

# Jarvis Street

## Pre- and Post-Bicycle Lane Collision Review

April 26, 2012

### Background:

City Council, at its meeting on May 25, 26 and 27, 2009, amended and adopted the Jarvis Street Environmental Assessment Study and, in so doing, approved the installation of bicycle lanes on Jarvis Street, between Queen Street East and Charles Street East. In July 2010 Jarvis Street, between Queen Street East and Isabella Street, was converted from a 5-lane cross-section with a centre reversible lane to a 4-lane cross-section plus bicycle lanes. In addition to the changes to traffic operations, all of the parking was removed from Jarvis Street to accommodate the bicycle lanes. Prior to the bicycle lanes, parking was permitted along some sections of Jarvis Street during the off-peak periods.

### Data Limitations:

Transportation Services has compiled the reported collision data for this section of Jarvis Street, before and after the bicycle lane installation. Collision analysis is generally based on a minimum three years of data because there can be significant variations from year to year. However, this analysis compares three years of before data with only one year of after data because the bicycle lanes have been in place for less than two years. Therefore caution should be used in interpreting the data. More than one year of data is required to determine conclusively that the change in collision patterns is a result of the change in operation rather than a temporal change.

### Changes in Traffic and Bicycle Volumes

It's important to identify any changes in traffic patterns between the before and after periods because a decrease or increase in volume could impact collision frequency and/or rate. The Transportation Services staff report, entitled "Bikeway Network – 2011 Update" which was considered by City Council on July 12, 2011 (PW5.1) indicated that the 8-hour motor-vehicle volumes had remained unchanged while bicycle volumes had increased three-fold. The traffic count data is presented in Table 1 below.

**Table 1: Jarvis Street  
Motor-Vehicle and Bicycle Volumes**

	<b>Before Bicycle Lanes</b>	<b>After Bicycle Lanes</b>
Street Cross-Section	5 general purpose traffic lanes (including centre reversible lane) Off-peak parking on west side no cycling facility	4 general purpose traffic lanes No parking at any time 2 bicycle lanes
Average 8-Hour Motor Vehicle Volumes (both directions)	13,000 vehicle (approx.)	13,000 vehicle (approx.)
Average 8-Hour Bicycle Volumes (both directions)	290 bicycles (approx.)	890 bicycles (approx.)

## Review of Collision Pattern Pre- and Post-Bicycle Lanes

Notwithstanding the above-noted caution concerning the short "after-analysis" period, there appear to be positive changes in the collision pattern following the changes introduced on Jarvis Street.

Table 2 below provides a summary of reported collisions along the Jarvis Street, from Queen Street East to Isabella Street, sorted by collision type, for the following periods:

- Before Period (36 months) – July 1, 2007 to June 30, 2010
- After Period (12 months) - September 1, 2010 to August 31, 2011

**Table 2: Jarvis Street  
Collision Types Pre- and Post-Bicycle Lanes**

Collision Type	Before Period (3 years)	Before Period (Average per year)	After Period (1 year)
Rear End	123	41	46
Turning Movement	144	48	21
Sideswipe	78	26	20
Angle	58	19	18
Motor vehicle-bicycle	22	7	15
Motor vehicle-pedestrian	28	9	1
All Other	28	9	1
<b>Total</b>	<b>481</b>	<b>159</b>	<b>122</b>

The overall number of reported collisions per year along Jarvis Street has decreased by 23 percent, from an average of 159 to 122 collisions per year. Most of this reduction can be attributed to the reduction in collisions involving motor vehicle turning movements and collisions involving pedestrians.

The other significant finding is that collisions involving cyclists have doubled, from an average of 7 per year for the three years prior to the bicycle lane installation to 15 collisions in the first year of the bicycle lane operation. However, when compared with the three-fold increase in bicycle traffic following the introduction of bicycle lanes, the cyclist collision rate has actually decreased in the year following the bicycle lane installation.

There were no traffic fatalities on this section of Jarvis Street during the study period. In the before period, 27% of all reported collisions resulted in personal injury, whereas in the after period 23% of all reported collisions resulted in personal injury. With respect to cyclists, 77% of bicycle collisions in the before period resulted in personal injury (5.7 per year) compared with 73% in the after period (11 per year).

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