



Your Cycling Connection

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

Brooksbank Avenue/Keith Road intersection design

Dear Erin and Liliana,

HUB is a charitable organization working to get more people cycling, more often. We believe that more cycling means healthier, happier, more connected communities.

Thank you for the opportunity to review three design options for the cycling facilities at the Brooksbank/Keith intersection that will be built as part of the Mountain Highway Interchange project.

The Ministry of Transportation and Infrastructure consulted us on the design of the interchange and this intersection for two years. The result of this consultation is the protected intersection in the tendered design by the Ministry. It was our understanding that bike signals would be included to control the bike crossings of Keith, Brooksbank and Mountain Highway, to make this a protected intersection for cyclists.

Of the three design options presented by City and District, we support the protected intersection design (Option C) if the bollards are replaced with islands like in the Ministry's tendered design and if bike signals are installed. We recommend marking all four bike crossings of the intersection in green if conflicting cyclist and vehicle movements are not separated by signal.

- Bollards are a serious hazard for cyclists. Please refer to research evidence (e.g. Kay Teschke, University of British Columbia) and guidance from other jurisdictions, such as draft guidelines in California. Cyclists have been seriously injured and even fatally injured in collisions with bollards. At intersections bollards are particularly hazardous because it is difficult to simultaneously navigate bollards and watch out for traffic.
- Bike signals are essential to allow for safe and efficient crossings and left turns. The bike signals

should be timed with the signals for motor vehicles (no push buttons). A leading interval for cyclists and pedestrians is recommended to increase safety. Without a leading interval cyclists and pedestrians are more at risk to be hit by turning cars while crossing because cyclists do not have the forward stop bar normally included in protected intersection designs and pedestrians do not have pedestrian safety islands.

We recommend the following additional changes to Option C (previously submitted by email on January 19, 2018):

1. **Keith WB west of intersection before bus stop: provide bike lane buffer by reducing vehicle travel lane width.** Reason: Increase cycling safety. Reduce vehicle speeds.
2. **Raise Keith bike lane WB to sidewalk level after bus stop west of intersection.** Reason: Keith is a steep uphill at this location and a 1.5m unprotected bike lane on a major arterial is insufficient when the goal is to encourage people to bike for transportation. A protected bike lane or raised path is absolutely necessary to allow more people to bike and to bike safely. Additionally, drivers often have poor visibility driving up Keith into the sun in the afternoon. Cyclists need protection from cars when the uphill cycling speed is near walking speed or people get off their bikes to push the steepest section on Keith.
3. **Stripe Keith EB bike lane through intersection at Heywood and Shavington and mark green.** Reason: Remind drivers turning into and from side streets to watch out for fast moving cyclists. The high downhill cycling speed on Keith is a risk because drivers often underestimate the speed of cyclists and cyclists can't stop in time or avoid a collision if drivers turn in front them.
4. **Mark multi-use path crossing of Brooksbank in green.** Reason: Alert drivers to watch out for cyclists. Without green colour drivers generally don't expect bikes in crosswalks.
5. **Widen and buffer the Brooksbank SB bike lane by reducing the width of the medians.** Reason: 1.5m is below recommended width. Traffic on Brooksbank will increase with new interchange and at minimum wider buffered bike lane is needed.
6. **Change combined right turn/straight vehicle lanes on Keith EB and Brooksbank NB to dedicated right turn lanes.** Reason: Dedicated right turn lanes are safer for cyclists and pedestrians because it is easy to identify approaching cars that will turn. Combined turn/straight vehicle lanes increase the risk of cyclists and pedestrians being hit and injured in crosswalks.

We look forward to the final design and the design of signal installation, which we would like to review. The signal design will be critical for providing safe transportation by bike.

Sincerely,

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