

CITY OF BURNABY  
TRAFFIC SAFETY COMMITTEE

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*HIS WORSHIP, THE MAYOR  
AND COUNCILLORS*

**SUBJECT: BUXTON STREET AND FORGLEN DRIVE INTERSECTION**

RECOMMENDATION:

1. **THAT** Council forward a copy of the attached report to area residents for further consideration.

REPORT

The Traffic Safety Committee, at its meeting held on 2003 October 07, received and adopted the *attached* report providing a review of the operation of the four-way stop control in response to requests by area residents.

Respectfully submitted,

Councillor D. Evans  
Chair

Councillor N. Volkow  
Vice Chair

Councillor L. Rankin  
Member

COPY: CITY MANAGER  
DIRECTOR ENGINEERING  
RCMP, Traffic Division

City of Burnaby

INTER-OFFICE COMMUNICATION

**TO:** TRAFFIC SAFETY COMMITTEE **DATE:** 2003 09 24  
**FROM:** ASST. DIRECTOR ENGINEERING,  
TRAFFIC & ENGINEERING SYSTEMS **FILE:** 38000-20  
**SUBJECT:** BUXTON STREET AND FORGLEN DRIVE INTERSECTION  
**PURPOSE:** To review the operation of the four-way stop control in response to requests by area residents.

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RECOMMENDATION:

1. **THAT** a copy of this report be forwarded to area residents for further consideration.

**R E P O R T**

**1.0 INTRODUCTION**

Councillor Evans and I met with a group of concerned residents on site at the Buxton / Forglen intersection 2003 August 20. The primary safety concern of the residents was that Buxton traffic habitually disobeyed the requirements of the four-way stop control at the intersection. During the course of discussion, it was observed that the majority of vehicles were executing a "California stop" - ie. slowing down but not coming to a full stop. It was agreed that staff would review the situation by collecting data on vehicle volumes and speeds, review the crash history and consider alternatives to mitigate the problem.

## 2.0 BACKGROUND

The Burnaby Transportation Plan indicates that Buxton is classed as a local collector between the Royal Oak arterial and the Nelson (Bond) local collector link but is built to an interim standard pavement. Given its collector designation, the roadway would not be considered eligible for speed humps which has been suggested by the residents. Forglen is constructed to a full urban standard south of the intersection but the north leg remains as an interim standard pavement.

The intersection was converted from a courtesy corner to two-way stop control (favouring Buxton) in 1993 and converted to a four-way stop in 1995 to allay resident concerns regarding potential shortcutting from the new Royal Oak arterial. It is noted that the four-way stop does not meet the warrants for this type of control because of the disparity in volumes between Buxton and Forglen and the absence of significant collision history.

As shown by Figure 1 attached, the intersection is relatively open with good sightlines further encouraging the "California stop".

## 3.0 REVIEW

### 3.1 Collision History

Our archival search indicates that prior to the installation of stop control in 1993 the intersection averaged less than one (0.7) collisions per year. Since then, we have recorded two reported collisions the last occurring in 1998. Notwithstanding the fact that recorded collisions are under reported, it would appear that this intersection is a relatively safe one.

### 3.2 Traffic History

The recent counts of traffic on Buxton (discussed further below) indicate an average weekday traffic volume of just under 900 vehicles per day. Counts carried out in 1992 showed an average of 830 vehicles per day. This rate of increase is considerably lower than we would expect from count histories on other collector streets.

### 3.3 Current Traffic Patterns

Staff placed a traffic counter on Buxton between Oakglen and Forglen after the site meeting with residents. The data are summarized below.

Date		EB		WB		Total Volume
		Volume #	Mean Speed (km/h)	Volume #	Mean Speed (km/h)	
2003 08 22	Fri	398	42	526	39	924
2003 08 23	Sat	358	42	429	40	787
2003 08 24	Sun	347	42	418	39	765
2003 08 25	Mon	356	41	503	39	859
2003 08 26	Tues	384	42	531	40	915

There is a disparity in the directional volumes weighted to the westbound direction. This is probably accounted for by the fact that it is easier to access Buxton from Royal Oak rather than vice versa. There is also a small difference in the directional data for mean speeds accounted for by the fact that westbound traffic is slowing for the stop control at Forglen Drive while eastbound traffic is accelerating from the stop at the other side of the intersection.

A check of hour by hour speed calculations indicates that the 85th percentile speeds are 7 to 10 km/h above 50th percentile, which still places them at or below the urban speed limit.

## 4.0 DISCUSSION / OPTIONS

### 4.1 The California Stop

Much of the residents' concern stems from the fact that most vehicles proceed through the stop sign controls on Buxton rather than coming to a full stop. This heightens the perception that vehicles are speeding while the data collected indicates that they are not and that the stop control, notwithstanding the lack of compliance, does dampen speeds. The rolling stop is encouraged by the absence of significant conflicting traffic on Forglen. While the California stop is "illegal" it is not necessarily being executed in a hazardous manner given the excellent sightlines at the intersection.

We understand that, at the request of residents, the RCMP (Community Police) have monitored the intersection and found that the stop violators are locally registered. The lack of compliance with the stop is based on drivers' familiarity with the intersection rather than any deficiency in signing or marking.

#### **4.2 Removal of Stop**

From a traffic management perspective, removal of the unwarranted stop is an option to deal with the non-compliance. However, from the residents' perspective it would probably not be considered beneficial (except that it would reduce acceleration / deceleration noise at the stops).

#### **4.3 Speed Humps**

The residents have suggested that their concerns about vehicle speeds would be resolved by the placement of speed humps on Buxton. This would undoubtedly further reduce mid-block speeds but would have little effect on the rolling stop issue which is related to other factors. Additionally, as noted the local collector status of Buxton precludes the deployment of speed humps.

#### **4.4 Roundabout / Traffic Circle**

A roundabout or traffic circle would address non-compliance by replacing the stop with yield control and not significantly alter traffic patterns. This may be beneficial but the topography precludes a cost effective construction of a roundabout.

While the intersection of Buxton / Forglen is relatively flat at its centre, the pavement on the north leg (Forglen) slopes downward at about 10%. Westbound traffic would be placed on this adverse "super elevation". Potentially this could lead to a loss of control or roll over of vehicles with a high centre of gravity and would be especially hazardous under adverse weather conditions.

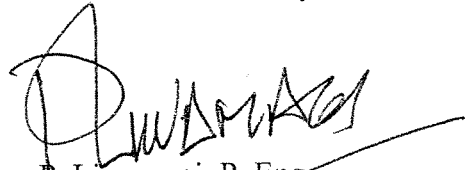
#### **4.5 Corner Bulges / Curb Extensions**

Buxton is currently an interim standard street. If the street were finished to an urban standard through the Local Improvement Program (LIP) we would recommend the introduction of corner bulges to perceptively narrow the expanse of asphalt through the intersection. While this throttling would be a beneficial traffic calming measure it would not necessarily eliminate the California stop issue.

## 5.0 CONCLUSION

The Buxton / Forglen intersection's four-way stop control is routinely violated by Buxton traffic rolling through the stop rather than coming to a full halt. These motorists are seemingly familiar with the traffic patterns and the unlikelihood of encountering conflicting traffic. In addition, the sightlines for Buxton are good so this manoeuvre can be executed in relative safety as indicated by the lack of collision history.

The options for resolving the problem are limited although staff believe that reconstruction of the intersection through an LIP on Buxton would be more beneficial to residents than the other options considered. It is recommended that this report be circulated to the residents who petitioned and others in the vicinity of the intersection.



P. Liivamagi, P. Eng.  
ASST. DIRECTOR ENGINEERING,  
TRAFFIC & ENG. SYSTEMS

PL:jb  
Attach.

cc: City Manager



