



City of Richmond

Report to Committee

To: Public Works and Transportation Committee

Date: August 25, 2010

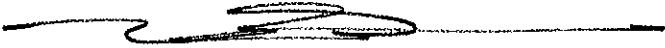
From: Victor Wei, P. Eng.
Director, Transportation

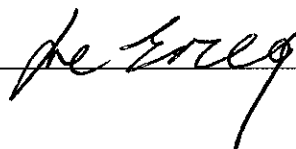
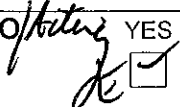
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Vol 01

Re: **REVISED IMPLEMENTATION STRATEGY FOR ACCESSIBLE PEDESTRIAN
SIGNAL DEVICES**

Staff Recommendation

1. That the installation of enhanced accessible pedestrian features at all City-owned signalized intersections and special crosswalks as described in the report, be endorsed subject to Council's further consideration of the associated costs as part of the City's annual capital and operating budget approval processes starting with the 2011 programs.
2. That the City send a letter to Transportation Association of Canada offering the sharing of experience gained by Richmond on the new verbal messaging features of accessible pedestrian signals (APS) with a view to assisting in expediting the development and publication of new national APS standards so to achieve consistency in the application of these devices by local governments across Canada.


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ROUTED TO:		CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Community Social Services Group.....		Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Engineering		Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Budgets & Accounting.....		Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
Law.....		Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
REVIEWED BY TAG		YES CVC <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
			REVIEWED BY CAO  YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>

Staff Report

Origin

In June 2007, Council approved the establishment of an annual program for the installation of enhanced accessible pedestrian features at signalized intersections, special crosswalks and pedestrian signals beginning with the 2008 capital and operating budget programs. At that time, an implementation strategy was endorsed whereby accessible devices would be installed at locations per the following criteria:

Type of Location	Criteria for Installation
Retrofit of existing locations	Exhibit "demonstrated need" per industry guidelines
New locations outside of City Centre	Exhibit "demonstrated need" per industry guidelines
New locations within the City Centre	Automatically deployed

This report proposes a revised implementation strategy that would result in all locations city-wide being installed with accessible pedestrian features by 2018 or sooner.

Analysis

1. Status of Current Accessible Pedestrian Signal (APS) Program

Following the establishment of the annual program for the installation of enhanced accessible pedestrian signal (APS) features in 2008, which has had a budget of \$150,000 per year for the 2008-2010 period, staff issued a Request for Proposals in June 2008 for the supply and delivery of the APS equipment. The contract was awarded in April 2009 and the new equipment is currently being tested initially at two pilot locations:

- Signalized Intersection: north leg of Gilbert Road and Granville Avenue; and
- Special Crosswalk: Blundell Road and Cheviot Place (near Rosewood Manor).

In addition, as part of the No. 3 Road Restoration Project, APS features are currently being installed at all signalized intersections on No. 3 Road between Cook Road and Capstan Way.

2. Accessible Pedestrian Signal Features to be Installed

Based on industry guidelines and following consultation with the Richmond Centre for Disability (RCD) and representatives from CNIB (Canadian Institute for the Blind) and ASIC (Advocates for Sight Impaired Consumers), Table 1 below lists the enhanced APS features to be installed for further testing at each type of location during a broader test phase (see Section 4).

Table 1: APS Features to be Installed as Part of Test Phase

Feature	Special Crosswalk	Pedestrian-Activated Signal	Full Traffic Signal
Pole Locator Tone	✓	✓	✓
Yellow Pushbutton	✓	✓	✓
Black on Yellow Tactile Arrow in Direction of Crossing	✓	✓	✓
Pushbutton with 3 Raised Dots on Surface (indicates APS device)	✓	✓	✓
Red LED Light that Illuminates on Button Push	✓	✓	✓
Audible Confirmation Tone on Button Push	✓	✓	✓
Verbal Wayfinding Message following Audible Acknowledgment	✓	✓	✓

Feature	Special Crosswalk	Pedestrian-Activated Signal	Full Traffic Signal
Verbal "Caution" Message following Verbal Wayfinding Message	✓	✗	✗
Volume Responds Automatically to Ambient Noise	✓	✓	✓
Audible Walk Indication Tone when Walk Light On	✗	✓	✓
Tactile Arrow in Direction of Crossing Vibrates when Walk Light On	✗	✓	✓
Increased Volume on Demand with Extended Button Press	✓	✓	✓
Braille and Raised Letter Street Name	✓	✓	✓

Note that some APS features will not be installed at special crosswalks, as those features are used only at signalized intersections where vehicles are required to stop (i.e., drivers have a red light) rather than yield as at a special crosswalk. Instead, a verbal "caution" message (see Section 3) would be deployed at special crosswalks but not at signalized intersections.

3. APS Feature of Verbal Messages

The deployment of verbal messaging is a recent addition to the APS implementation features and was prompted by a complaint against the City that was brought by the complainant to the BC Human Rights Tribunal. Staff's initial assessment was not to deploy verbal messaging at this time due the lack of national standards as to the use and content of such messages. While guidelines were available, they were not prescriptive and thus there was a concern with a potential lack of consistency across jurisdictions.



TAC published its APS guidelines in 2008 and has indicated that it is aiming to publish standards as well. The new APS devices procured by the City have the capability of deploying verbal messages and it was staff's intent to use this feature once national standards were developed which, in 2008, appeared to be imminent.

However, since that time, TAC has not been able to provide any timeline as to the completion of this work. Given that the publication of national standards by TAC does not appear forthcoming, staff have agreed to deploy a verbal wayfinding message as well as test other verbal messages in order to enhance the accessibility of the city for all road users. Table 2 below provides examples of the potential content of such verbal messages, which will be determined in consultation with RCD and other stakeholders.

Table 2: Examples of Potential Verbal Messages

Location of Crossing	Wayfinding Message at All Crossing Types	Additional Messages at Special Crosswalks Only
Intersection	<i>Gilbert at Granville</i> ⁽¹⁾	Test 1: <i>Amber Lights Flashing. Use Caution.</i> Test 2: <i>Amber Lights Flashing. Use Caution. Vehicles May Not Stop Immediately.</i>
Mid-block	<i>6900 Minoru</i> ⁽²⁾	

(1) The phrasing follows the recommended convention of announcing the street to be crossed first followed by the name of the parallel or intersecting street.

(2) The street address would be verbalized as "sixty-nine hundred" rather than "six thousand nine hundred," which is consistent with Coast Mountain Bus Company, Canada Post and the taxi industry.

In light of this proposed initiative to pilot the use of verbal messaging at signalized crosswalks, staff also recommend that the City send a letter to TAC offering to share the experience gained by Richmond in the deployment of the new verbal messaging features of accessible pedestrian signals with a view to assisting in expediting the development and publication of new national APS standards so to achieve consistency in the application of these devices by local governments across Canada.

4. Pilot Phase for Testing and Consultation on APS Features

Staff intend to install the new APS devices at the following test locations with high pedestrian volumes by mid September 2010:

- Full Traffic Signal: four locations along No. 3 Road at Westminster Highway, Saba Road, in front of Richmond-Brighouse Station, and Cook Road; and
- Special Crosswalk: two locations in the City Centre at No. 3 Road and Anderson Road (intersection) and Minoru Blvd at the RCMP Detachment (mid-block crossing).

The devices will remain in place at least until the end of November 2010 during which time the City will monitor their operation and seek feedback from users including the RCD and other stakeholders. During this test phase, specific APS features will be evaluated including the content of the verbal messages, the speed of the acoustic locator tone and the increase of volume upon the extended press of the button. Upon completion of the testing phase, the APS features to be deployed city-wide will be determined by the City in consultation with stakeholders. This approach is consistent with the agreement reached with the complainant to the BC Human Rights Tribunal.

5. Revised Implementation Strategy

5.1 Pedestrian-Activated Signals and Special Crosswalks

The RCD and other stakeholders have indicated that the upgrade of all existing special crosswalks and pedestrian signals is the desired first priority; staff also agree with this assessment. Accordingly, staff intend to use the existing approved funding from the 2008-2010 Enhanced Traffic Signal program towards this work. Staff anticipate that all special crosswalks in the city, which currently number 60 with another six planned for 2010, will be installed with the APS features by March 2011. Similarly, all 41 pedestrian-activated signals in the city will be installed with APS features by December 2011. For new special crosswalks and pedestrian-activated signals, the APS features will be part of the standard equipment installed and funded from the annual Traffic Signal Installation program.

5.2 Full Traffic Signals

As opposed to retrofitting all existing City-owned full traffic signals based on “demonstrated need” as per the original implementation strategy, staff now propose that the existing annual Enhanced Traffic Signal program for the installation of APS features be continued until all of these traffic signals are retrofitted with APS devices, which would likely make Richmond a leader in crosswalk accessibility for residents, employees and visitors. Staff would seek out all opportunities for external cost-share funding (e.g., TransLink, ICBC, new developments) to expedite the process such that all existing 133 City-owned signals would be upgraded within

eight years (by 2018), giving consideration to staff resources available. Staff would continue to work with the RCD and stakeholders to determine the priority of upgrade for these remaining signals and shorten the estimated installation timeframe as feasible.

With respect to the remaining 18 full traffic signals in the city that are owned by either the provincial Ministry of Transportation & Infrastructure (12 signals) or the Vancouver Airport Authority (six signals), staff would request each agency to install APS devices at their respective signals within a similar timeline. For new full traffic signals, the APS features will be part of the standard equipment installed and funded from the annual Traffic Signal Installation program.

5.3 Estimated Costs

The estimated cost to equip an existing or new typical four-leg signalized intersection with APS is \$14,000 per intersection while the estimated cost to upgrade an existing or new pedestrian-activated signal or special crosswalk to include accessible features is \$3,500 per site. Once a location is equipped with APS devices, the incremental annual maintenance cost is estimated to be \$560 per traffic signal and \$140 per pedestrian-activated signal or special crosswalk. As shown in Table 3, the estimated cost of upgrading all of the 227 existing signalized intersections, pedestrian-activated signals and special crosswalks with all APS features is \$2.08 million in capital funds plus \$89,500 for the annual maintenance and operating costs.

Table 3: Estimated Cost of Installation of APS Features

Crossing Type	#	Capital Cost	Annual Operating Cost
Full Traffic Signal	120 ⁽¹⁾	\$1,706,000 ⁽²⁾	\$74,480
Pedestrian-Activated Signal	41	\$143,500	\$5,740
Special Crosswalk	66	\$231,000	\$9,240
Total	227	\$2,080,500	\$89,460

(1) 151 traffic signals less 18 owned by MOTI and VAA less 13 already upgraded along No. 3 Road (excluding the addition of Braille and raised letter signs).

(2) Includes the cost of Braille and raised letter signs for 13 intersections on No. 3 Road at \$2,000 per intersection.

Financial Impact

Staff propose that the upgrade of existing signalized intersections be funded via the continuation of the existing annual Enhanced Traffic Signal program at a level of \$150,000 (i.e., the same amount as per the 2008-2010 Capital Programs), with the exception of 2011 and 2012,¹ until all fully signalized intersections, pedestrian-activated signals and special crosswalks owned by the City are upgraded with new APS devices including verbal messaging, which is anticipated to occur within eight years with no additional funding required to the previously Council-endorsed level assuming that the City is successful in cost-share applications to external agencies (e.g., to TransLink for the addition of APS devices to special crosswalks and traffic signals located on TransLink's Major Road Network) as well as secures retrofits as part of new development requirements where feasible.

These annual submission requests over the 2011 to 2018 period would be considered as part of the Capital Program process, which is subject to Council approval each year. The number of

¹ For 2011 and 2012, the annual amount for the program would temporarily decrease to \$74,500 due to funding commitments to other roadway projects that are receiving external grants and are time-sensitive (i.e., the widening of Westminster Highway, Nelson Road and No. 6 Road, all of which are receiving cost-share funding from the federal government and must be completed by March 2014).

locations upgraded will vary depending on the priorities to be determined in consultation with stakeholders, the type of location and the budget approved per year. Staff also propose that the installation of APS devices at new locations would be funded through existing annual capital programs, which are subject to Council approval each year, or through development requirements of any relevant applications.

Conclusion

As there are no national standards for the installation and operation of APS features and relatively few Canadian jurisdictions using verbal messages at any type of pedestrian crossing, the process culminating in staff's recommendation to deploy verbal messages has been challenging in terms of seeking a balance between ensuring pedestrian safety when using a traffic control device with guidelines but no national standards for its deployment, accommodating the special needs of people living with disabilities and improving the overall accessibility of the city for all pedestrians. Staff believe that the proposed pilot program and APS features to be deployed as described above achieve this balance.

Staff therefore recommend the continuation of the existing annual Enhanced Traffic Signal program through to 2018 to enable the installation of enhanced accessible pedestrian features at all City-owned signalized intersections and special crosswalks throughout the city. The proposed funding levels would be subject to Council's further consideration of the associated costs as part of the City's annual capital and operating budget approval processes starting with the 2011 programs. Should the APS features to be deployed vary from that described in this report and/or the anticipated installation timeframe change, staff would report back.

Staff also recommend that the City send a letter to the Transportation Association of Canada requesting that the City work with them so that the development and publication of accessible pedestrian signal standards can be expedited in order to provide direction to and consistency for local governments across Canada.

The proposed implementation strategy would establish Richmond as a pioneering leader in the deployment of APS devices, including the use of verbal messages, which would benefit not only people living with disabilities but all pedestrians and be a proactive measure in light of changing demographics (i.e., an aging population).



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