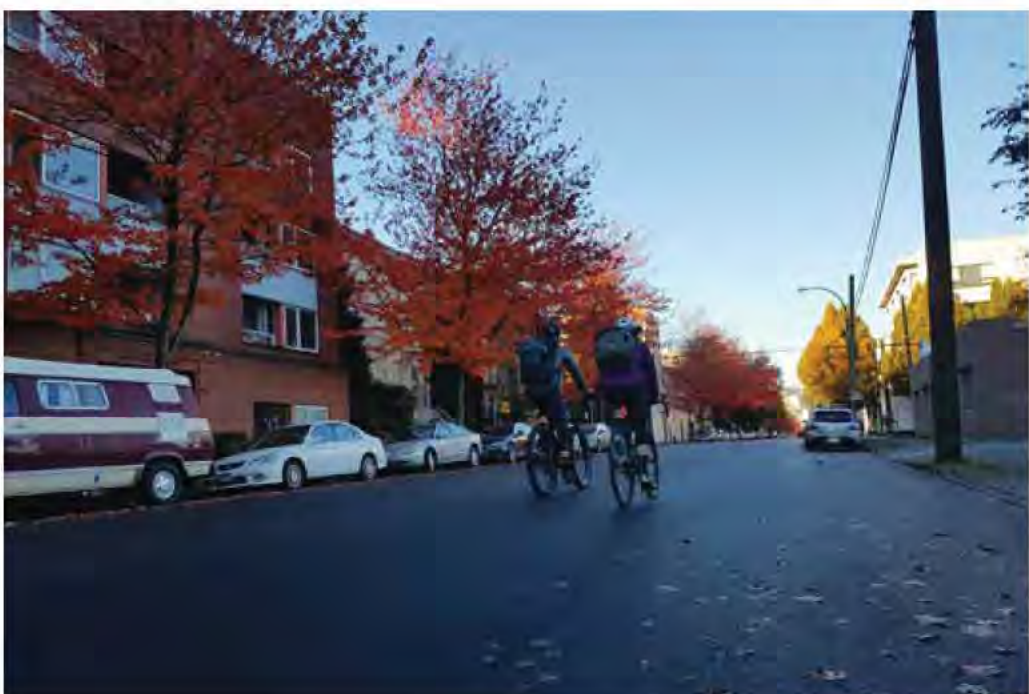


Alexander Street has informally served as this cycling connection for years. It is also the shortest route between the protected bike lanes on the Powell Street Overpass and Carrall Street in Gastown.



Improvements along Alexander Street can make it a reliable East-West cycling route that is safe and comfortable for everyone.

WHAT WE'VE HEARD



CYCLING

Cycling connections from Powell Street and Carrall Street onto Alexander Street feel unsafe and uncomfortable.



SHORT-CUTTING

Alexander Street is often used as a short-cut for non-local trips at high speeds.



LOADING

Businesses in the area need access and space to load and unload goods.



PARKING

Parking is a major concern for customers, employees and residents.

3 ALEXANDER STREET BIKEWAY

AAA BIKE NETWORK

All Ages and Abilities Bike Facilities

There is no one-size-fits all approach to making streets safe and comfortable for people of all ages and abilities to bike.



Major Street
Shared Use Lane



Painted Bicycle
Lane



Paint Buffered
Bike Lane



Local Street
Bikeway



Protected Bike
Lane



Off-Street
Pathway

Unsuitable for AAA facility

Suitable for AAA facility

Alexander Street Recommendation

On Alexander Street, we are recommending a Local Street Bikeway — a street where people cycling and driving share the road. Key changes to achieve this will include:

- Strategic traffic calming to reduce the number of non-local motor vehicles on the street.
- A 30 km/hr speed limit to slow vehicles.
- Clear signage to let street users know it is a bikeway.

A bikeway along Alexander Street will close an important gap in Vancouver's bike network.



4 ALEXANDER STREET BIKEWAY

Improvements to Alexander Street

To make Alexander Street safer and more comfortable for people of all ages and abilities to cycle, we are recommending improvements that will:



**Reduce speed to
30 km/hr**



**Maintain
loading & delivery**



**Minimize impact
to parking**

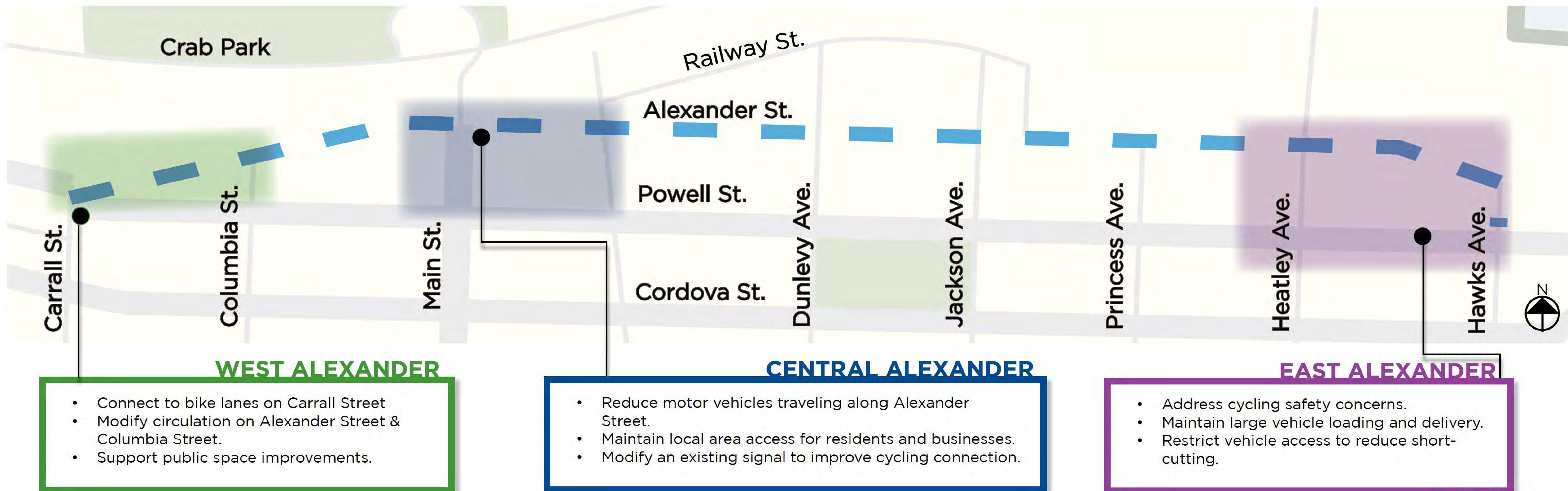


**Improve
pavement surface**



**Address key
intersections**

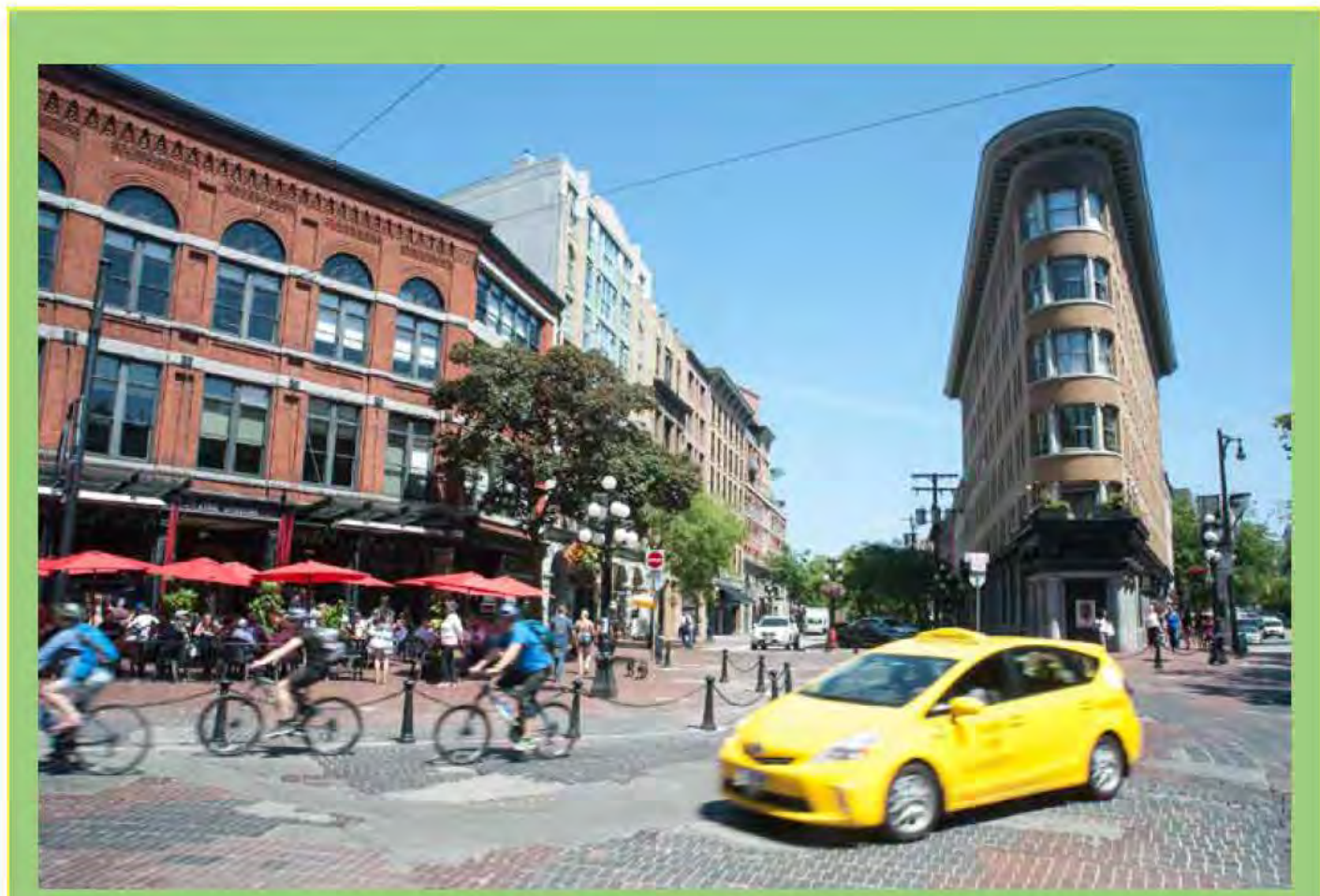
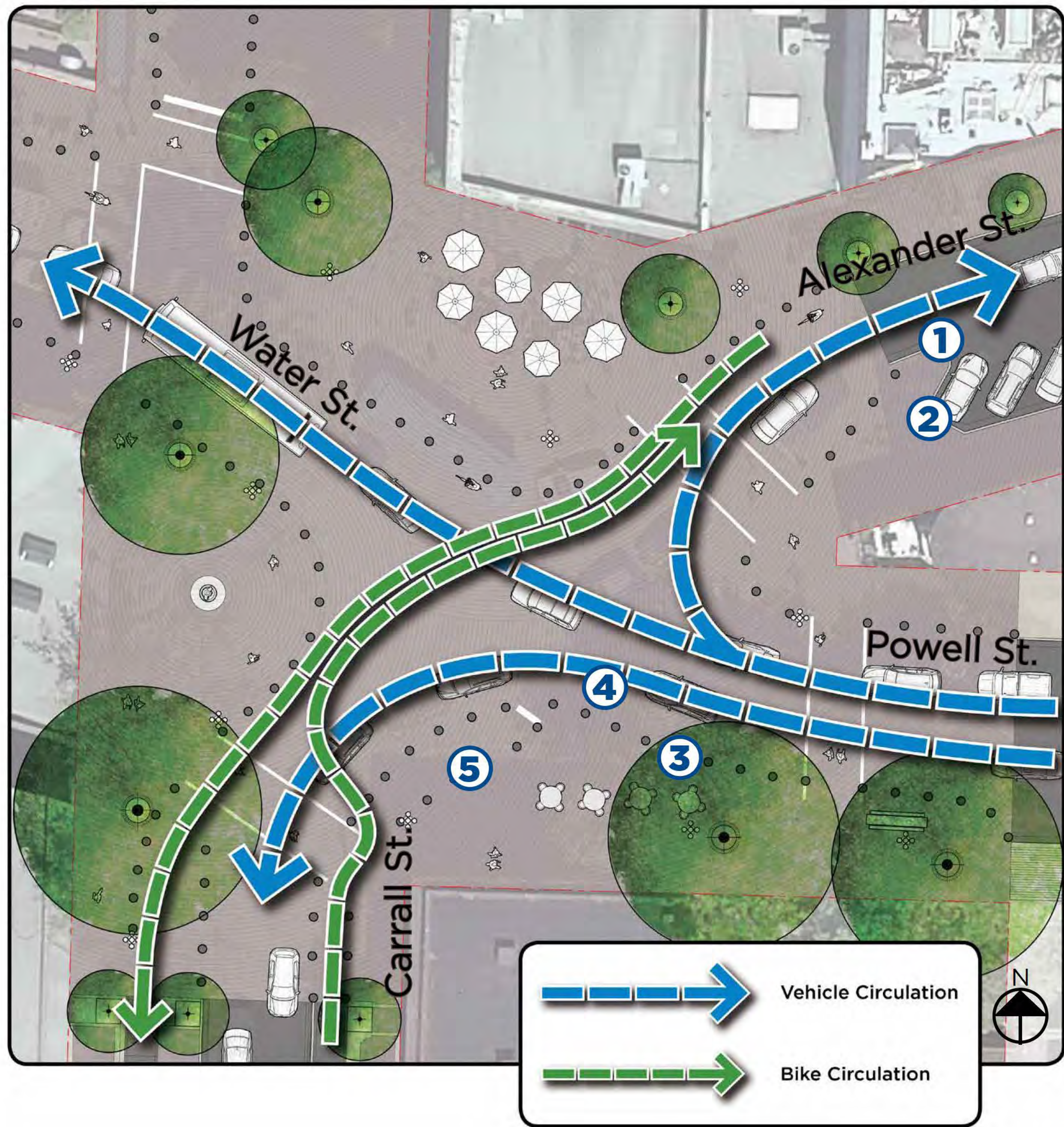
Three sections of the route have been identified as areas for additional improvements. Improvements common to each section will include:



SECTION 1: WEST ALEXANDER
(Maple Tree Square to Columbia Street)

This section is a key link between Alexander Street and the Carrall Street bike lane. Changes to the area will make the connection safer and simplify traffic flow.

Recommended Traffic Flow:
Change Motor Vehicle Direction on
Alexander Street



Maple Tree Square
Cycling Connection

We heard that the connection between Alexander Street and the Carrall Street bikeways feels uncomfortable and confusing for people cycling. The City will continue to work with local businesses and stakeholders to explore options to improve this connection through Maple Tree Square. Any change to traffic patterns here will be an interim improvement. Long-term improvements will be developed through the Gastown Complete Streets project currently underway.

	What is Different?	Why?
1	Reverse the one-way westbound traffic on Alexander Street to one-way eastbound between Columbia and Carrall Streets.	To reduce traffic volume, improve safety for people cycling and improve circulation.
2	Convert angle parking to back-in angled parking.	To improve visibility between people parking motor vehicles and people cycling.
3	Locate a new loading zone near Powell Street and Maple Tree Square with input from nearby businesses.	To provide a reserved location for deliveries to businesses.
4	Clarify motor vehicle lanes to Water and Carrall Streets.	To let people know where they should be travelling on the road to reduce conflicts.
5	Clarify bike lane crossings in Maple Tree Square.	To let people know where they should be travelling on the road to reduce conflicts.
6	Convert one-way northbound traffic on Columbia Street to two-way traffic.	To improve traffic circulation.

SECTION 2: CENTRAL ALEXANDER
(East of Main Street)

This is the busiest section of Alexander Street. It has traffic volumes nearly 10 times higher than our target for a Local Street Bikeway. However, vehicles of all sizes need access to Alexander Street, Railway Street and the Port.

Different options have been considered to maintain traffic circulation and reduce the number of vehicles traveling on Alexander Street east of Main Street.

- All three options presented will:
- Restrict access between Main Street and Alexander Street.
 - Maintain local area access and parking.
 - Provide push button control for those cycling at the Main Street signal.
 - Convert two-way stop at Dunlvey Avenue to favour Alexander Street.

Option 1 (Recommended):
Restrict Motor Vehicles East of Main Street on Alexander Street

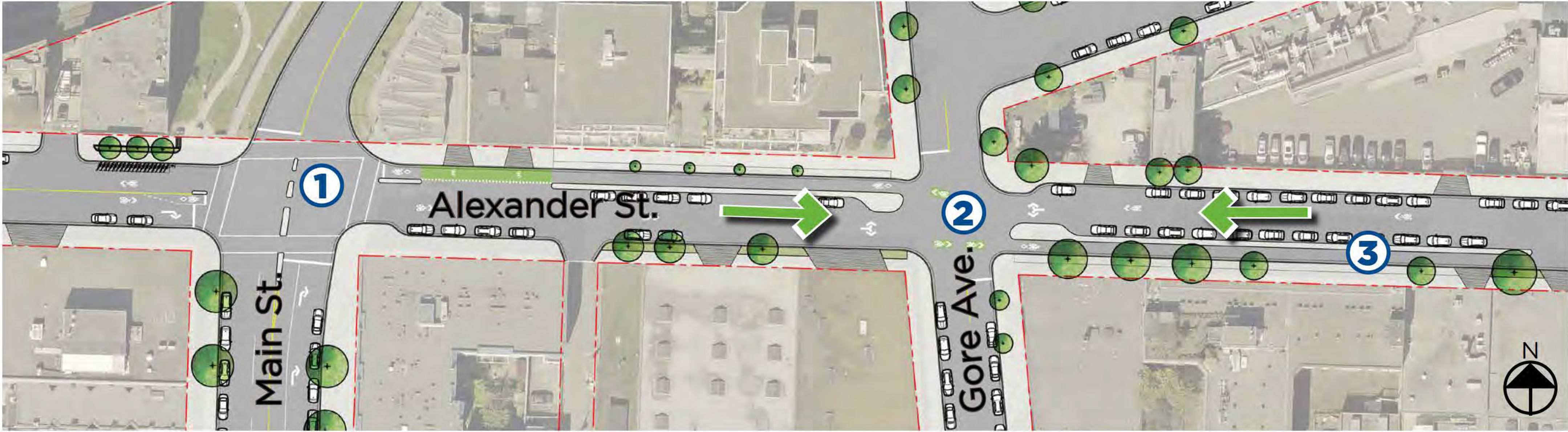
This option is the simplest way to reduce through-traffic along Alexander Street. It also maintains access to local businesses, maintains existing traffic direction, does not require protected bike lanes and minimizes impact to parking and circulation in the area.



	What is Different?	Why?
1	Add bollards on Alexander Street on the east side of Main Street that are designed to accommodate emergency access and adjacent business needs.	To reduce traffic volumes by restricting through traffic. Lower traffic volume improves safety for people cycling without the need for protected bike lanes.
2	Restrict access east of lane on south side of Alexander Street to local traffic access. Allow on-street “Temporary Special Zone” permits between Main Street and the lane, similar to today.	To allow for larger truck turning movements into driveways.
3	Convert two metered parking spots to a passenger zone.	To provide a dedicated space for pick-up and drop-off in front of the Seniors’ residence.

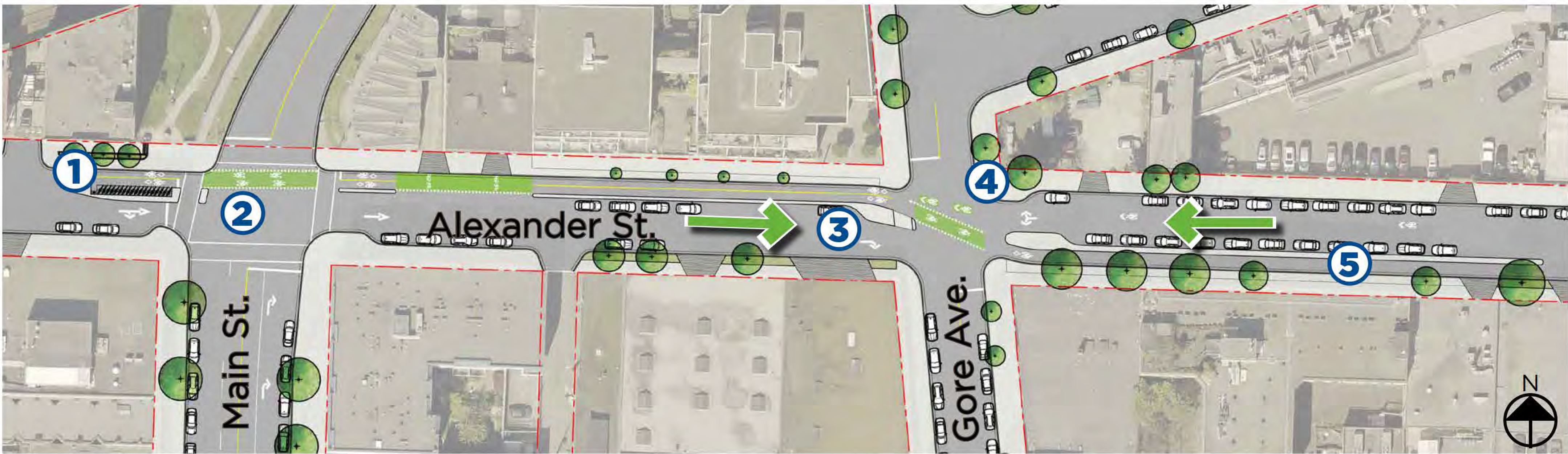
SECTION 2: CENTRAL ALEXANDER
(East of Main Street)

Option 2: Add a Median Diverter at Main Street



	What is Different?	Why?
①	Add median diverter in the middle of Main Street	To reduce traffic volumes by restricting left turns from Main Street and through traffic on Alexander Street. Lower traffic volumes improves safety for people cycling without the need for protected bike lanes
②	Convert Alexander Street into alternating one-way blocks for motor vehicles – eastbound between Main and Gore; westbound between Gore and Dunlevy.	To reduce traffic volumes by restricting through traffic. Lower traffic volumes improves safety for people cycling.
③	Consider protected bike lanes in counter flow direction.	To reduce conflicts between people cycling and parking on the left side of one-way streets.

Option 3: Two-way Protected Bike Lane



	What is Different?	Why?
①	Relocate Mobi station.	To provide a buffer between the two-way protected bike lane west of Main Street.
②	Restrict left turns from eastbound Alexander Street traffic onto Main Street northbound.	To reduce conflicts between people cycling and driving.
③	Add a two-way protected bike lane on Alexander Street between Main Street and Gore Avenue.	To provide a AAA bike facility where traffic volumes are too high.
④	Convert Alexander Street into alternating one-way blocks for motor vehicles – eastbound between Main and Gore; westbound between Gore and Dunlevy.	To reduce traffic volumes by restricting through traffic. Lower traffic volumes improves safety for people cycling.
⑤	Consider protected bike lanes in counter flow direction east of Gore Street.	To reduce conflicts between people cycling and parking on the left side of one-way streets.

What else should we know?

Section 3: EAST ALEXANDER
(Heatley Avenue to Powell Street Overpass)

This section of Alexander Street connects to Hawks Street and the Powell Street Overpass. Currently, the connection for people cycling to the Powell Street Overpass is unclear and needs improvement. Many large trucks also regularly need access to industrial businesses in the area.

- All options for this section aim to:
- Address safety by improving cycling connections to the Powell Street Overpass.
 - Maintain large vehicle access for loading and delivery.
 - Reduce vehicles using Alexander Street as a shortcut.

Option 1 (Recommended):
Connect Bike Lane via Hawks Avenue

This option creates a safe cycling connection to the Powell Street Overpass, maintains loading and delivery access, retains existing traffic circulation patterns, has no net impact to parking or travel lanes and reduces motor vehicles traffic along Alexander Street.



	What is Different?	Why?
①	Add two-way protected bike lanes on Hawks Avenue around the curve.	To provide a logical connection to the two-way bike lanes on Powell Street, safely retain parking and protect people cycling from truck movements.
②	New loading zone to be retained.	To maintain delivery and loading access.
③	Restrict right turns from Powell Street to Hawks Avenue.	To reduce traffic volumes by restricting through traffic. Lower traffic volumes improves safety for people cycling.

9

ALEXANDER STREET BIKEWAY

SECTION 3: EAST ALEXANDER

(Heatley Avenue to Powell Street Overpass)

Option 2: Connect Bike Lane via Powell Street



	What is Different?	Why?
1	Convert northbound travel lane and parking lane on Heatley Avenue to a two-way protected bike lane. Remove 8 parking spaces.	To connect the two-lane protected bikeways on Powell Street with Alexander Street.
2	Restrict right turns from Powell Street to only the Heatley Overpass.	To accommodate a two-way protected bike lane on the east side of the overpass.
3	Remove 20 parking spaces along Powell Street.	To accommodate a two-way protected bike lane to connect with the existing bike lanes east of Hawks Avenue.
4	Provide a dedicated right turn lane from Powell Street to Hawks Avenue.	To mitigate conflicts with the protected bike lane.
5	Retain Port access via the Heatley overpass.	To support Port activities.

What else should we know?

10 ALEXANDER STREET BIKEWAY

Next Steps

- Refine designs based on feedback from local businesses, residents, other stakeholders and the public
- Construct and complete improvements by Summer 2018
- Work with businesses to address any specific concerns and find interim solutions in advance of the removal of the Heatley Street Overpass
- Continue to work with Strathcona Business Improvement Association and other partners to identify potential north-south cycling connections.



Share your feedback

Please submit comments by December 8, 2017.

- | | |
|-----------|---|
| In Person | Share your Alexander experience today |
| Online | Learn more at vancouver.ca/spotimprovements |
| By Email | Send comments or questions to BikeUpgrades@vancouver.ca |
| By Phone | Call 3-1-1 to provide comments or |

Alexander Street Local Street Bikeway Improvements

November 2017 Consultation

Contact: Rachel Magnusson, Transportation Planning

Design items:

- Postcard



Help us improve the 10th Avenue Corridor

The City of Vancouver is planning upgrades to the 10th Avenue Corridor to be more safe, convenient, comfortable, and fun for people of all ages and abilities to walk and cycle. We would like your input as we prepare for tough design choices.

Meetings will be drop-in open house format. City staff will be available to discuss the project, answer questions, and gather input. Take part in a walking tour, join a conversation table, or just stop in to share your thoughts.

We want to hear from you!
Join us at an open house.

Thursday, October 29, 4:30-7:30 pm
Blusson Spinal Cord Centre Atrium,
818 W 10th Avenue

Monday, November 2, 4:30-7:30 pm
Kitsilano Community Centre Snowy's
Lounge, 2690 Larch Street

Saturday, November 7, 2:00-5:00 pm
Queen Alexandra Elementary School
Gym, 1300 E Broadway

You can view display materials and complete a short survey online at vancouver.ca/10th-avenue



FOR MORE INFORMATION: Phone 3-1-1 TTY 7-1-1
Visit: vancouver.ca/10th-avenue
Email: 10thavenue@vancouver.ca

15-306

[Postcard - Do in the style of 15-271]

Quantity: TBD

[Front]

[PHOTO?]

Alexander Street Local Street Bikeway Improvements

Open House

[Back]

Alexander Street Local Street Bikeway Improvements

The City of Vancouver is planning to improve the Alexander Street bike network to make it safer and more comfortable for cyclists of all ages and abilities.

The proposed improvements will make it safer for everyone to share the road by slowing and reducing traffic on Alexander St and creating better cycling connections to existing bike routes between Strathcona and Gastown.

We want to hear from you!

Drop into an open house to meet with project staff, learn about the recommended design options for the route and provide your feedback.

Date: Tuesday, November 21, 2017
Time: 2 - 8 pm
Location: Vancouver Japanese Language School
487 Alexander St

View the display boards and complete an online feedback form by **December 8, 2017** at **vancouver.ca/spotimprovements**

FOR MORE INFORMATION

Phone 3-1-1 TTY 7-1-1

Visit: **vancouver.ca/spotimprovements**

Email: **BikeUpgrades@vancouver.ca**

[Please include translation message]

This notice contains important information that may affect you. Please ask someone to translate it for you.

此通告刊載有可能影響閣下的重要資料。請找人為你翻譯。

ਇਸ ਨੋਟਿਸ ਵਿਚ ਮਹੱਤਵਪੂਰਨ ਜਾਣਕਾਰੀ ਹੈ ਜੋ ਕਿ ਤੁਹਾਡੇ ਲਈ ਜ਼ਰੂਰੀ ਹੋ ਸਕਦੀ ਹੈ। ਕਿਰਪਾ ਕਰਕੇ ਕਿਸੇ ਨੂੰ ਇਸ ਦਾ ਉਲੇਖਾ ਕਰਨ ਲਈ ਆਖੋ।

Thông báo này có tin tức quan trọng có thể ảnh hưởng đến quý vị. Xin nhờ người phiên dịch hộ.

Este aviso contiene información importante que puede afectarle personalmente. Pídale a alguien que se lo traduzca.

Ce document contient des renseignements importants qui pourraient vous concerner. Veuillez demander à quelqu'un de vous le traduire.

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Magnusson, Rachel" <Rachel.Magnusson@vancouver.ca>
Date: 1/31/2018 12:27:29 PM
Subject: FW: Alexander Bikeway and 298 Alexander

From: Jack Zuccaro [mailto:jackz@bloomfs.com]
Sent: Wednesday, January 31, 2018 3:19 AM
To: Gould, Brian
Cc: Julie Zuccaro
Subject: FW: Alexander Bikeway and 298 Alexander

Hi Brian

Just wondering if you received the email below and if there is anything I can contribute. Again I would like to meet with you and your colleagues at your convenience to discuss the impact of your decision on local businesses.

I believe we all have quite a bit at stake here.

Please advise on date and time and I will be there.

Regards

Jack

Jack Zuccaro

bloom furniture studio
Carmel Furniture Designs
495 Railway Street
Vancouver BC V6A 1E1
604-215-0051 ext 27
www.bloomfurniturestudio.com

From: Jack Zuccaro
Sent: January 25, 2018 6:56 AM
To: 'Gould, Brian' <Brian.Gould@vancouver.ca>; Julie Zuccaro <juliez@carmeldesigns.net>
Subject: RE: Alexander Bikeway and 298 Alexander

Hi Brian

Thanks for your time yesterday explaining the traffic calming options for Alexander street. I understand that the main objective is to allow cyclists to use Alexander street in a safe manner but the C of V primary option of blocking off the west end of Alexander street effects my family's livelihood.

We have operated our business in this area for the last 20 years and have seen many changes and this is just another challenge.

Our intent when we acquired the building was to restore this piece of Vancouver heritage and

improve the neighbourhood as well as taking advantage of the traffic flow that passes in front of our building.

The blockade the city is proposing will directly effect our business which you and the decision makers have control. Please correct me but do any of the decision makers live or work in this area and are truly aware of the concerns of the area? The residents and conditions of this neighbourhood are in dire need of improvement.

I strongly request that the blockade option is overturned for a dedicated bike lane on the north side of alexander and leaving a one way east bound access onto Alexander street which the fire and police department are also in favour of. This is also a much safer option for the cyclists. The cost to construct the bike lane compared to the risk of one cyclist being struck and hurt or even killed is worth every cent of the construction of the bike lane.

The proposed blockade traffic calming option will not make it safer for cyclists as the traffic between 300 and 700 block of Alexander street will not be reduced.

An observation is the contradiction that the City promoting the 5 x densification of the Railtown area. This allows the redevelopment of buildings which require parking provision for all these buildings. So the city is inviting many more cars into the neighbourhood putting the cyclist at even more risk! I would suggest that your team discuss this with the appropriate department at the city. I am willing to meet and discuss this option with the decision makers at any time as mentioned earlier – as your groups' decision will have a direct and long term effect on my family's livelihood and our hard earned investment.

I am available at your request and can visit your office and decision makers.

Regards

Jack Zuccaro

298 Alexander Street

Vancouver

Cel s.22(1)

From: Gould, Brian [<mailto:Brian.Gould@vancouver.ca>]

Sent: January 22, 2018 2:05 PM

To: Julie Zuccaro <juliez@carmeldesigns.net>

Cc: Jack Zuccaro <jackz@bloomfs.com>

Subject: RE: Alexander Bikeway and 298 Alexander

Confirmed. I will be passing by shortly after 2pm on my way to a 2:30pm site meeting at the Hawks end.

From: Julie Zuccaro [<mailto:juliez@carmeldesigns.net>]

Sent: Monday, January 22, 2018 2:03 PM

To: Gould, Brian

Cc: Jack Zuccaro

Subject: RE: Alexander Bikeway and 298 Alexander

Hi Brian,

Wednesday at 2 is perfect ☺(on location) so Jack can understand the plan of the street with you

with a clear visual.
Thanks
Julie

From: Gould, Brian [<mailto:Brian.Gould@vancouver.ca>]
Sent: January 22, 2018 1:49 PM
To: Julie Zuccaro <juliez@carmeldesigns.net>
Cc: Jack Zuccaro <jackz@bloomfs.com>
Subject: RE: Alexander Bikeway and 298 Alexander

Hi Julie,

I will be briefly in the area on Wednesday around 2pm. Alternately, I can make tomorrow before 10:30 and Wednesday before 11 work at Crossroads (Engineering s offices near City Hall), with a slight preference for Wednesday at 10:30am based on bookable meeting rooms.

From: Julie Zuccaro [<mailto:juliez@carmeldesigns.net>]
Sent: Monday, January 22, 2018 12:27 PM
To: Gould, Brian
Cc: Jack Zuccaro
Subject: RE: Alexander Bikeway and 298 Alexander

Hi Brian,
Thanks for meeting with me today. Jack is really disappointed for missing the meeting and would like to meet with you. He can either come to City Hall or meet you back at the property site at your earliest convenience.
Please advise.
Thanks
Julie

JULIE ZUCCARO

CARMEL FURNITURE DESIGNS/BLOOM FURNITURE STUDIO
495 RAILWAY ST.
VANCOUVER BC V6A 1A7
604-215-0051 EXT. 23

From: Gould, Brian [<mailto:Brian.Gould@vancouver.ca>]
Sent: January 18, 2018 5:56 PM
To: Julie Zuccaro <juliez@carmeldesigns.net>
Cc: Jack Zuccaro <jackz@bloomfs.com>
Subject: RE: Alexander Bikeway and 298 Alexander

Great, see you then.

From: Julie Zuccaro [<mailto:juliez@carmeldesigns.net>]
Sent: Thursday, January 18, 2018 5:29 PM
To: Gould, Brian
Cc: Jack Zuccaro
Subject: RE: Alexander Bikeway and 298 Alexander

Hi Brian,
Thanks for getting back to us. We would be happy to meet you at 298 Alexander St on Monday at 11:00.
Please confirm.
Best,
Julie

JULIE ZUCCARO

CARMEL FURNITURE DESIGNS/BLOOM FURNITURE STUDIO
495 RAILWAY ST.
VANCOUVER BC V6A 1A7
604-215-0051 EXT. 23

From: Gould, Brian [<mailto:Brian.Gould@vancouver.ca>]
Sent: January 18, 2018 9:01 AM
To: Jack Zuccaro <jackz@bloomfs.com>
Cc: Julie Zuccaro <juliez@carmeldesigns.net>
Subject: RE: Alexander Bikeway and 298 Alexander

Hi Jack and Julie,

We re sorry to hear that our open house mail-out missed you as well. It would probably be best to meet on site, and my calendar is beginning to open up again. In general I would lean toward to beginning or end of the day to catch it on my commute, the exception would be 11am on Monday as I m already expecting to be in the area. Other times with good availability currently: tomorrow, Tuesday morning, Wednesday morning, Thursday afternoon.

Best,
Brian

From: Jack Zuccaro [<mailto:jackz@bloomfs.com>]
Sent: Friday, January 12, 2018 2:16 PM
To: Gould, Brian

Cc: Julie Zuccaro

Subject: RE: Alexander Bikeway and 298 Alexander

Hi Brian

I received this email from Ed Ferreira and quite surprised that neither Julie or myself received a notice on this upcoming traffic change directly in front of our building. I checked all our emails as well as any mail delivered to 298 Alexander Street.

We would like to set up an appointment to meet with you and discuss this matter as soon as possible.

Please let me know on a convenient location, date and time.

Regards

Jack and Julie Zuccaro

Jack s.22(1)

Jack s.22(1)

From: Gould, Brian [<mailto:Brian.Gould@vancouver.ca>]

Sent: Friday, January 05, 2018 3:36 PM

To: Ferreira, Ed @ Vancouver <Ed.Ferreira@cbre.com>

Subject: Alexander Bikeway and 298 Alexander

Hi Ed,

Thank you for discussing the project and reaching out to the owner. Much of our business outreach was in Summer 2017, in advance of the November open house, but unfortunately we weren't able to make direct contact.

Our presentation boards for the project are available here: <http://vancouver.ca/files/cov/alexander-bikeway-preliminary-design-proposals.pdf> You can find the relevant section on Page 6; a full closure to through-motor vehicle traffic somewhere on the 200 block of Alexander Street is still our recommended approach, but as we work through feedback received we are considering locations to the east of what is shown. In the attached there, I've doodled the existing location and two alternates:

- In green: just east of Main Street as recommended during the open house, with the section west of the lane being only for local access from the east
- In blue: just east of the lane, with the section east of the lane being only for local access to 298 Alexander and its neighbours from the Gore side
- In pink: just west of Gore, with access for most of the block being from Main Street and the west, but two versions:
 - The solid line shows us leaving one driveway on either side of the closure, which may result in some drivers short-cutting (we would design things to discourage this and it

- may not be a problem, or could be addressed by leaving one gate or the other closed at most times
- The dotted line shows us potentially modifying the Alexander driveway so that both driveways would be to the east of the closure (if large vehicles are expected to turn to /from Alexander this might not be optimal, so we would discuss the details)

In each situation, we would retain as much parking as possible, as well as access to the existing driveways. Our aim is to specifically target through motor vehicle traffic on Alexander with the minimum of other impacts to access. We are hoping that something similar to the pink options would be workable, but are interested in overall feedback as well. It is likely that we would be implementing this section with relatively temporary materials as a first test before investing significant time and effort, so we could also modify our design if needed.

Thanks,
Brian

Brian Gould, MCP, P.Eng.
Senior Transportation Design Engineer
City of Vancouver
tel 604.871.6277
e-mail brian.gould@vancouver.ca

From: "Stubbington, James" <james.stubbington@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 9/26/2018 3:38:51 PM
Subject: FW: Emailing: alexander east of main origin-destination (2).xlsx
Attachments: alexander east of main origin-destination updated 26 sep 2018.xlsx

Here's the completed Alexander data.

-----Original Message-----

From: Xin, Carter
Sent: Wednesday, September 26, 2018 3:04 PM
To: Stubbington, James
Subject: RE: Emailing: alexander east of main origin-destination (2).xlsx

Hi James

Here is all the data entry for the Gore/Alexander survey.

Thanks,
carter

-----Original Message-----

From: Stubbington, James
Sent: Tuesday, September 25, 2018 3:10 PM
To: Xin, Carter
Subject: Emailing: alexander east of main origin-destination (2).xlsx

Your message is ready to be sent with the following file or link attachments:

alexander east of main origin-destination (2).xlsx

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

Plate	Origin						Destination					
	Lane e/o Main	Main north of Alexander	Main south of Alexander	Alexander west of Main	Parked on street	Driveway	Lane e/o Main	Main north of Alexander	Main south of Alexander	Alexander west of Main	Parked on street	Driveway
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Location: Alexander Street
between Main and lane east.
Please note time in five minute
increments between plates

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From: "Wong, Bryan" <Bryan.Wong2@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 5/7/2021 1:58:18 PM
Subject: Fw: [EXT] Re: Alexander Street Inquiry

Hi Brian,

Wondering if you know if there's anything that we're doing about this specific case:

- Citizen emailed asking about **Alexander Street between Main and Gore** vehicle closure.
- Current barrier to restrict vehicle traffic is being overrun by trucks / emergency vehicles / cars?
- Are there any changes to this design that we're looking into or is this the current "final" state of the design

I think these were deployed in 2018 and in the notification letter from that time, apparently these might be revised for the future?

Thanks,
Bryan

From: s.22(1)
Sent: April 26, 2021 5:10 PM
To: Wong, Bryan
Subject: [EXT] Re: Alexander Street Inquiry

City of Vancouver security warning: Do not click on links or open attachments unless you were expecting the email and know the content is safe.

Thanks for reaching out so quickly.

Yeah totally, basically a few years ago they installed some cones on the section of Alexander Street between Main and Gore s.22(1) Originally when they installed them I thought they were just a temporary solution in order to stop traffic from going through the bike lane. To be honest they look super temporary, it's just like 6 yellow pylons and a couple of those yellow barriers. Doesn't look like something the city would do for a permanent installation ya know?

Anyways, the problem is that whenever a car or truck drives through them at any speed other than a crawl, it makes a very loud bang. It's like the crack of a gun, I promise I'm not being dramatic about that, I've spoken to my neighbors and they agree, it spooks us because we

think it's gunshots. s.22(1) Most of the time it's emergency vehicles, and some of my neighbors have gone and complained to the police and fire halls to get them to stop driving through it s.22(1)

s.22(1) I think the issue with that is their staff is constantly rotating so the new drivers haven't been told not to do it.

What I want to discuss is finding a different solution to the problem of vehicles driving through there. I'd love to speak to someone over the phone or in person to explain if possible.

Regards,

s.22(1)

On Mon., Apr. 26, 2021, 3:14 p.m. Wong, Bryan, <Bryan.Wong2@vancouver.ca> wrote:

Hello s.22(1)

I'm Bryan Wong, a planning assistant with the transportation design engagement team with the City. Thank you for contacting the city.

We had received an email from you regarding Alexander Street requesting a meeting with someone from the team. Prior to scheduling a call, would you be able to share some of the key areas of concern so that we can ensure that the right department can address your concerns?

Thank you,
Bryan Wong

From: "Storer, Paul" <paul.storer@vancouver.ca>
To: "Kenny, Ross" <Ross.Kenny@vancouver.ca>
"Gould, Brian" <Brian.Gould@vancouver.ca>
"Rawsthorne, David" <david.rawsthorne@vancouver.ca>
"Passmore, Dylan" <Dylan.Passmore@vancouver.ca>
"Tamashiro, Kati" <Kati.Tamashiro@vancouver.ca>
Date: 12/3/2017 3:21:24 PM
Subject: FW: HUB Cycling Recommendations re Alexander Street Bikeway
and Strathcona Cycling Routes
Attachments: Hub SBIA Assessment Ride Strathcona 2017-11-26.pdf

FYI. This was done with HUB and Strathcona BIA.

From: Jeff Leigh [mailto:s.22(1)]
Sent: Thursday, November 30, 2017 10:35 PM
To: bikehupgrades@vancouver.ca; Guilbault, Lynn
Cc: Storer, Paul; 'Tanya Paz'; 'Clark Nikolai'; 'Johanna Vortel'; Jeff Leigh
Subject: HUB Cycling Recommendations re Alexander Street Bikeway and Strathcona Cycling Routes

Further to our submission regarding proposed Alexander Street Bikeway improvements, we are sending along our HUB Cycling Assessment Ride report for Strathcona cycling routes. This report has a degree of overlap with the proposed Alexander Street Bikeway improvements.

As background, HUB Cycling is currently working with the Strathcona Business Improvement Association (SBIA) to help the SBIA prepare a Mobility Advocacy Plan (MAP). This plan will assist the SBIA as they prepare for future changes in transportation infrastructure in Strathcona, by identifying key issues and opportunities. HUB Cycling agreed to support the SBIA on the cycling aspects of the MAP. As part of that work, we conducted several assessment rides of the SBIA area, and led a joint assessment ride with SBIA staff and SBIA member businesses. The attached report is a summary of our findings. Questions on the report can be addressed to me, or to Clark Nicolai, our lead on this report. Our contact at the SBIA is Johanna Vortel at the SBIA. The report has been reviewed by SBIA staff, but has not been reviewed by the SBIA board. As such, we are not publishing it widely at this time. Johanna has agreed that it would be timely to include City staff in the distribution given the Alexander Street Bikeway work underway.

Best regards,

Jeff Leigh
Chair, Vancouver UBC Local Committee, HUB Cycling
s.22(1)

From: Jeff Leigh [mailto:[s.22\(1\)](#)]
Sent: November 29, 2017 12:08 PM
To: bikeupgrades@vancouver.ca; 'Guilbault, Lynn' <Lynn.Guilbault@vancouver.ca>
Cc: 'Storer, Paul' <paul.storer@vancouver.ca>; Jeff Leigh [s.22\(1\)](#) 'Tanya Paz'
[s.22\(1\)](#)
Subject: HUB Cycling Recommendations re Alexander Street Bikeway

Hello Lynn (and bikeupgrade team)

The Vancouver UBC Local Committee of HUB Cycling has reviewed the proposed improvements for the Alexander Street Bikeway, and attached are our recommendations. Comments were to be sent to bikeupgrades@vancouver.ca, but I want to ensure that they reach the right people, and so am asking Lynn to forward this message as appropriate within Engineering.

We are available to answer any questions or provide clarifications on the attached. Please contact me at the email below.

Best regards,

Jeff Leigh
Chair, Vancouver UBC Local Committee, HUB Cycling
[s.22\(1\)](#)



Your **Cycling** Connection

Assessment Ride of Strathcona

Hastings Street Area

Vancouver, British Columbia, Canada

2017/11/26



BACKGROUND

HUB Cycling is a charitable organization that works to make cycling better through education, events and collaboration. We are Metro Vancouver's leader in making cycling an attractive choice for everyone. The Strathcona Business Improvement Association (SBIA) is working to improve the economic, environmental and community future of Strathcona's business district. The SBIA, with an interest in improving transportation and transportation choices in the Strathcona neighbourhood, is creating a Mobility Advocacy Plan (MAP). Recognizing that new development, technology, policies, and area plans are going to impact transportation and mobility in Strathcona, the SBIA is bringing together SBIA member businesses to help shape these changes. HUB Cycling is supporting this effort in regards to potential cycling infrastructure changes that would support the overall MAP direction.

INTRODUCTION



SBIA area.

Strathcona is a mixed neighbourhood bounded by the port to the north, Clark Drive to the east, Malkin Drive to the south, and Gore Avenue to the west. It includes parts of the Downtown Eastside and the False Creek Flats. Strathcona has large areas zoned residential, but also has areas zoned light industrial to the north of Hastings, east of Raymur, and south of Venables. Strathcona's southern border is expected to see considerable change in the next few years, with the removal of the viaducts, the building of the new St. Paul's Hospital and Health Campus south of Gore, the downgrading of Venables/Prior to a local street, and construction of the Malkin Connector.

Strathcona's main commercial streets are Hastings, Gore, and Powell, though there are a sprinkling of businesses within the largely residential area south of Hastings. Shopping and dining destinations in Strathcona include businesses such as Les Amis du Fromage on Hastings, and Benny's Market, Union Market, and The Wilder Snail within the just-mentioned residential area. Just outside the study area are Bomber Brewing and Off The Rail, both on the Adanac bike route.

Strathcona is also a neighbourhood with significant traffic passing through it to surrounding areas, mainly travelling east-west along Powell, Cordova, Hastings, and Venables, which all have bus routes on them (Hastings has many). Hastings Street

is the major arterial going through the area, running east and west from Downtown Vancouver to Burnaby Mountain.

Strathcona has a long history of activism in transportation changes, including a prominent part in a popular movement that stopped a massive highway project to access downtown. This movement is widely regarded as having changed Vancouver's direction for the better. Building on this legacy is an initiative by the Strathcona Business Improvement Association (SBIA) to create a Mobility Advocacy Plan (MAP), which is a framework for advocating for improvements to the area's transportation infrastructure.

Many residents and local employees are within walking and cycling distance of a multitude of local destinations. Census data from 1996 through 2016 reports an increase in people cycling to work, and a variable number of people walking to work.

Mode of travel to work in Strathcona	1996	2001	2006	2011	2011 City of Vancouver	2016 City of Vancouver
Walked	28.6 %	<i>Reliable data unavailable due to transit strike</i>	21.3 %	24.0 %	12.5%	29%
Cycled	6.5%		6.9%	10.2 %	4.4%	13%

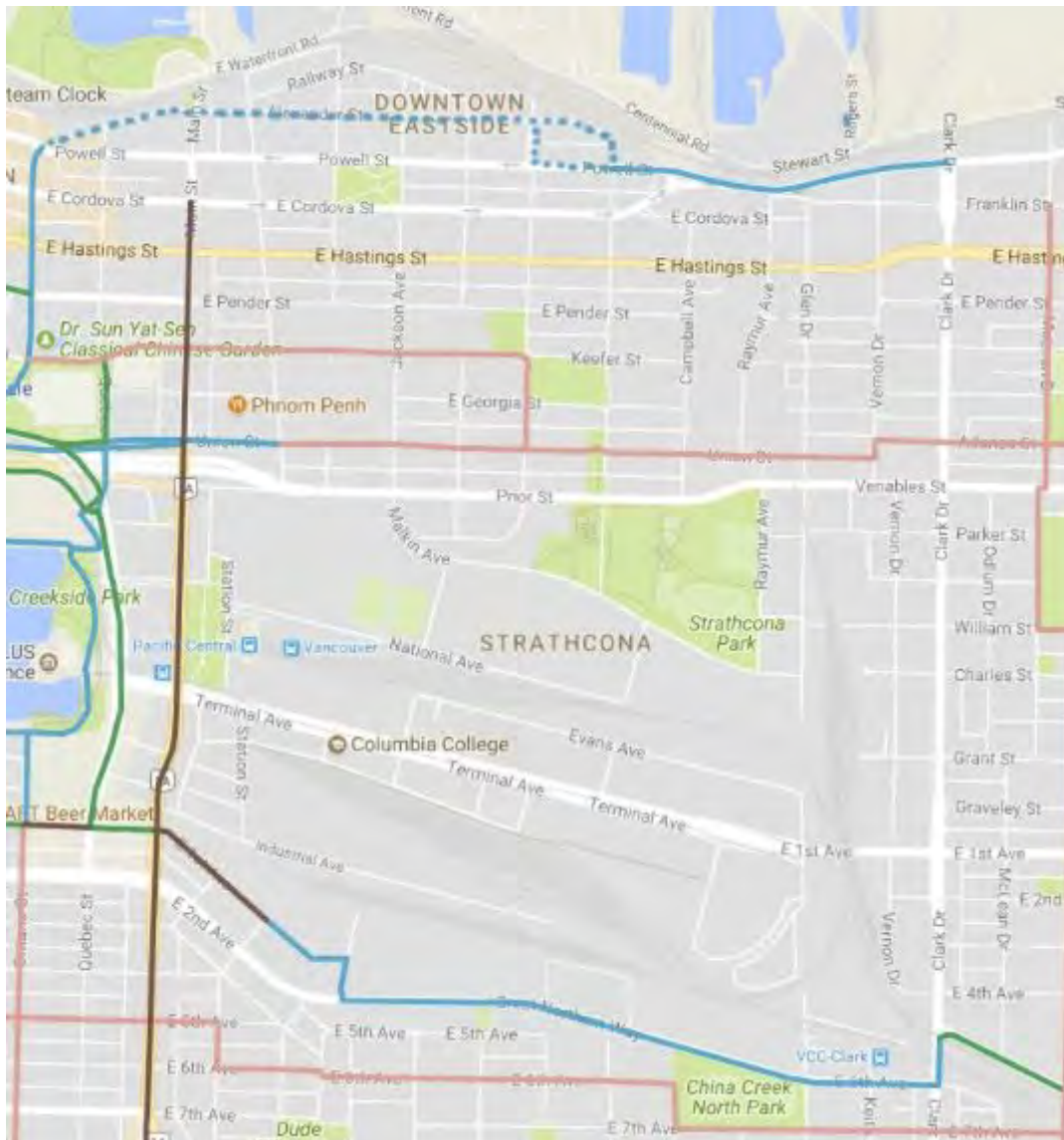
Strathcona has the city's highest cycling mode share at 13% in 2016.¹ In the larger port area 57% of the population have said that they would like to cycle more.²

On assessment rides through Strathcona on two different Sundays, we observed a significant number of people walking and cycling. These people were likely not going to and from work, suggesting that walking and cycling are popular modes of travel in Strathcona, outside of work trips.

The streets of Strathcona have some rudimentary traffic calming with diversions but it is decades old and is no longer adequate for today's motor traffic volumes. More advanced designs are now needed.

¹ Walking and Cycling in Vancouver 2016 Report Card
<http://vancouver.ca/files/cov/walking-cycling-in-vancouver-2016-report-card.pdf>

² 2016 Vancouver Panel Survey
<http://vancouver.ca/files/cov/transportation-panel-survey-2016-final-report.pdf>



The above map shows that there are two groupings of bike routes through Strathcona. There is a protected bike lane along Powell from Clark drive to Railway. There is also the heavily used Adanac/Union bike route, with a less heavily-used bike route along Keefer that splits from Union at Heatley. Both routes are regularly used by commuters passing through Strathcona.

What's particularly notable from the map is the lack of north-south bike routes in Strathcona, with the exception of a short stretch of Heatley. Recognized north-south bike routes would provide a means for people on bikes to access Hastings, which is Strathcona's main shopping street, both from the residential areas and Powell Street bike route to the north of Hastings, and from the residential areas to the south of Hastings and the Union/Adanac bike route. Recognized north-south bike routes would also provide access to the new St. Paul's Hospital and Health Campus south of Gore.

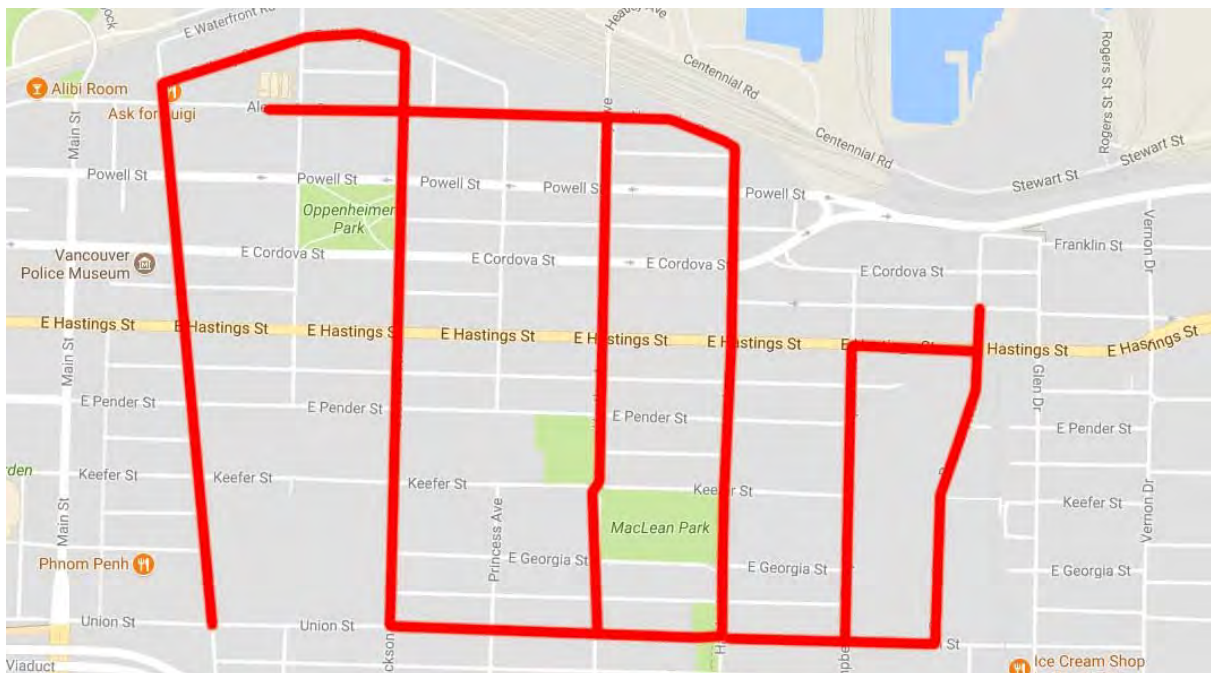
The area's transportation infrastructure is in need of change. People are increasingly wanting more transportation options, particularly for shorter distances. People are wanting to incorporate activity into their everyday lives. With better transportation infrastructure, businesses on Hastings and other streets would be more attractive to people walking and cycling to them, both local residents and people living outside Strathcona.

GENERAL ISSUES

Intersections in Strathcona are busy. In addition to vehicles passing through on their way to somewhere else, commercial and industrial activities give rise to many delivery vehicles and loading zones.

The residential part of the neighbourhood between Hastings Street and Union Street is attractive for walking and cycling; however, despite the traffic calming, there is still significant motor vehicle traffic, often moving at high speeds. Parking close to intersections creates challenges with visibility. Strathcona is the closest neighbourhood to Downtown, BC Place, and Rogers Arena that has free parking, meaning commuters and people attending events drive to Vancouver, park in the neighbourhood, and then take transit or walk to their destination.

SPECIFIC LOCATIONS



Map showing assessment ride routes. Other streets not included in the rides could also be considered.

Gore Avenue

On Gore, motor traffic moves slowly, but has delivery trucks, transit buses, and tour buses. Gore has many destinations itself (stores). Shift Delivery uses Gore to connect to destinations and suppliers.

Gore and Georgia

There is a partial east-west cycling and walking connection through the BC Housing area from Dunlevy to Georgia St. This is potentially useful but stops short before Gore. VanMap shows it as an easement.



Photo: View of car-free street in housing project: East Georgia Street looking west from Jackson Ave.

Gore and Keefer

Keefer just east of Gore is used constantly as a turn-around spot. Traffic speeds are high because of the width of the street. It is highly used by people walking and cycling. Keefer is part of the Trans Canada Trail.

Gore and Pender

Traffic is busy. There is a parking lane on both sides of the street.

Gore and Hastings

The intersection is busy and has fast motor traffic. There is a need to cross Hastings to get from Strathcona to Railtown.

Gore and Cordova

There is a lot of motor traffic. Many motor vehicles speed northward to turn east onto Cordova. The timing of the lights encourages higher vehicle speeds.

Cordova and Powell

Cordova and Powell are both currently one-way and have high motor traffic speeds. It's difficult to cross sometimes.

Gore and Powell

Sunrise Market is a popular grocery destination. It has many delivery trucks on the east side. The west side is heavily used by people walking.

Gore and Alexander

Between Powell and Alexander the sidewalk on the east side is very wide. There was much speeding traffic. People speed down Alexander to avoid Powell.

Keefer Street

Many motor vehicles turn around just east of Gore using two driveways that are on each side. The width of Keefer between Gore and Jackson is wide which encourages speeding.

POTENTIAL NORTH-SOUTH ROUTES

The area has very few routes for cycling in both east-west and north-south directions. According to Dutch principles of a useful cycling grid, primary routes should be no more than 500 metres apart and secondary routes 250 metres from them. In Strathcona, the east-west streets are 100 M. apart. The north-south streets are mostly 140 M. apart. This means that every second north-south street should have a cycle facility. Where these routes meet busy roads such as Hastings they should include protected intersections and crossings



Photo: Gore Avenue from Pender to Union looking East. The width between buildings is much wider than most streets. This was intended to be a freeway on-ramp.

Gore Avenue

Gore Avenue is an obvious choice as a north-south active transportation route. It's almost flat for most of its length. It connects Alexander and Union Streets. In the future it will connect to Terminal Avenue and the new location for St. Paul's Hospital. The east side of Gore from Pender to Union has green space that was leftover from the halted freeway project. Some of this could be used to create an off-street two-way cycle track.

Dunlevy Avenue

Dunlevy could be a useful connector from Pender to Alexander. (South of Pender Street however it is interrupted to Union.) It is flat and goes by Oppenheimer Park and other attractions.

Jackson Avenue

Jackson is central in Railtown on Railway avenue. A good choice to connect northward from Hastings.

Jackson and Powell

There are many destinations in the 400 block of Powell, including Uncommon Cafe, Payless Meats, Mackenzie Room, Oppenheimer park

Princess Avenue

Princess is a useful street but is interrupted at Pender Street. It connects to Strathcona School and Community Centre.

Heatley

Heatley has natural attractiveness as a cycle route. It is flat between Union and Hastings and currently traffic calmed south of Pender. North of Hastings it has a very gentle slope. The Heatley overpass to the port will be removed in a few years giving opportunities. It's very wide north of Powell.

Heatley and Keefer

The traffic calming island has too high of a curb to mount when biking. People currently bike on the sidewalk to get through. The visibility (because of bushes) is bad and the route is circuitous. There can be conflicts with people walking. The apartment building on the southwest corner creates a blind corner.



Photo: Current configuration of traffic diverter at Heatley and Keefer. The curb is too high to mount when cycling.

Hawks Avenue

A good street for cycling. Similar to Heatley. Traffic calming. Flat.

Campbell Avenue

Campbell is a good route. Almost flat. Both sides are residential. There is the Ray-Cam Community Centre at Hastings. It connects to the Adanac bike route, Prior Street, Strathcona Park, the Hastings Viaduct and Alexander Street.

Raymur Avenue

Raymur Avenue has residential apartments on the west side and industrial companies on the east side. The width is very wide. Large trucks move along it. There is a rail crossing just north of the Hastings Viaduct with tracks at a bad angle for cycling. In the future access across the tracks will be removed. The north end of Raymur is close to the crosswalk ramp of the Powell Overpass.

POTENTIAL EAST-WEST ROUTES

Alexander Street

This connects the Powell street overpass to Gastown and downtown. This is soon to be upgraded to a bikeway using traffic diversion to lower motor traffic volumes and speeds.

Hastings Street

Very flat. Important corridor that someday should be made into a complete street. One of the few routes over the tracks.

Keefer Street

Fairly flat. Connects to a high school, a community centre, a park. Connects Chinatown to Raymur. Part of the Trans Canada Trail.

Georgia Street

Fairly flat. A housing complex with a car-free area, a park.

SUGGESTIONS

While Hastings should be made into a complete street, balancing the needs of all users including vehicles, transit, people walking, and people on bikes, that is likely still some years away. Until then we can look at Hastings as a spine with routes coming north and south off of it. Some of these routes can be made attractive for walking and cycling. Instead of attempting to design each side street as a complete street, choose a few to be for goods delivery and motor vehicle traffic and then traffic calm the rest. Dutch Sustainable Safety^{3 4 5} principles show three types of road: Through Roads, Distributor Roads and Local Access Roads. Under these principles the functions cannot be mixed. For Strathcona, it should be decided which travel mode would be prioritized on which street.

Choose one north-south street to be car-free at the point where it meets Hastings. Install a half-block bike-permeable parklet between Hastings and the alley. (Similar to the mini park at Yukon and 17th.⁶) Work with goods movement stakeholders to determine their delivery needs.

On Hastings, the northwest and southeast corners (at least) of all intersections should have ample bike parking. There should be spaces for future Mobi stations.

³ Sustainable Safety: principles, misconceptions, and relations with other visions

https://www.swov.nl/sites/default/files/publicaties/gearchiveerde-factsheet/uk/fs_sustainable_safety_principles_archived.pdf

⁴ Background of the five Sustainable Safety principles

https://www.swov.nl/sites/default/files/publicaties/gearchiveerde-factsheet/uk/fs_sustainable_safety_principles_archived.pdf

⁵ Sustainable Safety (Duurzaam Veilig)

<https://www.cycling-embassy.org.uk/blog/2014/03/26/sustainable-safety-duurzaam-veilig>

⁶ Park at Yukon and 17th.

<http://vancouver.ca/parks-recreation-culture/park-at-17th-and-yukon.aspx>

If neighbourhood streets are intended solely for resident and visitor access, they don't need to be as wide as they are now. This gives more room for wider sidewalks or other purposes. Some streets could be a single lane one-way. Arterials and feeders would be wider of course. These differences would be a quick visual indicator that one is entering a residential neighbourhood and they can be expected to drive differently than on an arterial. Streets that are designated as local access streets should be narrowed. Major intersections on bike routes should be protected intersections.

UPCOMING CHANGES

The area will have some changes in the next while. These include a new location for St. Paul's Hospital at the south end of Gore, and the removal of the viaducts which will include a replacement for Prior St as an arterial. Existing and future cycle traffic on Union Street is expected to increase. Alexander Street and Powell street will see an increase as well.

SPECIFIC LOCATIONS

Gore Avenue from Union to Pender

There is a green space on the east side from Union to Pender which is left over from the halted freeway project. This could provide plenty of width to make a complete street or to install a two-way off road cycle path.

Gore and Hastings

This should be redesigned as a protected intersection. The motor traffic on both Gore and Hastings is high enough to justify it.

Gore Avenue from Pender to Alexander

This should have some cycling infrastructure of some type.

Jackson and Pender

Southbound from Hastings, this intersection should have different signage to indicate that you are entering a residential area. Jackson South of Keefer is hilly. Any north-south route on Jackson could end at Keefer.

Jackson between Powell and Cordova

A bike permeable parklet could be installed here between the alley and either Powell or Cordova. Visually it would be an extension of Oppenheimer Park. Little closures like this can deter motor vehicle traffic and make it more visually the realm of bikes and pedestrians.

Georgia and Hawks

This is a large plaza. There should be a more visible cycle route through it north-south. There currently is an east-west route through it. This could be made more visible. People walking and sitting in the plaza should know where to expect bikes, and to expect bikes. There should be bike parking at the edges of the plaza for people to use to bike to the plaza. Signs informing people that cycling is indeed allowed in the plaza.

A two-way cycle path could be on the western edge of the plaza making Hawks avenue bike permeable.

If the plaza is going to be redesigned entirely, there should be a two-way east-west cycle path through it. The southern edge makes sense because of the alignment of Georgia Street.

Hastings and Hawks

Hawks south of Hastings could be a greenway. Install traffic calming. One-way for driving on the first half block for example.

Raymur

From Union Street to Hastings Street, a two-way off road cycle track could be made on the west side (where the sidewalk is now.) A new sidewalk could be made West of it.



Photo: View of Raymur Ave looking South showing current west side sidewalk

There could be a ramp from Raymur up to Campbell and Hastings to connect with the overpass.

Raymur and Hastings

The new building has a corner cut. This could be used to have a cycle track connect to Cordova. The future residents of Strathcona Village would have the potential to easily connect to the Adanac bike route.



Photo: View of corner cut of Strathcona Village building (On Raymur looking up at Hastings overpass). Could have enough room for motor vehicles and bicycles to clear tracks when construction is removed.

Hastings overpass

The sidewalks on each side of Hastings are very wide. Cycle tracks could be added. They could be two-way or one-way. Two-way would be better as Hastings is often difficult to cross. (A one-way track would likely be used both ways anyway.) There is construction currently on the North side. This should have a protected bike lane installed at the end of construction before it get claimed for parking.

Heatley

Heatley south of Hastings could be a greenway.

Hawks Ave and Powell/Alexander

From a perspective of flow, North of Hastings, Hawks Ave works well as a connecting route to Alexander (directly curves into the Alexander route). However, a lot of heavy goods movement is going on here.

Heatley Ave and Powell

Perhaps when Heatley overpass comes down, there will be less goods movement to contend with here. Very wide road north of Hastings. Need to add push button for bikes at Powell

Heatley and Keefer

The traffic diversion needs to have better bike permeability. Cut a notch in the center of the diverter giving it better bike permeability. Ideally at street level. Should be well indicated that it's meant for bikes; wide path.

Install a bulb out on the southwest corner to move traffic north and be able to see around the corner better.

There should be a sign on Heatley northbound indicating that a bike route is ahead. The northeast corner of Heatley and Georgia needs bike parking for people biking to the park from the Adanac route.

Gore and Georgia

The off road path from Dunlevy to Jackson on Georgia could be connected through to Gore making a complete route to Campbell. Georgia is a flat nice route.

Gore and Keefer

Continue path along Gore, to cross Keefer. Put in a cul-de-sac on Keefer a bit east of Gore, then the rest of the block should be redesigned, one-way, or narrowed, to become a traffic calmed neighbourhood street.

Gore and Pender

Current there is construction of a new building on the northeast corner. The building has a parking entrance in the alley for its underground parking so does not need street parking. This is a good opportunity to install a bike lane on the east side for the half block (or full block to Hastings.) Taking advantage of the opportunity the new development gives, between Pender and the alley north of it, on the east side (currently closed to traffic) and put in a protected bike lane before construction is finished.



Photo: Looking North on Gore at Pender.

Gore from Pender to Hastings.

A protected intersection could be installed at Hastings and Gore. The southwest corner currently has construction so a protected bike lane could be installed after construction. The existing building on the south east corner has its own underground parking so does not need street parking.

Cordova and Powell

Cordova and Powell are both currently one-way. If they were made two-way streets traffic would flow at a saner pace. It would allow more agility for transportation around the area. It would make the current couplet of the two streets less like a highway.

Gore and Powell

The west side of the street is extra wide so could have room for a protected bike lane between the trees and the building.

Gore and Alexander

Between Powell and Alexander the sidewalk on the east side is very wide. This could be used to make room to make it a complete street.

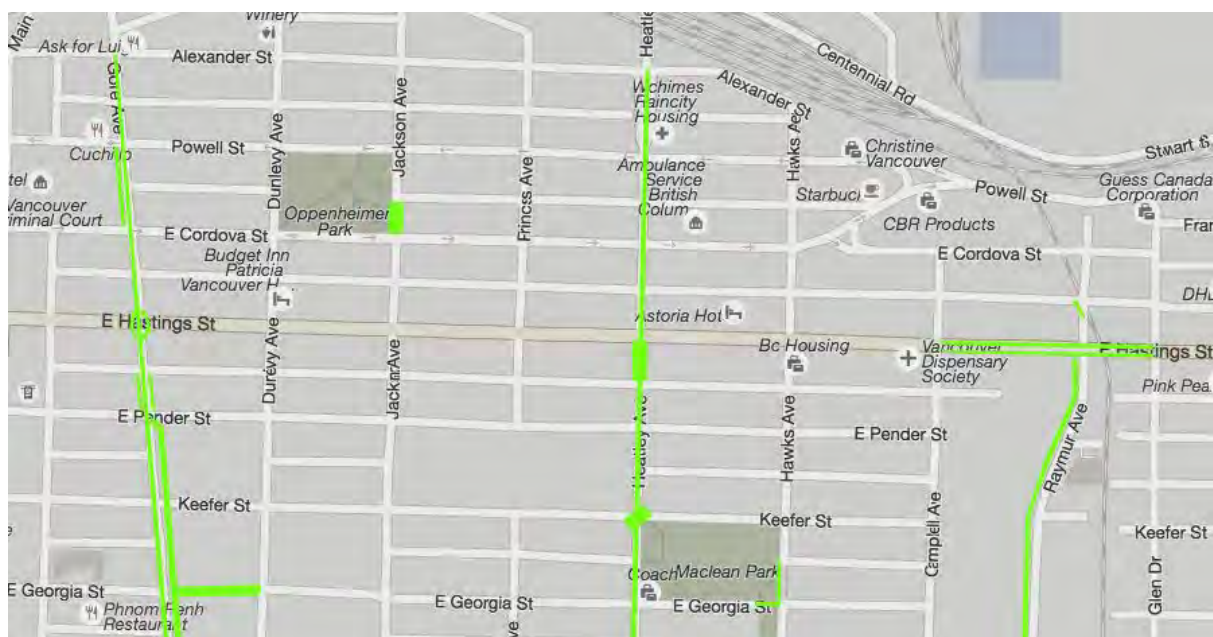
Make some traffic calming measure

(Such as making one block into a one-way street, diverters, etc.)



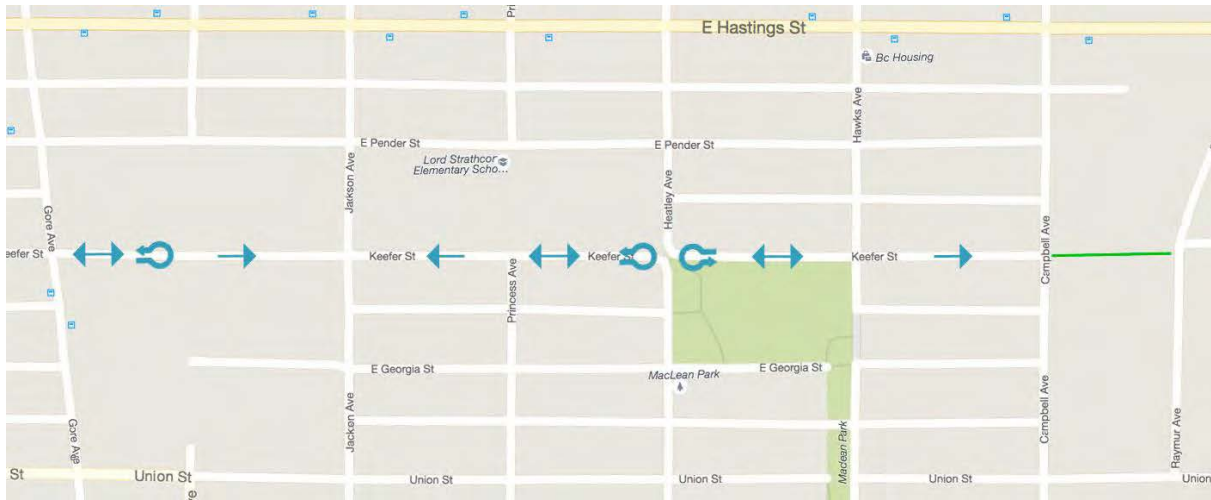
Corner of Heatley Ave and Powell headed north, missing cycle push button.

Coming Southbound on Heatley at Powell, you need to angle left (wider street on north side)...many options when overpass comes down - middle route for cyclists etc.



Map showing suggested improvements.

OTHER IDEAS



Suggested motor traffic flow if Keefer were to become a greenway. Two-way for cycling. The cul-de-sac just east of Gore would be motor vehicle permeable eastbound only. Also shows the idea for a cycle connection from Campbell to Raymur.

Narrow any street that is one-way or is not a through street. Indent parking spots within bulb-outs. Build small parkades for parking since many of the houses do not have garages or driveways. Consider neighbourhood-wide traffic diversion where all through motor traffic must go around it. Because the neighbourhood has few east-west cycle routes, add a few more. Good choices would be Keefer or Georgia.

SUMMARY

Union Street is a busy commuter route and Powell is a secondary commuter route, both of which serve people passing through as well as locals. Serving locals better would require animating the area between these existing corridors, linking people to both these routes, and local businesses.

Currently there are many destinations that are hidden and difficult to get to because of the lack of bicycle infrastructure. Many people who cycle avoid Hastings. The busy streets of Powell, Cordova and Hastings really make the area unattractive for cycling (and possibly walking). The more active transportation infrastructure there is in the area, the more attractive it will be overall, which is good for businesses.

There are many possibilities for improving the bike infrastructure, especially with north-south routes. There is also a need for more east-west cycle routes.

The area is expected to have more high density residential development. There will soon be many more people living in the area. People who have just moved tend to

adopt the perceived lifestyle of their new area. If the only attractive way of getting around is by driving then they will do that and fill up the streets with more cars. There isn't room in the area for more cars. If new residents instead look out their window and see attractive, safe walking and cycling street design they will use incorporate those into their new lives.

More Information

HUB Cycling
Vancouver BC
(604) 558-2002
Vancouver UBC Local Committee: vancouver@bikehub.ca

Strathcona Business Improvement Association
Mobility Action Plan (MAP Strathcona)
1222 East Hastings Street
Vancouver, BC V6A 1S6
(604) 258-2727
info@strathconabia.com

From: "Liaw, Alex" <Alex.Liaw@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 10/23/2017 10:05:28 AM
Subject: FW: Hydraulic Bollards at Alexander and Main

From: Durnford, Jack
Sent: Tuesday, October 10, 2017 2:40 PM
To: Lee, Joyce (ENG)
Cc: Liaw, Alex
Subject: RE: Hydraulic Bollards at Alexander and Main

Hey Guys,

This looks fairly simple. My only concern would be current and future utilities. Does this require a power source ? Where will it come from?

Jack

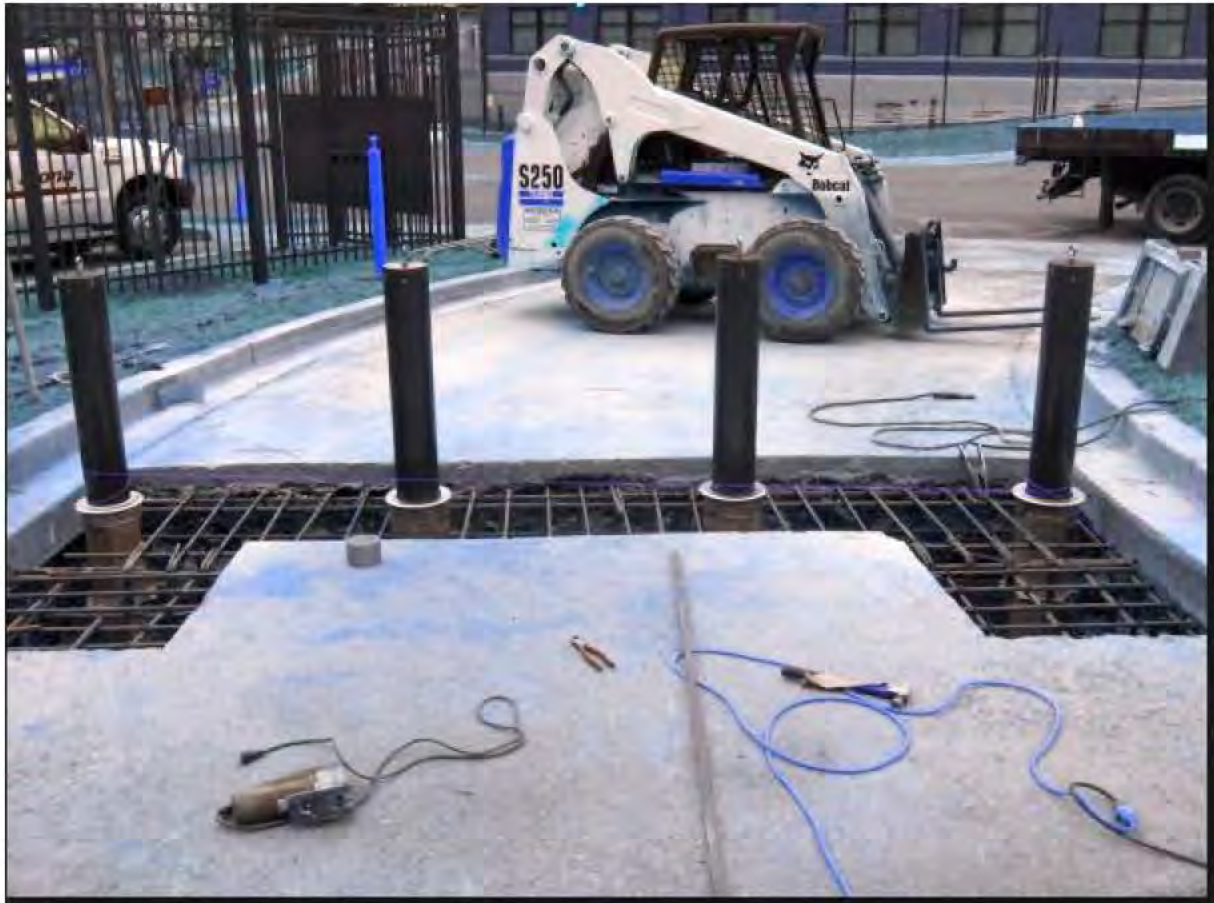
From: Lee, Joyce (ENG)
Sent: Tuesday, October 10, 2017 10:19 AM
To: Durnford, Jack
Cc: Liaw, Alex
Subject: FW: Hydraulic Bollards at Alexander and Main

Hi Jack,

Please see the email below from Alex from Transportation. They are exploring the idea of installing three hydraulic bollards on Alexander Street at Main Street. I have asked Alex to notify all the utility owners and ask for their acceptance for the bollards to be installed adjacent to the utilities.

From Street Ops perspective, what are your concerns about the installation of these bollards? I do not see any issue with the installation of the bollards and concrete foundations. Please let me know if you have any concerns. I presume the construction would be similar to the photo below, with rebar and concrete foundations.

Thanks,
Joyce



From: Liaw, Alex
Sent: Friday, October 06, 2017 3:21 PM
To: Lam, Mike
Cc: Gould, Brian; Lee, Joyce (ENG)
Subject: Hydraulic Bollards at Alexander and Main

Hi Mike,

Transportation is exploring the idea of installing hydraulic bollards that retract into the ground on Alexander St. Below is a sketch of how the bollards may work as described by the supplier, but it would be helpful to understand the constructability of this from a streets perspective. I'd also like to get a sense of the horizontal clearance required from the storm and sewer mains on Alexander St. The cad drawing to the pdf can be found [here \(section 2A\)](#).



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From: "Do, Amy" <Amy.Do@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
"Winters, Celia" <Celia.Winters@vancouver.ca>
"Corey, Kathleen" <Kathleen.Corey@vancouver.ca>
Date: 12/18/2019 1:16:18 PM
Subject: FW: Meeting notes with VFRS

Oops, totally forgot to cc the COV side.

From: Do, Amy
Sent: Wednesday, December 18, 2019 1:16 PM
To: Moore, Tyler; Paulson, Martin; LePard, Kenneth; Hayes, Ryan
Subject: FW: Meeting notes with VFRS

Hi all,

Thanks for the discussion yesterday regarding bollards. Below are meeting minutes.

I've also attached two designs that Brian drafted up for Alexander and Main based on your feedback. Let us know your comments on these and which one you prefer.

- Firetrucks require a minimum 4.5 inch ground clearance.
 - o There is 0.25 dia. tubing running under the trucks for air systems, etc. Bollards can damage tail pipes, auto chains, air compressors, engine (fan belts), etc. incapacitating the truck
- There's a different need for road design on streets that are response routes for fire trucks, compared to streets that are not. Response routes need to be designed so that fire trucks can quickly drive through, and not require firefighters to manually unlock or remove bollards. Locations that are local typically only require enough space and removability so that fire fighters can set up ladders, equipment etc. to respond.
- Local access locations: (Main & 14th, upcoming Ontario & 5th)
 - o Anything that requires a key slows response and padlock may simply be clipped. Hard to keep track of key holders and sometimes lock may malfunction.
 - o Plastic posts are OK. Drivers won't be able to tell from a distance if a post is plastic or metal, so they will likely not drive over them. But for locations where firefighters are setting up to respond, they will be able to tell that it's plastic and remove if necessary for staging.
 - § VFRS inquired about a break point notched into the plastic posts for ease, which we will explore for Ontario/5th; however, need to be careful about leaving post sleeves or PVC protruding near people cycling
 - o Removable bollards are also OK for specific locations that have low frequency of response.
- Response routes: (Alexander and Main, Heatley Ave)
 - o Flexible bollards are damaging to firetrucks. Transportation should not use them on response routes.
 - o Planters in the way are also not good, since they are considered permanent by firetruck drivers and they will not drive into them.

- Same issue as above with any bollard that requires manually unlocking or removing.
- Can explore options of unconventional curb design that allows trucks to straddle and /or mount a low concrete curb, but looks like a road block to normal cars. This can look like a concrete median that is mountable by firetrucks.
 - ⊙Note: Structural growing medium (structural soil) has the same load bearing capacity as fill (supposedly) ⊗would help camouflage the ability of VFRS to circumvent the diverter
- Avoid designs that quickly raise and drop wheels, particularly one of a pair, as they can lead to differential axle loading
- Favour designs that naturally guide VFRS driver into a safe alignment to straddle medians.
- Trucks have a difficult time going over big speed bumps, but it can straddle curbs of different heights laterally. Though prefer both axles on the same level plane to prevent damage to wheels.

Amy Do, EIT. | she, her, hers
 Civil Engineer I, Transportation Design | City of Vancouver
 p: 604 829 9251
amy.do@vancouver.ca

I respectfully acknowledge that I live, work and play in the traditional territories of the xʷməθkʷəy̓əm (Musqueam), skwxwú7mesh (Squamish), and selilwitulh (Tsleil-Waututh) Coast Salish peoples.

From: "Liaw, Alex" <Alex.Liaw@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 10/23/2017 10:03:14 AM
Subject: FW: Sewer/Water Main Clearance

From: Wells, Sarah
Sent: Monday, October 23, 2017 9:44 AM
To: Liaw, Alex
Subject: RE: Sewer/Water Main Clearance

Alex,

I apologize for not getting back to you earlier.

0.9m clearance is typically for other utilities; in this situation the clearance may need to be increased. Essentially, we want to be able to excavate to the sewers without needing to support or remove the bollard. If we were to need to repair or replace the sewer, the trench could extend 0.6m from the edge of the sewer, leaving only 0.3m of soil between the trench and the bollard. Without knowing more about the bollards it is hard to say if 0.9m is appropriate.

The other possibility is that if the sewer in this location ever needed to be repaired/replaced, the bollard closest to the sewer could be removed for the duration of construction assuming it is easy enough and not too expensive to remove and reinstall.

Sarah

From: Liaw, Alex
Sent: Tuesday, October 03, 2017 2:28 PM
To: Wells, Sarah
Cc: Der, Keith
Subject: Sewer/Water Main Clearance

Hi Sarah,

Transportation is looking at the feasibility of installing hydraulic bollards (retracts 1.1m into the ground) on Alexander St. I've attached a hand sketch of where they might go and the surrounding utilities.

Talking to Streets, they suggested I talk to you with regards to horizontal utility clearances. Just from looking at the Utilities Design Construction Manual, I'm seeing that we need minimum 0.9m clearance from the mains. Any input from you would be much appreciated.

Thank you,
Alex

Alex Liaw, EIT

Transportation Engineer | City of Vancouver
507 W Broadway, Vancouver, BC | V5Z 0B4
604.873.7353 | alex.liaw@vancouver.ca

From: "Mason, Erica" <Erica.Mason@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 4/11/2022 4:00:17 PM
Subject: FW: Transportation Design General Inquiries Case - 101015713413

From: Transportation Design
Sent: Monday, March 28, 2022 4:49 PM
To: s.22(1)
Subject: Transportation Design General Inquiries Case - 101015713413

Hi s.22(1)

Thank you for sharing your concerns about this traffic diverter and apologies for the delayed response. As you noted, temporary materials were used for this interim design and we are exploring options for a more permanent solution that will accommodate emergency vehicle access. Emergency access is important given the proximity to the Fire Hall and the ongoing opioid crisis. We are aware of some issues with the use of IRS bollards in addition to what you're noticing, and have been testing some alternative designs using a small concrete island while still maintaining access for Fire. We have worked with Vancouver Fire and Rescue Services to develop better methods, such as fold-down metal bollards, in area where emergency vehicles only need occasional access; however, we are still working on a better solution for situations like this where emergency vehicles need more frequent access.

We will investigate whether there's anything staff can do to address your concerns in the short term. In the longer term, we may be able to pursue more complete solutions such as bollards that automatically raise and lower for emergency vehicles or an alternative design for this location.

Regards,

Erica Mason, EIT (she/her)
Transportation Design Branch
Engineering Services | City of Vancouver
Email: erica.mason@vancouver.ca
T: 604-829-9796

From: "Transportation Design" s.15(1)(l)
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 4/11/2022 3:59:31 PM
Subject: FW: Transportation Design General Inquiries Case - Lagan Case 101015713413 (Hansen SR 1901284) - has been updated

From: 311 s.15(1)(l) s.15(1)(l)
Sent: Monday, March 28, 2022 4:15 PM
To: Transportation Design s.15(1)(l)
Subject: Transportation Design General Inquiries Case - Lagan Case 101015713413 (Hansen SR 1901284) - has been updated

The following update has been added:

Lagan Case Number: 101015713413
Hansen SR Number: 1901284
Case Title: Transportation Design General Inquiries Case
Client Name: s.22(1)
Location: s.22(1)

Case Notes:

2022/03/28 Sandra 16:14:09 Wong Citizen called to follow up again. It's been four years of the noise that comes from the delineators each time an emergency vehicle drives over them. He would appreciate at the very least an Engineer call and acknowledge his request even if they can't do anything about it.

The delineators have a spring on the bottom so when a vehicle drives over them, it bends down and snaps back up once the vehicle is through. That sound can be heard in his bedroom. In the DTES emergency vehicles use this street multiple times through the night, so it's affecting not only him but also his old dog.

He suggests COV change the delineators to a retractable cone similar to what is used at the Convention Centre. Emergency vehicles would have a pass that would retract the cones to gain access. It's quiet and would be win-win for everyone..sw

2022/01/24 Angela 15:09:23 Rivard Multiple cases found to repair plastic barriers and report the same concern: 101015290195, 101015193793, 101014421705, 101014092112, 101014091859, 101013501537, 101013462926, 101012351615 and more.
Google street view (shows 2 plastic barriers down): <https://goo.gl/maps/N3WKriQ1ze4f2FPcA>

Agent Desktop Light Users: click on link to view Case details:
s.15(1)(l)

Hansen Users: click on link to view Service Request details:
s.15(1)(l)

*** Note to Hansen users:**

- There may be up to 3 minute delay until these updates are visible in Hansen
- If case note indicates that there are attachments, please ask the Case Note author to send them to you via email

From: "Power, Sarah" <Sarah.Power@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 11/8/2018 9:27:22 AM
Subject: Hansen Case - 200 block of Alexander
Attachments: Service Request InfoViewer _ IPS_alexander3.pdf

Good morning Brian,

I have attached a Hansen case above regarding the 200 block of Alexander. The resident, s.22(1) mentioned that he called in July and would like a follow up phone call. He can be reached at s.22(1)

Let me know when I can close the case.

Thanks!

Sarah

Sarah Power

Transportation Design Engineer-In-Training

City of Vancouver

tel 604.871.6920

e-mail sarah.power@vancouver.ca



2018/11/08 09:23

Service Request # R 1371012
 Request Type ATDGeneral
 Request type description General Inquiries
 Request Date 2018/11/07 13:48
 Call Date 2018/11/07 13:46
 Lagan's ECM Update
 Incident Date 2018/11/07 13:48
 Crew Assign Date
 Crew ID
 Crew Contact
 Alt Crew Contact
 Follow-Up Date
 Reviewed no
 Sub Type
 Charges Explained no
 Initiated By
 Creator
 Dispatcher
 Alt Dispatcher
 Alert State None
 No Alert

Information

Information

Zone
 Area description
 Sub-area
 Sub-area description
 Beat
 District description
 Auto Beat
 Priority 4
 Priority description Medium
 Responsibility ATD
 Responsibility description Transportation Design
 Project
 Project description
 311 Case # 101012090469
 Source
 Due Date 2018/11/14 13:46
 Ext Reference #
 Ref Type
 Lagan CSR Name lagan
 Method
 Designation
 Frequency
 Cleaning Zone

Request Location

Asset
 Parcel ID
 Property ID
 Lane
 GPS X 0.0000
 GPS Y 0.0000

Location

Address type Range
 Street # 200
 to 299
 Pre Dir
 Street Name ALEXANDER ST
 Suffix -Range
 Post Dir

Subdesignation COVAV
Cross Street
Street 2 Name
Street 2 Suffix
Street 2 Post
Direction
Cross Street
Street 3 Name
Street 3 Suffix
Street 3 Post
Direction
City, Province, Postal Code Vancouver
Province BC
Postal Code
Location

Incident Details

Call Details

Call Duration 00:00:00
of Calls 0
Taken By
Taken by name
Customer Contact
Requested yes
Notify Customer
Regarding Service no
Request Progress

Contact

Name s.22(1)
First, MI s.22(1)
Middle Initial
Title
Foreign no
Address s.22(1)
City Vancouver
State/Province BC
ZIP/PC s.22(1)
Country

Contact Phone s.22(1)
Alternate Phone
Fax
Pager
PIN
E-mail s.22(1)
Contact Type Other

Customer Comments

s.22(1)

Other Calls

(No Data)

Inspection

(Tab Not Loaded)

Log

(Tab Not Loaded)

Attachments

(Tab Not Loaded)

Associations

(Tab Not Loaded)

Request Details

(Tab Not Loaded)

Schedules

(Tab Not Loaded)

Usage Readings

(Tab Not Loaded)

Audit Log**Audit Log****Audit Log**

(No Data)

Lagan eForm**Lagan Detail**

Citizen called in July regarding this matter. He was told at the time that the city was watching the area. He recently saw traffic counting strips along the block and would like to have a follow up discussion with you regarding this matter. Please call him to advise.

1. Type of Inquiry **closure on 200 blk Alexander**

2. Describe Inquiry in detail: **Citizen has a business s.22(1)** He is concerned with a recent closure to vehicles in the 200 block of Alexander. He said they were not notified of this change and it is affecting vehicle traffic in the area. The road is closed to vehicles - it is bike access only to & from Main St. There is insufficient notification to drivers on westbound Alexander. Vehicles are having to do u-turns in the middle of the block because the closure is before the laneway. Vehicles coming eastbound can only drive from Main St to the lane, where they have to take the lane to Powell St. Please call the citizen to discuss his concerns.

3. (Don't ask, just record - did caller indicate they want a call back?): **Yes**

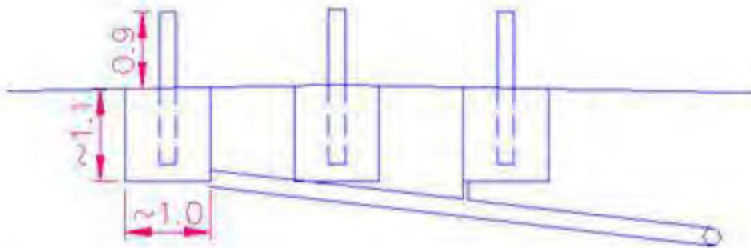
Lagan eForm

Lagan Case Details

From: "Liaw, Alex" <Alex.Liaw@vancouver.ca>
To: "Lam, Mike" <Mike.Lam@vancouver.ca>
CC: "Gould, Brian" <Brian.Gould@vancouver.ca>
"Lee, Joyce \ (ENG\)" <joyce.w.lee@vancouver.ca>
Date: 10/6/2017 3:20:40 PM
Subject: Hydraulic Bollards at Alexander and Main
Attachments: Alexander St and Main St.pdf

Hi Mike,

Transportation is exploring the idea of installing hydraulic bollards that retract into the ground on Alexander St. Below is a sketch of how the bollards may work as described by the supplier, but it would be helpful to understand the constructability of this from a streets perspective. I'd also like to get a sense of the horizontal clearance required from the storm and sewer mains on Alexander St. The cad drawing to the pdf can be found [here \(section 2A\)](#).



Thanks,
Alex

From: "Magnusson, Rachel" <Rachel.Magnusson@vancouver.ca>
To: "Magnusson, Rachel" <Rachel.Magnusson@vancouver.ca>
"Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 7/5/2017 11:46:47 AM
Subject: meeting with Cal @ Ironworks

Alexander bikeway – meeting with Cal @ Ironworks (Main and Alexander).

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Hiltz, Diane" <diane.hiltz@vancouver.ca>
CC: "Darwent, Christopher" <Christopher.Darwent@vancouver.ca>
Date: 8/31/2017 9:26:30 AM
Subject: RE: 200 Alexander between Main and Gore

Sorry, when we talked it sounded like "do not enter except commercial vehicles" may not be enforceable.

I'd appreciate confirmation that this accommodates some specific categories:

- ☐ Any sort of box truck or sprinter van that could conceivably show up for a shoot from that end with minimal commercial markings, whether or not they have a TSZ
- ☐ Personal vehicles of employees using the parking lot also accessed off the driveway
- ☐ Bicycles (obvious, but I'm assuming I need to add bicycles for completeness)

From: Hiltz, Diane
Sent: Thursday, August 31, 2017 8:28 AM
To: Gould, Brian
Cc: Darwent, Christopher
Subject: 200 Alexander between Main and Gore

Hi Brian,

I have discussed the changes to the traffic patterns along 200 Alexander and the intersection at Main. s.13(1)

s.13(1)

s.13(1)

s.13(1)

s.13(1)

Although traffic in the area is not as busy as most intersection there are large vehicles that use the Main St overpass.

s.13(1)

If is also advised that your team contact Special Events as they use Alexander for a number of events.

Thanks

Diane Hiltz
Engineering Assistant III
Parking Management Branch
Engineering Services
diane.hiltz@vancouver.ca
604-871-6874

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Yau, Adrian" <Adrian.Yau@vancouver.ca>
Date: 11/10/2017 10:16:23 AM
Subject: RE: 200 Block Alexander Midblock Full Closure

Thanks, this is an interesting fallback position. s.13(1)

s.13(1)

s.13(1)

It doesn't sound like Winston had anything new on the subject unless he was proposing we have a schedule for the bollards (?).

From: Yau, Adrian
Sent: Thursday, November 09, 2017 4:47 PM
To: Gould, Brian
Subject: 200 Block Alexander Midblock Full Closure

Hi Brian,

I dropped off a version with a midblock full closure between Main and Gore on your desk. Without bollard removal, all vehicles can access the driveways on the north side from the west, and all vehicles can access the driveways on the south side from the east. EB traffic would be diverted into the lane, while WB traffic dead-ends (vehicles can turn around via the driveway on the south side). All other movements require the bollards to be retracted. 4 parking spaces would be removed on the north side east of the lane, but that would be offset by the addition of 4 parking spaces fronting the senior home.

Winston stopped by and was wanting to talk to you regarding the bollards ☹ let him know you would get back to him. TDM is concerned with predictability wrt when the bollards are retracted (and whether that can be achieved via a set schedule and appropriate signage).

Cheers,

Adrian Yau

From: Gould, Brian
Sent: Tuesday, October 31, 2017 5:18 PM
To: Yau, Adrian
Subject: RE: Alexander Geometric (then sign and paint)

Right now I'm just waiting for the boards to review myself. If they are available Friday, let's go through them together. I am totally okay with you staying on Alexander, but need to get a geometric designer 100% up to speed in order to meet the deadlines. Please feel free to discuss with Mike, but I might suggest offering to work on the overall sign and paint plan, particularly the sharrow pattern in coordination with Mike Z.

From: Yau, Adrian

Sent: Tuesday, October 31, 2017 5:12 PM
To: Gould, Brian
Subject: RE: Alexander Geometric (then sign and paint)

Hi Brian,

I went through and discussed all the design options with Mike.

I'm currently looking for more tasks; is there any way I can provide support for Alexander moving towards the open house? I think I'll be able to make it to at least a portion of the open house.

Alternatively I would be able to continue on Kits Beach concepts or work on something new. I'll stop by to chat on Friday.

Cheers,

Adrian Yau

From: Gould, Brian
Sent: Tuesday, October 31, 2017 10:15 AM
To: Komiya, Mike
Cc: Yau, Adrian
Subject: Alexander Geometric (then sign and paint)

Hi Mike,

The below has some pieces of the project, but let's try to catch Adrian to ensure a clean handoff. Adrian and Alex have been working out of

s.15(1)(l)

You can see pieces of survey have been brought in, but I was seeing a gap until Kenji dug up 133044 just now, which covers of Hawks/Powell from 2013, pre-Powell Overpass. Design drawings for that will need to be located to confirm whether too much has changed. I think that's the first action item for you, which is complicated by the design being external on that project.

Survey along Alexander from late 2014: 143222, 143223, 143224, 143225
Survey of Main St Overpass: 143146
Survey along Hawks and Powell: 133044

I would suggest eventually setting up an overall sign and paint plan for sharrows, wayfinding, 30kmh, etc that span the full length - will be better for consistency. In the meantime, should have separate drawings limited to just the actual geometric design sections, which include:

1. Maple Tree square
 - a. A small concrete island to reinforce the new one-way just west of Columbia
2. Full closure on the 200 block
3. Alexander/Hawks/Powell connection

These also happen to correspond to our sections for consultation, but I'm not picky whether it gets captured in drawings for 1 or 2 since it's concrete but closer to the bollards at Maple Tree Square.

From: "Magnusson, Rachel" <Rachel.Magnusson@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 7/25/2018 1:44:43 PM
Subject: RE: alexander - feedback from Postmark/Urban winery

Yes, the feedback was about the lane at Main/Alexander. Otherwise, his was a general concern about how trucks will have inconvenient routes and that this is a real pain in an industrial area. I said I'd pass along the feedback.

R

From: Gould, Brian
Sent: Wednesday, July 25, 2018 12:13 PM
To: Magnusson, Rachel
Subject: RE: alexander - feedback from Postmark/Urban winery

I originally read this as the lane that Main/Alexander is sending traffic into, but I see them at 55 Dunlevy (more than a block northeast of that lane).

So is the complaint about some other lane, or that they re stubbornly trying to short-circuit our diverter?

From: Magnusson, Rachel
Sent: Wednesday, July 25, 2018 11:57 AM
To: Gould, Brian
Subject: alexander - feedback from Postmark/Urban winery

Hi Brian,

FYI - Just spoke to Steve who is at Postmark/Urban winery. He is concerned about the impacts of the closure on industrial businesses and the rerouting that is necessary for his trucks. Apparently they had a truck stuck in the alley last week and he says this is a serious safety issue. Would prefer a bike lane and says parking is not an issue anymore so that design consideration is less relevant and that the closure is worse in an industrial area.

Cheers,
Rachel

Rachel Magnusson
Engagement Lead
Transportation Planning
Engineering Services
City of Vancouver

(604) 873 7215
rachel.magnusson@vancouver.ca

From: "Magnusson, Rachel" <Rachel.Magnusson@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 8/22/2017 4:06:39 PM
Subject: RE: Alexander and Main St door knocking

Nope, let's wait to chat to 102 Main in particular.

From: Gould, Brian
Sent: Tuesday, August 22, 2017 3:53 PM
To: Magnusson, Rachel
Subject: RE: Alexander and Main St door knocking

Does this still make any sense before we talk to 102 Main and get back to Cal?

-----Original Appointment-----

From: Magnusson, Rachel
Sent: Friday, August 18, 2017 2:34 PM
To: Magnusson, Rachel; Gould, Brian
Subject: Alexander and Main St door knocking
When: Wednesday, August 23, 2017 9:00 AM-11:00 AM (UTC-08:00) Pacific Time (US & Canada).
Where:

Holding in our calendars for Alexander door knocking.

From: "Steve Thorp | freshTAP" <steve@freshtap.com>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
CC: "Bike Upgrades" <BikeUpgrades@vancouver.ca>
Date: 11/28/2018 11:46:18 AM
Subject: Re: Alexander at Main

Hi Brian

Thank you for the email.

Unfortunately, I believe COV did not do its proper research before confirming this change in traffic.

If you visit the site you will watch multiple vehicles a minute drive down this street, both east and west. When coming from the west, you are detoured down an alley, that regularly has obstacles and is very unsafe for traffic.

I was personally on a bus last week that got caught in this area. We had to back out and do a 5 point turn in the intersection.

It's an absolute mess

50% of our staff bike to work, and I have many friends in the area that bike to work. NO one ever complained about Alexander or the intersection at Main being an issue for vehicle traffic.

Our area (Railtown) is Commercial Zoned, and until last year was M2. This is NOT residential. We have multiple shipping trucks & thousands of customers coming to our site every week.

The restrictions you have put at Main x Alexander is a massive hassle for our company and customers. It is causing added stress on the area.

NO one from COV talked to us before this change.

If you ask any business member of this community, you will get the same response I'm giving you. That is not a coincidence.

Please do your proper research for this issue.

If you would like to visit our business or call please do so anytime. 604-764-0052

STEVE THORP | Co-Founder

freshTAP Kegging Facility | 55 Dunlevy Avenue | Vancouver, BC V6A 3A3
freshTAP Head Office | 1575 Vernon Drive | Vancouver, BC V5L
3L4 | 604.764.0052 (c) | 604.566.9423 (o) | [twitter](#) | [facebook](#) | [instagram](#) | [website](#)

How does wine-on-tap really work? ANIMATED VIDEO
Why wine-on-tap? Word on the street? TESTIMONIAL VIDEO

freshTAP: a smarter, fresher, friendlier glass of wine

On Wed, Nov 21, 2018 at 3:43 PM Gould, Brian <Brian.Gould@vancouver.ca> wrote:

Dear Steve Thorp,

Apologies, I wasn't able to reach you by phone and our office hours probably conflict. The Alexander Bikeway project included outreach to businesses as guided by the BIAs, as well as notification letters before and [after](#) our [open house](#) last November. This included three options in the vicinity of Main Street which you can find via the first link.

When selecting restrictions to reduce motor vehicle volumes, we work to target through motor vehicle traffic and maintain local access as much as possible. In this case, we found quite a lot of traffic using Alexander to the Main Street Overpass as a back-door into downtown, and that what primarily attracts people to drive along Alexander versus Powell/Cordova is the signal at Main Street. The Fire Department was also more supportive of this configuration as there were fewer obstacles for them to navigate, and unfortunately there continues to be a substantial volume of calls they are responding to in the area and that was a significant factor in our design.

We also needed to account for larger truck movements around the driveways on that block, and thus shifted the interim closure just east of the lane. Ultimately, we would prefer it be west of the lane if possible, which would reduce the need for U-turns westbound while being more visible to drivers before they turn onto Alexander. We are in discussions with Fire about some changes to the way it is laid

out, and may additionally restrict the southbound left turn from Main to Alexander to reduce the amount of traffic ending up in the alley.

In addition to the do-not-enter signs and the barrier itself, we should have a yellow diamond “no exit” on either side of Alexander at Gore, plus a sign warning drivers before they turn off Gore. Unfortunately, we find that it is typical for some drivers to miss all our cues, at least initially (and perhaps partly due to old GPS info and habits), but if you do have specific suggestions please let us know.

Sincerely,

Brian

Brian Gould, MCP, P.Eng.

Senior Transportation Design Engineer

City of Vancouver

tel 604.871.6277

e-mail brian.gould@vancouver.ca

From: "Steil, John" <john.steil@stantec.com>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 5/2/2018 9:56:11 AM
Subject: RE: Alexander Bikeway

Thanks for the response, but....

I'm afraid the weak link in this whole design is the impacts on the Gore/Powell and Gore/Cordova intersections. I still think it would be a lot better to calm the intersection at Alexander/Gore and leave Main/Alexander open.

Cheers
John

From: Gould, Brian <Brian.Gould@vancouver.ca>
Sent: Tuesday, May 01, 2018 1:22 PM
To: Steil, John <john.steil@stantec.com>
Cc: Bike Upgrades <BikeUpgrades@vancouver.ca>
Subject: Alexander Bikeway

Hi John,

Apologies from the project team – I gather that you may have received a letter about construction from Fiona before our mail-out on changes through consultation. I'd be happy to discuss your concerns regarding the Main/Alexander change, but want to ensure that you have that information as well:

<http://vancouver.ca/files/cov/alexander-bikeway-notification-letter-final-designs.pdf>
<http://vancouver.ca/files/cov/alexander-bikeway-engagement-summary.pdf>

At the open house we were recommending the closure to motor vehicles at Main; this proved problematic to accommodate emergency vehicles and large trucks, as well as access to the seniors' home on the corner. As a result we will be testing the closure just east of the lane, which creates something like a cul-de-sac on your section of Alexander. If this proves successful in reducing volumes while maintaining access (including trucks to the businesses on the south side of the block), we aim to replace it with more permanent materials and would be confident in making more significant changes such as bulges at the Gore/Alexander intersection as well.

Please feel free to give me a call,
Brian

Brian Gould, MCP, P.Eng.
Senior Transportation Design Engineer
City of Vancouver
[tel/ 604.871.6277](tel:604.871.6277)

e-mail brian.gould@vancouver.ca

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Moore, Tyler" <tyler.moore@vancouver.ca>
CC: "Magnusson, Rachel" <Rachel.Magnusson@vancouver.ca>
Date: 11/10/2017 9:51:37 AM
Subject: RE: alexander bikeway
Attachments: RE: Cycling Improvement Projects - Fire and Rescue Review.msg

Hi Tyler,

Thank you for having me over yesterday. A few quick hits on other projects before some notes on Alexander:

- It turns out I actually did reach out to you regarding those modifications to our Cypress design, please see attached
- As expected, our Cambie Bridge project is now live at <http://vancouver.ca/cambiebridge> - glad to hear no concerns with using space SB on the midspan and the off-ramp to 6th
- We will follow-up through Rick's side on the Bute/Robson plaza remaining indefinitely

Alexander

I've quickly checked the two WBR turns with our 47' ladder template, and both will be fine. At the west end, turning nearly 180 degrees is certainly tight, but we can design around a turn from the left lane of Powell. At the east end, the design still has the same 2 lanes plus parking on Powell, and leaves 2 lanes plus parking on Hawks. As a result, the WBR turn is quite easy from the middle of one road to the other despite the turn prohibition and squared-off corner.

Regarding Alexander at Main, thank you for sharing information on how frequent responses to that section of Alexander are and confirming that is the shortest route from Main and Powell as well as a potential new hall in the area. I understand your concerns operating against traffic on a narrower one-way and will continue to explore the automated bollard option. My previous back-up strategy would have been removable metal bollards, but given your feedback I think there is a better back-up strategy, which can be found on Union west of Main: <https://goo.gl/maps/RgY7ZAUvo7D2>

I have seen VPD make use of this as a short-cut on a few occasions, and while this understandably puts a lot of abuse on the bollards it does seem like a possible way forward. We are also looking at two new types of products, a rubberized fence for the Cambie Bridge ramp (<https://youtu.be/eYqhukVWYNc?t=26s>) and a "trick" Gastown-style bollard (<https://gil.glasdon.com/highway-safety/bollards-posts-hazard-markers/victory-tm-bollard>) that might be more appropriate.

From: Moore, Tyler
Sent: Thursday, November 09, 2017 3:34 PM
To: Gould, Brian
Subject: Re: alexander bikeway

All good see you soon.

Tyler Moore
Deputy Chief, Planning and Technical Services / AGM
Vancouver Fire & Rescue Services
900 Heatley Avenue
Vancouver, BC
V6A 3S7
s.15(1)(l) cell
604.665.6054 office
tyler.moore@vancouver.ca
www.vancouver.ca/fire

Sent from my iPhone 6+

On Nov 9, 2017, at 3:32 PM, Gould, Brian <Brian.Gould@vancouver.ca> wrote:

I'm on my way over now, unfortunately Rachel won't be able to join us.

-----Original Appointment-----

From: Moore, Tyler
Sent: Wednesday, November 08, 2017 4:41 PM
To: Moore, Tyler; Magnusson, Rachel; Wilkinson, Jeff
Cc: Gould, Brian
Subject: alexander bikeway
When: Thursday, November 09, 2017 4:00 PM-5:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: VFRS Alternate Board Room

Hi Rachel,


Would tomorrow work for you? We could meet in my office.

Thanks,

Tyler

Tyler Moore
Deputy Chief, Planning and Technical Services / AGM
Vancouver Fire & Rescue Services
900 Heatley Avenue
Vancouver, BC
V6A 3S7
s.15(1)(l) cell
604.665.6054 office
tyler.moore@vancouver.ca
www.vancouver.ca/fire

<< OLE Object: Picture (Device Independent Bitmap) >>

 Please Be Green ♻️ save some trees and print only if necessary

From: Magnusson, Rachel
Sent: Wednesday, November 08, 2017 4:23 PM
To: Moore, Tyler; Wilkinson, Jeff
Cc: Gould, Brian
Subject: RE: alexander bikeway

Hi Tyler and Jeff,

We are heading out to a public open house with design options for Alexander St bikeway on Tuesday, November 21st. It would be great to meet to discuss the design options and get your feedback on them.

Let me know when might be a good time for you. Cheers,
Rachel

From: Magnusson, Rachel
Sent: Monday, August 14, 2017 5:12 PM
To: Moore, Tyler; Wilkinson, Jeff
Cc: Gould, Brian
Subject: alexander bikeway

Hi Tyler and Jeff,

We are exploring a few options for Alexander Street to make it safer for people cycling. We were hoping we might sit down with you to discuss what might work. Do you have some time to meet next week? say Tuesday August 22nd at 4pm?

Rachel

Rachel Magnusson
Engagement Lead
Transportation Planning
Engineering Services

(604) 873 7215
rachel.magnusson@vancouver.ca

From: "Bradley, Jasmine \\\(ECOMM\\)" <Jasmine.Bradley@ecomm911.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 7/17/2018 2:41:08 PM
Subject: RE: Alexander Bikeway Changes

Thank you – I've shared this information with our Operations department.

Kind regards,

Jasmine Bradley, *Corporate Communications Manager*

P: 604-215-5023 / C: 604-603-7245

ecomm911.ca @EComm911_info

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From: Gould, Brian [mailto:Brian.Gould@vancouver.ca]
Sent: Tuesday, July 17, 2018 2:28 PM
To: HLTH.Dutycharge@gov.bc.ca; Jasmine Bradley <Jasmine.Bradley@ecomm911.ca>
Cc: Bike Upgrades <BikeUpgrades@vancouver.ca>
Subject: FW: Alexander Bikeway Changes

Hi,

My apologies if these email addresses are out of date for this sort of information, and please let me know if there is a better option. The Alexander Bikeway is currently being implemented with some traffic pattern changes for the general public which can be found at <https://vancouver.ca/files/cov/alexander-bikeway-notification-letter-final-designs.pdf>

In discussing VFRS' needs in the area, and frequent response from their nearby hall particularly east on Alexander from Main, we landed on a design (to close Alexander to general motor vehicle traffic just east of Main) for ladder apparatus to drive through as often as multiple times per day. As a result, any other emergency vehicles shouldn't have a problem driving through a few IRS bollards.

However, based on the below email where it seems an ambulance detoured around this block, it's worth confirming that design intent and how we might do a better job communicating in the future. It's also totally possible that this was not an emergency response situation (we don't have that information) and this was just the driver taking the shortest legal route.

I should also draw your attention to a westbound right turn ban from Powell to Hawks and a reversed one-way on the westernmost block of Alexander at Maple Tree Square (again, physically possible for as large as a ladder truck to ignore if needed).

Thanks,
Brian

Brian Gould, MCP, P.Eng.

Senior Transportation Design Engineer
City of Vancouver
tel 604.871.6277
e-mail brian.gould@vancouver.ca

From: s.22(1)
Sent: Thursday, July 12, 2018 11:48 AM
To: Bike Upgrades
Subject: Re: Alexander Bikeway Changes

Hi Vania,

Thank you for providing the information on the Alexander bike route 2 months ago.

Now that the changes have been in place for a couple days, I have some observational feedback that I feel is quite important.

Last night while driving home I noted an ambulance attempting to make the turn from Main Street on to Alexander. They had to take time to turn around and travel an extra 2 blocks up, 1 block over and two blocks down where they would have only had to have travelled one block without the barriers in place. This has led me to consider how firetrucks, currently less than 2 blocks away, will now have to reroute.

From what I see, our safety and security has been put at risk. If there was an emergency, seconds count and this is a huge cause for concern for myself and my family living in a now blocked off area. It appears to me this will cause difficulty for essential services to access residents, our buildings and those who are less fortunate that live in the area, people who rely on these services.

I'm always free to chat further.

Thank you.

s.22(1)



On 16 May 2018 at 14:06, Bike Upgrades <BikeUpgrades@vancouver.ca> wrote:

Hi, s.22(1)

Thanks again for chatting on the phone today. As discussed, I'm attaching a link here to the Transportation 2040 Plan for your reference: <http://vancouver.ca/streets-transportation/transportation-2040.aspx>

Regarding the Alexander Street Bikeway, here is some more information about the project and the process: <http://vancouver.ca/streets-transportation/cycling-network-spot-improvement-program.aspx>

Also, I checked in again with the staff lead who was actually at the open house for Alexander, and she mentioned that she does recall some residents of 289 Alexander Street attending the event. So good news is that there was some representation from people in your building who might have had similar concerns as you do. Unfortunately, I understand that it doesn't feel right to be left out of the process if you didn't receive the notification postcard. However, I do hope we can prevent this type of situation as much as possible in the future by designing the postcard differently and/or reexamining our mail-out procedures.

As noted, engineering staff will be monitoring the changes in the months to come, and welcome comments or insights from you throughout the process, as it helps alert us to issues we might need to study further or reassess. Thanks!

Sincerely,
Vania

Transportation Planning Team
City of Vancouver

From: "Zipf, Mike" <Mike.Zipf@vancouver.ca>
To: "Yau, Adrian" <Adrian.Yau@vancouver.ca>
"Gould, Brian" <Brian.Gould@vancouver.ca>
CC: "Tamashiro, Kati" <Kati.Tamashiro@vancouver.ca>
"Lao, Dominic" <Dominic.Lao@vancouver.ca>
"McNeely, Stephanie" <Stephanie.McNeely@vancouver.ca>
"Steiger-Tang, Hailey" <Hailey.Steiger-Tang@vancouver.ca>
"Bracewell, Dale" <dale.bracewell@vancouver.ca>
Date: 4/13/2017 4:20:23 PM
Subject: RE: Alexander St & Main St - Conceptual Design Drawings

Hi Brian and Adrian,

Thanks for the updated Alexander concepts and looping us in for comment. From our review, TPL has the following comments to consider prior to taking out to stakeholders:

s.15(1)(l)

- ☐ The preferred concept should be highlighted when discussing with stakeholders. Option C: bidirectional is preferred from TPL. Some of the rationale:
 - Most likely to provide the AAA cycling connection, if traffic calming (in other options) does not bring volumes below preferred threshold.
 - Provides a portion of the seawall to seawall protected bike lane and easy connection to the Main overpass
 - Provides additional buffering from vehicle traffic for pedestrians on the north side and could form part of a portside greenway
 - Per Brian's notes, it has most long term flexibility as a minor one-way couplet including protected bike lanes. Alexander one way EB and Powel 1 way WB would complement a two-way Cordova
- ☐ All options appear to be workable to discuss with stakeholders.
 - Note that additional traffic calming and changes may be added after implementation if needed to address volume and speeding concerns
- ☐ We should agree upon / confirm a preferred cycling connection for the Main St overpass discussing with Stephanie M., Carol K and others internally. All of the concepts should be able to tie into the preferred overpass connection. It is likely this will be a bidirectional protected bike lane on the east side of the overpass to connect to a future seawall. Also, consider the feasibility of connections with other future N-S cycling routes (i.e. Gore and Heatley or Hawks)
- ☐ All options need to consider and articulate how they can improve the public realm & add to placemaking. (This can form part of the portside greenway.) Can street trees, landscaping, benches etc. be incorporated into the designs?

- Pedestrian improvements including, sidewalk rehab, corner bulges and raised crossings should be included as part of this work. If we can address recent concerns raised from the Strathcona BIA walkabout with Sadhu re: Alexander that would definitely be a win:
 - 400 block Alexander (between Dunlevy & Jackson) ☐ Reduce pedestrian crossing distance around daycare, incorporate traffic bulges
 - ☉ City responds to investigate bulges, but need funds for local improvement
 - Alexander @ Dunlevy & Jackson ☐ frequent speeding through here, and sightlines are concealed due to parked cars. BIA asks for traffic calming measures
 - ☉ City responds to add NSA clearance signs 6m from the intersection to improve sightlines related to parked cars too close to intersection. Speed humps noted as not feasible as is industrial area
 - Alexander 300 and 400 blocks ☐ uneven pavement, road in need of repair.
 - ☉ City responds that thin lift overlay was postponed due to utility conflicts. Paving rescheduled for summer 2017.

Thanks again and have a wonderful long weekend.

Mike Zipf

Senior Engineering Assistant
Transportation Planning | City of Vancouver Engineering Services
507 W Broadway, Vancouver BC V5Z 0B4
P: 604.873.7729
E: mike.zipf@vancouver.ca
vancouver.ca/bikevancouver

From: Yau, Adrian
Sent: Tuesday, April 11, 2017 10:34 AM
To: Gould, Brian; Zipf, Mike
Cc: Tamashiro, Kati; Lao, Dominic; McNeely, Stephanie
Subject: RE: Alexander St & Main St - Conceptual Design Drawings

Hi everyone,

s.15(1)(l)

Updated conceptual designs are saved in the above folder, which shows the NB left from Main to WB Alexander in Option A.

Adrian Yau

From: Gould, Brian
Sent: Wednesday, April 05, 2017 10:16 AM
To: Zipf, Mike; Yau, Adrian
Cc: Tamashiro, Kati; Lao, Dominic; McNeely, Stephanie
Subject: RE: Alexander St & Main St - Conceptual Design Drawings

At DRT we discussed a revised version of A. This would allow the NBL from Main to WB Alexander given that Alexander is one-way EB only a block later. This avoids the awkward lane drop and forced through onto the overpass. I'm not a huge fan of A either, but please assume this is included in A until Adrian has a chance to draw it up formally.

- Past experience suggests 1/3 diverts to local (Railway?), 1/3 arterial (Powell/Cordova), 1/3 disappears. So expect on the order of 700/day to both Cordova and Powell. I have had previous exchanges from Dale where he was expecting alternating one-ways are on the table, which puts us in essentially this same place. About the only way to avoid most impacts on Cordova would be to extend the Alexander two-way protected bike lane on an EB one-way in C so that it's providing the EB with Powell providing the WB. That would be something we could do in conjunction with Water Street; it's a lot of work to build it preemptively, but we could certainly revise Alexander again to support Water (i.e. by making Powell/Alexander a minor one-way couplet to support a two-way Cordova). We also won't have a great picture of local circulation until we start talking to businesses with a few ideas on the table.
- Agreed, and we've been discussing this. Powell is four lanes, and we're connecting to north side bidirectional routes, so likely one lane for bike lane, one lane for parking/bus island/right turn lanes, one lane for through travel, one lane for parking/lefts/maybe rush hour throughs. But be careful: do not sacrifice a guaranteed AAA route with more destinations on a quieter street that can be built in the short term because we *might* get something else *somewhere* that is marginally shorter, especially when that guaranteed route builds the case for Water in the first place. I support the Kati strategy of building Alexander and leaving the door open to Powell.
- We are good for bidirectional on Main St overpass north side or units all along Main in any of these options, in fact Adrian has already drawn many of them up if anyone wants to see it. Gore is unaffected getting it this far north means wiping out all the parking, and it'll be bad regardless, especially if we want continuous separation from traffic on Gore, Alexander, Water, and onward which means finding a way to jam in a protected intersection at Gore/Alexander/Railway. These designs have no impact on Heatley and the Hawks proposal adds traffic calming with the potential for future connections.
- The Alexander roadway is approximately 13m wide; unfortunately if we merely extend the protected bike lane/one-way in C there wouldn't be any extra space for sidewalks unless we remove a side of parking as well. In this respect, a local street bikeway is probably significantly better for walking with narrowed roadway, quiet crossings, bulges at intersections.

From: Zipf, Mike
Sent: Tuesday, April 04, 2017 5:21 PM
To: Yau, Adrian; Gould, Brian
Cc: Tamashiro, Kati; Lao, Dominic; McNeely, Stephanie
Subject: RE: Alexander St & Main St - Conceptual Design Drawings

Thanks Adrian & Brian for the DRT discussion and circulating the early concepts.

From our initial TPL discussion, we think option A will be a non-starter from a neighborhood circulation perspective. It also forces all Main St NB vehicle traffic that pass Powell over the railway overpass which is not ideal.

Our initial comments /questions regarding options B and C are below. We may add to these as we learn more and discuss with Dale next week.

- ☐ We would like to get a broader understanding where diverted vehicle traffic will go and the impacts to neighborhood circulation. We may want to do high level analysis together to better understand this.
- ☐ It looks like this could work with the Gastown project; however, we would like to ensure the Alexander project does not affect the ability to change of Cordova to a two-way street. That potential change may allow for Powell to a medium term AAA bike connection.
- ☐ Need to have some further discussion and clarity to preserve future N-S bike network connections. (1. Main Overpass to the north, 2. Gore or Main to the south, 3. Potential new N-S route at the east side Alexander {Heatley or Hawks}).
- ☐ Consider what additional pedestrian improvements can be included as part of this project. It may be part of a future Portside Greenway route.

Thanks,
Mike

From: Yau, Adrian

Sent: Thursday, March 30, 2017 4:01 PM

To: Clelland, John; Gould, Brian; Komiya, Kenji; Lewis, Toby; Mate, Tibor; Watteyne, Tanner; Yee, Carol; Zipf, Mike

Subject: Alexander St & Main St - Conceptual Design Drawings

Hi everyone,

Thanks for your feedback on the three conceptual designs that were presented in DRT. Linked below are the PDFs of the drawings:

s.15(1)(l)

If you have any comments, please let me or Brian know.

Thanks!

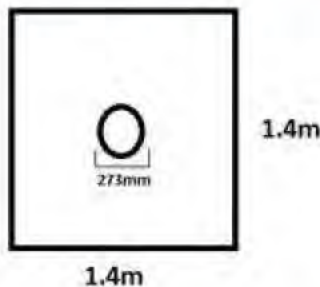
Adrian Yau

Transportation Design Branch | Engineering Services
604-873-7034 | adrian.yau@vancouver.ca

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: Nemenio.Bugarin@bchydro.com
CC: "Charleston, Brian" <Brian.Charleston@vancouver.ca>
Date: 11/8/2017 3:16:40 PM
Subject: RE: Alexander St BC Hydro conflicts

Hi JR,

Regarding the automated bollards, the supplier we have the most information uses a foundation 1.1m deep and a 1.4m square centred on the bollard.



Accounting for 3 bollards, ~0.3m diameter of bollard, spacing at or below 2m gives a maximum total foundation width on the order of 6m. Please let me know if you have additional questions on the automated bollards.

I can produce more detailed drawings regarding the Hydro poles at Hawks given some time, but a passable solution there could be one that shifts the poles closer to the roadway and maximizes the width for cycling between the poles and their guy wires.

Thanks,
Brian

Brian Gould, MCP, P.Eng.
Senior Transportation Design Engineer
City of Vancouver
tel 604.871.6277
e-mail brian.gould@vancouver.ca

From: Charleston, Brian
Sent: Wednesday, November 08, 2017 2:13 PM
To: Gould, Brian
Subject: FW: Alexander St BC Hydro conflicts

Hi Brian,

See note below from BC Hydro. Can you provide JR with as much of this information he has

requested as possible?

Thank you,
Brian

From: Bugarin, JR [<mailto:Nemenio.Bugarin@bchydro.com>]
Sent: Wednesday, November 08, 2017 2:11 PM
To: Charleston, Brian
Subject: FW: Alexander St BC Hydro conflicts

Hi Brian,

Let me know when you are available to meet on site or in your office. I will need plans (survey and /or site plans showing the location of the poles, the proposed works for the bike lane and the details of the bollards listed below: depth, offset, footprint) to be able to discuss options for this request.

If you need a site meeting, Friday (Nov10) looks like a good day: 10 degrees Celsius, 30% chance of < 1mm of rain. I am available after 10 a.m. If Friday does not work and the weather is not cooperating, an office meeting would also work.

I will let you determine the meeting details.

Best,

Nemenio (JR) Bugarin | Design Technician, Distribution Design

BC Hydro
6900 Southpoint Drive
Podium C01
Burnaby, B.C. V3N 4X8

P 604 528 1678
E nemenio.bugarin@bchydro.com

bchydro.com

Smart about power in all we do.

From: Raagner, Tye
Sent: 2017, November 08 10:01 AM
To: Bugarin, JR
Cc: McLarty, Steve
Subject: FW: Alexander St BC Hydro conflicts

Hi JR,

Can you follow up with Brian please? I doubt we can remove/relocate that pole without a major infrastructure redesign (quite costly). As Steve has said below you ll need to get more info for these proposed bollards (depth, offset, footprint, etc.) as there are feeder ducts in the road. Thanks.

~Tye

From: McLarty, Steve
Sent: 2017, November 08 9:19 AM
To: Raagner, Tye
Cc: Sidhu, Amarjit; Alho, Gil
Subject: FW: Alexander St BC Hydro conflicts

Tye, can you have someone comment to the city on this one. As you have noted they are both dead end poles and there is no space to relocate. As far as the bollards we need a lot more info.

Thanx
Steve

From: Alho, Gil
Sent: 2017, November 07 11:37 AM
To: Sidhu, Amarjit
Cc: D'Errico, Stefano; McLarty, Steve; Raagner, Tye
Subject: FW: Alexander St BC Hydro conflicts

Amarjit – please review below and advise CoV accordingly. If necessary forward to Tye or Steve for their input.

Thanks,
Gil

From: Charleston, Brian [<mailto:Brian.Charleston@vancouver.ca>]
Sent: 2017, November 07 11:20 AM
To: Alho, Gil
Subject: Alexander St BC Hydro conflicts

Hi Gil,

Can we set up a meeting with you or one of your delegates to discuss a couple pole relocations and installation of a bollard near a BC Hydro duct bank?

The 2 poles in question are located near the 100 block of Hawks Av and 700 block of Alexander St circled in red below. The current location is in conflict with our proposed bike path.



The second proposal is to install some bollards on Alexander St to stop vehicle access at the 200 block of Alexander St. The initial proposal would be to install the bollards above the BC Hydro duct bank on Alexander circled in red below.



Please let me know who we can meet with on this for further discussion.

Thank you,
Brian

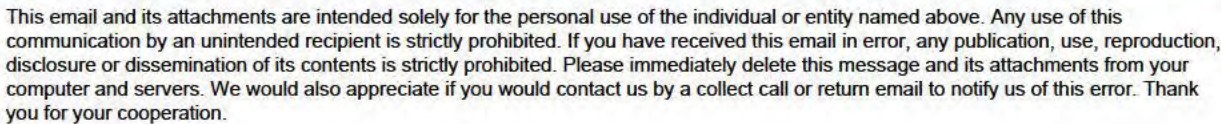
From: Gould, Brian
Sent: Wednesday, November 01, 2017 1:49 PM
To: Charleston, Brian
Cc: Keating, Fiona; Liaw, Alex
Subject: RE: Alexander St Hydro conflicts

Hi Brian,

Didn't catch you by phone, but can pop up before 3pm today. Just got confirmation from Lon and branch heads that we are good to start preparations for our preferred concepts, so I am more comfortable asking Hydro for relocate options on Hawks at Alexander, two poles in question are:



Second issue is on Alexander east of Main, the three dots shown are the automatic bollards in concept (but as noted we are probably shifting them north to avoid sewer along the south curb).







From: "Clark, Rick" <Rick.Clark@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
"Liaw, Alex" <Alex.Liaw@vancouver.ca>
CC: "Swanigan, Sandi" <Sandi.Swanigan@vancouver.ca>
"Magnusson, Rachel" <Rachel.Magnusson@vancouver.ca>
Date: 10/23/2017 11:36:06 AM
Subject: RE: Alexander St Bikeway

Hello Brian,

Thank you to you as well for taking the time last week. I appreciate you hearing all my concerns and was relieved to know that you have been speaking with Cal at Ironworks. The comments below are accurate and noted. Please keep me apprised if there are further design changes or tweaks to the current plans.

Thanks,
Rick

Rick Clark
Operations Manager (Acting)
Film and Special Events
City of Vancouver | 126 Keefer Street | Vancouver BC, V6A 1X4

T. 604.257.8848 | C. 604.358.8307 | E. rick.clark@vancouver.ca

-----Original Message-----

From: Gould, Brian
Sent: Friday, October 20, 2017 5:49 PM
To: Clark, Rick; Liaw, Alex
Cc: Swanigan, Sandi; Magnusson, Rachel
Subject: RE: Alexander St Bikeway

Hi Rick,

Thanks for sitting down this week, and glad it looks like everything is compatible. In addition to asking whether you had anything to add about requirements at the Hawks end or frequency of filming on 000 Alexander that would require a AAA detour along Columbia/Powell, I just wanted note a few things down:

-No significant change in curb space that can be TSZ'd for filming on 200 Alexander is appreciated -Bollards at Main St meeting operational needs of Ironworks Studio should suffice -Single-unit truck access to 000 Alexander is sufficient -No specific concerns about loading/tour zone relocation and two-way Columbia as proposed

-----Original Message-----

From: Clark, Rick
Sent: Friday, October 06, 2017 5:39 PM
To: Liaw, Alex; Gould, Brian
Cc: Swanigan, Sandi; Magnusson, Rachel
Subject: RE: Alexander St Bikeway

Hello Alex,

s.22(1) but would like to discuss these plans further. I have heard anecdotally, that the film industry is somewhat displeased . Perhaps we can discuss more when Brian and I are back s.22(1) ?

Thanks,
Rick

Rick Clark
Operations Manager (Acting)
Film and Special Events
City of Vancouver | 126 Keefer Street | Vancouver BC, V6A 1X4

T. 604.257.8848 | C. 604.358.8307 | E. rick.clark@vancouver.ca

-----Original Message-----

From: Liaw, Alex
Sent: Thursday, October 05, 2017 9:50 AM
To: Gould, Brian; Clark, Rick
Cc: Swanigan, Sandi; Magnusson, Rachel
Subject: RE: Alexander St Bikeway

Hi Rick

Please find attached draft copies of the proposed design for 0-200 block Alexander St.

Thanks,
Alex

-----Original Message-----

From: Gould, Brian
Sent: Thursday, September 21, 2017 6:22 AM
To: Clark, Rick

Cc: Swanigan, Sandi; Magnusson, Rachel; Liaw, Alex
Subject: RE: Alexander St Bikeway

Hello s.22(1) 000 should be fine unless you have anything larger than a single unit truck? There are no publicly available spaces for anything larger, but maybe you work out something else with a TSZ.

I don't think we're currently changing anything on 100 that would affect your parking situation other than access.

As noted, we're working through details on 200 with Cal, but very glad to bring you in and please let us know of anyone else active on that block.

Alex, please check with Adrian tomorrow for the most recent drawings and get Rick a PDF copy as I'd rather find any issues now than as we prep for the open house. (noting we are likely to change the details of the 200 bollards per previous emails if that hasn't already been done) _____

From: Clark, Rick

Sent: September 20, 2017 4:53 PM

To: Gould, Brian

Cc: Swanigan, Sandi; Magnusson, Rachel; Liaw, Alex

Subject: RE: Alexander St Bikeway

Hi Brian,

s.22(1) I'm certainly interested in seeing the plans and any designs to this point.

000-200 Alexander are fairly significant filming blocks that are used for both picture and work truck parking.

I look forward to connecting when you are back.

Thanks,
Rick

Rick Clark

Operations Manager (Acting)

Film and Special Events

City of Vancouver | 126 Keefer Street | Vancouver BC, V6A 1X4 T. 604.257.8848 | C. 604.358.8307 | E. rick.clark@vancouver.ca<mailto:rick.clark@vancouver.ca>

NEW: Office Hours - Monday to Friday - 8:00am to 4:00pm

From: Gould, Brian
Sent: Thursday, September 14, 2017 11:22 AM
To: Clark, Rick
Cc: Swanigan, Sandi; Magnusson, Rachel; Liaw, Alex
Subject: RE: Alexander St Bikeway

Hi Rick,

Trying to catch up on loose ends s.22(1) Your voicemail indicated that you wanted to discuss a few things, so hoping to catch you.

We did have a follow-up meeting with Cal at Ironworks and he seemed to be coming around to the idea of the bollards with large vehicle access. One possible "benefit" of the scheme is that parking between the lane and Main would need to be removed, but could still be given a TSZ, thus we would take the heat for reducing parking rather than his activities.

From: Gould, Brian
Sent: Thursday, August 31, 2017 9:51 AM
To: Clark, Rick
Cc: Swanigan, Sandi; Magnusson, Rachel
Subject: Alexander St Bikeway

Hi Rick,

We have completed a preliminary round of engagement with businesses along Alexander St for a bikeway project (identified and mapped through Transportation 2040). It would seem that we've got something workable to take out to an open house this fall, so are doing a round of internal confirmation.

In addition to already expecting significant filming around Gastown, many of the businesses and BIAs have added emphasis. In particular, I'd like to provide an update on where we seem to be headed for the section from Carrall to just east of Main:

- Conversion of 0 Block Alexander from one-way WB for motor vehicles to one-way EB

- o primarily to convert the head-in angle parking on the left side to back-in angle parking on the right-hand side (safer when we allow cycling in both directions)

- o also provides some traffic calming benefit, but many businesses appreciate the new circulation pattern so it's a bit win-win

o main implication is that a soft turn onto Water Street (easy enough for coach buses and semi-trucks as needed) is replaced by a tight turn from Powell (good for large box trucks and garbage trucks)

- Conversion of Columbia to two-way traffic

o at least Alexander to Powell given the above change, but potentially all the way to Pender

- Full closure to general motor vehicle traffic between Main and the lane east

o we will be following up with Cal at Ironwork Studio with a plan to allow him access for large trucks from Main St with a key for a row of bollards

o he was really opposed to our alternative plans involving one-ways, so this may be the best we can do while addressing this block that's several times over our AAA thresholds for traffic

- No changes beyond a stop sign rotation until past Heatley

o still working on Hawks and a turn restriction, but no significant impacts on access east along Alexander, Railway, etc

I think most of the changes with special event implications are at Maple Tree Square which we're working on somewhat separately (e.g. GGP), but any insight on that side would also be appreciated.

Thanks,
Brian

Brian Gould, MCP, P.Eng.
Senior Transportation Design Engineer
City of Vancouver
tel 604.871.6277
e-mail brian.gould@vancouver.ca<<mailto:brian.gould@vancouver.ca>>

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Charleston, Brian" <Brian.Charleston@vancouver.ca>
CC: "Keating, Fiona" <Fiona.Keating@vancouver.ca>
"Liaw, Alex" <Alex.Liaw@vancouver.ca>
Date: 11/6/2017 10:42:23 AM
Subject: RE: Alexander St Hydro conflicts

Okay, sounds like Hydro is on our critical path on both ends, would suggest contact ASAP then.

I've asked Jad to dig into the re&re, and I don't think we're going into this with a specific timeline. I suspect we would have something similar for the life of this version of the project or the life of the film studio we're accommodating, both of which are indefinite at this point. Next trigger likely the overall Gastown process in ~5 years.

From: Charleston, Brian
Sent: Saturday, November 04, 2017 6:56 AM
To: Gould, Brian
Cc: Keating, Fiona; Liaw, Alex
Subject: RE: Alexander St Hydro conflicts

Hi Brian,

Regarding the proposal for the bollards, we need to notify BC Hydro about the proposal, understand their concerns and mitigate where possible. I wouldn't say right now that placement over the duct bank is feasible until we have a clear understanding from BC Hydro what issues it may present other than just access.

The idea of having a gap in the foundation is not ideal, but it may be one way to look at it. It would be better if they can just be removed and reinstated. The gap would mean the utility alignment would be fixed to specific locations on the road which may not always be feasible. Let's explore the options and discuss further. How long do you see these bollards being in place for?

Thank you,
Brian

From: Gould, Brian
Sent: Wednesday, November 01, 2017 4:10 PM
To: Charleston, Brian
Cc: Keating, Fiona; Liaw, Alex
Subject: RE: Alexander St Hydro conflicts

Thanks for stopping by, notes on our conversation:

- Poles probably can't be removed, but likely options to relocate. Would be best to have Hydro in for a meeting, we'll have CAD drawings to show currently and likely future

locations.

- ☐ Duct bank at Main and Alexander shouldn't stop us, drawings show 300mm minimum cover and the main risk would be if they need repairs in the future
- ☐ Would recommend a gap in the foundation to allow a potential future service of some kind, ~1m would suffice

More detail to follow.

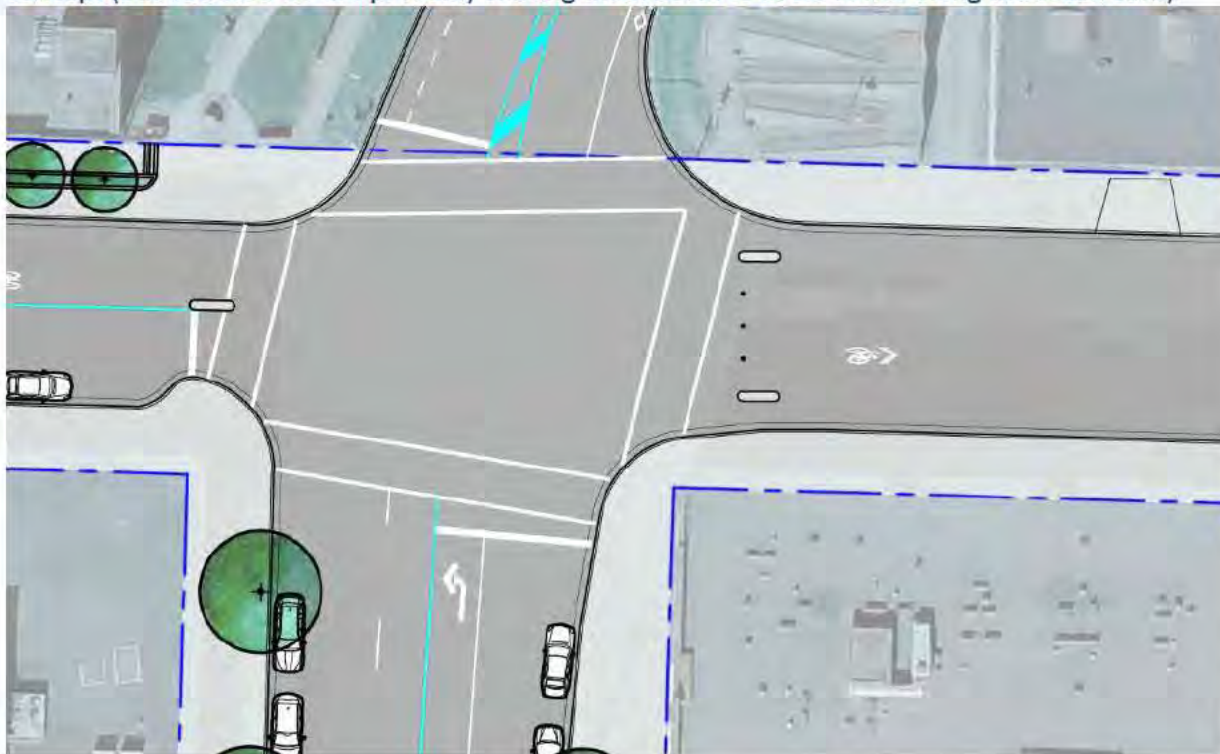
From: Gould, Brian
Sent: Wednesday, November 01, 2017 1:49 PM
To: Charleston, Brian
Cc: Keating, Fiona; Liaw, Alex
Subject: RE: Alexander St Hydro conflicts

Hi Brian,

Didn't catch you by phone, but can pop up before 3pm today. Just got confirmation from Lon and branch heads that we are good to start preparations for our preferred concepts, so I am more comfortable asking Hydro for relocate options on Hawks at Alexander, two poles in question are:



Second issue is on Alexander east of Main, the three dots shown are the automatic bollards in concept (but as noted we are probably shifting them north to avoid sewer along the south curb).



From: Charleston, Brian
Sent: Wednesday, November 01, 2017 10:30 AM
To: Gould, Brian
Cc: Keating, Fiona; Liaw, Alex
Subject: RE: Alexander St Hydro conflicts

Hi Brian,

Can you or one of your engineers give me a brief overview of what we want to do? It would probably be best to do at my computer so we can look at the drawings and maps. I'm available anytime today.

Thank you,
Brian

From: Gould, Brian
Sent: Tuesday, October 31, 2017 5:34 PM
To: Charleston, Brian
Cc: Keating, Fiona; Liaw, Alex
Subject: Alexander St Hydro conflicts

Hi Brian,

Two things regarding Alexander St that Smithe is reminding me to flag sooner rather than later:

- There are a pair of Hydro poles around Alexander/Hawks we may be looking for adjustments to, but we are still three weeks away from consultation. If six months is really the lead time, is it better to ask now and cancel later or leave it until we're pushing 4-5 months?
- There is what appears to be a Hydro vault on the east side of the Main/Alexander intersection and a service heading eastward from there. I am not able to pull up any information from VanMap beyond that, but we are looking at automatic bollards on the east leg of Alexander which would require an underground foundation around 1m deep. Sewers have requested we stay 0.9m clear of their line on the south, which is pushing us closer to Hydro. Any information on clearance, depth, or otherwise would be appreciated, or help making contact.

Thanks,
Brian
<

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Magnusson, Rachel" <Rachel.Magnusson@vancouver.ca>
CC: "Liaw, Alex" <Alex.Liaw@vancouver.ca>
"Smith, Cail" <Cail.Smith@vancouver.ca>
"Yau, Adrian" <Adrian.Yau@vancouver.ca>
Date: 9/14/2017 8:01:10 PM
Subject: RE: Alexander Storyboard

Oh, and if anyone does have a chance to draw things up for Cal, possibly as part of the consultation boards, this is what I would like it to show after doing some tests in AutoTURN:

- 3 bollards spaced 2m apart perpendicular to the Alexander curbs between the stop bar and the crosswalk. Middle bollard centred in the roadway.
- 2m off the centre of those are concrete islands eating up the remainder of the space as necessary, with a bit of straight curb to rest a foot, but not unnecessarily huge
- Islands at the lane and Gore as per Adrian's last concept
- Show parking filling up legal spaces from the lane east, but not within the closure
- Per Diane, sign back at Gore is "No Through Road/Except Bicycles," sign at lane is an oversized no stopping sign with custom text below reading "beyond this point"
- Point out to Cal that this doesn't prevent him from getting TSZs that supercede

From: Gould, Brian
Sent: Thursday, September 14, 2017 5:57 PM
To: Magnusson, Rachel
Cc: Liaw, Alex; Smith, Cail
Subject: Alexander Storyboard

Things I didn't get to:

- Drawing for Cal (want it to show as few bollards as possible just east of the crosswalk while minimum accommodating large trucks) Alex to ask Adrian for help if we want this done before I'm back
- Confirming whether Jen D did manage to approve Ron Fisher's loading zone
- Suggested copy for the Hawks end, but Alex is still working on drawings
- Checking in if contacting property managers re: port access is already happening
- ???

The City of Vancouver is planning to expand the bike network through Downtown and Strathcona along Alexander St with the following main components:

Connections to the existing Carrall Street protected bike lanes at Maple Tree Square
Measures to reduce motor vehicles volumes and speeds, particularly at Main Street
Connections to the existing Powell Overpass protected bike lane at Hawks Street

The new Alexander Street Bikeway will:

- be more comfortable and convenient for people of all ages and abilities
- fill a major gap in the existing network
- be delivered using low-cost approaches that minimize traffic disruption

The route is part of a larger Active Transportation network improvement plan, which was reviewed by Council in December 2015.

We want to hear from you! Please take a few moments to review the information presented here and give us your feedback. Your feedback will be used to help refine the detailed designs. The information presented here is also available on our website at: vancouver.ca/downtownbikenetwork (reuse this brand?)

Standard Transportation 2040 board on cycling (see downtown network expansion)
Show the five year cycling priority map? Note that this would include Water, Gore...

Goals

- Expand connectivity in the bike network around Downtown and Strathcona
- Provide a bikeway where people of all ages and abilities – including children, seniors, and new riders – feel safer and more comfortable

Objectives

- Provide a safer and more comfortable cycling environment by addressing issues at connection points with existing routes
- Reduce conflicts between buses and people cycling, and improve transit operations where possible
- Accommodate the loading and access needs of adjacent businesses, institutions and residences
- Minimize costs and disruption by coordinating with repaving or development where possible, using primarily inexpensive measures such as paint and signs
- Maintain on-street parking where possible

Background

Cycling in Strathcona

Strathcona is part of “Vancouver Port” in the City’s annual panel survey, where residents have made a higher percentage of their trips by bicycle than any neighbourhood in any of the four years of the panel survey, reaching as high as 17% of all trips. The most recent panel survey indicates potential for more: 45% respondents generally use a bicycle two or more times per week in fair weather (highest of the nine zones in Vancouver), and 57% would like to travel by bicycle more (2nd highest). Given the interest in cycling in the area, it is not surprising that the Adanac bikeway on Union Street is the busiest local street bikeway in the City, with 4000 or more trips per day through the spring

and summer. Through the remainder of the year, it is busier than many parts of the seawall.

<http://vancouver.ca/files/cov/transportation-panel-survey-2016-final-report.pdf>

Despite existing ridership and local interest in cycling more, the Adanac bikeway is the only complete connection across Strathcona and most focus recently has been on increased traffic calming along this route. However, delays due to increased rail traffic during rush hours and a lack of other routes make cycling more difficult. To the south, work around the False Creek Flats is expected to ultimately provide a more direct connection between the Central Valley Greenway and seawall, as well as upgrades along Great Northern Way and some north-south connections across the rail tracks. To the north, the Alexander bikeway will initially connect Gastown to the Powell Overpass, shortly thereafter to the Mosaic Bikeway on McLean Drive in Grandview-Woodland, and ultimately to the Second Narrows via the Portside Bikeway on Wall Street.

Map? Highlight nine zones, Strathcona boundary, existing bike routes, dangling ends, some mode share or other numbers.

Alexander Street

For some time, Alexander Street has served as an informal cycling connection, being significantly quieter than Powell and Cordova while providing one of the shortest connections between protected bike lanes on the Powell Overpass and Carrall Street. Nevertheless, issues have been identified to be addressed including:

- ☐ Difficult connections at either end, and a one-way block at the west end without an official cycling exemption
- ☐ Short-cutting general motor vehicle traffic and heavy industrial traffic
- ☐ Motor vehicle volumes significantly higher than considered appropriate for all ages and abilities cycling, particularly east of Main Street
- ☐ Some collisions involving people cycling at either end, and particularly at Main Street
- ☐ No push buttons for people cycling to activate the signal at Main Street
- ☐ Poor pavement quality, particularly through the middle of the route (recently addressed through the City's thin lift overlay program)

Map? Highlight the above points, bike route context, and the three areas for future boards (#1: Maple Tree Square, 00 Alexander, Columbia; #2: Alexander just east of Main; #3, Hawks and Powell) also highlight rotated stop sign at Alexander/Dunlevy (note to self: get count to support)

Motor vehicle volumes, possibly to combine into map:

Midweek Daily Average			
Block	Total	EB	WB
0	1400		1400
100	2200	1000	1200
200	4400	2050	2350
400	2500	1200	1300
700	1600	750	850

Typical peak hour motor vehicle counts at Main/Alexander (show here or section 2?)

	SBR	SBT	SBL		
	10	220	75	50	WBR
				50	WBT
EBL	10			40	WBL
EBT	40				
EBR	40		20	275	80
			NBL	NBT	NBR

Proposals for three sections follow, with a recommended option and any other configurations we explored. Changes along the remainder of the route are relatively minor: paint and wayfinding signs to indicate it is a bike route, 30km/h speed limits as is typical along local street bikeways, and rotating the two-way stop at Dunlevy to favour Alexander.

Section 1: Maple Tree Square to Columbia (see 2017-59 phase 2, Alexander drawings)

Building off changes this summer, further relocations of bollards at Maple Tree Square expand sidewalk and seating space, facilitate bicycle crossings, and simplify traffic flow. Converting the 00 block of Alexander St to one-way eastbound for motor vehicles with back-in angle parking allows for safe two-way bicycle traffic while also supporting circulation to businesses and reducing through traffic along the bikeway. Two-way traffic on Columbia likewise helps facilitate circulation in the area.

- ☐ New combination loading/taxi zone (*Water Street just west of Carrall past new bulge*)
- ☐ Additional sidewalk space and potential street furniture (e.g. Mobi station, detached patio) (*Water Street just west of Carrall – new bulge*)
- ☐ Additional sidewalk space and potential semi-circular bench around Gassy Jack statue
- ☐ Extend protected bike lane bollards up to Water Street (*SB Carrall*)
- ☐ Realign bollards to accommodate westbound motor vehicle right turns to Alexander St, bike crossings (*Alexander at Powell*)
- ☐ Mark zebra crosswalks and consider relocating to more direct crossings (*applies to all, but specifically crosswalks of Powell and Alexander*)
- ☐ Expanded public space from summer pilot project, additional seating to be confirmed (*point to south and north where we expanded the sidewalk*)
- ☐ Signs and potential dashed paint markings to identify bike crossing to drivers (no change to right-of-way) (*middle of intersection*)
- ☐ Formalize right lane of Powell to Water, left lane to Carrall, and mark dotted line through intersection (*middle of intersection*)
- ☐ Additional bike parking, with other locations to be identified (*just in front of Vera's on the wide PBL*)
- ☐ Convert tour bus/taxi zone to loading/taxi zone (*Powell just east of Alexander*)
- ☐ Potential relocated tour bus zone (*north side of Powell just west of Columbia*)
- ☐ Convert one-way westbound for motor vehicles to eastbound (*00 block Alexander*)
- ☐ Allow two-way for bicycles in mixed traffic (*00 block Alexander*)

- ☐ Convert angled parking to back-in angled parking (*00 block Alexander*)
- ☐ Prohibit westbound motor vehicles on Alexander past Columbia (*new island for partial closure*)
- ☐ Convert Columbia to two-way traffic on at least the 100 block initially, consider full length of Columbia (*100 block Columbia*)
- ☐ Potential changes to 100 Alexander shown in section 2 (*Alexander just east of Columbia*)

Section 2: Columbia to Dunlevy

This section around Main Street is complicated by the highest motor vehicle volumes along Alexander, nearly ten times higher than our target volumes for All Ages and Abilities cycling. Furthermore, there is no one significant pattern to this traffic, which includes both Alexander and Railway access to Main Street, Water Street, and the port via the rail overpass.

Overall approach

- ☐ Reduce motor vehicle volumes and speeds along Alexander in the vicinity of Main by restricting motor vehicle access between Main Street and Alexander to the east.
- ☐ Maintain as much parking and local access as possible given the above
- ☐ Provide push buttons for people cycling along Alexander at the Main Street signal
- ☐ Rotate the Dunlevy stop sign to favour Alexander

2a – Full closure to motor vehicles just east of Main (Recommended)

This configuration addresses high motor vehicle volumes on the 200 block of Alexander by closing the east leg of Alexander to motor vehicles at Main Street. No access for general traffic or parking will be provided between Main and the lane east, although access for film crews, large trucks, and to the private parking lot will be retained. This option is expected to be the simplest and least impactful on overall circulation through the neighbourhood, as well as being the most effective at reducing volumes along Alexander Street generally without violations.

- ☐ Explain based on Adrian's map. Highlight that bollards would be used to allow large truck access to the closed section, and that access to the parking lot will be maintained from the Gore end
- ☐ Convert two metered parking spaces on Main Street to a passenger zone (*skip two spaces on the east side of Main south of Alexander and label the next two*)
- ☐ Explore measures to reduce root heave on sidewalks (*SE corner of Main/Alexander*)

2b – Median diverter at Main, one-way streets converging at Gore (Alternate)

This configuration adds a median diverter along Main Street to prevent left turns and drivers travelling through along Alexander. As this is not expected to prevent enough short-cutting motor vehicles, alternating one-way blocks to the east have been overlaid. Given the wide roadway, protected bike lanes in the opposite direction may be required to retain parking on both sides safely. This configuration results in the most complications for local traffic circulation around Main Street.

- ☐ Explain based on Adrian's map.

2c – Two-way protected bike lane with one-way eastbound motor vehicles (Alternate)

This configuration aims to reduce motor vehicle volumes less in the vicinity of Main Street by providing a protected bike lane. However, to retain parking, motor vehicle traffic would be

restricted to eastbound only, matching the 00 block of Alexander. Although this treatment could continue further east, it has been shown ending at Gore with converging one-ways like in 2b; from this point forward, people cycling begin sharing the roadway in mixed traffic again. Allowing eastbound left turns across the protected bike lane would likely require relocating the Mobi station and may have safety implications for people cycling. This configuration is somewhat similar to 2b, despite taking a different approach to start.

- Explain based on Adrian's map, which needs to be updated to confirm all movements at Main are permitted except the EBL and those against the one-way Alexander

Section 3: Heatley to Powell

Next Steps

- Staff will refine the concepts based on feedback from local businesses, residents, other stakeholders, and the public
- Staff will continue to work with individual businesses who have identified concerns along the corridors
- Improvements are targeted for completion in early 2018

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: s.22(1)
CC: s.22(1)
"Keating, Fiona" <Fiona.Keating@vancouver.ca>
"Bike Upgrades" <BikeUpgrades@vancouver.ca>
Date: 7/23/2018 10:20:37 AM
Subject: RE: Alexander Street Bike Facility Project

Hi s.22(1)

Anecdotally during rush hours I'm seeing about half of folks in the lane make the left turn toward Gore, and I think we can run a simple origin-destination study shortly to see what other options may be available.

Ideally the closure to motor vehicles would be at Main Street as per the open house, but we ran into issues with large vehicle access as discussed. To be more specific, semi- and other large trucks backing into driveways to the northwest and southeast of what we installed meant that this angle worked while the other appeared not to. We will confirm this again.

There are other relevant pieces of the design that have not yet been installed, including switching from a right turn lane to a left turn lane on Main at Alexander as well as signs on Main and Gore before drivers turn onto Alexander. These signs will include the local access language you suggest, although that is not enforceable.

Best,
Brian

From: s.22(1)
Sent: Sunday, July 22, 2018 3:26 PM
To: Gould, Brian
Cc: s.22(1); Keating, Fiona; Bike Upgrades
Subject: Re: Alexander Street Bike Facility Project

Hi Brian,

I just wanted to follow up on my emails below. Over the last two weeks there hasn't really been any change in the traffic flow through the lane s.22(1). Any car that is turning eastbound onto Alexander Street just travels through the lane to get past the bollards that have been installed on the east side of our lane. Having walked past there today it is actually quite understandable why this is the case as the signage on the concrete barriers simply directs traffic into the lane, there is no suggestion that this is not the new traffic pattern (see attached photo). Why would anyone turn around and go up Main Street to Cordova and then north to get back to Alexander when they are directed into the lane for a one block detour? I am sure there are some simple solutions to this problem. At a minimum change the signage beside the bollards to indicate "local access only" rather than the current signage which indicates this is the new approved route for all traffic. Preferably, move the bollards to the west side of the lane, restricting any traffic from entering Alexander east of Main, and forcing traffic up Main since this is a road fit for purpose. The current solution is allowing traffic into Alexander then *specifically directing it up our laneway*.

The noise levels from traffic is an increase from prior to the installation of the bollards and is very noticeable: stereos from cars, motorcycles and delivery trucks.

I'd be grateful if you could give us an update on your own findings, since the signage that has been put up is making the problem worse instead of better.

Regards,

s.22(1)

On Thursday, July 12, 2018, 7:52:06 p.m. PDT, s.22(1) wrote:

Hi Brian,

Thanks for the prompt response and the commitment to monitor the situation going forward. We will do the same and get back in touch if our concerns persist.

Regards,

s.22(1)

Sent from my iPhone

On Jul. 12, 2018, at 13:00, Gould, Brian <Brian.Gould@vancouver.ca> wrote:

Hi s.22(1)

Thank you for your feedback and patience during this adjustment period. Yesterday in particular was difficult with the traffic management as part of the Gastown Grand Prix, which included restrictions on Alexander and Powell west of Main. As a result, an unusually large amount of traffic was finding its way to Main and Alexander, with drivers likely choosing your lane to avoid circling back to Main and Powell. Additionally, we can find it takes a few weeks for drivers to become more familiar with new restrictions, after which the majority will begin using alternate arterial streets.

Through our open house and other consultation in the area we identified several issues with large vehicle access in the area that led us to the current design, and specifically with maintaining access to The Ironworks and for frequent VFRS response. At the same time, we wanted to keep the number of restrictions to a minimum recognizing the trade-offs with resident access.

The boundaries for our notification letter did include your home, and with IDRS targeting the mail-out should have made it into individual units. Our apologies. As you've noticed, we

further modified the design and selected materials that are easier to adjust to help us manage any significant side effects. I will continue to visit the area to observe your lane, and once new traffic patterns are settled in we can request a traffic count. Depending on what direction this traffic is arriving at Alexander and Main Street, we may be able to fine tune the traffic restrictions there or in your lane.

Thanks,

Brian

Brian Gould, MCP, P.Eng.

Senior Transportation Design Engineer

City of Vancouver

From: s.22(1)
Date: July 12, 2018 at 10:02:06 AM PDT
To: "fiona.keating@vancouver.ca" <fiona.keating@vancouver.ca>
Cc: "BikeUpgrades@vancouver.ca" <BikeUpgrades@vancouver.ca>, s.22(1)
s.22(1)
Subject: Alexander Street Bike Facility Project

Hi Fiona,

I am a resident at s.22(1) and I have s.22(1) to find that the lane at s.22(1) is being used as a traffic thoroughfare due to bollards that have been installed on Alexander Street restricting east and westbound through traffic east of Main Street. These new bollards are directing traffic southbound along the lane between Alexander Street and Powell Street. This is the lane via which s.22(1) If the traffic destination is the east end of Alexander Street they are then taking the east/west section of the lane which runs to Gore Street (at speed). After doing some digging online I discovered the Alexander Street Bike Facility Project on the City's website: as residents of 253 Powell Street we have never received a notification about this project or the open house that happened in November last year.

With some online research we have reviewed the final design notification letter (<https://vancouver.ca/files/cov/alexander-bikeway-notification-letter-final-designs.pdf>), which

we again have never received. Although we were not consulted, we would like to indicate that there needs to be urgent action taken by the City to provide traffic calming or restricting the use of this lane to the people who need to use it for access rather than as a new thoroughfare. This lane is predominantly used for residential parking access (including backing into residences and blocking the lane while waiting for gates to open/close), parking for an industrial unit, back doors from restaurant facilities to access refuse and delivery trucks servicing the restaurants. The lane is also single lane which creates safety issues with bi-directional traffic. Plus as a residential property, having this lane as a new thoroughfare is creating a lot of additional traffic noise in our property at all hours of the day.

I would be grateful if you could please respond and provide detail of the City's plans to ensure the safety of the resident and business users of these lanes. Please feel free to call me at s.22(1)

Many Thanks,

s.22(1)

From: s.22(1)
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
CC: debs.riddick@gmail.com
"Keating, Fiona" <Fiona.Keating@vancouver.ca>
"Bike Upgrades" <BikeUpgrades@vancouver.ca>
Date: 7/22/2018 3:25:30 PM
Subject: Re: Alexander Street Bike Facility Project
Attachments: IMG_5241.JPG

Hi Brian,

I just wanted to follow up on my emails below. Over the last two weeks there hasn't really been any change in the traffic flow through the lane s.22(1). Any car that is turning eastbound onto Alexander Street just travels through the lane to get past the bollards that have been installed on the east side of our lane. Having walked past there today it is actually quite understandable why this is the case as the signage on the concrete barriers simply directs traffic into the lane, there is no suggestion that this is not the new traffic pattern (see attached photo). Why would anyone turn around and go up Main Street to Cordova and then north to get back to Alexander when they are directed into the lane for a one block detour? I am sure there are some simple solutions to this problem. At a minimum change the signage beside the bollards to indicate "local access only" rather than the current signage which indicates this is the new approved route for all traffic. Preferably, move the bollards to the west side of the lane, restricting any traffic from entering Alexander east of Main, and forcing traffic up Main since this is a road fit for purpose. The current solution is allowing traffic into Alexander then *specifically directing it* up our laneway.

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s.22(1)

On Thursday, July 12, 2018, 7:52:06 p.m. PDT, s.22(1) wrote:

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On Jul. 12, 2018, at 13:00, Gould, Brian <Brian.Gould@vancouver.ca> wrote:

Hi s.22(1)

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Through our open house and other consultation in the area we identified several issues with large vehicle access in the area that led us to the current design, and specifically with maintaining access to The Ironworks and for frequent VFRS response. At the same time, we wanted to keep the number of restrictions to a minimum recognizing the trade-offs with resident access.

The boundaries for our notification letter did include your home, and with IDRS targeting the mail-out should have made it into individual units. Our apologies. As you've noticed, we further modified the design and selected materials that are easier to adjust to help us manage any significant side effects. I will continue to visit the area to observe your lane, and once new traffic patterns are settled in we can request a traffic count. Depending on what direction this traffic is arriving at Alexander and Main Street, we may be able to fine tune the traffic restrictions there or in your lane.

Thanks,

Brian

Brian Gould, MCP, P.Eng.

Senior Transportation Design Engineer

City of Vancouver

From: Stuart Riddick s.22(1)

Date: July 12, 2018 at 10:02:06 AM PDT

To: "fiona.keating@vancouver.ca" <fiona.keating@vancouver.ca>

Cc: "BikeUpgrades@vancouver.ca" <BikeUpgrades@vancouver.ca>, s.22(1)
s.22(1)

Subject: Alexander Street Bike Facility Project

Hi Fiona,

I am a resident a s.22(1) and s.22(1) to find that the lane at the s.22(1) is being used as a traffic thoroughfare due to bollards that have been installed on Alexander Street restricting east and westbound through traffic east of Main Street. These new bollards are directing traffic southbound along the lane between Alexander Street and Powell Street. This is the lane via which s.22(1) If the traffic destination is the east end of Alexander Street they are then taking the east/west section of the lane which runs to Gore Street (at speed). After doing some digging online I discovered the Alexander Street Bike Facility Project on the City's website: as residents of 253 Powell Street we have never received a notification about this project or the open house that happened in November last year.

With some online research we have reviewed the final design notification letter (<https://vancouver.ca/files/cov/alexander-bikeway-notification-letter-final-designs.pdf>), which we again have never received. Although we were not consulted, we would like to indicate that there needs to be urgent action taken by the City to provide traffic calming or restricting the use of this lane to the people who need to use it for access rather than as a new thoroughfare. This lane is predominantly used for residential parking access (including backing into residences and blocking the lane while waiting for gates to open/close), parking for an industrial unit, back doors from restaurant facilities to access refuse and delivery trucks servicing the restaurants. The lane is also single lane which creates safety issues with bi-directional traffic. Plus as a residential property, having this lane as a new thoroughfare is creating a lot of additional traffic noise in our property at all hours of the day.

I would be grateful if you could please respond and provide detail of the City's plans to ensure the safety of the resident and business users of these lanes. Please feel free to call me at s.22(1)

Many Thanks,

s.22(1)



From: "Lou Filippo" s.22(1)
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
CC: "Bike Upgrades" <BikeUpgrades@vancouver.ca>
Date: 5/2/2018 1:06:55 PM
Subject: Re: Alexander Street bikeway

Thank you for the response.

As I overlook the area in question, I can assure you it is considerably more than twice a day. I assume this will be done with temporary barriers so it can be fixed once the results are known.

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: Gould, Brian
Sent: Wednesday, May 2, 2018 12:46 PM
To: s.22(1)
Cc: Bike Upgrades
Subject: RE: Alexander Street bikeway

Dear s.22(1)

Thank you for your feedback on the planned changes to Alexander Street east of Main. We met with VFRS early in the process and understand they have been responding about twice a day to that portion of Alexander as you say. We frequently design traffic diverters like this to accommodate emergency services, and on the whole they were more supportive of this configuration than the alternatives which involved a narrower roadway and alternating one-way travel. Although the design we will implement initially is based on other successful locations, we will also be testing a new product with VFRS next week that could be a future upgrade.

In either case, we expect there to be minimal delay passing through the diverter, and from that point forward the reduced traffic volumes and stop sign change at Dunlevy would be a benefit to their operations. A roundabout would also slow emergency response somewhat, but without the reduced traffic volumes on Alexander that are a key objective of the project.

We expect that the main effect of the project will be to redirect short-cutting traffic from Alexander to Powell and Cordova. Local access traffic patterns sometimes take some time to adjust, but we will investigate any unintended traffic impacts, so please do let us know via the cc'd email account.

Sincerely,
Brian

Brian Gould, MCP, P.Eng.
Senior Transportation Design Engineer
City of Vancouver
e-mail brian.gould@vancouver.ca

From: s.22(1)
Sent: Wednesday, May 02, 2018 10:34 AM
To: Gould, Brian
Subject: Alexander Street bikeway

Brian, I am a resident of the area and the proposed blocking of Alexander is an extremely shortsighted idea. The fire hall at Main and Powell comes eastbound on Alexander multiple times a day for emergency response. This blockage will force them to go up to Cordova, across to who knows where and then back down 2 blocks. It would be modest to say this will add 2-3 minutes for a response. That 2-3 minutes could be the difference in the subject surviving.

The easiest solution was, is, and always will be a roundabout at Gore and Alexander. There is no doubt that the plan put forward will increase congestion.

Regards

Sent from my BlackBerry 10 smartphone on the TELUS network.

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Keating, Fiona" <Fiona.Keating@vancouver.ca>
CC: "Storer, Paul" <paul.storer@vancouver.ca>
Date: 4/23/2018 2:12:55 PM
Subject: RE: Alexander Street Bikeway

Yes, please proceed with IRS with the hope that we can confirm the other product in the future. If the IRS don't hold up, we may use that as leverage to swap it in as an "on-site test," but hopefully they do a decent job there.

s.22(3)(d) but we're trying to move the two outstanding drawings forward shortly. Is there anything else (other than the obvious) that I can support on while we wait?

From: Keating, Fiona
Sent: Monday, April 23, 2018 1:58 PM
To: Gould, Brian
Cc: Storer, Paul
Subject: RE: Alexander Street Bikeway

Hi Brian,

I want to confirm we're going with the IRS bollards. I haven't heard anything about the flexible barrier since.

Please confirm.

Thanks,
Fiona

From: Gould, Brian
Sent: Monday, March 12, 2018 10:49 AM
To: Keating, Fiona
Cc: Storer, Paul
Subject: RE: Alexander Street Bikeway

1. Hawks
 - a. I have the revision sealed at my desk. For completeness, I'm still planning to give Paul a chance to see and sign, should be to you and Hydro this afternoon to action.
2. Main Street approved geometric
 - a. No stopping anytime. We identified the necessary parking regulations before the sign plan to help understand the implications, but for construction those make little difference.
 - b. We have the flexible barrier in storage and around the 6th if you'd like to see it; it's a new product and before it hit the port we don't think it had ever been to this continent, we can't get a successful test with Fire and otherwise in time we will proceed with the yellow IRS bollards and it might be good to reserve them. Interpret the drawing as yellow IRS bollards until or unless proven otherwise by

Transportation.

3. Maple Tree Square
 - a. Great, thanks.
 - b. We are hung up again on the BIA regarding details, but to reiterate my earlier comments:
 - It's not possible to relocate the crosswalk west of the grates as this would be in line with the north leg of Carrall and not with Alexander
 - The exact location of the crosswalk in its easterly spot is mostly inconsequential for whether people walking would cross over the grates they'll be on the wrong side from Gassy Jack and we can only look at straightening it a bit. If we do, however, we'll just be encouraging people walking into the same space we expect most of the bikes to be even though it won't be marked as a bike path.

From: Keating, Fiona
Sent: Monday, March 12, 2018 10:18 AM
To: Gould, Brian
Cc: Storer, Paul
Subject: RE: Alexander Street Bikeway

Hi Brian,

Just want to see how the project is progressing and ask some questions.

1. Hawks
 - a. Any resolution with BC Hydro? Any work near the tracks will require CP to sign off on as well.
2. Main Street approved geometric
 - a. What does NSAT stand for?
 - b. The call out for IRS vs Flexible Barrier who owns this decision?
3. Maple Tree Square
 - a. I've sent a follow up email to Kevin Priest to find out about the bollard prototyping. Hopefully hear about that soon.
 - b. Were you able to relocate the crosswalk so we avoid having pedestrians crossing over the CB grates?

Thank you,

Fiona Keating P.Eng.
Project Manager
City of Vancouver | Streets & Electrical Design
Tel: 604-326-4814 | Fax: 604-873-7212
Email: fiona.keating@vancouver.ca

From: Gould, Brian
Sent: Wednesday, March 07, 2018 12:13 PM
To: Lewis, Toby; Keating, Fiona
Subject: RE: Alexander Street Bikeway

Hi Toby,

A few updates on various subjects:

- The geometric for Main (2014-87) is Director approved and can be officially used in the electrical design now
- The geometric for Hawks (2017-160) will have a minor revision imminently north of the driveway to accommodate BC Hydro requirements (i.e. not affecting traffic signal, but maybe street lighting decisions)
- I gather we are close to approving the northern block of two-way Columbia, could you please estimate ballpark cost for the Columbia/Powell signal (and particularly expected contribution from TDE as Paul is sensitive to cost)?

From: Lewis, Toby
Sent: Friday, February 16, 2018 3:30 PM
To: Keating, Fiona
Cc: Gould, Brian; Storer, Paul
Subject: RE: Alexander Street Bikeway

Hi Fiona

These are all preliminary. Arun was just assigned to review.

Work would have to be coordinated with the rest of the project. Main requirement would be Columbia two-way: All the signal equipment would need to be in place and energized in coordination with the new paint plan.

Re: budget that would be something Brian and Paul need to comment on.

From: Keating, Fiona
Sent: Friday, February 16, 2018 2:56 PM
To: Lewis, Toby
Subject: FW: Alexander Street Bikeway

Hi Toby,

Just want to clarify these are just preliminary drawings correct?
What is the expectation for construction completion?

We didn't budget for any signal work at Hawks and Main, and I'd have to review the capacity of our crews.

Thanks!
Fiona

From: Epa, Duminda
Sent: Friday, February 16, 2018 2:08 PM
To: Kumar, Arun
Cc: Lewis, Toby; Keating, Fiona

Subject: FW: Alexander Street Bikeway

Arun
Please review,
Duminda

From: Lewis, Toby
Sent: Tuesday, February 13, 2018 11:29 AM
To: Epa, Duminda
Cc: Keating, Fiona
Subject: Alexander Street Bikeway

Hi Duminda

Please assign a designer to review the attached base plans and let us know who it is.

They are required as part of the Alexander Street Bikeway project that is being delivered in May

Fiona Is Streets paving Columbia? Or paint changes only.

Thanks.

Toby

Toby Lewis, Eng.L.
City of Vancouver | Engineering
Traffic & Data Management Branch
507 W Broadway | Vancouver, BC V5Z 0B4
tel: 604.873.7342 | Fax: 604.873.7212
e-mail: toby.lewis@vancouver.ca

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Yau, Adrian" <Adrian.Yau@vancouver.ca>
Date: 7/19/2017 9:38:11 AM
Subject: RE: Alexander tests and alternates

I have more information based on a meeting with Gastown.

- ☐ Definite interest in the two-way conversion of Columbia, including all the way south to Pender. Will need to look at all the implications for turns and curb use, as well as make a list of signal modifications needed. Could wait until a high level conversation, but is this something you want to tackle?
- ☐ Looks like a preference for Option A, so will be more interest in modifications to make it better for Ironworks as well as your diagonal alternatives.
- ☐ One method I think has some promise is that we close the half block between the lane and Main to motor vehicles, but with ~~no~~ entry except authorized vehicles at the east end and allowing Ironworks to access their driveways freely from the east. The west end would have some kind of retractable/automatic bollard as necessary to allow semis in. East of the lane, see if we can get more parking on the south-side with back-in angled parking. Both just west of the lane and just west of Gore, look into whether we could fit a tiny island to mount the no entry or no through road signs in visible locations. Some worse ideas in the list below.

I believe the following aren't great ideas, but you're welcome to prove me wrong:

- ☐ Use the westernmost bit of angle parking on Alexander at Water as a cul-de-sac so as to cut off Alexander from Water/Powell for motor vehicles
- ☐ Modify Option A so that all we do is drop barrier along the east crosswalk at Main Street, and anyone can drive past the lane freely to access driveways or park on the south side. I assume awkward truck movements and u-turns to access parking will break this one
- ☐ Modify Option A so that you can only get to the 200 block of Alexander by using the lane, it would be one-way westbound to the west and one-way eastbound to the east for motor vehicles. Large trucks would likely need some kind of exemption

From: Gould, Brian
Sent: Tuesday, July 11, 2017 2:52 PM
To: Yau, Adrian
Subject: Alexander tests and alternates

Hi Adrian,

Not the best reception from Cal, the owner of the Ironworks Studios and the building it sits in, as well as (it sounds like) the Burrard Iron Works across the street. s.22(3)(f)

s.22(3)(f)

Please confirm whether these work already or can be made to work:

1. WB-15 backing into and then exiting the driveway next to the Main St overpass, if not both driveways on the north side. For this one, you can assume some parking on the north side is stripped with a temporary special zone because apparently that's already how they operate

2. SU-9 in and out of each of these driveways, as well as backing in and out as well since there isn't room to turn around (without any parking stripped)
3. WB-15 backing into Burrard Iron Works and getting back out (without any parking stripped)

I assume Option A fails hard on points 1 and 3, but would be interested in discussing if it could be made to work if we had automatic bollards instead of barriers. I think Options B and C will do alright.

I would also be interested in tests for a few other things, with more as we come up with them:

- Would anything work better with a one-way WB for motor vehicles just east of Main? Maybe we even let them exit their driveways and head east? Assume no other traffic calming at Main.
- What would a traffic circle look like on this street that still accommodated vehicles up to WB-15 at least straight and/or right turns we typically design such that motor vehicles aren't pushed into the crosswalks (so might need bulges) and would need significant mountable area for the semis.
- Diagonal diverters at Dunlevy or Jackson, likely oriented to turn NB into EB (I'm not sure about this, but I'm looking for something that doesn't involve one-ways or the full closure at Main)
- Full closure just west of Main St??!1!!
- Please come up with some better ideas.

From: "Magnusson, Rachel" <Rachel.Magnusson@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
"Keating, Fiona" <Fiona.Keating@vancouver.ca>
CC: "Bike Upgrades" <BikeUpgrades@vancouver.ca>
Date: 5/1/2018 12:15:41 PM
Subject: RE: Alexander/Main - Resident Concern

Hi Fiona and Brian,

I think our notifications started arriving yesterday – that's when Cal got his at Main/Alexander. If the caller lives in the area, it could be that he hasn't received it yet. You can also direct them to the website vancouver.ca/spotimprovements

Thanks Fiona,
Rachel

From: Gould, Brian
Sent: Tuesday, May 01, 2018 11:55 AM
To: Keating, Fiona
Cc: Bike Upgrades; Magnusson, Rachel
Subject: RE: Alexander/Main - Resident Concern

Hi Fiona,

If they are actually related to the Alexander project we can take those at Bike Upgrades. First though, I want to check in with Rachel on whether we did get our notifications out of order here, because I'm seeing little evidence that Transportation's has been received by anyone.

From: Keating, Fiona
Sent: Tuesday, May 01, 2018 11:27 AM
To: Gould, Brian
Cc: Gastown Streets
Subject: Alexander/Main - Resident Concern

Hi Brian,

Here's another one:

s.22(1)

Particularly concerned about the Alexander/Main changes and wanted to know why he wasn't made aware of what was being decided on post public engagement.

Fiona

From: Gould, Brian

Sent: Monday, April 30, 2018 1:25 PM
To: Keating, Fiona
Cc: Gastown Streets
Subject: RE: Maple Tree Square - Pavement Condition

Thanks Fiona, we can steer these to the project account (cc'd) since this very thing is the main trigger.

vancouver.ca/gastown is the vanity URL for that project which may be useful over the phone if it comes up again.

From: Keating, Fiona
Sent: Monday, April 30, 2018 1:21 PM
To: Gould, Brian
Subject: Maple Tree Square - Pavement Condition

Hi Brian,

I got a phone call from a concerned resident (who got our construction notice) about the pavement condition of Maple Tree Square and she was wondering how she can get more information on the long term plan for this area.

I wasn't sure myself, so I was hoping you could help steer her towards some better information regarding this?

s.22(1)

s.22(1)

She lives s.22(1)

Thanks,

Fiona Keating P.Eng.
Project Manager
City of Vancouver | Streets & Electrical Design
Tel: 604-326-4814 | Fax: 604-873-7212
Email: fiona.keating@vancouver.ca

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Keating, Fiona" <Fiona.Keating@vancouver.ca>
CC: "Larijani, Alipasha" <Alipasha.Larijani@vancouver.ca>
"Storer, Paul" <paul.storer@vancouver.ca>
"Mital, Eric" <Eric.Mital@vancouver.ca>
"Bike Upgrades" <BikeUpgrades@vancouver.ca>
"Magnusson, Rachel" <Rachel.Magnusson@vancouver.ca>
Date: 7/16/2018 8:50:31 AM
Subject: RE: Alexander/Main 311 Calls

Thanks, since the first and last are both public process, I'd like to discuss with Rachel, but they're with us.

From: Keating, Fiona
Sent: Monday, July 16, 2018 7:28 AM
To: Gould, Brian
Cc: Larijani, Alipasha; Storer, Paul; Mital, Eric
Subject: Alexander/Main 311 Calls

Hi Brian,

I have the following messages ☐ will let them know their concerns have been passed on to you and that you☐ be following up with them.

1. s.22(1) [REDACTED]
s.22(1) [REDACTED]
2. s.22(1) ☐he just wanted to complain but doesn☐ want a callback.
3. s.22(1) [REDACTED]
s.22(1) [REDACTED]
s.22(1) [REDACTED] s.13(1) [REDACTED]
4. s.22(1) [REDACTED]
Wants to know why he was not invited to the consultations

Fiona Keating P.Eng.
Project Manager
City of Vancouver | Streets & Electrical Design
Tel: 604-326-4814 | Fax: 604-873-7212
Email: fiona.keating@vancouver.ca

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "LePard, Kenneth" <kenneth.lepard@vancouver.ca>
CC: "Young, Sheldon" <sheldon.young@vancouver.ca>
"Moore, Tyler" <tyler.moore@vancouver.ca>
Date: 10/19/2018 4:55:46 PM
Subject: RE: Alexander/Main and Experimental Barrier Testing
Attachments: vfrs clearance2.jpg

Hi Ken,

Sorry for not connecting, a quick potential tweak s.22(1)

I would explicitly want us to avoid a situation where any of the wheels come off the asphalt in this parallel situation. If the auto chains are the most significant concern, we could shape and locate curbs on either side to act as a guide similar to the Berkeley example, maybe even with tapers and a higher than usual curb to ensure that wheels would hit curb before there would be a problem around the auto chains.

Whether or not that helps, what height obstacle would you be comfortable with clearing at the differential? 4"? 3"? Can it be concrete since it may be difficult to find the right rubberized product?

Best,
Brian

From: LePard, Kenneth
Sent: Wednesday, October 17, 2018 12:17 PM
To: Gould, Brian
Cc: Young, Sheldon; Moore, Tyler
Subject: RE: Alexander/Main and Experimental Barrier Testing

Hi Brian, (see rough sketch attached)

Driving over the curb ☐ perpendicular to it ☐ meaning we push the whole axle up and not hit the auto chains ☐ clearing the differential etc.

Driving parallel to the curbing is where I'm more concerned. Driving parallel to it ☐ and if the wheel drop over the other side of the curb, it's going to hit underneath. I'm noting below that there's about 4 1/2" of clearance.

Even if when you drive over it and it compresses some ☐ that won't help.

Please feel free to call me on this ☐ I'm in meetings this aft. until about 4pm.)

Thank you,

Ken

From: Gould, Brian
Sent: Wednesday, October 17, 2018 11:26 AM
To: LePard, Kenneth
Cc: Young, Sheldon; Moore, Tyler
Subject: RE: Alexander/Main and Experimental Barrier Testing

Thanks for this, a few follow-up questions:

- I m a bit confused by your first answer being that perpendicular is fine, but later that crews would be driving over the curbs (in the parallel situation I assume?). The attached crude sketch is what I m picturing for parallel, with plenty of room to be driving straight and to centre the curb between the wheels.
- If the issue is simply the height for parallel, is there an acceptable height for VFRS? Does it make a difference if rubber vs concrete, etc? Obviously lower is better for your apparatus, but then we would not do as good a job discouraging general motor vehicle traffic.
- We could likely revise the current layout and paint to allow for the Rosehill product to be used perpendicular as in the test (angled/only one wheel up better for us but I assume not for you). Based on the test, I would expect this to slow down response times, but I am unclear on whether this would get better with time and driver expectance. Would this be acceptable? If we used a mountable concrete curb with a less aggressive angle would this be better?

From: LePard, Kenneth
Sent: Wednesday, October 17, 2018 7:33 AM
To: Gould, Brian
Cc: Young, Sheldon; Moore, Tyler
Subject: RE: Alexander/Main and Experimental Barrier Testing

Hi Brian,

Driving perpendicular to the curbing (13cm or 5" tall) should be ok but it looks like you need them to drive parallel to it which will be a problem.

Straddling this curbing will do damage to the fire trucks. We also need to think about the smaller medic pickups that would need to do the same

There s about 4.5' of clearance needed for the heavy trucks so if crews drive over top of the curbing once it drops over the inside rear tires it will hit the auto-chains and we have already had trucks damage them climbing over bike lane curbing the same way. If it s not simply a raised curb where it more curb/raised surface like the edge of a sidewalk where the tires will not drop over that would work better.

Ken LePard
Assistant Chief
Vancouver Fire & Rescue
Fleet & Equipment Services

From: Moore, Tyler
Sent: Friday, October 12, 2018 6:04 AM
To: Gould, Brian
Cc: Young, Sheldon; LePard, Kenneth
Subject: Re: Alexander/Main and Experimental Barrier Testing

Hi Brian,

I'm adding AC LePard to this conversation, he is our chief responsible for purchasing and maintaining our apparatus and could definitely be impacted by this request.

AC LePard,

Please make comment on this proposal.

Thanks,

Tyler

Tyler Moore
Deputy Chief, Planning and Technical Services / AGM
Vancouver Fire & Rescue Services
900 Heatley Avenue
Vancouver, BC
V6A 3S7
s.15(1)(l) cell
604.665.6054 office
tyler.moore@vancouver.ca
www.vancouver.ca/fire

Sent from my iPhone 6+

On Oct 11, 2018, at 11:48 AM, Gould, Brian <Brian.Gould@vancouver.ca> wrote:

Hi Tyler and Sheldon,

Thank you for your help reviewing design concepts for Alexander and testing barriers for emergency vehicle permeability respectively. We're having some operational issues on Alexander and Main, and I'd appreciate your feedback on a different approach.

The short version is that the current design that relies on IRS bollards that are not holding up, and Traffic Ops are having a hard time keeping up with replacements. It's not immediately clear how much damage may be from general motor vehicle traffic, but since we've been replacing as frequently as twice in one week, it seems likely that even just fire apparatus would be too much for them to bear over the long term.

We would like to begin using automated bollards in this sort of situation, but there are a lot of cost and operational questions yet to answer for what is a relatively interim installation. We also began thinking about alternate “knock-down” options such as a fence or gate that would be designed to be struck and then reset themselves slowly, but as much as EQS are interested in helping, we’re not aware of a product off the shelf and may just find maintenance issues there as well.

When I raised this with our Transportation branch heads and Lon, the preference was to explore an approach that is based on ground clearance and would allow us to just use durable fixed objects. I’m most familiar with these sorts of arrangements with concrete or steel, but I think we have an opportunity to put the 13cm high rubberized curb product we tested into use. I’ve attached photos that illustrate the remaining clearance to the two vehicles Sheldon brought to the test.

I believe we only tested perpendicular and oblique; however, I am hoping we could actually go parallel to the direction of travel, particularly given that vehicles would be travelling straight with plenty of space to straddle. This would avoid needing to actually drive wheels over the rubber curb, or the questions of how bikes pass by the curb. Should some part of the apparatus contact the curb, the rubber did show to have some give, but I am not clear on all your considerations.

One other thought I had was adding “except emergency vehicles” to the traffic regulations – I’ve seen non-responding ambulances making the long way around and wouldn’t mind making lights and sirens at the discretion of the first responders here (though I’ve also taken a resident complaint about the noise of the bollards being driven over, so can’t please ‘em all).

All thoughts welcome, and I’d be happy to proceed by, for example, installing the rubber curb and coordinating with Hall #2 to test it immediately and remove if needed.

Thanks,
Brian

-----Original Appointment-----

From: Khayat, Jad

Sent: Monday, April 30, 2018 3:04 PM

To: Khayat, Jad; Gould, Brian; Clelland, John; Tseng, Ken; Young, Sheldon

Cc: Storer, Paul; Zipf, Mike; Wong, Winnie; Lao, Dominic

Subject: Experimental Barrier Testing

When: Monday, May 07, 2018 1:30 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).

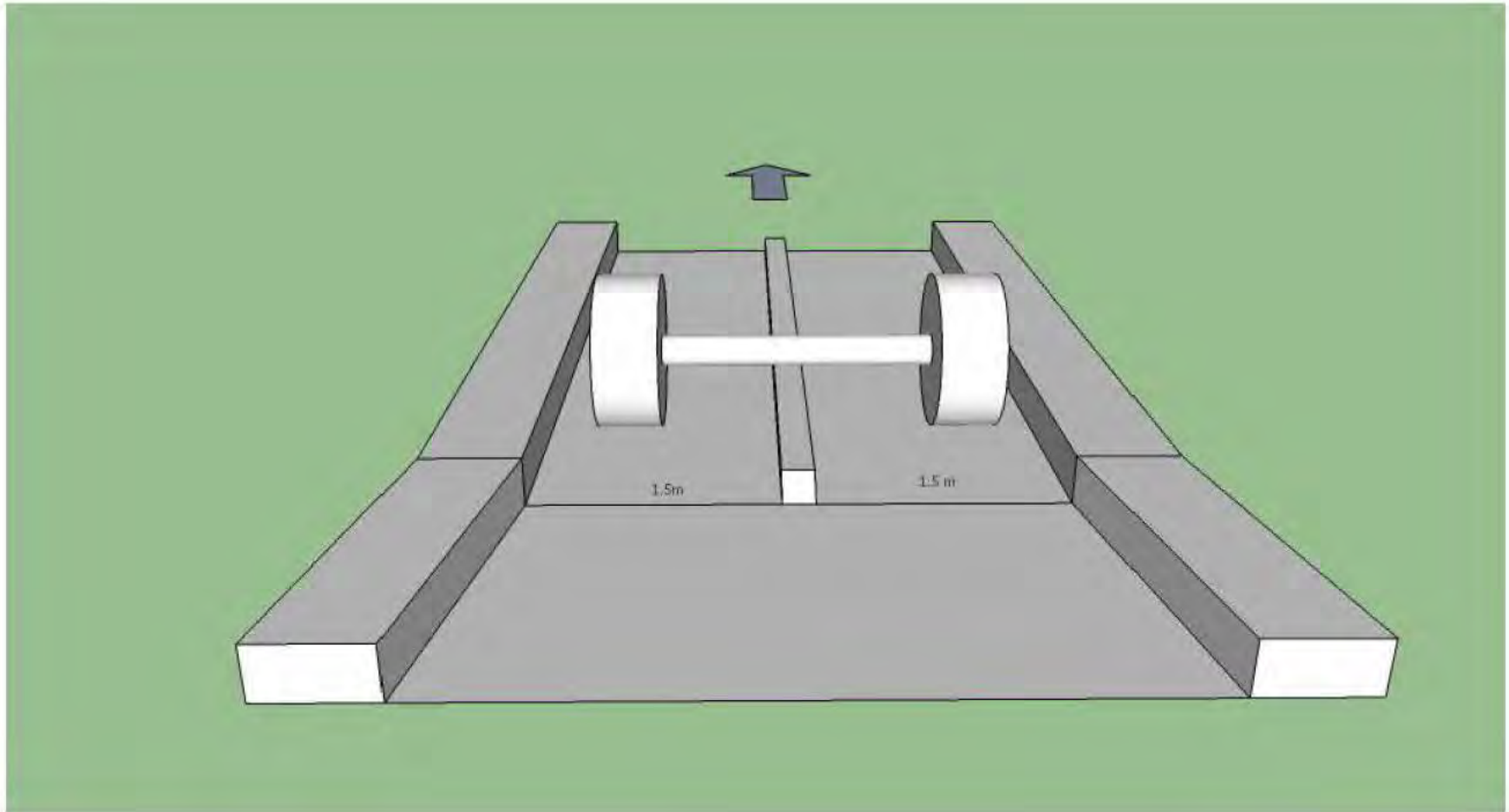
Where: Concord Pacific Lands

Testing of experimental barriers in real world conditions to determine suitability and if they are able to withstand and accommodate full size North American style fire trucks.

Two products will be tested; a flexible barrier product from South Korea to determine if the product is able to not only deal with its advertised claims of mid-size commercial vehicles but is also able to deal with the weight of fire trucks. The other product from the UK is made out of rubber and meant to resemble an extruded concrete curb. While not an advertised benefit of this product, the goal with this test is to determine if it is in fact able to compress enough under the weight of a fire truck for the drivetrain and chassis to be able to comfortably pass over it.

<IMG_0156.jpg>

<IMG_0160.jpg>



From: "LePard, Kenneth" <kenneth.lepard@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
CC: "Young, Sheldon" <sheldon.young@vancouver.ca>
"Moore, Tyler" <tyler.moore@vancouver.ca>
Date: 10/29/2018 7:10:26 AM
Subject: RE: Alexander/Main and Experimental Barrier Testing
Attachments: Bollards at alexander and main.msg

Hi Brian,

Saturday night I had to call out a mechanic because the plastic bollards snapped off an airline from the bottom of the air reservoir. This put the Pumper (Engine) out-of-service. I have raised this problem before. There's lots of small air lines, water lines/drains and electrical that can be damaged. See attached email. Crews are now relating it to other damage to both this Engine and the Ladder truck. They are asking for them to be removed as they use this often and I'd agree... We can't be having this damage trucks so they can't respond to calls. You could put a steel bollard there and they'd have to remove but it will slow down their response times and being a very common route for them is sure to cause more problems.

Can you let me know ?

Thanks,

Ken LePard





From: LePard, Kenneth
Sent: Friday, October 19, 2018 5:08 PM
To: Gould, Brian
Cc: Young, Sheldon; Moore, Tyler
Subject: RE: Alexander/Main and Experimental Barrier Testing

Hi Brian,

Would you mind meeting with me when your back ?

Ken

From: Gould, Brian
Sent: Friday, October 19, 2018 4:56 PM
To: LePard, Kenneth
Cc: Young, Sheldon; Moore, Tyler
Subject: RE: Alexander/Main and Experimental Barrier Testing

Hi Ken,

Sorry for not connecting, a quick potential tweak [s.22\(1\)](#).

I would explicitly want us to avoid a situation where any of the wheels come off the asphalt in this parallel situation. If the auto chains are the most significant concern, we could shape and locate curbs on either side to act as a guide similar to the [Berkeley example](#), maybe even with tapers and a higher than usual curb to ensure that wheels would hit curb before there would be a problem around the auto chains.

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Best,
Brian

From: LePard, Kenneth
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To: Gould, Brian
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Subject: RE: Alexander/Main and Experimental Barrier Testing

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Thank you,

Ken

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Cc: Young, Sheldon; Moore, Tyler
Subject: RE: Alexander/Main and Experimental Barrier Testing

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To: Gould, Brian
Cc: Young, Sheldon; Moore, Tyler
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Ken LePard
Assistant Chief
Vancouver Fire & Rescue
Fleet & Equipment Services
Office 604-665-6083 Cell s.15(1)(l)

From: Moore, Tyler

Sent: Friday, October 12, 2018 6:04 AM
To: Gould, Brian
Cc: Young, Sheldon; LePard, Kenneth
Subject: Re: Alexander/Main and Experimental Barrier Testing

Hi Brian,

In adding AC LePard to this conversation, he is our chief responsible for purchasing and maintaining our apparatus and could definitely be impacted by this request.

AC LePard,

Please make comment on this proposal.

Thanks,

Tyler

Tyler Moore
Deputy Chief, Planning and Technical Services / AGM
Vancouver Fire & Rescue Services
900 Heatley Avenue
Vancouver, BC
V6A 3S7
s.15(1)(l) cell
604.665.6054 office
tyler.moore@vancouver.ca
www.vancouver.ca/fire

Sent from my iPhone 6+

On Oct 11, 2018, at 11:48 AM, Gould, Brian <Brian.Gould@vancouver.ca> wrote:

Hi Tyler and Sheldon,

Thank you for your help reviewing design concepts for Alexander and testing barriers for emergency vehicle permeability respectively. We're having some operational issues on Alexander and Main, and I'd appreciate your feedback on a different approach.

The short version is that the current design that relies on IRS bollards that are not holding up, and Traffic Ops are having a hard time keeping up with replacements. It's not immediately clear how much damage may be from general motor vehicle traffic, but since we've been replacing as frequently as twice in one week, it seems likely that even just fire apparatus would be too much for them to bear over the long term.

We would like to begin using automated bollards in this sort of situation, but there are a lot of cost and operational questions yet to answer for what is a relatively interim installation. We also began thinking about alternate "knock-down" options such as a

fence or gate that would be designed to be struck and then reset themselves slowly, but as much as EQS are interested in helping, we're not aware of a product off the shelf and may just find maintenance issues there as well.

When I raised this with our Transportation branch heads and Lon, the preference was to explore an approach that is based on ground clearance and would allow us to just use durable fixed objects. I'm most familiar with these sorts of arrangements with concrete or steel, but I think we have an opportunity to put the 13cm high rubberized curb product we tested into use. I've attached photos that illustrate the remaining clearance to the two vehicles Sheldon brought to the test.

I believe we only tested perpendicular and oblique; however, I am hoping we could actually go parallel to the direction of travel, particularly given that vehicles would be travelling straight with plenty of space to straddle. This would avoid needing to actually drive wheels over the rubber curb, or the questions of how bikes pass by the curb. Should some part of the apparatus contact the curb, the rubber did show to have some give, but I am not clear on all your considerations.

One other thought I had was adding "except emergency vehicles" to the traffic regulations – I've seen non-responding ambulances making the long way around and wouldn't mind making lights and sirens at the discretion of the first responders here (though I've also taken a resident complaint about the noise of the bollards being driven over, so can't please 'em all).

All thoughts welcome, and I'd be happy to proceed by, for example, installing the rubber curb and coordinating with Hall #2 to test it immediately and remove if needed.

Thanks,
Brian

-----Original Appointment-----

From: Khayat, Jad

Sent: Monday, April 30, 2018 3:04 PM

To: Khayat, Jad; Gould, Brian; Clelland, John; Tseng, Ken; Young, Sheldon

Cc: Storer, Paul; Zipf, Mike; Wong, Winnie; Lao, Dominic

Subject: Experimental Barrier Testing

When: Monday, May 07, 2018 1:30 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).

Where: Concord Pacific Lands

Testing of experimental barriers in real world conditions to determine suitability and if they are able to withstand and accommodate full size North American style fire trucks. Two products will be tested; a flexible barrier product from South Korea to determine if the product is able to not only deal with its advertised claims of mid-size commercial vehicles but is also able to deal with the weight of fire trucks. The other product from

the UK is made out of rubber and meant to resemble an extruded concrete curb. While not an advertised benefit of this product, the goal with this test is to determine if it is in fact able to compress enough under the weight of a fire truck for the drivetrain and chassis to be able to comfortably pass over it.

<IMG_0156.jpg>

<IMG_0160.jpg>

From: "Firehall 02 - A Shift" <AShift.Firehall02@vancouver.ca>
To: "BC1A, Battalion1" <Battalion1.BC1A@vancouver.ca>
CC: "LePard, Kenneth" <kenneth.lepard@vancouver.ca>
Date: 10/27/2018 10:09:37 PM
Subject: Bollards at alexander and main

Hi Chief

Yellow plastic Bollards were installed on Alexander St. and Main St. approximately 3 months ago. As far as I know ..The firehall was not warned of the change ... they just showed up
Just tonight E 2 had to immediately be placed out of service after a air brake line broke.. Crews highly suspect these bollards are the reason for the break as they bounce under the rig when we drive over them.. We are now suspicious of several other undercarriage water and airline issues on E2 and L2 that may have been related to the bollards ..

Alexander street is a popular route that all crews on all shifts use to respond to emergencies ... if crews were further limited to not using alexander as a response route we feel there would definitely be further delays to our response times to large amount of calls we respond to in #2's district... we are hopeful that the bollards can simply be removed

Thanks for your consideration

Regards
Capt. Cave M. #2A

From: "LePard, Kenneth" <kenneth.lepard@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
CC: "Young, Sheldon" <sheldon.young@vancouver.ca>
"Moore, Tyler" <tyler.moore@vancouver.ca>
Date: 10/17/2018 12:17:04 PM
Subject: RE: Alexander/Main and Experimental Barrier Testing
Attachments: VFRS clearance.jpg
201810171215.pdf

Hi Brian, (see rough sketch attached)

Driving over the curb – perpendicular to it – meaning we push the whole axle up and not hit the auto chains – clearing the differential etc.

Driving parallel to the curbing is where I'm more concerned. Driving parallel to it – and if the wheel drop over the other side of the curb, it's going to hit underneath. I'm noting below that there's about 4 ½" of clearance.

Even if when you drive over it and it compresses some – that won't help.

Please feel free to call me on this...(I'm in meetings this aft. until about 4pm.)

Thank you,

Ken

From: Gould, Brian
Sent: Wednesday, October 17, 2018 11:26 AM
To: LePard, Kenneth
Cc: Young, Sheldon; Moore, Tyler
Subject: RE: Alexander/Main and Experimental Barrier Testing

Thanks for this, a few follow-up questions:

- I m a bit confused by your first answer being that perpendicular is fine, but later that crews would be driving over the curbs (in the parallel situation I assume?). The attached crude sketch is what I m picturing for parallel, with plenty of room to be driving straight and to centre the curb between the wheels.
- If the issue is simply the height for parallel, is there an acceptable height for VFRS? Does it make a difference if rubber vs concrete, etc? Obviously lower is better for your apparatus, but then we would not do as good a job discouraging general motor vehicle traffic.
- We could likely revise the current layout and paint to allow for the Rosehill product to be used perpendicular as in the test (angled/only one wheel up better for us but I assume not for you). Based on the test, I would expect this to slow down response times, but I am unclear on whether this would get better with time and driver expectance. Would this be acceptable? If we used a mountable concrete curb with a less aggressive angle would this be

better?

From: LePard, Kenneth
Sent: Wednesday, October 17, 2018 7:33 AM
To: Gould, Brian
Cc: Young, Sheldon; Moore, Tyler
Subject: RE: Alexander/Main and Experimental Barrier Testing

Hi Brian,

Driving perpendicular to the curbing (13cm or 5" tall) should be ok but it looks like you need them to drive parallel to it which will be a problem.

Straddling this curbing will do damage to the fire trucks. We also need to think about the smaller medic pickups that would need to do the same ??

There's about 4.5" of clearance needed for the heavy trucks so if crews drive over top of the curbing once it drops over the inside rear tires it will hit the auto-chains and we have already had trucks damage them climbing over bike lane curbing the same way. If it's not simply a raised curb where it more curb/raised surface like the edge of a sidewalk where the tires will not drop over that would work better.

Ken LePard
Assistant Chief
Vancouver Fire & Rescue
Fleet & Equipment Services
Office 604-665-6083 Cell s.15(1)(l)

From: Moore, Tyler
Sent: Friday, October 12, 2018 6:04 AM
To: Gould, Brian
Cc: Young, Sheldon; LePard, Kenneth
Subject: Re: Alexander/Main and Experimental Barrier Testing

Hi Brian,

In adding AC LePard to this conversation, he is our chief responsible for purchasing and maintaining our apparatus and could definitely be impacted by this request.

AC LePard,

Please make comment on this proposal.

Thanks,

Tyler

Tyler Moore
Deputy Chief, Planning and Technical Services / AGM
Vancouver Fire & Rescue Services
900 Heatley Avenue
Vancouver, BC
V6A 3S7
s.15(1)(l) ell
604.665.6054 office
tyler.moore@vancouver.ca
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Sent from my iPhone 6+

On Oct 11, 2018, at 11:48 AM, Gould, Brian <Brian.Gould@vancouver.ca> wrote:

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The short version is that the current design that relies on IRS bollards that are not holding up, and Traffic Ops are having a hard time keeping up with replacements. It's not immediately clear how much damage may be from general motor vehicle traffic, but since we've been replacing as frequently as twice in one week, it seems likely that even just fire apparatus would be too much for them to bear over the long term.

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All thoughts welcome, and I’d be happy to proceed by, for example, installing the rubber curb and coordinating with Hall #2 to test it immediately and remove if needed.

Thanks,
Brian

-----Original Appointment-----

From: Khayat, Jad

Sent: Monday, April 30, 2018 3:04 PM

To: Khayat, Jad; Gould, Brian; Clelland, John; Tseng, Ken; Young, Sheldon

Cc: Storer, Paul; Zipf, Mike; Wong, Winnie; Lao, Dominic

Subject: Experimental Barrier Testing

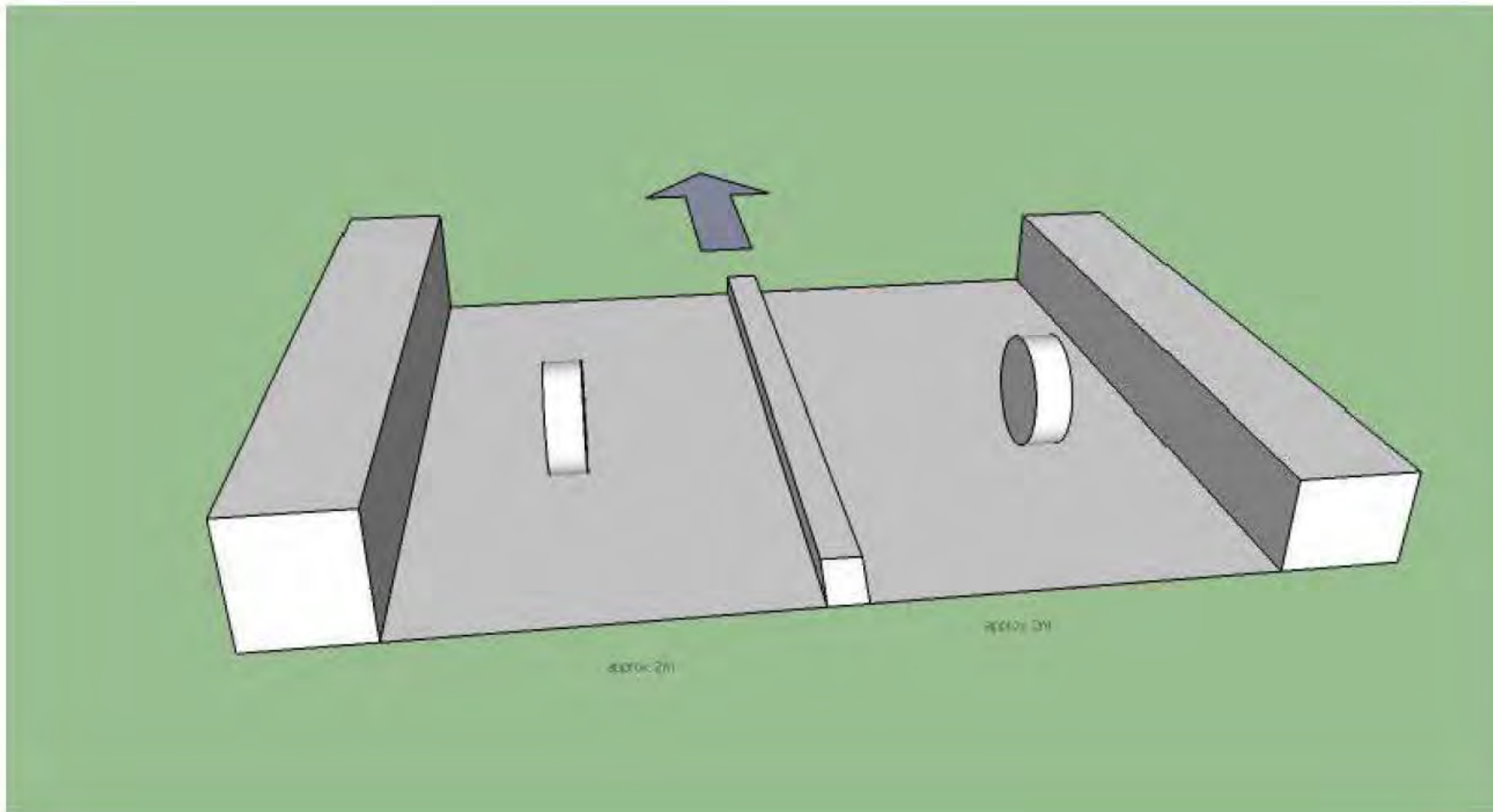
When: Monday, May 07, 2018 1:30 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).

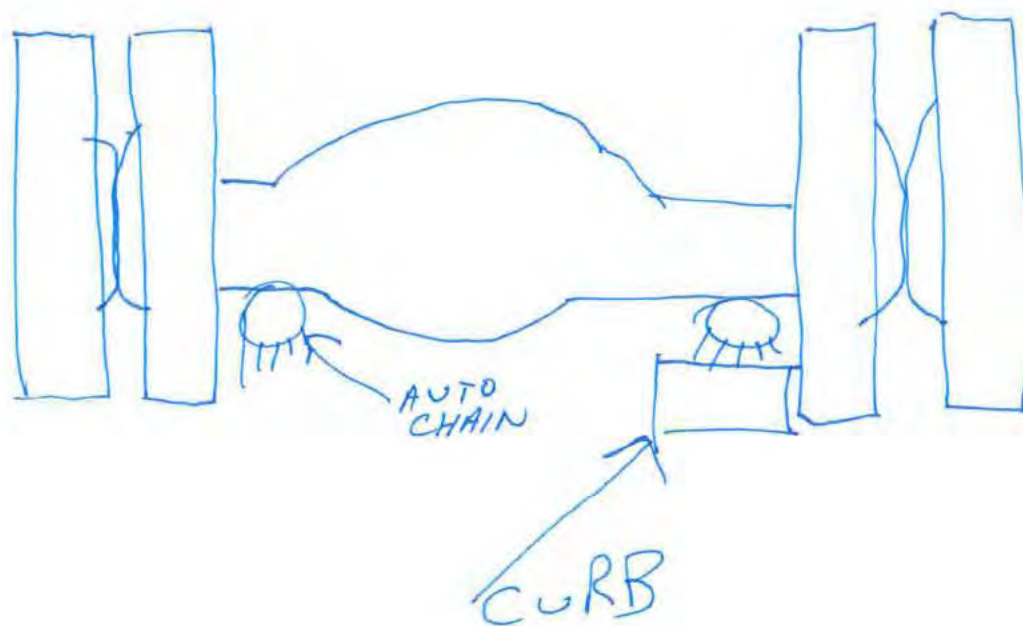
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Testing of experimental barriers in real world conditions to determine suitability and if they are able to withstand and accommodate full size North American style fire trucks. Two products will be tested; a flexible barrier product from South Korea to determine if the product is able to not only deal with its advertised claims of mid-size commercial vehicles but is also able to deal with the weight of fire trucks. The other product from the UK is made out of rubber and meant to resemble an extruded concrete curb. While not an advertised benefit of this product, the goal with this test is to determine if it is in fact able to compress enough under the weight of a fire truck for the drivetrain and chassis to be able to comfortably pass over it.

<IMG_0156.jpg>

<IMG_0160.jpg>





From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Stubbington, James" <james.stubbington@vancouver.ca>
Date: 9/13/2018 2:00:19 PM
Subject: RE: Alexander/Main diverter origin-destination

Thanks – the Gore records are already fairly helpful in that I can see almost 200 trips exiting the lane and that 45% head east on Alexander from Gore plus another 30% heading north on Gore past Alexander. Both of these types are going to be mostly shortcutting.

I don't have enough of the Alexander sheet to work through, and I can't quite tell from this how much filming broke us so I'll take your advice on whether to prioritize data entry or a recount.

What I can see on the small sample size is that Main north of Alexander is the origin for 8/10 shortcutting plates that I do have. So a SBL ban would be highly effective based on preliminary results.

From: Stubbington, James
Sent: Tuesday, September 04, 2018 4:29 PM
To: Gould, Brian
Subject: RE: Alexander/Main diverter origin-destination

Hi Brian,

I haven't been able to finish entering all of the data yet but here is what I have done so far. I'll drop the papers off on your desk so you can take a look at them as well.

Thanks,
James

From: Gould, Brian
Sent: Friday, August 31, 2018 2:05 PM
To: Stubbington, James
Cc: Rahmani, Banafsheh
Subject: RE: Alexander/Main diverter origin-destination

Hi James,

Per our discussion last week, please provide the data so we can discuss how much it was broken by the film shoot (and presumably re-attempt unless you've already done so).

Thanks,
Brian

From: Fung, Peter
Sent: Wednesday, July 25, 2018 7:03 AM
To: Gould, Brian; Rahmani, Banafsheh; Stubbington, James

Subject: RE: Alexander/Main diverter origin-destination

Network has been set up, please use: CER999443

Peter Fung

Traffic Signal Asset Management
City of Vancouver
Engineering Services - TDM Branch
peter.fung@vancouver.ca
604-873-7334

From: Gould, Brian
Sent: Tuesday, July 24, 2018 4:29 PM
To: Rahmani, Banafsheh; Stubbington, James
Cc: Fung, Peter
Subject: RE: Alexander/Main diverter origin-destination

Hi Banafsheh and James,

Attached is my stab at a sheet they re actually pretty different locations since tracking everyone on Alexander is helpful and possible, but Gore will see a bunch of traffic unrelated to the lane and it s important they focus attention on anyone using that section. Understand if it proves impossible to be sure where traffic to lane originated (I m okay with ticking multiple plausible boxes in that case) or to track everything else going on there.

I m hoping Peter can set up a network under CER-00216-NN-03 internal obviously, name something like the subject line (O/D a good abbreviation)

From: Rahmani, Banafsheh
Sent: Monday, July 23, 2018 3:04 PM
To: Gould, Brian; Stubbington, James
Subject: RE: Alexander/Main diverter origin-destination

Hi Brian,

Let s have a quick meeting when you have time to go over this.

Thanks,

Banafsheh

From: Gould, Brian
Sent: Monday, July 23, 2018 10:55 AM
To: Rahmani, Banafsheh; Stubbington, James
Subject: Alexander/Main diverter origin-destination

Hi Banafsheh and James,

I d appreciate some advice on some sort of count I can request of how drivers are short-circuiting

our interim diverter east of main (red line on the attached). Resident reports are that drivers that were deflecting into the lane are mostly just popping back up on Gore, and I've seen similar things on site.

I think we might be able to manage a mini O-D study to try and figure out the magnitude of the behaviour as well as what other movements at other intersections we might be able to target since we didn't really have other options for this diverter that branch heads and neighbours were happy with. So, does the following seem plausible for some spare Monday/Friday TA shifts:

- ☐ From point A, watch for traffic from Main/Alexander arriving at diverter, record plate and direction of approach; likewise, record plate for departures from lane and direction of departure at Main/Alexander. I suggest only point A because they could additionally record turns at the alley T, but any location between the lane and Main on Alexander could otherwise work.
- ☐ From point B, watch for traffic exiting the lane, record plate and direction of departure (there are a lot of options here, and we would at least want to know whether they headed north); likewise, at least record which way they entered the lane from along with plate for WB

Volumes on this block of Alexander used to be 4000/day, and there seem to be up to 3-4 vehicles per signal cycle using the lane during peak with confounding background traffic, particularly at B. Please advise on whether this is realistic/cost/timeline, I'm certainly open to alternatives.

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Rahmani, Banafsheh" <Banafsheh.Rahmani@vancouver.ca>
"Stubbington, James" <james.stubbington@vancouver.ca>
CC: "Fung, Peter" <peter.fung@vancouver.ca>
Date: 7/24/2018 4:29:12 PM
Subject: RE: Alexander/Main diverter origin-destination
Attachments: alexander east of main origin-destination.xlsx

Hi Banafsheh and James,

Attached is my stab at a sheet – they're actually pretty different locations since tracking everyone on Alexander is helpful and possible, but Gore will see a bunch of traffic unrelated to the lane and it's important they focus attention on anyone using that section. Understand if it proves impossible to be sure where traffic to lane originated (I'm okay with ticking multiple plausible boxes in that case) or to track everything else going on there.

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Banafsheh

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Subject: Alexander/Main diverter origin-destination

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	Origin						Destination					
Plate	Lane e/o Main	Main north of Alexander	Main south of Alexander	Alexander west of Main	Parked on street	Driveway	Lane e/o Main	Main north of Alexander	Main south of Alexander	Alexander west of Main	Parked on street	Driveway

Location: Alexander Street
between Main and lane east.
Please note time in five minute
increments between plates

	Origin						Destination					
Plate	Lane on west side of Gore	Gore south of lane	Lane on east side of Gore	Alexander west of Gore	Alexander east of Gore	Gore north of Alexander	Lane on west side of Gore	Gore south of lane	Lane on east side of Gore	Alexander west of Gore	Alexander east of Gore	Gore north of Alexander

Location: Gore St between Alexander and the lane on the west side of Gore (south of Alexander). Note that only vehicles using this lane are important for this study, and those originating from the lane are most important. Counting other turning movements at the lane/Gore intersection is optional if time permits (Plates not required in that case) Please note time in five minute increments between plates.

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Wong, Winnie" <Winnie.Wong@vancouver.ca>
CC: "Larijani, Alipasha" <Alipasha.Larijani@vancouver.ca>
Date: 9/26/2018 12:33:43 PM
Subject: RE: Automated Bollards on Alexander at Main (and turn ban)

Thanks, that works. Will regroup with Paul, s.13(1)
s.13(1)

From: Wong, Winnie
Sent: Wednesday, September 26, 2018 12:23 PM
To: Gould, Brian
Cc: Larijani, Alipasha
Subject: RE: Automated Bollards on Alexander at Main (and turn ban)

Brian,

s.13(1)

From: Gould, Brian
Sent: Wednesday, September 26, 2018 12:04 PM
To: Wong, Winnie
Cc: Larijani, Alipasha
Subject: RE: Automated Bollards on Alexander at Main (and turn ban)

Update: we are leaning to something like the [Matador 4](#) from Heald, which we were previously considering for 800 Robson. One key advantage is the ability to install these semi-permanently and above grade, which shows up better on the narrower [Matador 3](#). We would, however, still need to make significant modifications to the design, make the investment, source power, figure out activation, etc, so I would appreciate your help or bouncing me to someone else in TDM.

From: Gould, Brian
Sent: Thursday, September 20, 2018 5:08 PM
To: Wong, Winnie
Cc: Larijani, Alipasha
Subject: Automated Bollards on Alexander at Main (and turn ban)

Hi Winnie,

I think the last time I raised this possibility Toby was still around, but that you and Alipasha were

involved in some of the discussions around automated bollards for Alexander. Originally we were talking about multiple automated bollards at the signalized intersection that could also be used for filming. The TDM-preferred revision moved the full closure just east of the lane, where we were hoping we could get away with IRS bollards. Unfortunately, we are having significant maintenance issues and they've gone missing again less than three days after being reinstalled. See DOC/2018/262460, DOC/2018/303920, and <https://photos.app.goo.gl/agv3QtHUeb1ajKsR8> for the situation when the bollards are actually in place. We'll be getting a hose out there to see what the scale of non-compliance is, but ultimately I suspect it's just continued VFRS movements pounding them into the ground.

Now that we are away from the signalized intersection, and will not need to allow access to the general public, does TDM have any remaining concerns if we replaced with an automated bollard? It would be a long road to getting these installed, and we'll need to be confident we're ready to move to a permanent design here rather than our interim, but it does seem like the only guaranteed way out of this issue.

As a related side issue to address side-effects of moving the closure east of the lane, we would like to proceed with a SBL turn ban from Main Street Overpass to Alexander, as it appears 80% of the shortcutting traffic in the lane south of Alexander is coming from the overpass. I'll have more detailed results once James completes data entry, but any concerns moving forward with this immediately?

Thanks,
Brian

From: "Lewis, Toby" <Toby.Lewis@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 11/7/2017 4:49:19 PM
Subject: Re: bollards at Main/Alexander

Let's discuss

Sent from mobile

On Tue, Nov 7, 2017 at 4:42 PM -0800, "Gould, Brian" <Brian.Gould@vancouver.ca> wrote:

It was a key component of the design branch heads meeting on Wednesday and my follow-up with Winston, so I would argue yes.

I'll need to come find you to understand what operational issues you're expecting, and how they could be worse than removable bollards. One thing I was going to confirm is when to avoid traffic light colours (they have a model with a ring of red lights around the top, and another module that adds green/red feedback of when to proceed).

From: Lewis, Toby
Sent: Tuesday, November 07, 2017 3:15 PM
To: Gould, Brian
Subject: bollards at Main/Alexander

Before we get Streets trying to figure this out, do we have support in Transportation?

Proximity to the traffic signal is likely an issue

Toby Lewis, Eng.L.
City of Vancouver | Engineering
Traffic & Data Management Branch
507 W Broadway | Vancouver, BC V5Z 0B4
tel: 604.873.7342 | Fax: 604.873.7212
e-mail: toby.lewis@vancouver.ca

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "LaClaire, Lon" <lon.laclaire@vancouver.ca>
"Storer, Paul" <paul.storer@vancouver.ca>
CC: "Postma, Tobin" <Tobin.Postma@vancouver.ca>
"Bracewell, Dale" <dale.bracewell@vancouver.ca>
Date: 9/6/2018 3:55:36 PM
Subject: RE: Concerned Business Operator

Hi Lon,

I haven't seen this or interacted with this specific business as our door knocks were focused on the blocks we were proposing changes. While he doesn't refer to the bikeway as far as I can tell, a few businesses raised the potential for what Tobin notes below. I think they were picturing tents in the middle of the roadway as a result of the Main-Gore change. I don't believe that's happened - there is no mini-park to pitch a tent, and VFRS/drivers finding parking drive through/around there quite regularly.

I have been down a bit during the morning on Alexander, not noticing anything in particularly different at the time, but I can certainly go again as it was a few weeks ago.

Best,
Brian

From: LaClaire, Lon
Sent: Thursday, September 06, 2018 2:17 PM
To: Storer, Paul; Gould, Brian
Cc: Postma, Tobin; Bracewell, Dale
Subject: FW: Concerned Business Operator

Paul and Brian,
Have you see this feedback?

Thanks
Lon

From: Postma, Tobin
Sent: Wednesday, September 5, 2018 10:41 AM
To: LaClaire, Lon; Bracewell, Dale
Subject: FW: Concerned Business Operator

Hi guys,

I just wanted to raise this to your attention.

We are seeing a noticeable increase in complaints from residents and businesses along Alexander street in Railtown around street disorder (see letter attached).

Our crews as well as the VPD have said that this increase began when that stretch of Alexander was closed to traffic in order for the bike lane to be constructed. Every day they are having to move more tents/campers etc. from Alexander since the road was closed.

I'm not sure what more there is we could do but it might be helpful for a member of your team to check out the bike lane in the morning (Alexander from Main to Heatley) to see how people are using it. Perhaps they may have some ideas as to how we could better activate that stretch of street.

Happy to chat more if that would be helpful.

Tobin

From: Reimer, Andrea
Sent: Wednesday, September 05, 2018 7:23 AM
To: Postma, Tobin
Subject: Fwd: Concerned Business Operator

Sent from my iPad

Begin forwarded message:

From: Adam Madrussan | Belgard Kitchen <adam@belgardkitchen.com>
Date: September 4, 2018 at 11:32:15 PM EDT
To: Tim <Tim.Stevenson@vancouver.ca>, Raymond
<Raymond.Louie@vancouver.ca>, Kerry <Kerry.Jang@vancouver.ca>, Andrea
<Andrea.Reimer@vancouver.ca>, <heather.deal@vancouver.ca>, Gregor
<Gregor.Robertson@vancouver.ca>, Melissa
<Melissa.DeGenova@vancouver.ca>, Adriane <adriane.carr@vancouver.ca>,
George <george.affleck@vancouver.ca>, Hector
<hector.bremner@vancouver.ca>, <Elizabeth.Ball@vancouver.ca>
Subject: Concerned Business Operator

Dear Mayor and Council Members,

I am writing in regards to the growing unfortunate situation in Railtown, particularly around the businesses near Alexander Street, between Heatley and Gore. I have reached out via the website, 311, and other forms of communication with no response or lack of action.

Please see the attached documents.

I appreciate your time. Regards,

--

Adam Madrussan | General Manager

BELGARD KITCHEN | [55 Dunlevy Avenue](#) - The Settlement Building | Vancouver,
BC V6A 3A3 | | [604.699.1989](#) (o) | [twitter](#) | [instagram](#) | [website](#) |

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Stubbington, James" <james.stubbington@vancouver.ca>
CC: "Rahmani, Banafsheh" <Banafsheh.Rahmani@vancouver.ca>
Date: 9/27/2018 9:48:40 AM
Subject: RE: Emailing: alexander east of main origin-destination (2).xlsx

Thanks. I manually matched plates as almost all of them had more than one character off, but given the order they were clearly the same vehicle. The results from the full set are less obvious than the partial set, but still fairly compelling: a SBL ban from Main to Alexander should take care of about half the shortcutting traffic (about 52 trips in 4 hours), but potentially impacting 1/3 of possible local EB access (about 27 in 4 hours).

265 veh observed eastbound on Alexander just east of Main in 4 hours, ~75 peak hour TAs were able to confirm half these are shortcutting to Gore via the lane

Over 40% of EB short-cutting traffic makes a SBL from the Main Overpass (versus 35% NBR, 20% EBT)

Over 2/3 of SBL turning traffic is accounted for as shortcutting

Over 2/3 of presumed local eastbound access is by the NBR or EBT

Restricting the SBL is expected to reduce EB traffic on Alexander and the lane by around 30 in the peak hour

Note: limited O-D study conducted in August on a day where filming was taking place

-----Original Message-----

From: Stubbington, James

Sent: Wednesday, September 26, 2018 3:39 PM

To: Gould, Brian

Subject: FW: Emailing: alexander east of main origin-destination (2).xlsx

Here's the completed Alexander data.

-----Original Message-----

From: Xin, Carter

Sent: Wednesday, September 26, 2018 3:04 PM

To: Stubbington, James

Subject: RE: Emailing: alexander east of main origin-destination (2).xlsx

Hi James

Here is all the data entry for the Gore/Alexander survey.

Thanks,
carter

-----Original Message-----

From: Stubbington, James

Sent: Tuesday, September 25, 2018 3:10 PM

To: Xin, Carter

Subject: Emailing: alexander east of main origin-destination (2).xlsx

Your message is ready to be sent with the following file or link attachments:

alexander east of main origin-destination (2).xlsx

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Keating, Fiona" <Fiona.Keating@vancouver.ca>
"Khayat, Jad" <Jad.Khayat@vancouver.ca>
CC: "Clary, Joel" <Joel.Clary@vancouver.ca>
"Charleston, Brian" <Brian.Charleston@vancouver.ca>
Date: 11/2/2017 9:48:11 AM
Subject: RE: Emerging Alexander Scope - Automated Bollard

Jad has taken on a product research role in our branch, and he's been in contact with Vicky Hughes at Heald (vhughes@heald.uk.com). It seems that their Evo product has some advantages in terms of depth and continuing to operate after being struck: <https://www.heald.uk.com/heald-products/iwa-bollard/>

I am unclear on what the procurement process would look like, but agreed on getting into the details. In addition to the specs available, one thing Jad encountered was a recommendation that all the foundations be poured integrally, which works against Brian C's request that we leave openings for future underground services. The power requirements for these may be one of the most challenging.

Jad, could you please pass along anything else you received from Heald and competing products for comparison?

From: Keating, Fiona
Sent: Thursday, November 02, 2017 8:49 AM
To: Gould, Brian
Cc: Clary, Joel
Subject: FW: Emerging Alexander Scope - Automated Bollard

Hi Brian,

I'm looking at the automated bollard - do you have a supplier contact for this already?
It would be good to get a shop drawing to see how this would fit in to the corridor we want to install in as well as address lead times.

Thanks,

Fiona Keating P.Eng.
Project Manager
City of Vancouver | Streets & Electrical Design
Tel: 604-326-4814 | Fax: 604-873-7212
Email: fiona.keating@vancouver.ca

From: Clary, Joel
Sent: Monday, October 30, 2017 4:01 PM
To: Gould, Brian; Wong, Andy; Dobud, Mike
Cc: Lewis, Toby; Keating, Fiona
Subject: RE: Emerging Alexander Scope

Hi Brian,

Could you please resubmit the survey request. It doesn't seem to be in the queue. Based on our current construction schedule, we require a signed off geometric by mid-December (3 months before construction).

Let me know if you have any concerns.

Thanks,

Joel

From: Gould, Brian
Sent: Monday, October 30, 2017 2:53 PM
To: Clary, Joel; Wong, Andy
Cc: Lewis, Toby; Keating, Fiona
Subject: RE: Emerging Alexander Scope

We'll be reviewing things at design branch heads on Wednesday as well, and I'll look for leanings in advance of our Nov 21st open house to inform how far to push. I'm pretty sure we're going to need to grab survey along Hawks (not sure Alex got this request in), but it's not the greatest time to send them out. The remaining geometric work is very simple.

From: Clary, Joel
Sent: Monday, October 30, 2017 2:47 PM
To: Gould, Brian; Wong, Andy
Cc: Lewis, Toby; Keating, Fiona
Subject: RE: Emerging Alexander Scope

Hi Brian,

Thank you for the summary. When do you expect to have a completed geometric? Does this need to be completed by a certain time next year? I have it scheduled for mid-March to end of May, but I'm concerned this will be hard to meet if consultation won't be for a month.

Please note that Fiona will be the PM.

Thanks,

Joel

From: Gould, Brian
Sent: Monday, October 23, 2017 4:10 PM
To: Clary, Joel; Wong, Andy
Cc: Lewis, Toby
Subject: Emerging Alexander Scope

Hi all,

Ross suggested sending around likely scope for Alexander given the coordination meeting on Friday. Since it's such an odd package of work at this point and drawings will be better done when we're heading out for consultation in a month, here are the emerging highlights:

Overall

Traffic Ops: Quite a bit, but mostly bike stencils, wayfinding, 30kmh, one stop sign rotation
Streets: Thin lift overlay already complete

Carrall to Columbia

Concrete crews: No scope expected
Other Streets: Further relocation of bollard-and-chain at Maple Tree Square, potentially some rubberized (see <https://gil.glasdon.com/highway-safety/bollards-posts-hazard-markers/victory-tm-bollard>)
Signal/Electrical: Southbound signals to convert at least northernmost block of Columbia to two-way traffic

East of Main

Concrete crews: Approximately 3 small (a few sq m each) concrete islands
Other Streets: Require assistance with a first automated bollard installation in the city (e.g. <https://www.heald.uk.com/wp-content/uploads/2017/04/2017-Evo-Bollard-PDF.pdf>)
Signal/Electrical: Bicycle push buttons on Alexander at Main, see above automated bollards

Hawks

Concrete crews: This is the significant scope item to relocate ~100m curb and gutter, install similar length of off-street bike path, rework driveways, possible corner buldge
Other Streets: Will require some 3D design
Signal/Electrical: Pole relocation (lighting, Hydro, possibly signal)

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Wong, Bryan" <Bryan.Wong2@vancouver.ca>
CC: "Mason, Erica" <Erica.Mason@vancouver.ca>
Date: 6/17/2021 2:52:25 PM
Subject: RE: [EXT] Re: Alexander Street Inquiry

Sorry, here is some copy you can use. Tagging Erica for interest as this is a candidate for whatever treatment the Ontario study leads to, primarily to reduce maintenance effort and give Fire more comfort using it regularly, but the angle is unusual.

s.13(1)



s.13(1)



From: Wong, Bryan <Bryan.Wong2@vancouver.ca>
Sent: June 17, 2021 2:28 PM
To: Gould, Brian <Brian.Gould@vancouver.ca>
Subject: Re: [EXT] Re: Alexander Street Inquiry

Hi Brian,

I hope I'm sending this to the right person.

I have a resident who wanted to ask about **alexander street between Main and Gore** vehicle closure:

They note that the current barriers to restrict traffic are **regularly being overrun** by trucks and emergency vehicles and produce a very loud bang and was wondering if there are **any changes to this design** or if **this is the final state of the design**.

Thanks,
Bryan Wong

From: Wong, Bryan
Sent: May 7, 2021 1:58:18 PM
To: Gould, Brian
Subject: Fw: [EXT] Re: Alexander Street Inquiry

Hi Brian,

Wondering if you know if there's anything that we're doing about this specific case:

- Citizen emailed asking about **Alexander Street between Main and Gore** vehicle closure.
- Current barrier to restrict vehicle traffic is being overrun by trucks / emergency vehicles / cars?
- Are there any changes to this design that we're looking into or is this the current "final" state of the design

I think these were deployed in 2018 and in the notification letter from that time, apparently these might be revised for the future?

Thanks,
Bryan

From: s.22(1)
Sent: April 26, 2021 5:10 PM
To: Wong, Bryan
Subject: [EXT] Re: Alexander Street Inquiry

City of Vancouver security warning: Do not click on links or open attachments unless you were expecting the email and know the content is safe.

Thanks for reaching out so quickly.

Yeah totally, basically a few years ago they installed some cones on the section of Alexander Street between Main and Gore and I live directly in front of them. Originally when they installed them I thought they were just a temporary solution in order to stop traffic from going through the bike lane. To be honest they look super temporary, it's just like 6 yellow pylons and a couple of those yellow barriers. Doesn't look like something the city would do for a permanent installation ya know?

Anyways, the problem is that whenever a car or truck drives through them at any speed other than a crawl, it makes a very loud bang. It's like the crack of a gun, I promise I'm not being dramatic about that, I've spoken to my neighbors and they agree, it spooks us because we think it's gunshots. My girlfriend's dog freaks out. Most of the time it's emergency vehicles, and some of my neighbors have gone and complained to the police and fire halls to get them to stop driving through it. I myself went to the ambulance hall a week ago because I had an ambulance driver through twice in the night and wake me up. I think the issue with that is their staff is constantly rotating so the new drivers haven't been told not to do it.

What I want to discuss is finding a different solution to the problem of vehicles driving

through there. I'd love to speak to someone over the phone or in person to explain if possible.

Regards,

s.22(1)

On Mon., Apr. 26, 2021, 3:14 p.m. Wong, Bryan, <Bryan.Wong2@vancouver.ca> wrote:

Hello s.22(1)

I'm Bryan Wong, a planning assistant with the transportation design engagement team with the City. Thank you for contacting the city.

We had received an email from you regarding Alexander Street requesting a meeting with someone from the team. Prior to scheduling a call, would you be able to share some of the key areas of concern so that we can ensure that the right department can address your concerns?

Thank you,
Bryan Wong

From: "Bike Upgrades" <BikeUpgrades@vancouver.ca>
To: "Gould, Brian" <Brian.Gould@vancouver.ca>
Date: 9/18/2019 4:27:59 PM
Subject: RE: Hansen Case - Main at Alexander

Hi Brian, speaking of this location, any chance you can help me with some quick responses to the questions below:

1. The existing system with all the vehicles crashing through the yellow poles is still very disturbing to residents.
2. If this staying, can this be improved, lower impact, and made better--looks like a cheap temp solution. I see lots of other better examples around.
3. The sign noting 2-way for bikes at Maple Tree Square is poorly located. And, facing the wrong way. Cars entering Alexander St from Powell can't see the sign so don't respect the bikes going west bound.

Your thoughts?

s.22(1)

s.22(1)

s.22(1)

From: Gould, Brian
Sent: Tuesday, September 17, 2019 2:39 PM
To: Ding, Emily
Cc: Bike Upgrades
Subject: RE: Hansen Case - Main at Alexander

Thanks Emily, I'll keep that in mind as we might be making some changes around the corner (but will need to establish whether we have jurisdiction versus the Port). I also like to flag these "can you do this small thing" requests to the Bike Upgrades account since they're candidates for future cycling spot improvements.

From: Ding, Emily
Sent: Tuesday, September 17, 2019 9:22 AM
To: Gould, Brian
Subject: Hansen Case - Main at Alexander

Hi Brian,

I've attached a Hansen case for your review. It's located on Main at Alexander where you previously did a bike lane project. The resident is concerned about speeding cars going Northbound up the ramp and potentially causing conflict with cyclists.

The resident doesn't need a call back so I've closed the case.

Thanks!
Emily

From: "Gould, Brian" <Brian.Gould@vancouver.ca>
To: "Winters, Celia" <Celia.Winters@vancouver.ca>
"Do, Amy" <Amy.Do@vancouver.ca>
CC: "Corey, Kathleen" <Kathleen.Corey@vancouver.ca>
Date: 12/17/2019 3:15:32 PM
Subject: RE: Meeting notes with VFRS

Some additional suggestions inline, I also cobbled together two concepts for Alexander at Main to test our conversation. I would be happy with you attaching and could be happy with either of them (hopefully they are too). I could also just reply to your email when sent if you prefer.

s.15(1)(l)

Here's that precedent from Berkeley, there are others but I prefer this configuration: <https://goo.gl/maps/DwnscytUqZUDLAic7>

From: Winters, Celia
Sent: Tuesday, December 17, 2019 2:16 PM
To: Do, Amy; Gould, Brian
Cc: Corey, Kathleen
Subject: RE: Meeting notes with VFRS

Added a few bits below, however Amy I think you captured many of the main notes well, thank you.

Cheers,
Celia

From: Do, Amy
Sent: Tuesday, December 17, 2019 11:35 AM
To: Gould, Brian
Cc: Winters, Celia; Corey, Kathleen
Subject: Meeting notes with VFRS

Not chronological, more based on topics discussed. Please add your notes:

- Firetrucks require a max (I'm not sure max is the right word unless they meant that some parts of the truck ride even lower did they say can clear a max 4.5 inch obstacle? Have a minimum of 4.5 inch clearance?) 4.5 inch ground clearance.
 - o There is 0.25" dia. tubing running under the trucks for air systems, etc. Bollards can damage tail pipes, auto chains, air compressors, engine (fan belts), etc. incapacitating the truck
- There's a different need for road design on streets that are response routes for fire trucks, compared to streets that are not. Response routes need to be designed so that fire trucks can quickly drive through, and not require fire fighters to manually unlock or remove bollards. Locations that are local typically only require enough space and removability so that fire fighters can set up ladders, equipment etc. to respond.

- Local access locations: (Main & 14th, upcoming Ontario & 5th)
 - Don't install anything that requires a key slows response and padlock may simply be clipped. Hard to keep track of key holders and sometimes lock may malfunction.
 - Plastic posts are OK. Drivers won't be able to tell from a distance if a post is plastic or metal, so they will likely not drive over them. But for locations where firefighters are setting up to respond, they will be able to tell that it's plastic and remove if necessary for staging.
 - VFRS inquired about a break point notched into the plastic posts for ease, which we will explore for Ontario/5th; however, need to be careful about leaving post sleeves or PVC protruding near people cycling however BG mentioned this leaves an unsafe protrusion if not removed asap
 - Removable bollards are also OK for specific locations that have low frequency of response.
- Response routes: (Alexander and Main, Heatley Ave)
 - Flexible bollards are damaging to firetrucks. Transportation should not use them on response routes.
 - Planters in the way are also not good, since they are considered permanent by firetruck drivers and they will not drive into them.
 - Same issue as above with any bollard that requires manually unlocking or removing.
 - Can explore options of unconventional curb design that allows trucks to straddle and/or mount a low concrete curb, but looks like a road block to normal cars. This can look like a concrete median that is mountable by firetrucks.
 - Note: Structural growing medium (structural soil) has the same load bearing capacity as fill (supposedly) would help camouflage the ability of VFRS to circumvent the diverter
 - Avoid designs that quickly raise and drop wheels, particularly one of a pair, as they can lead to differential axle loading
 - Favour designs that naturally guide VFRS driver into a safe alignment to straddle medians.
 - Trucks have a difficult time going over big speed bumps, but it can straddle curbs of different heights laterally. Though prefer both axels on the same level plane to prevent unnecessary damage to wheels.

Amy Do, EIT. | she, her, hers
 Civil Engineer I, Transportation Design | City of Vancouver
 p: 604 829 9251
amy.do@vancouver.ca

I respectfully acknowledge that I live, work and play in the traditional territories of the xʷməθkwəy̓əm (Musqueam), skwxwú7mesh (Squamish), and selilwitulh (Tsleil-Waututh) Coast Salish peoples.