



MEMO

To: Cycling Advisory Committee

From: Daniel Hall
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Transportation Planning & Design

Date: June 16, 2021

Re: **Ferndale Ave Bike Lane Barriers**

Background

When traffic calming measures such as speed cushions are added to streets with bike lanes, one of the challenges is that vehicles may enter the bike lane to avoid the speed cushions. This can present a safety issue for people on bikes and reduces the effectiveness of the speed cushions.

Solutions

To mitigate drivers using the bike lane to avoid the speed cushions, a few different solutions have been implemented.

In 2016, a flexible bollard was installed on Bruce St to keep vehicles from entering the bike lane, but this was not an all-year solution since it was removed from November-April to accommodate winter maintenance.

In 2017, a speed cushion was then added to the bike lane on Bruce St to facilitate a permanent solution. This solved the problem of motorists using the bike lane to avoid the speed cushions but created a new concern for people on bikes – riding over a speed cushion is not very comfortable and so some people would enter the vehicle lane to avoid the speed cushion.



In 2020, a concrete curb with bollards, see pictures above, were installed on Ferndale Ave adjacent to the speed cushions in three locations. This was an all-year solution that kept vehicles out of the bike lane, preserved the usefulness of the speed cushions and increased the safety for people on bikes.

The drawbacks of the concrete curb solution, like any barrier in the roadway, is that it reduced maintenance efficiency. In the winter, the road plow is forced to plow a windrow across the bike lane, causing snow accumulation in the bike lane, see picture below.

This reduces the effectiveness of removing the snow from the roadway and adds additional maintenance costs to return to the area to clear these specific locations. In the summer, road sweeping is also more difficult with the barriers installed.



Evaluating Solutions

The three solutions were compared using three criteria and a simple scoring method.

Type of Barrier	Flexible Bollard	Speed cushion in bike lane	Concrete curb with bollards
Slows traffic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Comfortable for cyclists	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Maintenance efficiency	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	

The purpose of the speed cushions is to slow traffic and the purpose of the bike lane is to improve the comfort and safety of cyclists. Therefore, the first two criteria should be weighted more than the operational impacts to maintenance activities. A weighted evaluation concludes that curbs and bollards are the preferred solution in this context.

Going Forward

The recommended solution for bike lanes adjacent to speed cushions is a concrete curb with bollards. The location of the speed cushions and concrete curb could be experimented with to avoid nearby driveways and the potential increased snow load, but it's unlikely this will make a significant difference. Also, as this solution is implemented in more locations, operational adjustments can be reviewed to maintain the bike lanes more effectively.

Regards,
Daniel Hall

c: Doug Macrae, Director, Transportation and Mobility
John Parsons, Division Manager, Road Operations
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