



**To:** Chief Administrative Officer **Date:** December 5, 2022  
**From:** Amritpal Kang, Engineering Technologist 2 – Traffic and Transportation  
**Subject:** **Second Avenue Mission Bus Exchange – Pedestrian Safety Improvement**

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#### **Recommendation(s)**

That staff proceed with the implementation of the recommended option to improve pedestrian crossing safety at the Second Avenue Bus Exchange.

#### **Purpose**

This report is to seek Council's acceptance of the preferred option for the improvement of pedestrian crossing safety at the Second Avenue Bus Exchange.

#### **Background**

The Mission Transit Exchange on Second Avenue is currently laid out to service buses and transit riders on both the north and south side of Second Avenue between Welton Street and Horne Street. The City has received concerns from residents about transit users regularly crossing Second 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.

In June 2018, the plan to improve pedestrian safety included a mid-block crosswalk to control pedestrian crossing Second Avenue. This plan was presented and discussed at the Mission Traffic and Transit Committee (MTTC) meeting and it was decided not to follow through due to a couple of shortcomings of this plan.

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

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

Staff have been exploring options to improve safety at the Second Avenue Bus Exchange. A report was presented to Council on January 17, 2022 which presented a few options and recommended to relocate bus shelters on the south side of Bus Exchange to the east side of Horne Street, as a medium-term option. Staff also recommended to work with BC Transit during its local area transit planning and identify a permanent long-term alternative location for the Bus Exchange. At the meeting, Council approved that staff proceed with the relocation as a long-term option and directed that staff provide interim solutions to improve pedestrian safety at the Mission Bus Exchange and report back to Council.

#### **Discussion and Analysis**

Staff have conducted the following analysis with the help of a transportation consultant to evaluate various options for pedestrian safety improvements for the short/medium term.

## Multiple-Account Evaluation

Four bus exchange improvement options were evaluated using multiple account evaluation (MAE) with six different accounts. These accounts are Pedestrian Comfort and Safety, Maintenance and Operations, Parking Impacts, Motor Vehicle Traffic Operations, Access, Relative Cost. Each criterion was ranked on a three-point scale, ranging from Good/Better, Neutral/Satisfactory, Poor/Worse. Details of the evaluation are provided in the following table:

### Option 1: Physical Median Separation Along Second Avenue

This involves constructing a physical median barrier with pedestrian fencing along Second Avenue to prevent transit riders from crossing the road midblock.

### Option 2: Mid-Block Crosswalk with Curb Extensions and Rectangular Rapid Flashing Beacons (RRFB)

Option 2 involves implementation of a mid-block crosswalk with curb extensions and rectangular rapid flashing beacons (RRFB) near the bus exchange on Second Avenue. The crosswalk with curb extension would have to be located at the west of the bus exchange beyond the Mission Public Library access.

### Option 3: Second Avenue Traffic Calming Measures

Option 3 involves placement of traffic calming measures such as appropriate signage, pavement markings, and speed humps along Second Avenue approaching the bus exchange.

### Option 4: Maintain Existing Conditions

Option 4 is a do-nothing option while preserving the existing bus exchange and crossing conditions on Second Avenue.

	<u>Option 1</u> Physical Median Separation Along 2 <sup>nd</sup> Ave	<u>Option 2</u> Mid-Block Crosswalk with Curb Extensions and RRFB	<u>Option 3</u> 2 <sup>nd</sup> Ave Traffic Calming Measures	<u>Option 4</u> Maintain Existing Conditions
<b>Pedestrian Comfort/Safety</b>	Pedestrian traffic is forced to use the designated crossing at 3 <sup>rd</sup> Ave / Horne St	Pedestrian traffic is provided a slightly closer crossing option, while still having the option to jaywalk	Pedestrian traffic experiences existing conditions with slower vehicle speeds	Pedestrian traffic experiences existing conditions with existing vehicle speeds
<b>Maintenance and Operations</b>	The level of maintenance effort is marginally increased	The level of maintenance effort is marginally increased	The level of maintenance effort is significantly increased	The level of maintenance effort remains unchanged
<b>Parking Impacts</b>	On-street parking conditions remain unchanged	Requires on-street parking removal	On-street parking conditions remain unchanged	On-street parking conditions remain unchanged
<b>Motor Vehicle Traffic Operations</b>	Existing cross section is slightly restricted	Motor vehicle traffic operations are unchanged	Motor vehicle traffic along 2 <sup>nd</sup> Ave is affected and slowed through the bus exchange corridor	Motor vehicle traffic operations are unchanged
<b>Access</b>	Access to the Mission Public Library is restricted to RIRO	Existing access conditions remain unchanged	Existing access conditions remain unchanged	Existing access conditions remain unchanged
<b>Relative Cost</b>	Medium	High	Medium	Low

### Option 5 (Engineering and Education/Enforcement)

Based on the initial analysis, Option 1 was determined to be the most suitable option due to its overall best scores. Staff proceeded with further engagement and discussions with various stakeholders. Option 1 was found to have the following shortcomings:

- 1) Restricted access to the Mission Public Library. Staff has met and presented options to the Library and we were informed that the Library does not support Option 1 due to concerns with changing access conditions;
- 2) Option 1 requires a physical barrier in the middle of Second Avenue which has a potential to impede bus maneuvers (buses pull out from behind); and
- 3) Potential impacts to construction of existing and future developments in the area.

Following discussions between staff and the consultant, another option (low cost Engineering/Education/Enforcement) was proposed. This option would implement additional signage to remind pedestrians to cross the streets at legal crosswalks and install pavement marking to slow down traffic (see Attachment B). This approach would involve low cost physical installations and rely on education and improved awareness of pedestrian crossing safety tips for the public, reduce risks, and improve safety. "Use Crosswalk" signage would be installed and high visibility "Slow" pavement markings would be applied to the pavement at both east and west ends of the Bus Exchange.

Other municipalities have also adopted increased enforcement approaches to improve pedestrian crossing safety. For instance, City of Richmond has passed an amendment of their Traffic Bylaw and jaywalkers in the City will face a \$50 fine if they cross a major road outside of a legal crosswalk. The Bylaw has been enforced by the City and the RCMP. Staff do not currently recommend the implementation of the enforcement approach in the City of Mission.

### Recommendation and Next Steps

As discussed above, low cost engineering and public awareness education is the recommended option to be moved forward for further evaluation and implementation as a short-term solution. The long-term solution for the bus exchange is to move all shelters/benches to the north side of the Second Avenue.

### **Council Goals/Objectives**

The implementation of the proposed signage and pavement markings will support Council's 2018-2022 Strategic Plan in commitment to build a Safe Community by improving pedestrian comfort and safety.

### **Financial Implications**

The cost for the recommended option of installing signage and pavement markings would be approximately \$5,000. There is sufficient budget for the Second Avenue Bus Exchange improvements and no budget amendment will be required.

Pavement marking restoration will be required when they are worn off. An increase of \$5,000 is required for pavement marking operating budget if this interim/short term solution are still needed after two years, for pavement marking maintenance.

### **Communication**

Staff will coordinate with Communications & Public Engagement staff to engage with stakeholders, local property owners and transit users to inform them of the implementation as well as conduct a public awareness education for pedestrian crossing safety.

Engineering staff will liaise with external stakeholders including the BC Transit, the transit operator and Mission Library as needed.

### **Summary and Conclusion**

Staff have evaluated various short-term and medium-term options to improve the pedestrian crossing safety at the Second Avenue Bus Exchange. It is recommended that additional signs/pavement marking be applied as well as public awareness education be conducted.

Council's approval is requested prior to the implementation of recommended options.

**Report Prepared by:** Amritpal Kang, Engineering Technologist 2 – Traffic and Transportation

**Reviewed by:** Allen Xu, Manager of Engineering Planning and Assets

**Reviewed by:** Tracy Kyle, Director of Engineering and Public Works

**Approved for Inclusion:** Mike Younie, Chief Administrative Officer

### **Attachment(s)**

Attachment A: Conceptual Plans for Options of Second Avenue Bus Exchange  
Pedestrian Safety Improvement