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For T&T - November 3, 2009

Supports Item No. 2  
T&T Committee Agenda  
November 3, 2009



CITY OF VANCOUVER

ADMINISTRATIVE REPORT

Report Date: October 28, 2009  
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VanRIMS No.: 08-2000-20  
Meeting Date: November 3, 2009

TO: Standing Committee on Transportation and Traffic  
FROM: General Manager of Engineering Services  
SUBJECT: Knight Street at 33rd Avenue - Left Turn Bays

***RECOMMENDATION***

- A. THAT Council approve the detailed design and construction of Knight at 33<sup>rd</sup> Avenue Left Turn Bays at a total revised project budget of \$3,411,000 with the source of funds as follows:
- 2009 Street Basic Capital for Arterial Improvements - Clark/Knight Corridor- \$1,057,500;
  - \$370,000 from residual property sale at 4854 Knight Street;
  - \$1,233,500 cost shared funding contribution from TransLink;
  - \$500,000 anticipated Federal Border Infrastructure Fund;
  - \$250,000 anticipated funding from Insurance Corporation of BC.
- B. THAT Council grant the Director of Real Estate Services in consultation with the General Manager of Engineering Services, the authority to commence property negotiations for the acquisition of the remaining road widening strips with reports back as necessary.

***GENERAL MANAGER'S COMMENTS***

The General Manager of Engineering Services RECOMMENDS approval of the foregoing.

### *COUNCIL POLICY*

On May 27, 1997 Council approved the Vancouver Transportation Plan which recommended that staff develop improvements for goods movement and safety along Knight Street.

On January 15, 2002 Council approved the Victoria-Fraserview/Killarney Community Vision which provided a direction to improve conditions and safety on Knight Street for residents, pedestrians and transit users.

On April 20, 2003 Council approved the Clark-Knight Corridor Whole Route Analysis project to develop a corridor plan that would recommend improvements for pedestrians, transit users, residents and goods movement.

On March 29, 2005 Council approved the Clark-Knight Corridor Plan which outlined various measures to improve liveability and transportation along the corridor, including a left turn bay on Knight Street at 33rd Avenue.

### *PURPOSE*

The purpose of this report is to fulfill the requirement to report back on the detailed design and project budget for left turn bays on Knight Street at 33<sup>rd</sup> Avenue(per RTS 4549), and acquire the remaining properties to complete the project.

### *BACKGROUND*

Clark Drive and Knight Street provide a vital transportation corridor through Vancouver. This eight-kilometer route, which extends from the Port of Vancouver on Burrard Inlet to the Knight Street Bridge at the Fraser River, carries between 38,000 and 55,000 vehicles per day. It is the most heavily used truck route in the City and is a key regional connection between the Port, the City, the region, and the United States border. In addition, the corridor runs through single-family residential neighbourhoods for the majority of its length. There are schools, parks, commercial areas and a community centre along the route that make travel on and across the corridor essential for many local residents.

The frequency of collisions along the Clark/Knight Corridor is among the highest in the City of Vancouver. The 1997 Vancouver Transportation Plan directed staff to undertake improvements on the Clark-Knight corridor to improve both safety and liveability along the corridor. The resulting Clark-Knight Whole Route Analysis identified 19 safety and liveability improvements and partnership funding from TransLink, ICBC and the Canada Border Infrastructure Fund.

On March 29, 2005 Council approved the left turn bay on Knight Street at 33<sup>rd</sup> Avenue in principle subject to report back on cost and detailed design.

In June 2009, Council approved a total budget allocation of \$2,795,000 for this project as part of the 2009 Capital Budget process. At this time, detailed design was not complete and therefore, this was an approximate total project budget, with a requirement to report back on the detailed design and project budget.

The following table shows the Clark-Knight improvement projects that are completed, and upcoming.

Completed	Upcoming
<ul style="list-style-type: none"> <li>• Construction of northbound left turn bay at 6<sup>th</sup> Ave.</li> <li>• Construction of dual left turn bays at 49<sup>th</sup> Ave.</li> <li>• Central Valley Greenway landscaped median</li> <li>• Southbound to eastbound left turn signal on Clark at 1<sup>st</sup> Ave.</li> <li>• Approval of Landscaped Median between 15<sup>th</sup> Ave and 21<sup>st</sup> Ave</li> </ul>	<ul style="list-style-type: none"> <li>• Construction of Left Turn Bays on Knight Street at 33<sup>rd</sup> Ave.</li> <li>• Construction of Landscaped Median between 15<sup>th</sup> Ave and 21<sup>st</sup> Ave.</li> <li>• Redesign Clark/Knight Diversion between 13<sup>th</sup> Ave and 15<sup>th</sup> Ave.</li> <li>• Boulevard Enhancement and Tree Voucher Program.</li> <li>• Design and estimate for construction of left turn bay at 57<sup>th</sup> Ave.</li> <li>• Redesign curve between 54<sup>th</sup> and 55<sup>th</sup> Ave.</li> <li>• North/South Border/Dumfries Bike Route.</li> <li>• Public Art Plan.</li> </ul>

### *DISCUSSION*

The intersection of Knight Street at 33<sup>rd</sup> is one of the highest collision locations in the City of Vancouver. Between 2003 and 2007, there were 522 reported vehicle crashes resulting in 187 injuries at the intersection.

Council approved the left turn bays at Knight at 33<sup>rd</sup> Avenue subject to report back on detailed design and funding. Left turn bays at this location will improve safety, reduce shortcutting, and improve goods flow from Clark/Knight to the Port of Vancouver by improving travel time reliability through reduced collisions.

The experience gained from similar projects shows that left turn bays significantly reduce collisions without changing intersection capacity. Case studies of six City intersections indicated that left turn bays have reduced left turn collisions by 50-80% (see Appendix 1). In all cases, traffic volumes stayed about the same and safety improved significantly after construction of the left turn bays. Left turn bays also reduce all intersection collisions significantly. The before and after study of Knight Street & 41<sup>st</sup> Avenue intersection indicated that left turn bays have reduced all interaction collisions by 36% (see Appendix 2).

The proposed design for the Knight and 33<sup>rd</sup> Avenue left turn bays requires the acquisition of property, largely on the east side of the street, including a strip along Kensington Park. This design minimizes the impact to residents by acquiring properties, on one side of the street only, thus reducing property requirements to 12 properties instead of 26 properties (see Appendix 3).

The existing 35<sup>th</sup> Avenue crosswalk will be relocated to improve safety. New pedestrian paths and landscaping in Kensington Park will be constructed between 33<sup>rd</sup> and 37<sup>th</sup> Avenue to direct pedestrians to signalized crossings at those locations.

### *PUBLIC CONSULTATION*

As part of the process to prepare the Clark-Knight Corridor Plan, the City carried out a survey in May 2004 asking residents about their support for adding left turn bays to the intersection of Knight Street and 33<sup>rd</sup> Avenue. In total, 95% of residents supported the installation of left turn bays on Knight Street alone or both Knight Street and 33<sup>rd</sup> Avenue (see Appendix 4). Although there was significant resident interest for left turn bays on 33<sup>rd</sup> Avenue, staff do not recommend its inclusion at this time due to its relatively lower collision history and left turn volumes.

### *FINANCIAL IMPLICATIONS*

In June 2009 (RTS 8046), Council approved \$2,795,000 in funding for this project as part of the 2009 Streets Basic Capital Budget. At that time, the project budget was considered a preliminary estimate as detailed design, cost sharing estimates, and Kensington Park mitigation plans were not complete. Sources of funding were as follows: \$1,074,000 Streets Basic Capital - Arterial Improvement, \$1,375,000 TransLink Cost-Share and \$346,000 property sale.

Upon completion of the detailed design, mitigation measures, and with greater certainty on expected cost-sharing, the project budget has increased to \$3,411,000 and the contribution from the 2009 Street Basic Capital has decreased to \$1,057,500. The other sources of funding are as follows:

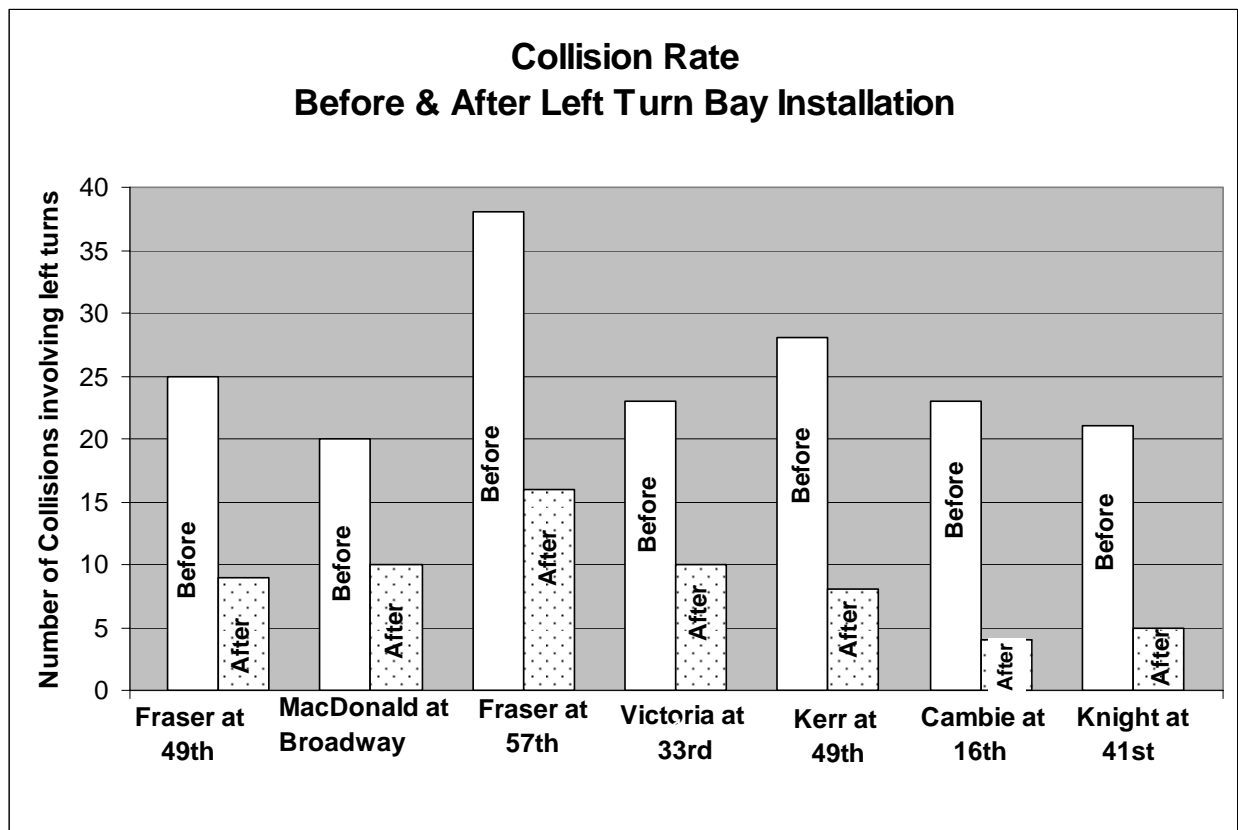
- \$1,057,500 from 2009 Street Basic Capital for Arterial Improvements - Clark/Knight Corridor;
- \$370,000 from property sale;
- \$1,233,500 Cost- shared funding contribution from TransLink;
- \$500,000 anticipated Federal Border Infrastructure Fund;
- \$250,000 anticipated funding from Insurance Corporation of British Columbia.

Funding from the Federal Border Infrastructure Fund requires that the project be complete before the end of March 2011. Meeting this schedule requires funding approval this fall, to allow for the remaining properties to be acquired and to schedule construction for summer 2010.

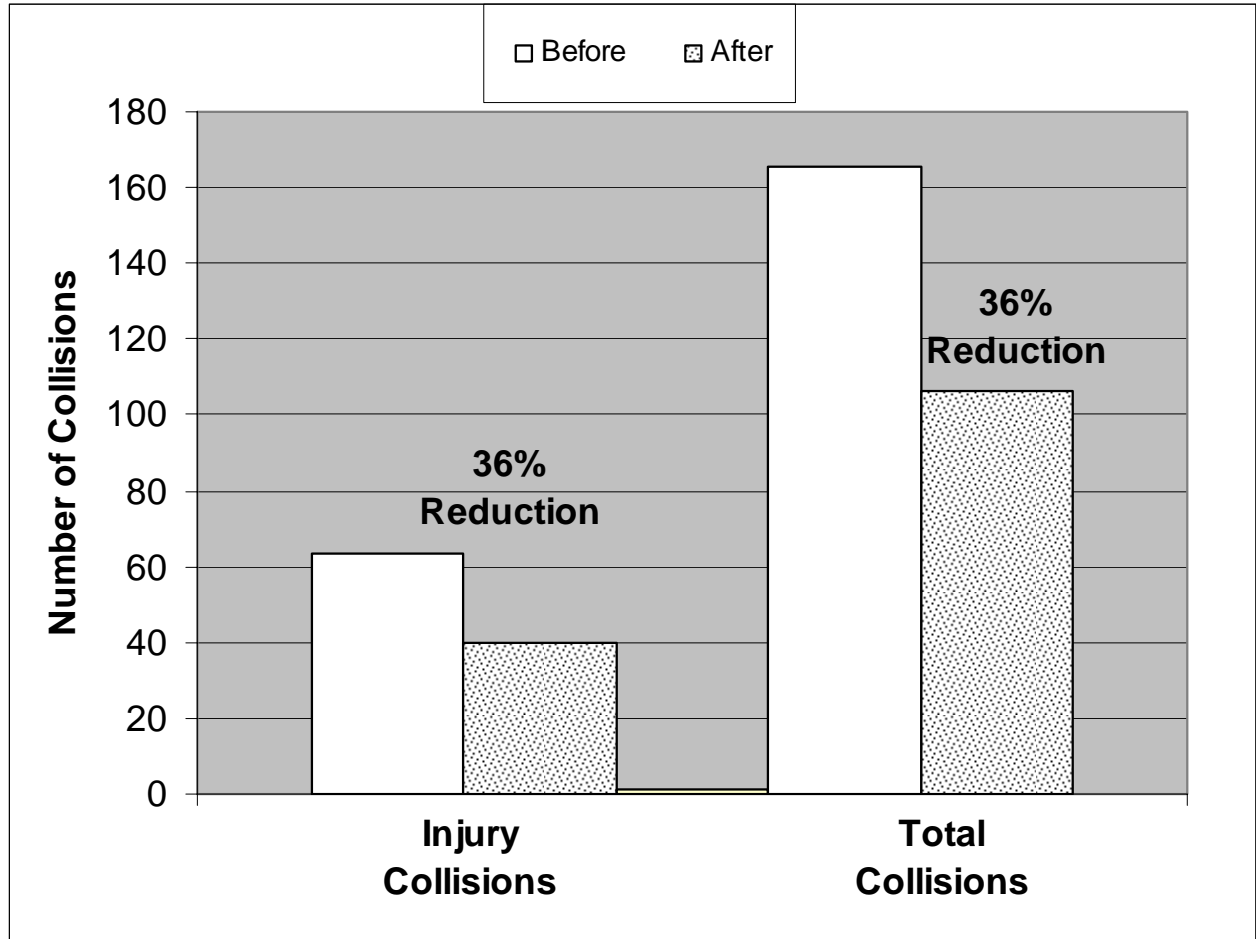
### *CONCLUSION*

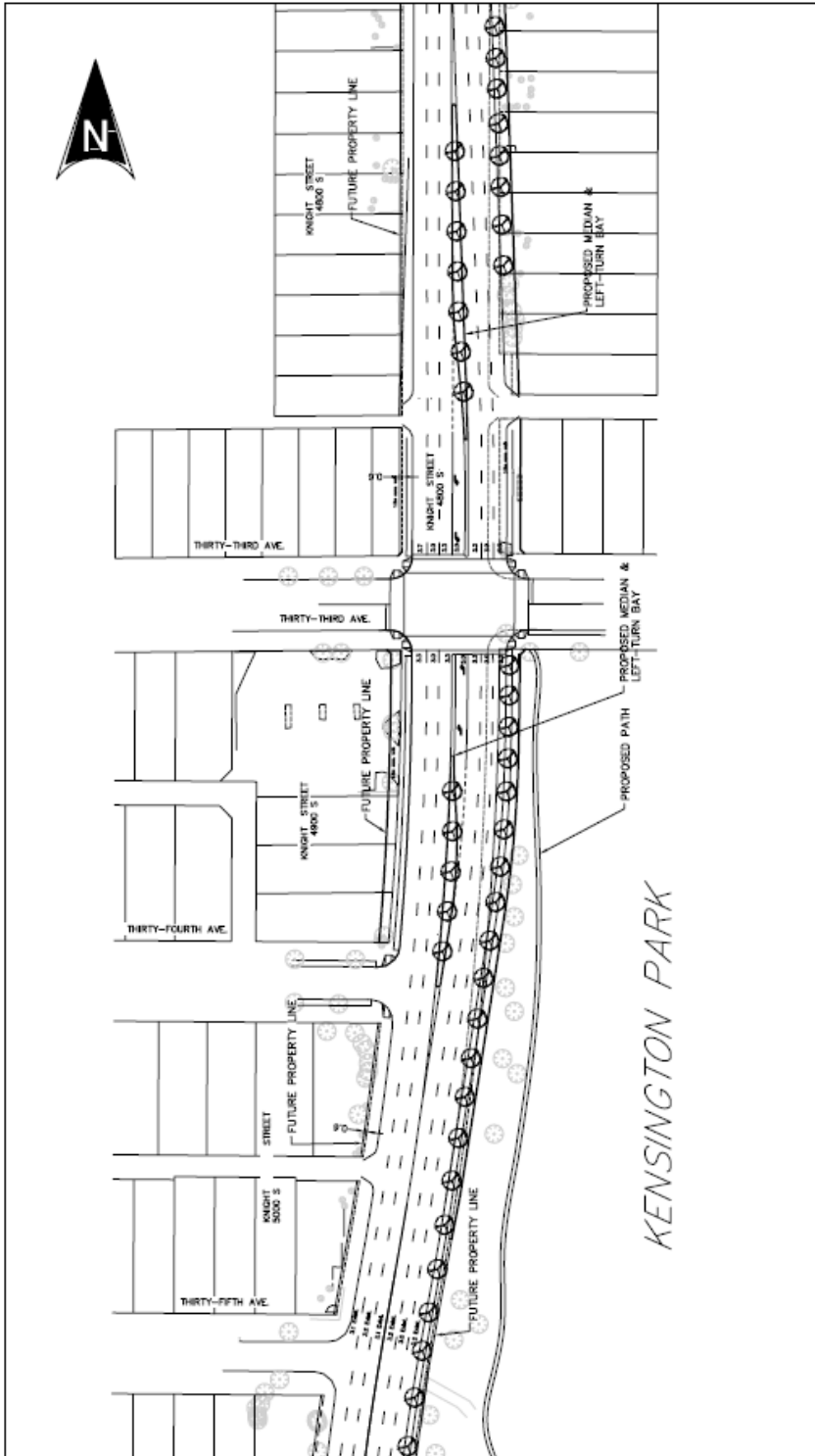
It is recommended that the installation of left turn bays on Knight Street at 33<sup>rd</sup> Avenue be constructed as shown in Appendix 1, in order to improve traffic safety and reliability.

\* \* \* \* \*



### Collision Rate Before and After Left Turn Bay Installation





Knight St. at 33rd Ave. - Proposed Left-turn Bay

### Resident Survey - Left turn Bays, Knight and 33rd

	Survey Total	Live Directly on Clark- Knight Street (subset)	Live Within 7 block radius (subset)	Live Outside 7 block radius (subset)
Stay as is	5% (20/377)	15% (8/55)	3% (9/272)	6% (3/50)
Left turn bay in north and south legs	34% (127/377)	29% (16/55)	31% (84/272)	54% (27/50)
Left turn bay in north, south, east, west legs	61% (230/377)	56% (31/55)	66% (79/272)	40% (20/50)