

January 15, 2019

HUB Cycling
312 Main Street, 2nd Floor
Vancouver, BC V6A 2T2

Dear Mr. Piercy,

Re: Brooksbank Avenue/East Keith Road Intersection Design

Thank you for your organization's feedback regarding the new Brooksbank Ave. and E. Keith Road intersection, which is currently under construction. This letter provides responses to the questions included in your letter dated November 20, 2018. For your reference, enclosed is a copy of your original letter.

- Green paint will not be installed in the intersection. The use of green paint is limited to City locations where a high potential for conflict exists between motor vehicles and cyclists, and is only considered on a case-by-case basis as determined by the City Engineer. An example of such a case might be when a road narrows within an intersection, exposing cyclists to an increased potential conflict with vehicles travelling in the same direction. This is the case with the eastbound and westbound directions of travel at the intersection of East 13th Street and St. Georges Avenue, hence the elephant feet markings and road signs that are installed there. The City's Engineering group will continue to monitor the effectiveness of the elephant's feet markings and will consider any future improvements accordingly.
- Four RB-27 "Turning Vehicles Yield to Bicycles" signs will be installed, one on each approach.
- The bicycle stencil orientations are correct in the drawing as cyclists, unlike motor vehicles, will have the freedom to decide which crossing/direction they will use.
- The District will be following up with the Ministry of Transportation and Infrastructure (MOTI) regarding the westbound curb lane developing into a right-turn only lane. A solid lane marking for a length of 15m from the stop bar will be painted to prohibit lane changes close to the intersection.
- Right-Turn on Red (RTOR) movements will not be prohibited at the current time. The signal timing plan provided by the Ministry, and developed by their consultant based on traffic analysis and modelling, did not include restrictions for RTOR. RTOR restrictions will have significant impacts to the capacity of the intersection, therefore, City staff will monitor the intersection operation once the new traffic signal is commissioned and, if warranted

and justified based on intersection performance and operation, may consider restricting RTOR.

- Bicycle push buttons will be provided for in every corner of the intersection.

Thank you for your feedback. If you have any further questions or concerns, please contact the undersigned at kkuzmanovski@cnv.org or at 604-998-3458.

Sincerely,



Kliment Kuzmanovski, P.Eng, PMP
Traffic Engineer

C: Jay Porter, Senior Project Manager – MOTI
Erin Moxon, Project Manager – District of North Vancouver
Jonas Moon, Project Manager – City of North Vancouver

Attachment



604.558.2002
bikehub.ca



November 20, 2018

Jonas Moon, Project Engineer, City of North Vancouver

Erin Moxon, Project Manager, District of North Vancouver

Cc: Jay Porter, Senior Project Manager, Ministry of Transportation and Infrastructure

RE: Brooksbank Avenue/East Keith Road Intersection Design

Dear Jonas and Erin,

HUB Cycling is a charitable organization working to get more people cycling, more often. We believe that more cycling means healthier, happier, more connected communities. We are writing to you regarding the new Mountain Highway / Brooksbank / East Keith Road intersection which is currently under construction and anticipated to be fully operational in the spring of 2019. This project is greatly appreciated and based on the information reviewed with the HUB North Shore Committee to date, incorporates design innovations that should improve cycling network connectivity and safety through this critical junction. We would like to provide feedback on Revision B of the signing and pavement marking plans dated March 2, 2018 that we believe could enhance the overall functionality and safety of the new intersection.

The specific comments, which are highlighted in the attached markup include the following:

- Install green paint through conflict areas in order to highlight the presence of a designated bicycle crossing. Similar treatments have been applied at high traffic volume cross-jurisdictional locations such as the Lynn Valley Road southbound bicycle lane at Highway 1 interchange.
- Install RB-37 "turning vehicles yield to bicycles" for the four approaches where a right hook conflict could occur. This will help to alert right-turning drivers of the presence of bicycle riders who may be approaching the conflict points at a high speed given the approach grades.
- Adjust the bicycle stencil orientations at the entrance to each bicycle crossing as the current orientation would appear to encourage wrong-way bicycle movements. Supplementing the stencils with directional arrows may also help to provide positive guidance through the intersection and reduce the risk of wrong way movements.
- The westbound curb lane develops into a right-turn only drop configuration. To reduce the risk of last-minute lane changes, consider adjusting the skip line pattern to a 3 m line / 3 m gap.

We also would like to pass along two general comments and request clarity on the proposed signalized intersection operation as follows:

- Consider prohibiting Right-Turn on Red (RTOR) movements due to:
 - steep approach grades with high bicycle entry speeds (particularly the southbound and eastbound downhill approaches) where right-turning motorists may mis-judge safe gaps in oncoming bicycle traffic;
 - potential for RTOR vehicles to block wider crosswalk and offset bike lane area while searching for an available gap in oncoming traffic;
 - proposed two-way Multi-Use Pathway operation on the south side with bikes potentially entering the intersection from the right hand side; and
 - the opportunity to convert shared lanes to right turn only lanes in the future, incorporate overlap right turn phases with protected left turn phases and thereby mitigate the resultant delay from prohibited RTOR operation.
- Confirm the bicycle pushbutton location and signal detection arrangement. Will there be separate cyclist pushbutton locations for sideroads that are not on a minimum recall or resting phase? We note that currently at Mountain / Keith the signal operation rests on Mountain Highway southbound, however, with the new signal phasing, a two-stage crossing will be necessary for some movements. To ensure user compliance and reduce delays, convenient and legible bicycle detection capabilities should be provided.

If you have any questions or comments about our suggestions, please contact us at northshore@bikehub.ca. We appreciate the opportunity to comment on this design as it is has developed and continue to support the multi-agency efforts required to bridge this key gap in the regional cycling network.

Yours truly,



Don Piercy
Chair, HUB North Shore
HUB: Your Cycling Connection
northshore@bikehub.ca

Jason Jardine
Vice-Chair, HUB North Shore

Giacomo Falorni
Member, HUB North Shore

Antje Wahl
Member, HUB North Shore

Attach