

**TO:** CHAIR AND MEMBERS  
PUBLIC SAFETY COMMITTEE

**DATE:** 2017 November 01

**FROM:** DIRECTOR ENGINEERING

**FILE:** 38000 20  
*Ref: Traffic Safety*

**SUBJECT: REQUEST FOR TRAFFIC SIGNAL AT CARIBOO ROAD AND  
CARIBOO DRIVE**

**PURPOSE:** To assess the need for traffic control and safety improvements at the Cariboo Road /Cariboo Drive intersection.

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#### **RECOMMENDATION:**

1. **THAT** the Committee recommend to Council the implementation of road safety improvements at Cariboo Rd and Cariboo Dr as detailed in this report.
2. **THAT** the Committee recommend that Council send a copy of this report to residents concerned about the intersection (Ms. Keri Brummitt – [REDACTED], and Mr. Bill Schulz – [REDACTED], Burnaby, BC, V5E 1Z7).

### **REPORT**

#### **BACKGROUND**

The City has received a number of requests for a new traffic signal at the intersection of Cariboo Road /Cariboo Drive. Some of the correspondence requested a signalized pedestrian crosswalk, and expressed concerns about traffic speeding on Cariboo Rd and inappropriate use of trucks along the street. In response to such concerns, a traffic engineering review was completed based on the standard warrant analysis procedures from the Transportation Association of Canada (TAC) and the findings are summarized herein.

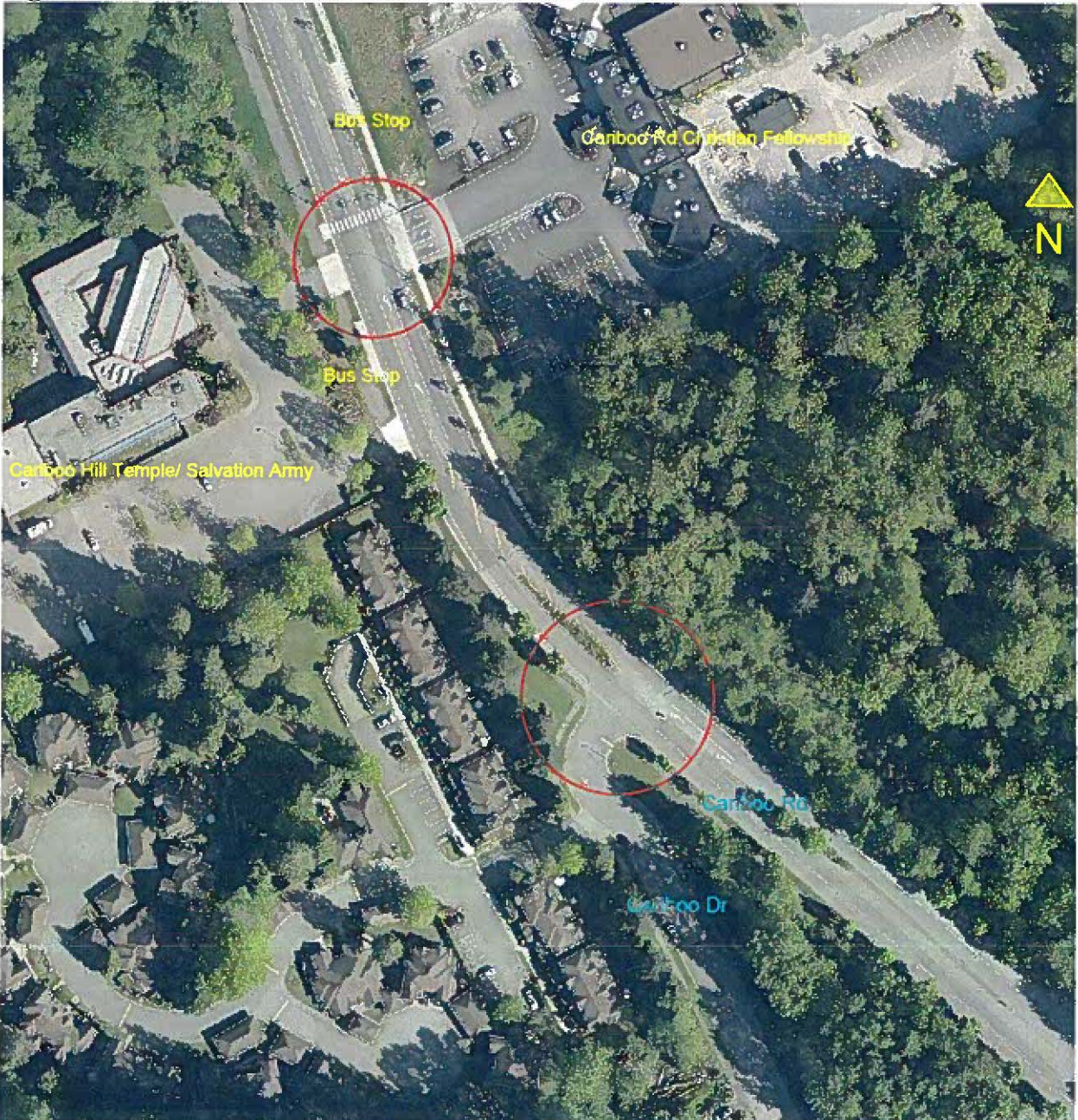
#### **SITE LOCATION**

Figure 1 shows the location of the subject unsignalized 'T'-intersection of Cariboo Rd/Cariboo Dr. It is 240 metres south of the Trans-Canada Hwy overpass and 510 metres to the north of the signalized intersection of 16<sup>th</sup> Ave/Cariboo Rd. Figure 1 also shows two existing church accesses directly opposite to each other and an overhead signed crosswalk on Cariboo Rd 140 metres north of the subject 'T'-intersection. Transit bus stops are located on both sides of Cariboo Rd at the crosswalk.

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Cariboo Dr serves low to medium density residential developments and leads into undeveloped lands and a conservation area. The Cariboo Heights Housing Co-operative with 56 townhouse units and 8 single family homes is on the west side of Cariboo Rd that is accessed via Cariboo Dr. The Cariboo Hill Temple / Salvation Army offices are located just north of the co-op that offers services on Sundays and Tuesday evenings. The Cariboo Road Christian Fellowship Church is directly across Cariboo Rd from Cariboo Hill Temple and offers services primarily on Sundays, and generates very little traffic during the typical weekday peak hours.

**Figure 1: Location of Cariboo Road/Cariboo Drive Intersection**





## **EXISTING TRAFFIC CONDITIONS**

Cariboo Rd is a Major Collector Secondary with a single travel lane in each direction north of Cariboo Drive. A second additional southbound travel lane is introduced just south of the intersection. Cariboo Rd carries 1,340 vehicles per direction for a total of up to 2,670 vehicles two-way in the peak hour.

In the northbound direction Cariboo Road has a downhill grade of approximately 8% which contributes to operating speeds higher than the posted speed limit of 50 km/h. Also, due to lack of gaps in the northbound traffic stream during peak periods, traffic exiting Cariboo Dr making a left turn onto Cariboo Rd may experience delays. However, the volume of such left turn movement is extremely low with only 16 vehicles in the peak hour. The ICBC crash data for the most recent five-year period (2011-2015) does not show any crashes at the intersection.

## **WARRANT ANALYSIS**

The City follows the Transportation Association of Canada's (TAC) standard intersection and crosswalk traffic control warrant analysis procedures. The methodology takes into account traffic and pedestrian volumes, roadway geometrics, crash history, nearby traffic control and network connectivity. This ensures consistency across the City, addresses the safety of pedestrians and meets driver expectations.

The analysis completed at the intersection of Cariboo Rd/Cariboo Dr show that a signal is not warranted due primarily to the very low volume of vehicles and pedestrians crossing Cariboo Rd at Cariboo Dr. In particular, there are only 25 vehicles coming from eastbound Cariboo Dr in the peak hour of which 16 turn left northbound. Also, there is only an average of 2 pedestrians/ hour crossing Cariboo Rd. Both are well below the threshold of 200 vehicles /hour and 15 pedestrians/ hour to warrant a signal.

The installation of an unwarranted traffic signal could lead to unnecessary delays to motorists and a higher potential for rear end crashes. A review of historical traffic volume data along Cariboo Dr also does not indicate any significant growth trend.

A similar analysis was completed at the intersection of Cariboo Rd and the access to Cariboo Hill Temple/ Salvation Army. The results were similar in that both traffic (30 vehicles/ hour in the peak hour) and pedestrian volumes (average of 3 pedestrians/ hour) were too low to warrant a signal.

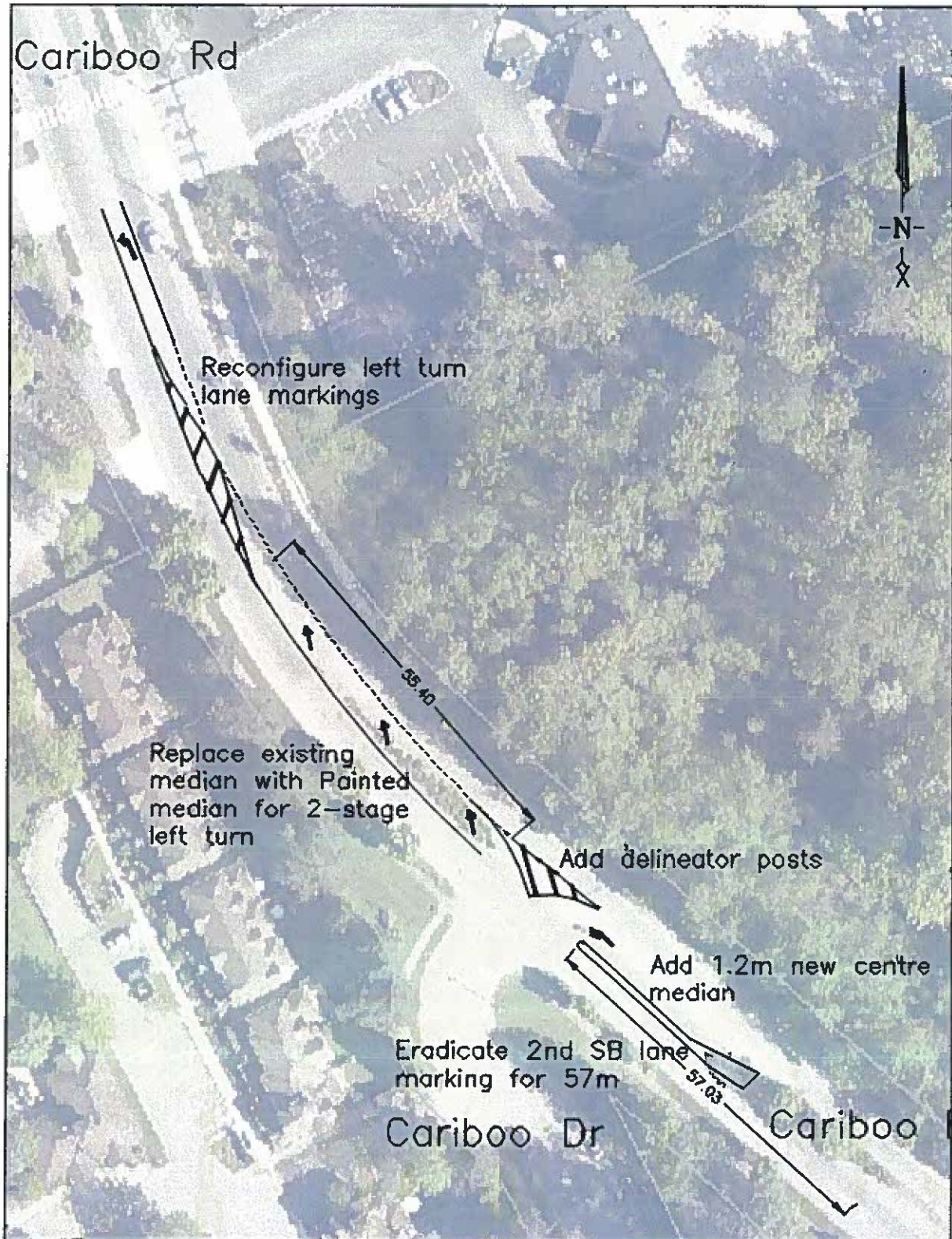
## POTENTIAL IMPROVEMENTS

Although new traffic signals are not warranted along Cariboo Rd, a number of alternatives were developed to address some of the concerns raised. These include:

- i. The installation of a Speed Reader Board or speed feedback electronic sign in the northbound downhill direction on Cariboo Rd near Cariboo Dr to influence driver behaviour;
- ii. Speed enforcement by the RCMP as resources and priorities allow to improve speed limit compliance;
- iii. Intersection design modifications to provide a two-stage protected left turn exit from Cariboo Dr by means of a 55 metre long painted centre median / merge lane on Cariboo Rd;

Figure 2 shows the recommended intersection design modifications. The proposed two-stage left turn exit from Cariboo Dr should reduce delays to motorists making a left turn onto Cariboo Rd. The central merge lane allows vehicles to wait for a gap in traffic if necessary, and makes them clearly visible to northbound motorists. Delineation posts are used to guide left turning vehicles and help deter northbound vehicles from speeding. The modifications also shift the introduction of the second southbound lane further south along Cariboo Rd, thus deterring southbound motorists from speeding up the hill until well after the intersection of Cariboo Dr.

**Figure 2: Recommended Intersection Improvements**






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## RECOMMENDATIONS

The existing traffic volumes and pedestrian activity on Cariboo Dr are well below the standard warrant thresholds for a traffic signal to be installed at the Cariboo Dr/Cariboo Rd intersection. Instead, it is recommended that a two-stage protected left turn exit from Cariboo Dr be created. This along with the installation of a Speed Reader Board and speed enforcement by the RCMP as required should help to mitigate the traffic concerns at the intersection. The cost of the physical improvements is estimated to be approximately \$35,000.

Subject to Council approval of the 2018 Capital Budget (Minor Traffic Management Projects), the proposed modifications can be completed in 2018. Funding contributions from the ICBC Road Improvement Program will be sought to help offset some of the City's cost for this proposed road safety improvement.



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Copied to: City Manager