



City of Richmond

Report to Committee

To: Public Works and Transportation Committee **Date:** March 9, 2022
From: Lloyd Bie, P.Eng.
Director, Transportation **File:** 10-6450-09-01/2022-
Vol 01
Re: **Traffic Safety Improvements around Schools – Update**

Staff Recommendation

That the staff report titled “Traffic Safety Improvements around Schools – Update” dated March 9, 2022, from the Director, Transportation:

- (i) be received for information; and
- (ii) be forwarded to the Richmond Council-School Board Liaison Committee for information.

Lloyd Bie, P.Eng.
Director, Transportation
(604-276-4131)

Att. 2

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Engineering	<input checked="" type="checkbox"/>	
Community Bylaws	<input checked="" type="checkbox"/>	
Fire Rescue	<input checked="" type="checkbox"/>	
SENIOR STAFF REPORT REVIEW	INITIALS:	APPROVED BY CAO

Staff Report

Origin

At the March 23, 2021 meeting of the Parks, Recreation and Cultural Services Committee, there was a referral to staff to implement traffic calming measures on Fundy Drive that has since been addressed. The discussion of the item included comments regarding “increased traffic around schools in general and the potential for other areas bordering schools to experience similar issues.” This report summarizes the results of staff’s review of existing traffic safety measures at all public elementary and secondary schools, and identifies the next steps of a proactive plan to expand the application and consistency of measures across the city to increase safety, support walking to/from school and reduce vehicle traffic associated with student pick up/drop off activities.

This report supports Council’s Strategic Plan 2018-2022 Strategy #1 A Safe and Resilient City:

Enhance and protect the safety and well-being of Richmond.

1.4 Foster a safe, caring and resilient environment.

Analysis

Existing Traffic Safety Improvements around Schools

Historically, the implementation of traffic safety measures around schools has occurred on a case-by-case basis in response to requests. The requests arise primarily from concerns regarding motorist speeding and traffic congestion around schools during pick-up/drop-off activities. Typical existing measures implemented to address these concerns include (Table 1):


- *In-street School Zone Sign*: A street-mounted school zone speed limit sign that narrows the roadway, raises motorists’ awareness of the school zone and encourages drivers to slow down. This signage is relatively low cost and can be implemented on local roads given suitable roadway characteristics (e.g., sufficient width) and no driveway conflicts. To date, the signage has been installed at 10 elementary schools and one secondary school and staff have not received any negative feedback.
- *Speed Hump/Raised Crosswalk*: A speed hump is a rounded vertical traffic calming device placed across the road that reduces vehicle speeds and discourages short cutting in neighbourhoods. Implementation is subject to confirmation that the devices will not impede emergency response vehicles below desired service levels as well as neighbourhood consultation and majority support. A raised crosswalk is similar to a speed hump but with a flat top and a pedestrian crossing. The measure reduces vehicle speeds and provides a more visible crossing for pedestrians. Four elementary schools have speed humps while two elementary schools have a raised crosswalk. While before/after speed surveys are not available, numerous research studies have documented the efficacy of speed humps in slowing down vehicle speeds.
- *Pick-up/Drop-off Area*: Delineation of a specific area for student pick-up/drop-off activities where sufficient right-of-way is available. The designated area can help to better manage traffic congestion around the school and reduce common illegal manoeuvres (e.g., stopping

in a No Stopping zone, prohibited turns when exiting parking lots). Existing examples include an improved off-street pick up/drop off area on Forsyth Crescent at Thompson Elementary School and Gibbons Park and an on-street loading zone effective during school days established on Moresby Drive at Quilchena Elementary School. The principals at both schools have indicated that measures have been effective in improving student safety.

- **Curb Extension:** A bulge(s) at intersections or mid-block to reduce roadway width, reduce the crossing distance for pedestrians and encourage motorists to slow down. Single or paired bulges have been implemented at three elementary schools and one secondary school.
- **Speed Reader Board:** Uses radar to measure motorists' speeds and provides feedback to drivers of their speed relative to the speed limit to encourage appropriate travel speeds. Speed reader boards (one in each direction) have been installed at two elementary schools.

Table 1: Typical Existing Traffic Safety Measures around Schools

Measure	School
<p>In-Street Marker</p> 	<ul style="list-style-type: none"> • Blair: 2 signs on Lynas Lane • Cambie: 2 signs on Jack Bell Dr • Diefenbaker: 6 signs on Fundy Dr • General Currie: 2 signs on General Currie Road • Hamilton: 2 signs on Smith Cr • Homma: 2 signs on Railway Ave • Maple Lane: 2 signs on Tweedsmuir Ave • Spul'u'kwuks: 2 signs on Blanshard Dr • Manoah Steves: 2 signs on Fourth Ave • Tomsett: 2 signs on Odlin Road • Westwind: 2 signs on Kingfisher Dr
<p>Speed Hump</p> 	<ul style="list-style-type: none"> • Diefenbaker: 3 speed humps on Fundy Dr • Dixon: 6 speed humps on Diamond Road • Homma: 2 speed humps on Brunswick Dr • Thomas Kidd: 2 speed humps on Maddocks Road
<p>Raised Crosswalk</p> 	<ul style="list-style-type: none"> • Anderson: 1 raised crosswalk on Alberta Road • Homma: 1 raised crosswalk on Railway Ave
<p>Pick-Up/ Drop-Off Area</p> 	<ul style="list-style-type: none"> • McKinney: on-street loading zone on Wallace Rd • Quilchena: on-street loading zone on Moresby Dr • Thompson: off-street parking area on Forsyth Cr
<p>Curb Extensions at Crosswalk</p> 	<ul style="list-style-type: none"> • General Currie: on General Currie Road • McKinney: on Lassam Road • McNeill: on Garry Street • Spul'u'kwuks: on Blanshard Dr

Measure	School
<p>Speed Reader Board</p> 	<ul style="list-style-type: none"> • Thomas Kidd: 2 signs on Shell Road • Jesse Wowk: 2 signs on Woodward's Road

Development of City-wide Plan for Traffic Safety Improvements around Schools

While the above individual measures have been effective at each site, the result is a city-wide mix across schools. As the first step of a proactive approach to develop a toolkit of engineering measures to address traffic safety issues around schools while also improving consistency in the application of measures across the city, staff completed a comprehensive review of all public elementary and secondary schools and adjacent parks to document existing traffic safety measures within the school zone at each site.

The process involved preparation of an aerial view of each site that identified existing features such as pedestrian facilities and traffic calming measures (example in Attachment 1). Staff then conducted site visits to confirm the existing conditions and audit the existing regulatory and information signage. Gaps and opportunities to upgrade existing pedestrian pathways were also noted.

The process identified deficiencies for 31 (of 38) elementary schools and nine (of 10) secondary schools, which staff anticipate will be addressed by the end of 2022. These safety improvements primarily consist of new signage to increase awareness of intersecting pedestrian pathways for motorists, curb ramps and crosswalks (Figure 1). The remaining schools did not require improvements.

As the next step, this baseline inventory of traffic safety measures will be updated to include staff's assessment of the feasibility of each type of measure at each school site. The data will then provide a springboard for consultation with the City's Traffic Safety Advisory Committee (TSAC), which includes representatives from the Richmond School District and the Richmond District Parents Association. The aim is to achieve consensus on the types and categories of measures that can be implemented either across all sites or are dependent on site specific conditions (examples in Attachment 2).



Figure 1: Example of Walkway with Curb Ramp and Walkway Signage

Staff anticipate subsequent consultation with the principals of each school as they have first-hand knowledge of day-to-day operations and traffic safety concerns. Guidance from TSAC members will be sought regarding the best way to engage with the principals.

Ultimately, the toolkit of traffic safety measures will inform a comprehensive plan for their implementation to address traffic safety issues around school zones and adjacent parks. The program will enable the City, Richmond School District and each neighbourhood to work towards a common goal of improved safety while also improving consistency in the application of measures across the city.

Financial Impact

None.

Conclusion

Staff have initiated work to progress from a reactive to proactive approach for the implementation of traffic safety measures around school zones. An inventory of existing measures has been documented and observed minor deficiencies such as missing pathway signage and curb ramps are anticipated to be addressed by the end of 2022.

As the next phase, staff will consult with the City's Traffic Safety Advisory Committee as part of the development of a comprehensive plan to for the implementation of a city-wide consistent suite of traffic safety measures at all elementary and secondary schools to support walking to/from school, reduce vehicle speeding and better manage congestion associated with student pick up/drop off activities.



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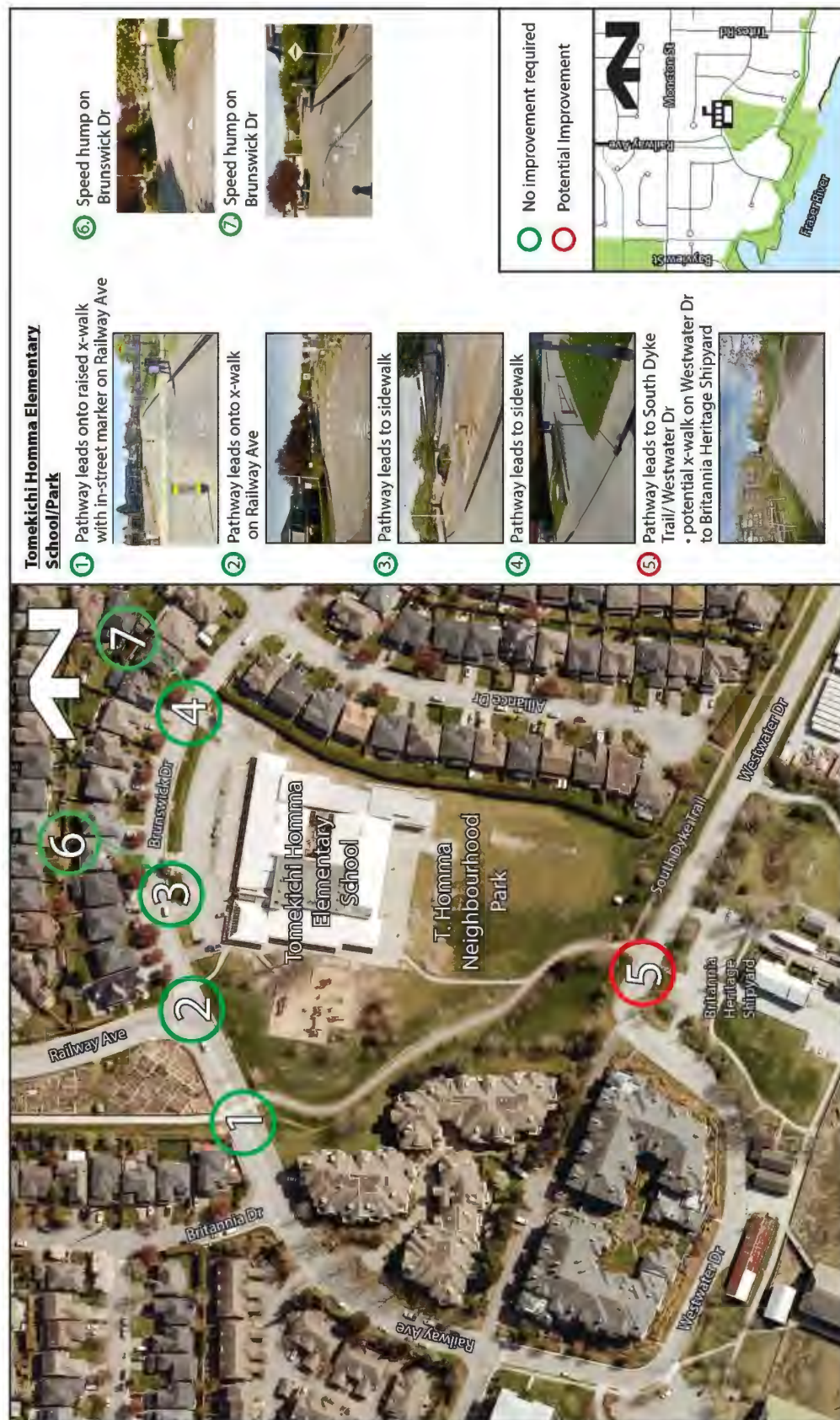


Joan Caravan
Transportation Planner
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BD:jc

- Att. 1: Example School Site – Aerial Map of Existing Traffic Safety Measures
- 2: Example Engineering Measures to Improve Traffic Safety





Example School Site – Aerial Map of Existing Traffic Safety Measures



Example Engineering Measures to Improve Traffic Safety

Measure	Description/Purpose	Road Type	Example
Raised Crosswalk	<ul style="list-style-type: none"> Similar to a speed hump but with a flat top and a pedestrian crossing Reduces vehicle speeds More visible crossing for pedestrians 	Local Collector Minor Arterial	
Pedestrian Walkway	<ul style="list-style-type: none"> Provide a safe passage for pedestrians Improve walking access to/from school 	All	
Speed Hump	<ul style="list-style-type: none"> Rounded vertical traffic calming device placed across the road Reduces vehicle speeds Discourages short cutting in neighbourhoods 	Local Collector Minor Arterial	
Curb Extension	<ul style="list-style-type: none"> Bulge at intersections or mid-block to reduce roadway width Reduces crossing distance for pedestrians Encourages motorists to slow down 	Local Collector	
Revised Curb Radius	<ul style="list-style-type: none"> Reduce curb radius Slows turning vehicles Reduces crossing distance for pedestrians 	Local Collector Minor Arterial	
In-street School Zone Sign	<ul style="list-style-type: none"> Street-mounted school zone speed limit signs Narrows the roadway and encourages drivers to slow down 	Local	

Example Engineering Measures to Improve Traffic Safety

Measure	Description/Purpose	Road Type	Example
Pavement Markings	<ul style="list-style-type: none"> Highly visible, fluorescent yellow-green road markings Replicate school zone sign or 'SCHOOL' Help increase awareness of where the reduced speed limit begins 	Local	
Traffic Circle	<ul style="list-style-type: none"> Raised island located in centre of intersection Reduces vehicle speeds Provides right-of-way control and reduces conflicts 	Local Collector	
Speed Reader Board	<ul style="list-style-type: none"> Use radar to measure motorists' speeds Provide feedback to drivers of travel speed relative to speed limit Reduce vehicle speeds 	All	
Stop Sign In-fill	<ul style="list-style-type: none"> Installation of stop sign Reduces vehicle speeds Discourages short-cutting traffic Reduces conflicts at intersections 	Local Collector Minor Arterial	
Review of Signage and Markings	<ul style="list-style-type: none"> Signage placement and visibility of pavement markings Sightlines and possible encroaching foliage Location of on street parking 	All	