

To: Chief Administrative Officer **Date:** June 19, 2023
From: Amrit Kang, Engineering Technologist II – Traffic and Transportation
Subject: 2nd Avenue Bus Exchange Safety Improvements

Recommendation(s)

That Council accept the preferred option to install a mid-block crosswalk at the 2nd Avenue Bus Exchange and direct staff to proceed with implementation in 2023.

Purpose

The objective of this report is to provide Council with additional information regarding the 2nd Avenue Bus Exchange improvements including a cost estimate for a modified Option 2 as discussed previously in the council report from December 2022 (Attachment B). The options reviewed included cross walks with a rectangular rapid flashing beacon (RRFB), additional safety signage and road painting, a 30 km/h speed limit, collapsible bollards, crosswalk let-downs for accessibility and street lighting for improved visibility.

Background

The Mission Transit Exchange on 2nd Avenue is currently laid out to service buses and transit riders on both the north and south side of 2nd Avenue between Welton Street and Horne Street. The City has received concerns from residents about transit users regularly crossing 2nd Avenue at midblock with the objective of connecting with bus transfers on the opposite side of the street, which makes this area susceptible to high-risk pedestrian/vehicle conflicts.

The Mission Traffic and Transit Committee (MTTC) has raised safety concerns regarding the pedestrians and transit users who are frequently crossing mid-block on 2nd Avenue to access the library and/or to connect between bus stops at the Downtown Transit Exchange.

Since 2018, there has been significant growth and new land development projects taking place in the area which would potentially increase the usage of transit and other public infrastructure in the area.

In June 2018, the plan to improve pedestrian safety included a mid-block crosswalk to control pedestrians crossing 2nd Avenue. This plan was presented and discussed at the Mission Traffic and Transit Committee (MTTC) meeting and it was decided not to proceed.

In 2019, the Mission Transit Exchange underwent the installation of bus shelters as well as some ancillary improvements to the sidewalk.

In response to raised safety concerns regarding the pedestrians and transit users who are frequently crossing mid-block on 2nd Avenue, the City retained a consultant to evaluate different safety options for near to medium term in order to provide a final recommendation to be carried forward.

Discussion and Analysis

The Downtown Transit Exchange on 2nd Avenue has one travel lane in each direction and has bus stops located on both sides of the street to accommodate transit routes in each direction. Existing marked crosswalks on 2nd Avenue are located at the intersections with Welton Street and Horne Street. 2nd Avenue is also a marked cycling route with cyclists sharing the road space with motor vehicles and parked cars. Currently, the only formal option to cross the road from one side of the bus exchange and catch a connecting bus is to walk 40 m east to Horne Street and use the marked crosswalk. Pedestrians, however, are often observed to take the shorter route and cross 2nd Avenue in the middle of the block to catch their connection or go to the Library instead of walking to the intersection crosswalk. Given the volume of vehicles and cyclists traveling along 2nd Avenue, combined with buses using the exchange and cars parked on either side of the corridor, this creates a higher potential for conflict between users. The City is currently considering short-term safety options to address potential conflicts between road users while increasing safety for pedestrians and transit users for the 2nd Avenue Bus Exchange.

A consultant firm, Urban Systems Ltd, was hired to conduct the 2nd Avenue – Bus Exchange Study (the study) with the direction of the City's Engineering staff. A total of four options to improve safety were considered and assessed as part of the study. Google Street view, ortho imagery, as well as surface survey features were used for the assessment. The long-term potential options of relocating the south bus shelters to the east side of Horne Street or placing all of the bus exchange shelters on the north side of 2nd Avenue were not further assessed as part of this report.

From this study, four options were outlined and staff presented the findings to Council in December, 2022. Of the four options, Option 2 (mid-block crosswalk) was favored by Council, with the additional request of a cost estimate for a modified Option 2 as discussed: no curb extensions; additional safety signage and road painting; a 30 km/h speed limit; collapsible bollards, and crosswalk let-downs for accessibility.

It should be noted that staff are working on a design and permits to energize the south side bus shelters to improve lighting conditions. This work was necessitated due to feedback from the public and the Transit operator.

Cost Estimates for the Mid-Block Crosswalk with Rectangular Rapid Flashing Beacons

The preferred and optional safety treatments including a mid-block crosswalk with rectangular rapid flashing beacons (RRFB) near the bus exchange on 2nd Avenue, additional streetlighting and pavement marking for traffic calming are illustrated in Attachment B.

A table with a cost breakdown of the proposed treatments is shown below.

Treatment	Cost Estimate
Design and construction of a new crosswalk with signages, RRFB and accessibility letdowns (no curb extensions)	\$50,000
One additional streetlight on the north side of 2 nd Avenue (optional treatment, contingency is required due to potential additional BC Hydro and electrical permit requirements)	\$15,000 +\$5,000 contingency
Signage and pavement markings for traffic calming (optional treatment)	\$8,000

Flexible bollards along the centerline are not considered as a suitable treatment at this location because the bollards would reduce the amount of road width to below what is required for two buses to effectively pass each other. Also, centerline bollards will prevent east bound turns into the library parking lot which is not ideal. Collapsible bollards are not very effective at restricting

pedestrians from jaywalking. The cost for installation is estimated to be \$19,000. Staff does not recommend implementing this treatment.

Recommendation and Next Steps

As discussed above, a mid-block crosswalk with rectangular rapid flashing beacons and crosswalk let-downs is the preferred option to be moved forward for further design and installation. Staff will proceed with detailed design and installation immediately upon Council's acceptance.

Additionally, traffic calming signage, pavement markings and street lighting are optional treatments that could be implemented. Additional funding would be needed.

Financial Implications

The 2023 capital plan includes \$70,563 for the 2nd Avenue Transit Exchange Improvement project. Part of the funding has been used for the installation of two new shelters on the south side of the bus exchange and engineering design/evaluation. Currently there is approximately \$50,000 remaining in the budget.

Based on the consultant's cost estimate, the preferred option to install a midblock crosswalk with RRFB and accessibility letdowns will cost \$50,000 which can be funded by the funds in 2023 budget for the 2nd Avenue Bus Exchange improvements.

Should Council choose to implement the optional treatments (additional streetlighting and traffic calming pavement marking/signage), a budget amendment of additional \$28,000 is required to be approved by Council. The budget increase can be funded by the Public Safety reserve.

Communication

Engineering staff will coordinate with Communications and Public Engagement staff to engage with stakeholders (including BC Transit and their operations, library, and others) and inform the transit users and the general public.

Summary and Conclusion

To address the community's safety concerns regarding mid-block crossings on 2nd Avenue, a consulting firm was hired to conduct the 2nd Avenue Bus Exchange Study with the direction of the City's Engineering staff. A total of four options to improve safety were considered and assessed as part of the study. This report presents the cost estimates and seek Council's acceptance before implementation of the safety improvements.

Report Prepared by:	Amrit Kang, Engineering Technologist II – Traffic and Transportation
Reviewed by:	Allen Xu, Manager of Engineering Planning and Assets
Reviewed by:	Jay Jackman, Acting Director of Engineering & Public Works
Approved for Inclusion:	Mike Younie, Chief Administrative Officer

Attachment(s)

Attachment A:	Proposed Treatments for 2nd Avenue Bus Exchange
Attachment B:	December 2022 Council Report