



To: Public Works and Transportation Committee **Date:** May 31, 2002
From: Gordon Chan, P. Eng.
 Director, Transportation **File:** 6450-17-01
Re: **FOLLOW-UP REPORT ON THE ARTERIAL CROSSWALK IMPROVEMENT PROGRAM**

Staff Recommendation

1. That the proposed locations for crosswalk upgrades on arterial roads, as presented in the attached report, be included as candidate projects in the Annual Arterial Crosswalk Improvement Program to be reviewed as part of the next submission of the Five-Year Major Capital Works Program.
2. That the proposed engineering, education and enforcement initiatives to promote traffic safety at amber flasher-controlled crosswalks on arterial roads be endorsed.

Gordon Chan, P. Eng.
Director, Transportation

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Staff Report

Origin

At the November 26, 2001 regular Council meeting, a list of candidate locations for crosswalk upgrades on arterial roads to a higher standard was endorsed. The upgrade includes the provision of overhead illuminated pedestrian crossing signs with amber flashers and pushbuttons. At the meeting, staff were also directed to develop a comprehensive program involving education and engineering initiatives to raise the level of driver compliance and promote safe pedestrian usage at these crosswalks and report to Council on the proposed initiatives.

This report provides an update on the Arterial Road Crosswalk Improvement Program that commenced in November 2001 and presents the various initiatives that have been or will be implemented to improve driver compliance at crosswalks and educate pedestrians on the safe usage of the crosswalks.

Analysis

1. Existing and Recently Upgraded Crosswalks

Prior to Council's endorsement in November 2001 of a multi-year phased program to upgrade crosswalk standards on arterial roads, there were 14 crosswalks in the city with overhead illuminated pedestrian crossing signs with amber flashers and pushbuttons. Since November 2001, four more crosswalks have been upgraded to similar standard. The location of these crosswalks are presented in Table 1:

Table 1 - Recently Completed Special Crosswalks

Crosswalks Upgraded Prior to November 2001 (14 locations)	
Major Street	Cross Street
No. 1 Road	Garry Street
Granville Avenue	McCallan Road
River Road	Dover Crossing
Minoru Boulevard	Seniors' Apartments
Minoru Boulevard	The Bay Entrance
No. 2 Road	Maple Road
Steveston Highway	Mortfield Gate
No. 4 Road	Albion Road
No. 4 Road	Saunders Road
Williams Road (west)	Shell Road
Williams Road (east)	Shell Road
Granville Avenue	Lynas Lane
Granville Avenue	Buswell Street
No. 3 Road	Anderson Road
Crosswalks Upgraded Since November 2001 (4 locations)	
Garden City Road	Odlin Road
Gilbert Road	Lucas Road
7800 Westminster Highway	The Bay Entrance
No. 3 Road	Saunders Road

2. Planned Crosswalk Upgrades

For this year, eight crosswalk locations have been identified for recommended upgrade to the higher pedestrian crossing standard. These locations are presented in the Table 2. Staff have submitted all

of these projects for consideration of 50/50 cost sharing with TransLink as part of its 2002 Major Road Network (MRN) Minor Capital Improvement Program and the 2002 Transit Related Road Infrastructure Program. Additional contributions towards these crosswalk upgrades from other agencies are also being pursued. Including the existing and committed improvements, the Arterial Crosswalk Improvement Program is now 45% complete (26 out of a total of 58 arterial road crosswalks). Within the next five years, it is the objective of the Transportation Department, given adequate resources, to have the remaining 32 crosswalks on arterial roads upgraded to the same standard.

Table 2 - Committed and Planned Special Crosswalk Improvements

2002 Crosswalk Upgrade Program (8 locations)	
Major Street	Cross Street
River Road	Hollybridge Way
No. 2 Road	Colville Road
Westminster Highway	Smith Crescent
Westminster Highway	Riverdale Road
Steveston Highway	Lassam Road
No. 6 Road	Commerce Parkway
No. 5 Road	Seacliff Road
Blundell Road	Cheviot Place
Remaining Locations (32) to be Reviewed as Part of the Future Capital Works Program	
Blundell Road	Clifton Road
Blundell Road	Ash Street
Blundell Road	Montana Road
Bridgeport Road	Gage Road
Francis Road	Craigflower Drive
Garden City Road	Dixon Street
Gilbert Road	Maple Road
Granville Avenue	Azure Boulevard
Minoru Boulevard	6900-Block
No. 1 Road	Regent Street
No. 1 Road	Springfield Drive
No. 1 Road	Peterson Gate
No. 1 Road	Pacemore Road
No. 3 Road	Broadmoor Boulevard
No. 4 Road	Dennis Crescent
No. 4 Road	Mortfield Gate
No. 5 Road	Bird Road
Westminster Highway	Tiffany Boulevard
Francis Road	St. Albans Road
Francis Road	Ash Street
Francis Road	Carrick Street
Garden City Road	Glenallen Drive
Garden City Road	Saunders Road
Granville Avenue	McCallan Road
Granville Avenue	Mayflower Drive
Minoru Boulevard	Bennett Road
Railway Avenue	11100-Block
Williams Road	Sheridan Road
Williams Road	Greenlees Road
Williams Road	Lassam Road
Williams Road	Deagle Road
Williams Road	Leonard Road

3. Initiatives to Improve Driver Compliance at Special Crosswalks

As part of the crosswalk upgrade program, staff also propose to improve crosswalk safety through the following education and engineering initiatives.

3.1 Education

Staff propose to increase the crosswalk safety awareness of both pedestrians and motorists by implementing the following educational initiatives:

- *Advertisement* – An advertisement would be placed in the City Notice Board of the *Richmond News* advising motorists and pedestrians of the new crosswalks and proper usage.
- *Crosswalk Safety Brochure* – Development and distribution of a traffic safety brochure explaining the responsibilities of motorists and pedestrians when the device is in use.
- *School Zone Safety Brochure* – Two versions of this brochure have been distributed to all elementary schools in the City. Other jurisdictions, including Victoria and other municipalities within and outside of the Lower Mainland are also using the brochure as a tool to promote school zone safety. Future updates of this brochure will include “tips” on the proper usage of these special crosswalks.
- *Annual Traffic Safety Week* – This event is co-sponsored by parents groups, the school district, Richmond RCMP, ICBC and the City. Promotional materials to raise the awareness of drivers and pedestrians about the special crosswalks will be included in future Traffic Safety Week campaigns.

3.2 Engineering and Enforcement

Research has shown that driver compliance at crosswalks with amber flashers improves with the installation of an advance sign that prompts motorists to stop when the amber beacons are flashing. The *Pedestrian Crossing Control Manual for British Columbia* prepared by the Ministry of Transportation has similar application of such signage as an option.

To raise the level of driver compliance, staff recently erected “*Yield When Occupied*” signs (Attachment 1) in advance of the following four crosswalk locations to alert motorists to watch for pedestrians when the flashing beacons are activated:

- Granville Avenue at Buswell Street;
- Minoru Boulevard at the Seniors’ Apartments;
- Granville Avenue at Lynas Lane; and
- No. 3 Road at Anderson Road.

Site surveys conducted at these locations prior to the installation of the signs recorded driver compliance rates of 90 percent. Staff will conduct follow-up reviews to obtain feedback on the effectiveness of the signs on motorist compliance behaviour, pedestrian/motor vehicle conflicts and/or pedestrian-related incidents. If these signs are found to be effective, they will remain in place and be installed at other locations.

The Richmond RCMP detachment will provide enforcement at selected locations to compliment the educational and engineering measures described above.

4. Accident Statistics

Staff have reviewed the accident statistics related to the various types of crosswalks in Richmond. Table 3 summarizes the total number of accidents involving a vehicle and pedestrian since the introduction of the special crosswalks in 1997 up to 2001.

Table 3 - Pedestrian Related Accidents at Crosswalks

Type of Crosswalk Control	No. of Locations	Total No. of Pedestrian-Related Incidents ('97-'01)
Full Traffic Signal	120	130
Pedestrian Signal	39	9
Special Crosswalks (Amber Flashers)	18	2
Overhead Signs & Shoulder Mounted Signs	20	36

Based on the above statistics, on average, the special amber flasher-controlled crosswalks were found to have the lowest number of pedestrian-related incidents per location when compared to other types of crosswalks in the City.

5. Applications in Other Jurisdictions

Many other Lower Mainland and Canadian jurisdictions employ these special crosswalks at busy unsignalized crosswalks with a multi-lane approach. The informal feedback received from other municipalities is generally positive. However, since this device is fairly new no formal research has been conducted to evaluate the effects on motorist yielding behaviour and pedestrian conflicts on a region-wide basis. With the need for safer means of crossing roadways the introduction of these special crosswalks are increasing in numbers among major municipalities in the lower mainland. Table 4 summarizes the extent of the application of these special crosswalks among municipalities in the Lower Mainland.

Table 4 - Municipalities with Special Crosswalks

Jurisdiction	No. of Special Crosswalks
Richmond	18
Vancouver	13
District of North Vancouver	9
City of North Vancouver	4
Delta	3
Surrey	2
Burnaby	1
Ministry of Transportation	1

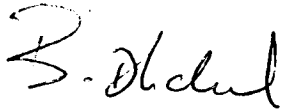
Financial Impact

The installation of the recommended upgrades to existing crosswalks on arterial roads in the Arterial Road Crosswalk Improvement Program is proposed to be implemented as a multi-year program. The first year of this program, which is estimated at a cost of \$200,000, has been approved as part of the 2002 Major Capital Works Program. Staff are currently seeking partial funding from TransLink and ICBC towards the program. The remaining locations of the planned crosswalk improvements are proposed to be considered in the next submission of the Five-Year Major Capital Works Program.

Conclusion

As part of the Annual Arterial Crosswalk Improvement Program, four crosswalks on arterial roads have been upgraded to the new amber-flasher standard since November 2001. Eight additional crosswalks will be implemented to the same standard in 2002. At present, staff are seeking funding contributions from external agencies, including TransLink and ICBC, towards the committed crosswalk improvements. With the existing and committed installations, the program is now 45% complete (26 completed out of 58 locations).

The results of recent site surveys have indicated a high level of driver compliance at these special crosswalk locations. These crosswalks were also found to have the lowest number of pedestrian-related incidents among the other types of crosswalks. To enhance the safety of these crosswalks further, staff recently installed new signs to increase the motorists' awareness of the presence of pedestrians at these crosswalk locations. A number of education initiatives are also proposed to be implemented to promote crosswalk safety on an on-going basis. Selected locations will also be targeted for enforcement by the Richmond RCMP, Traffic Division personnel.



Bill Dhaliwal
Traffic Technician I

BD:lce



**City of
Richmond**

6911 No. 3 Road Richmond B.C. V6Y 2C1

TITLE:

Special Crosswalk Advance
Warning Sign

DESIGN: BD

DRAWN: BD

CHECKED:

ENGINEER:

DWG No.

SCALE: NTS

SEC. No.

DATE: May 9, 2002

SHT. No. 1/1