



## CITY OF CAMBRIDGE

# TRAFFIC, PARKING, + TRANSPORTATION

## MEMORANDUM

**To:** Yi-An Huang, City Manager

**From:** Joseph E. Barr, Director

**Date:** September 12, 2022

**Subject:** Awaiting Report 21-49 – Bristol and Cardinal Medeiros Intersection Improvements

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This memorandum has been prepared in response to Awaiting Report 21-49 (Order 8 from the June 14, 2021 City Council meeting), as well as Policy Order/Resolution 2022 #143 from the August 1, 2022 City Council meeting. Both orders requested that we consider the potential for safety improvements at the intersection of Cardinal Medeiros Avenue with Binney Street and Bristol Street.

### Existing Conditions

This intersection is currently controlled by STOP signs on the Bristol Street approach, which is one-way towards the intersection (eastbound) and on the Binney Street approach, which is two-way.

Existing buildings on both eastern corners of the intersection create limited sight distances for drivers attempting to turn right or left from Binney Street to Cardinal Medeiros Avenue. In response to a prior history of crashes at this location, staff from the Traffic, Department, and Transportation Department (TP+T) worked with the developer of the 399 Binney Street property (Alexandria Real Estate) to set back the ground floor of the new building on the northeast corner to allow for better sight distance looking to the right/north from Binney Street. Sight distance is still limited looking to the left/south due to the existing building on the southeast corner, which directly abuts the back of the sidewalk.

As a required mitigation item for the 399 Binney Street redevelopment project, Alexandria recently completed a traffic signal warrant analysis for this intersection. The analysis indicated that the conditions at the intersection do not meet any of the nine official warrants for installation of a new traffic signal under the Manual on Uniform Traffic Control Devices. Based on that analysis we would not consider installing a traffic signal at this intersection.

Crash data obtained by TP+T for the past three years indicate that there were not any crashes between vehicles entering from Binney Street and through vehicles on Cardinal Medeiros Avenue. There was one crash involving a vehicle exiting Bristol Street colliding with a vehicle exiting Binney Street and two crashes involving vehicles

exiting Bristol Street colliding with through vehicles on Cardinal Medeiros Avenue. There were no reported crashes involving cyclists or pedestrians.

Based on a review of the sight distance at the intersection, traffic volumes, and crash data, TP+T staff have identified two potential alternatives to improve safety at the intersection of Cardinal Medeiros Avenue with Bristol Street and Binney Street.

### **Alternative 1**

Reverse the direction of Bristol Street between Webster Avenue and Cardinal Medeiros Avenue. This will remove the movement into the intersection that has caused all of the reported angle crashes. It may also reduce the volume of traffic cutting through the neighborhood, as Bristol Street would no longer provide a continuous connection between Hampshire Street and Cardinal Medeiros Avenue (and other destinations to the east).

### **Alternative 2**

Install all-way STOP control for the intersection. This would involve adding new STOP signs and STOP bars on Cardinal Medeiros at the intersection. This would resolve the crash pattern by requiring all vehicles to stop entering the intersection, but could lead to an increase in rear end crashes on Cardinal Medeiros Avenue. This may also result in a small increase in traffic on Bristol Street, as it would improve access across to Binney Street.

### **Next Steps**

In addition to the feedback we receive from the City Council from this memorandum, TP+T staff will provide residents of the neighborhood with opportunities to provide feedback on these two alternatives. Our goal is to identify the preferred option based on this feedback, and implement the proposed changes later this fall.

More generally, the City Council has asked that we develop a process for addressing other problematic intersections and corridors, particularly those that are not otherwise being looked at through capital and quick build projects. Although Cambridge has been pursuing a range of traffic safety improvements for many years, we recognize that there remain certain locations where further improvements may be warranted. Working with our internal Vision Zero partners, we are working to develop such a process, particularly focused on improvements that can occur within a relatively short time frame. We hope to be able to work out the details of such a program as part of the budget process for FY2024.