

Report Date: September 18, 2015
Contact: Lon LaClaire
Contact No.: 604.873.7336
RTS No.: 11098
VanRIMS No.: 08-2000-20
Meeting Date: September 30, 2015

TO: Standing Committee on Planning, Transportation and Environment

FROM: General Manager of Engineering Services in consultation with the General Manager of Finance, Risk and Business Planning

SUBJECT: Knight and Marine Intersection Improvements: Project and Budget Approval

RECOMMENDATION

THAT Council approve a multi-year project budget of \$2.5 million for the Knight and Marine Intersection Improvements Project, to be added to 2015-2018 Capital Plan as a priority project to improve goods movement and safety; source of funding to be up to \$1.5 million in City funding (City-wide Development Cost Levies (DCL) for Highway Facilities) and \$1.0 million contribution from the Federal government.

REPORT SUMMARY

The City has an opportunity to implement a capital project that advances two key objectives of the City's Transportation 2040 Plan: improving safety and improving the goods movement network:

- The intersection of Knight Street and Marine Drive is the highest crash location in the city of Vancouver. The Knight and Marine Intersection Improvements Project would improve safety through design and signalization changes to the intersection and bridge ramps.
- Currently there is no connection for westbound trucks on Marine Drive to turn north onto Knight Street, which are both key regional truck routes. The project would create that connection, which would greatly benefit goods movement and reduce the impact of trucks on more minor streets.

The project was considered by staff but did not make the short list of highest priority projects included in the 2015-2018 Capital Plan. The Federal government recently committed \$1.0 million toward this \$2.5 million project. Given this opportunity to cost-share the project, and additional potential cost-sharing opportunities with TransLink and ICBC, staff are recommending that the project be included for implementation as part of the 2015-2018 Capital Plan. Including this project will require reprioritization of other transportation projects, which will be addressed as part of the 2016 Budget.

Once a funding contribution agreement is signed with the Federal government this fall, staff will proceed with public engagement, final project design and exploration of further cost-sharing opportunities, and report back to Council as needed. Staff anticipates that construction can start and finish in 2017.

COUNCIL AUTHORITY/PREVIOUS DECISIONS

The [2015-2018 Capital Plan](#) (\$1.085 billion) was approved by Council on October 1, 2014. The Capital Plan [borrowing authority questions](#) (\$235 million) were [approved by the electors](#) on November 15, 2014.

The [Transportation 2040 Plan](#), the City's strategic policy framework for transportation, was adopted by Council on October 31, 2012.

GENERAL MANAGER'S COMMENTS

The Knight and Marine Intersection Improvements Project supports Transportation 2040 by providing goods movement and safety improvements. This intersection has been identified by ICBC as the highest collision and casualty location in Vancouver. The City's 4-year Capital Plan is intended to be flexible enough to accommodate changes in response to new circumstances or opportunities. The ability to reduce collision rates and to cost-share this project with the Federal government, provides a strong rationale to implement this project now.

REPORT

Background/Context

The [Asia-Pacific Gateway and Corridor Transportation Infrastructure Fund](#) was initiated in 2006. The program supports projects that make Canada's multimodal transportation network more efficient for international trade with Asia-Pacific. In 2009, the Federal government allocated \$18.5 million toward the construction of the City's Powell Street Overpass (a \$50 million project), which was completed in 2014.

Earlier this year, the Federal government had a proposal call to allocate the remaining \$16.5 million left in the fund. In April, the City submitted an application for the Knight and Marine Intersection Improvements Project. In July, the Federal government announced that it had selected the project and allocated \$1.0 million to it. Projects must be completed by December 31, 2017.

Strategic Analysis

The intersection of Knight Street and Marine Drive was designed and built in the mid-1970s when Knight Street Bridge was constructed. The grade-separated intersection was designed for the efficient movement of vehicles with minimal facilities for people walking or cycling.



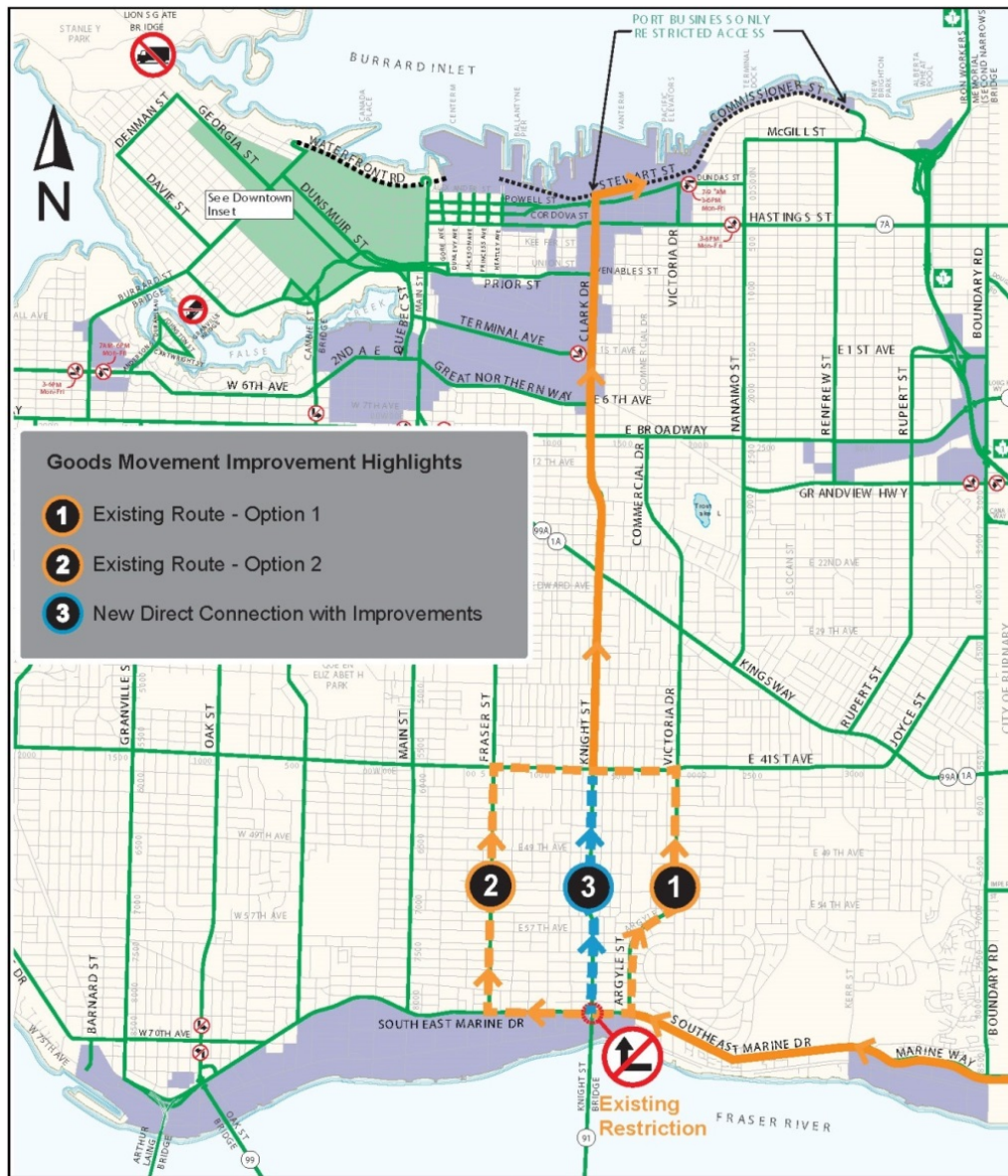
The Knight at Marine intersection is currently one of the highest collision locations in the region and the highest in the city of Vancouver. Between 2009 and 2013 there were 1,300 collision incidents, for an average of 260 collisions per year. During this period there were 529 injury collisions (approximately 40% of collisions). Most collisions occurred during weekdays and the afternoon peak period, showing collision incidence is linked with high traffic activity and congestion. Most of these collisions are due to rear ends and uncontrolled merges at poor angles, particularly where the northbound to eastbound off-ramp merges onto Marine Drive. Although the overall number of collisions is high, there have been no fatalities at this location between 2009 and 2013, or more recently.

Knight Street and Marine Drive/Marine Way are part of the region’s Major Road Network and key truck routes for both the city and region. The Clark-Knight corridor connects directly to the Port of Vancouver, and Marine Drive connects to Burnaby and New Westminister. From 2006 to 2011, following Council’s approval of the [Clark-Knight Corridor Plan](#), the City made significant safety improvements to intersections along the corridor, with help from the Federal Border Infrastructure Fund.

Knight St. Bridge is the second busiest bridge in the region after the 2nd Narrows Bridge. The City will be collecting additional truck volume data in Fall 2015 for Marine Drive at the intersections of Knight Street, Argyle Street and Fraser Street. Results will be shared through the upcoming public consultation process.

2011 TransLink Screenline Counts	Vehicle & truck volume (6am - 10pm)	Truck volume (6am - 10pm)
Knight Street Bridge	89,000	7,190 (8% of total)
Marine Way - west of Boundary Rd.	38,000	2,280 (6% of total)

A westbound to northbound turning lane was not built as part of the original construction at the intersection. Westbound vehicle and truck traffic on Marine Drive wanting to go northbound Knight Street must take a more circuitous route using either Argyle or Fraser Street.



The recommended design includes a set of upgrades to improve truck access and overall safety at the intersection, including:

- A new westbound left turn bay on Marine Drive that provides a missing link for a direct connection to northbound Knight Street. The left turn lane will tie into the existing on-ramp for Knight Street.
- Widening the northbound to eastbound Knight Street Bridge off-ramp to create a new dual right turn lane and introducing a new traffic signal control for northbound to eastbound traffic, which will reduce or eliminate potential motor vehicle conflicts.

- Cycling and pedestrian access improvements, including a new shared pedestrian/bike path on the north side of Marine Drive, a new bike path on the south side of Marine Drive, and a new pedestrian/bike path connecting the Knight Street Bridge off-ramp to Marine Drive.

The diagram summarizes the proposed improvements:



Staff will conduct a public engagement process with stakeholders and nearby residents and businesses, and prepare detailed plans for the project in 2016. Construction is expected to start and finish in 2017. This aligns with the Federal government requirement that all projects funded from the Asia-Pacific Fund be completed by December 31, 2017.

Implications/Related Issues/Risk

Financial

Project Budget and Funding Sources

The project is estimated to cost \$2.5 million. Funding for the project is currently up to \$1.5 million (60%) in City funding (City-wide Development Cost Levies (DCL) for Highway Facilities) and \$1.0 million (40%) in Federal funding. Staff is exploring cost-sharing opportunities with both ICBC and TransLink. Funding for the project of up to \$625,000 is possible from TransLink and up to \$250,000 from ICBC, which would reduce the City’s contribution to \$625,000. If these discussions are successful, staff will inform Council via a quarterly budget adjustment report.

Cash flow spending

Staff estimate that about 10% of the funding will be expended in 2016 (detailed planning/design and public notification/engagement) and 90% in 2017 (construction). A small amount (up to \$10,000) may be spent in 2015 for data collection and public meetings, which will be addressed in the next quarterly budget adjustment report, scheduled for November.

Capital Plan perspective

The 2015-2018 Capital Plan proposed investing \$150 million in transportation related infrastructure, both the renewal of existing assets and new/upgraded assets. The Knight and Marine Intersection Improvements Project was originally considered by staff but not included in their final submission for the Capital Plan. The inclusion of this project in the current Capital Plan will require reprioritization of transportation projects. Staff is reviewing options and will report back to Council as part of the 2016 Budget.

CONCLUSION

The Knight and Marine Intersection Improvements Project is an important safety and goods movement initiative that can be implemented during the 2015-2018 Capital Plan, with the assistance of Federal government funding.

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