City of Richmond

Report to Committee

To Public Works & Transportation - Jun 20, 2007

To:	Public Works and Transportation Committee	Date:	April 23, 2007
From:	Victor Wei, P. Eng. Director, Transportation	File:	10-6450-09-01/2007-Vol 01
Re:	PROPOSED TRAFFIC CALMING MEASURES - 11000 TO 13000 BLOCK OF NO. 3 ROAD (SOUTH SIDE)		

Staff Recommendation

1. That the proposed traffic calming measure for 11,000 to 13,000 blocks of No 3 Road, as described in the attached report dated April 23, 2007 from the Director of Transportation, be forwarded to the area residents for comment and indication of support by means of a survey to be mailed out immediately.

2. That, subject to the support of the area residents, staff proceed with the installation of a test speed hump for a period of three months to:

   a) obtain further feedback from the area residents;

   b) gauge the effectiveness of the test speed hump; and

   c) assess the need for refinement to the design of the traffic calming device prior to the permanent installation of the proposed speed humps.

Victor Wei, P. Eng.
Director, Transportation
(4131)

Att. 1

FOR ORIGINATING DEPARTMENT USE ONLY				
ROUTED TO:	CONCURRENCE		CONCURRENCE OF GENERAL MANAGER	
Engineering	Y ☑	N ☐		
Roads & Dykes	Y ☑	N ☐		
Fire Rescue	Y ☑	N ☐		
R.C.M.P.	Y ☑	N ☐		
REVIEWED BY TAG	YES ☑	NO ☐	REVIEWED BY CAO	YES ☑ NO ☐

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Staff Report

Origin

At the October 18, 2006 Public Works and Transportation Committee meeting staff were given the following referral to address the concerns expressed by area residents in the section of No 3 Road between Steveston Highway and Dyke Road regarding traffic safety, particularly the high speed of vehicles.

"That staff investigate the issue of traffic safety along the south stretch of No 3 Rd and submit a report to PWTC on suggested solutions to the traffic safety issue at that location."

The Transportation Division has also received a letter directly from an area resident in the 11,000 block of No. 3 Road advising the City of a similar traffic safety concern.

The purpose of this report is to present the findings of a traffic study to determine the extent of the reported traffic safety problems and to recommend remedial measures to discourage speeding on this section of No. 3 Road.

Analysis

1. Process for the Application of Traffic Calming Measures

There is a range of industry recognized traffic calming measures that could be applied in different situations. The following steps are followed to ensure that the most effective measures are applied for a particular local neighbourhood.

- Conduct traffic studies to obtain an understanding of the existing traffic conditions and the nature and extent of the traffic safety problems;
- Examine the relative effectiveness of alternative traffic safety measures and recommend the most appropriate application for the area under investigation;
- Survey area residents to determine the level of support for the recommended traffic calming measure;
- In some situations a temporary test traffic calming device is placed to identify any possible negative impacts and to allow refinement to be made before final device installation;
- Install permanent measures and conduct periodic monitoring to gauge the effectiveness of the device and if necessary take further action to enhance traffic safety in the area.

2. Traffic Study

The Transportation Division conducted a traffic study and field observations in the 11,000 to 13,000 blocks of No. 3 Road to obtain a better understanding of the traffic safety problems in the area. The results of the traffic study are summarized as follows:

Road Description - No. 3 Road south of Steveston Highway is a six meter wide asphalt roadway oriented north/south providing one lane in each direction in a rural area. The west side of the

roadway has a narrow shoulder and a deep drainage ditch. the east side of the roadway has an improved shoulder for pedestrian passage with an approximately 45° slope to the level of the adjacent farmland.

Traffic Volume – Traffic volume is relatively low with a combined Average Annual Daily Total (AADT) of 805 vehicles northbound and 849 vehicles southbound. The peak period traffic volumes (3:30 pm – 4:00 pm) was 69 vehicles northbound and 49 vehicles southbound.

Traffic Speed – Traffic speed is relatively high with an 85th percentile speed of 71.60 km/h northbound and 72.30 km/h southbound. more than 20 km/h over the posted speed limit of 50 km/h. The 85th percentile speed indicates the highest speed that 85% of the vehicles are travelling at or below. This measurement is an industry standard for determining speed limits and assessing the level of action required to address speeding issues.

Traffic Classification – Approximately 1% of the traffic captured in the study is classified as large trucks/busses, which were observed to be large farm tractors and equipment.

Crash Data – The total number of vehicular crashes recorded from 1996 to May 2006 is 13. The majority of the crashes were single vehicle off road crashes and the average is 1.3 crashes per year. The types of crashes were 11 single vehicle off road (attributed to ice, debris, avoiding an animal, etc.) and 2 side swipes. The year to year crash record is summarized below:

Year	Number of Crashes
1996	0
1997	3
1998	2
1999	0
2000	2
2001	1
2002	1
2003	0
2004	1
2005	3
2006 (May)	0

3. Traffic Calming Options

A number of traffic calming measures were considered. The following is a summary of the investigation of the different applications.

Speed Humps (Recommended) - Speed humps are designed to reduce travel speeds yet allow the driver to maintain control of the vehicle. The design is intended to allow safe passage of emergency, maintenance and transit vehicles and cyclists. The disadvantages associated with speed humps such as vibration and noise produced as a vehicle passes over the device are not expected to be significant in this area due to the set back of the adjacent properties. These negative impacts can be further minimized by adjusting the placement of the devices as far as possible from the properties.

Speed humps are recommended in this area for the following reasons:

- experience gained in other neighbourhoods has shown that speed humps are an effective measure in discouraging vehicular speeding;
- positive response from the residents in areas where speed humps have been placed;
- lower costs relative to other traffic calming applications such as traffic circles and curb extensions.

Other Types of Traffic Calming Measures – Other forms of traffic calming measures such as chicanes, medians or curb extensions are not recommended in this area for these reasons:

- the effectiveness of these traffic calming measures rely on drivers slowing down their vehicles through the narrow passage created by these devices as the vehicles travelling in the opposing direction enter the same traffic calming area. Drivers are not expected to slow down as they drive through these devices due to the low traffic volume in this section of No. 3 Road;
- these types of devices would require significant road works such as road widening, curb installation and some ditch infills. The extent of capital works would be cost prohibitive;
- these measures may also affect the ability of drivers of large farm equipment to use the roadway to access local fields.

4. Design Considerations

In this application, the speed humps (designed to accommodate vehicles with an operating speed of 50 km/h) will be placed at locations north and south of those driveways that are actively used. **Attachment 1** shows the typical design of a speed hump. Test speed humps will be installed to gauge the response of the area residents and the effectiveness of the devices. Further refinement of the design will be made if necessary before the permanent speed hump are installed.

5. Complimentary Actions

The traffic study has provided information regarding the time periods when speeding is most prevalent in this section of No. 3 Road. This information has been given to the Richmond RCMP - Traffic Section so that they can focus their enforcement efforts in the interim before the introduction of traffic calming devices in this area.

6. Other Considerations

Upon completion of the No. 3 Road traffic calming project, staff will monitor the traffic conditions on adjacent north - south roadways south of Steveston Highway, such as Gilbert Road. If the monitoring activities determine that there is a shift of the speeding problem to these roadways the application of similar traffic calming measures will be considered.

Financial Impact

The cost to install up to ten (10) speed humps and the associated signage and road markings on No. 3 Road south of Steveston Highway could be up to $25,000. The number of such devices required will be determined upon the completion of the installation and monitoring of the test humps. The funding source for this project is account: 1501-40-000-TRAFC-0000-40257. Staff

will also apply for cost sharing with ICBC and explore any opportunity for private voluntary funding towards the construction cost.

Conclusion

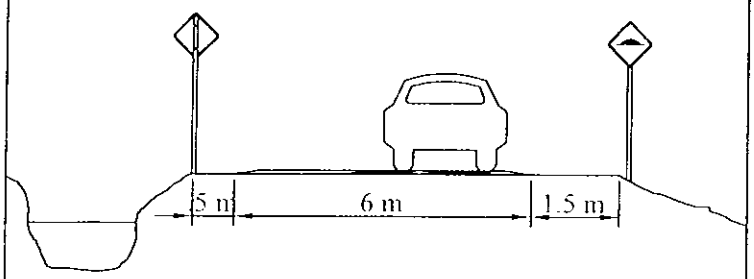
Based on the findings of a traffic study and concerns expressed by local residents, it is recommended that speed humps be installed on No. 3 Road from Steveston Highway south to Dyke Road to enhance traffic safety in the area. Proceeding with this project will be subject to receiving input and support of the affected residents on this section of No. 3 Road by means of an area survey. If the proposed improvements are supported by the majority (2/3) of the residents, an initial test speed hump will be installed for a trial period of three months prior to the permanent installations.

Doug Newton
Traffic Technician
(4032)

DN:lce

Speed Hump Design Specifications

Typical Cross-Section No. 3 Road



Speed Hump Profile

Expanded profile

To scale profile

Speed Hump Typical Signs & Roadmarkings