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## **Bristol Road All-Way Stop Control Review Information Report**

Report Number: INFO 2024-24

Department(s): Engineering Services

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In accordance with the Procedure By-law, any member of Council may make a request to the Town Clerk that this Report be placed on an upcoming Committee of the Whole agenda for discussion.

### **Executive Summary**

In response to Council's direction, this report provides an analysis of All-Way Stop Controls (AWSC) at the intersections of Bristol Road with Elman Crescent (East) and Dorchester Street. It assesses compliance with the Town's AWSC policy and the guidelines outlined in the Ontario Traffic Manual (OTM), based on recent traffic studies, collision history, and existing conditions.

While the AWSC at Bristol Road and Elman Crescent (East) does not fully meet the warrant criteria, it provides safety benefits for pedestrians accessing York Region Transit (YRT) bus stops at this intersection. In contrast, the Bristol Road and Dorchester intersection does not meet the required AWSC warrants, and its proximity to the existing AWSC at Vanden Bergh Boulevard conflicts with the Town's AWSC policy, potentially leading to operational inefficiencies.

Collision data shows one reported incident at Bristol Road and Elman Crescent (East) over the past 36 months, while no collisions were reported at Bristol Road and Dorchester Street during the same period. Based on these findings, it appears reasonable to retain the AWSC at Bristol Road and Elman Crescent (East) to maintain pedestrian safety and manage traffic flow. Relocating the AWSC or adding a new one at Bristol Road and Dorchester Street is not warranted due to policy non-compliance and lower traffic volumes.

To further support pedestrian safety, ladder style crossing markings on the east leg of the Bristol Road and Elman Crescent (East) intersection can be considered, with funding available from the Transportation Services Business Unit's line painting budget.

## Purpose

The purpose of this report is to analyze the All-Way Stop Controls (AWSC) at the intersections of Bristol Road with Elman Crescent (East) and Dorchester Street. The report assesses compliance with the Town's AWSC policy and the guidelines outlined in the Ontario Traffic Manual (OTM), using recent traffic studies, collision history, and current conditions.

## Background

At the Committee of the Whole meeting on June 17, 2024, Town Council made the following request.

**That Staff be directed to issue an Information Report on the technical merits of a stop sign at either the Bristol Road and Dorchester Street intersection or Bristol Road and Elman Crescent intersection.**

## Discussion

Bristol Road is a 9.8-metre-wide collector road with an average daily traffic (ADT) of approximately 2,910 between Elman Crescent (East) and Dorchester Street. Dorchester Street is an 8.5-metre-wide local road with an ADT of around 1,395. Both Elman Crescent (East) and Billings Crescent are 8.5-metre-wide local roads intersecting with Bristol Road. The traffic study was conducted over 8 peak hours on a weekday at the intersections of Bristol Road with Elman Crescent (East) and Dorchester Street, both on the same day.

### Analysis of Bristol Road and Elman Crescent (East) Intersection

The intersection of Bristol Road and Elman Crescent (East) currently features an AWSC. York Region Transit (YRT) bus stops (Routes 423 & 44) are situated at the northeast and southwest corners of the intersection and a curb ramp was recently installed at the southeast corner by the Town as a capital project. Based on the latest traffic study data, the following observations were made.

#### Vehicle Volume on All Approaches

The vehicle volume on all approaches at the Bristol Road and Elman Crescent (East) intersection ranged between 194 and 371 vehicles per hour during the highest observed hours. This volume is below the required minimum threshold of 375 vehicles per hour for an AWSC as outlined in the AWSC policy guidelines. The lower vehicle volume suggests that an AWSC may not be warranted based on volume criteria alone.

#### Combined Vehicle and Pedestrian Volume Crossing the Major Road

The combined vehicle and pedestrian volume crossing the major road at this intersection ranged between 21 and 65 during each observed hour. This is significantly

below the required 150 vehicles and pedestrians per hour as specified in the AWSC policy for warrant satisfaction. Therefore, the intersection does not meet the required criteria for combined vehicle and pedestrian volume.

### **Percentage of Vehicle Volume Split on the Major Road**

The vehicle volume split on the major road ranged from 82% to 93% during each observed hour, exceeding the 70% ideal maximum threshold for the volume split warrant. This indicates that the majority of the traffic is concentrated on the major road, suggesting that an AWSC may not effectively balance traffic distribution at this intersection.

## **Analysis of Bristol Road and Dorchester Street Intersection**

The intersection of Bristol Road and Dorchester Street currently has a minor stop control, and there are no YRT bus stops at this intersection. This intersection was reviewed to assess its eligibility for the installation of a new AWSC based on the AWSC policy and recent traffic study data. The analysis considered the following parameters.

### **Vehicle Volume on All Approaches**

The vehicle volume on all approaches at the Bristol Road and Dorchester Street intersection ranged from 211 to 399 vehicles per hour. While some hours met the required minimum threshold of 375 vehicles per hour, the intersection did not consistently meet this criterion during the highest observed hours.

### **Combined Vehicle and Pedestrian Volume Crossing the Major Road**

The combined vehicle and pedestrian volume crossing the major road at Bristol Road and Dorchester Street ranged from 40 to 82, which is significantly lower than the required 150 vehicles and pedestrians per hour as specified in the AWSC policy for warrant satisfaction.

### **Percentage of Vehicle Volume Split on the Major Road**

The percentage of vehicle volume split on the major road ranged from 74% to 82% during the observed hours. This exceeds the 70% ideal maximum threshold, indicating that the majority of traffic is concentrated on the major road, similar to the situation at Bristol Road and Elman Crescent (East) intersection.

## **Collision History**

The collision history at both intersections was reviewed to evaluate their safety performance under existing conditions:

1. **Bristol Road and Elman Crescent (East):** There has been one reported collision at this intersection in the past 36 months. A pedestrian was crossing the north leg of the intersection when an eastbound vehicle turning left onto the north leg, struck the pedestrian at the crosswalk. This collision could have resulted in a

serious injury had there been no AWSC in place, as it helped control the vehicle's speed and turning movements.

2. **Bristol Road and Dorchester Street:** There have been no reported collisions at this intersection in the past 36 months. The lack of collisions suggests that the intersection has been operating safely without an AWSC.

## Policy Compliance Consideration

One of the key factors in evaluating the feasibility of relocating the AWSC from Bristol Road and Elman Crescent (East) to Bristol Road and Dorchester Street is compliance with the Town's AWSC policy regarding the spacing between adjacent all-way stops. According to the policy, an AWSC should not be installed within 250 metres of another AWSC to prevent operational inefficiencies and avoid non-compliance issues.

The Bristol Road and Dorchester Street intersection is located approximately 230 metres from Vanden Bergh Boulevard, where another AWSC is currently installed. Relocating the AWSC from Elman Crescent (E) to Dorchester Street would violate this policy, potentially creating unnecessary congestion and reducing the overall efficiency of the road network in the area.

*Table 1. AWSC Evaluation Summary for Bristol Road Intersections*

Description	Bristol & Elman Crescent (East)	Bristol & Dorchester Street
Vehicle Volume on All Approaches (Min. 375 per hour)	194 to 371 vehicle/hour	211 to 399 vehicle/hour
Vehicle and Pedestrian Volume Crossing the Major Road (combined volume of Min. 150 per hour)	18 to 55 vehicles and 1 to 14 pedestrians/hour	39 to 75 vehicles and 0 to 7 pedestrians/hour
Percentage of Vehicle Volume Split on the Major Road (Max. 70% per hour)	82% to 93%	74% to 82%
Spacing Policy (Min. 250m)	Compliant	Not compliant
Collision History	1 pedestrian collision	No collisions
AWSC Policy Compliance	Not Met	Not Met

## Conclusion

Based on recent traffic studies, collision history, and existing conditions, it is recommended that the existing All-Way Stop Control (AWSC) at Bristol Road and Elman Crescent (East) remain in place. This will help manage the existing traffic conditions and enhance pedestrian safety for those using YRT transit services near the intersection, even though it may not fully meet all AWSC warrants.

A new AWSC or the relocation of the existing AWSC to the intersection of Bristol Road and Dorchester Street does not appear warranted, as it does not meet the required criteria outlined in the AWSC policy and Ontario Traffic Manual (OTM) guidelines. Furthermore, its proximity to Vanden Bergh Boulevard does not comply with the Town's policy regarding the spacing between adjacent AWSCs.

To further enhance pedestrian safety and accessibility, adding ladder crossing markings on the east leg of the Bristol Road and Elman Crescent intersection, in alignment with the newly installed curb ramp at the southeast corner, appears to be beneficial and is recommended.

## **Business Plan and Strategic Plan Linkages**

Well-planned and connected...strategically planning for the future to improve information access and enhance travel to, from, and within Newmarket.

## **Consultation**

This report was prepared with input from staff in Transportation Services. Traffic data analysis was conducted using Traffic Engineering Software to ensure an accurate and comprehensive evaluation of the intersections.

## **Human Resource Considerations**

None

## **Budget Impact**

Funds for the additional ladder crossing markings at the east leg of Bristol Road and Elman Crescent (E) are available through the Transportation Services Business Unit's line painting budget.

## **Attachments**

None

## **Approval**

Sepideh Majdi, M.Sc., P. Eng, Director, Engineering Services

Peter Noehammer, P. Eng, Commissioner, Development & Infrastructure Services

## Contact

For more information or questions regarding this report, please contact Mark Kryzanowski, Manager, Transportation Services, at 905-953-5300 extension 2508 or [MKryzanowski@newmarket.ca](mailto:MKryzanowski@newmarket.ca)

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