



TRANSPORTATION ADVISORY COMMITTEE

Town of Arlington

Planning and Community Development Department, 730 Mass Ave,

Arlington MA, 02476

c/o Daniel Amstutz

To: Select Board

From: Howard Muise, TAC Chair

Subject: Request for Stop Signs on Hayes Street

Date: April 8, 2019

Recommendation

The TAC recommends that the Select Board authorize installation of STOP signs on both approaches of Mystic Lake Drive and Maynard Street to Hayes Street.

Background

On May 10, 2018, residents of Hayes Street and Mystic Lake Drive sent a petition to the Town Manager's Office requesting the installation of STOP signs on Hayes Street at Maynard Street and at Mystic Lake Drive. This request was forwarded to the Transportation Advisory Committee from the Select Board for further review and recommendation. The petitioners' principal concern was confusion regarding who has the right-of-way at the intersections of Maynard Street and Mystic Lake Drive with Hayes Street. Both are four-way uncontrolled intersections.

Location Description and Data Collection

Hayes Street, Maynard Street, and Mystic Lake Drive are minor two-way roads on the eastern edge of Arlington near the Medford city line. Hayes Street intersects with Mystic Valley Parkway on its north end and Medford Street on its south end and is approximately 600' long. Maynard Street and Mystic Lake Drive intersect with Mystic Valley Parkway on their eastern ends and with Medford Street and Webcowet Road on their western ends, respectively. Hayes Street meets both Maynard Street and Mystic Lake Drive at four-way uncontrolled intersections. The block lengths on Hayes Street are approximately 200' long, splitting Hayes Street into three roughly equal segments. Land uses around the streets are primarily residential. The traffic rotary at Mystic Valley Parkway and Medford Street is in proximity to the area.



Figure 1 - Hayes Street looking northwest towards Mystic Lake Drive and Mystic Valley Parkway



Figure 2 - Map of intersection locations

Transportation Advisory Committee Members:

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Additional base level data were collected by Town staff and TAC for reviewing this request and are listed in Table 1.

Table 1 - Base Level Data

	Hayes Street	Maynard Street	Mystic Lake Drive
Roadway Width	24-25'	24-25'	24-25'
Number of Travel Lanes	2	2	2
Bidirectional Traffic?	Yes	Yes	Yes
Speed Limit	25 mph	25 mph	25 mph
Roadway Type/Classification	Local/Minor Street (MassDOT)	Local/Minor Street (MassDOT)	Local/Minor Street (MassDOT)
On-Street Parking	Unrestricted	Unrestricted	Unrestricted
Pavement Markings	None	None	None
Existing Signage	Stop signs on approach to Mystic Valley Parkway and Medford St; none at intersections with Maynard St. or Mystic Lake Dr.	None at intersection with Hayes St.	None at intersection with Hayes St.

Volume and Speed Data

The Arlington Police Department (APD) collected volume and speed data for Hayes Street and Maynard Street over a 72-hour period on Wednesday October 17 through Friday October 19, 2018. This included identifying the peak morning and evening peak periods for traffic volumes, total daily traffic volumes, average speeds, and 85th percentile speeds by direction. This data is presented in Tables 2 and 3. APD did not collect volume and speed data on Mystic Lake Drive. Conditions at Mystic Lake Drive and Hayes Street are considered to be very similar in nature to Maynard Street and Hayes Street. The short block lengths on Hayes Street make it unlikely that speeds or volumes vary significantly from one intersection to the next.

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Table 2 - Volume Data (3-Day Average)

	Hayes Street	Maynard Street
Average Daily Two-Way Volume	742	119
AM Peak Hour (Eastbound)	106 (8-9 AM)	4 (11 AM-12 PM)
AM Peak Hour (Westbound)	14 (8-9 AM)	5 (11 AM-12 PM)
PM Peak Hour (Eastbound)	106 (5-6 PM)	9 (6-7 PM)
PM Peak Hour (Westbound)	19 (6-7 PM)	5 (6-7 PM)

Table 3 - Speed Data*

	Hayes Street	Maynard Street
Average Speed	15 mph	10 mph
85th Percentile Speeds	23 mph	15 mph
95th Percentile Speeds	26 mph	20 mph
Percent of Vehicles > 25 mph	7.05%	0.5%

*Totals and percentages are averages of eastbound and westbound directions.

Safety and Crash Data

According to crash reports provided by APD, from 2016-2018 there have been two crashes at Hayes Street and Maynard Street and one crash at Hayes Street and Mystic Lake Drive that can be attributable to failure to yield the right-of-way. The reports indicate that the drivers thought that intersection control had been established with signage although no signs are present. These are official crash reports that have been reported to APD and do not include anecdotal reports of crashes or near misses that the neighborhood has communicated to staff and the TAC.

Review of STOP Signs Request

The primary concern of petitioners was driver confusion regarding right-of-way at the two uncontrolled intersections. According to the Massachusetts General Laws, when two vehicles approach an uncontrolled intersection “at approximately the same instant, the operator of the vehicle on the left shall yield the right-of-way to the vehicle on the right... the foregoing provisions of this section shall not apply when an operator is otherwise directed by a police officer, or by a traffic regulating sign, device or signal...”¹ Drivers currently approaching the two intersections of Hayes Street with Maynard Street Mystic Lake Drive should be yielding the right-of-way to the vehicle on the right if a vehicle is approaching on the right. However, the concern from local residents is that it is not clear to many drivers who has the right-of-way at the subject intersections and vehicle collisions have occurred (reported and unreported) because of this confusion.

¹ MGL Part I, Title XIV, Chapter 89, Section 8

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Town staff and TAC members have reviewed the factors recommended by the Manual on Uniform Traffic Control Devices (MUTCD) to establish intersection control at both intersections. Generally speaking, based on crash data and volume data, neither intersection meets warrants for installing STOP signs. However, the MUTCD makes additional provisions for using STOP signs, noting that they should be used at “an intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law.”² Additionally, STOP signs should be considered at the intersection of two minor streets where the intersection has more than three approaches if “the ability to see conflicting traffic on an approach is not sufficient to allow a road user to stop or yield in compliance with the normal right-of-way rule if such stopping or yielding is necessary.”³

Given this review and the experience of users of the roadway, it has been observed that the normal right-of-way rule is not always being observed at these intersections. Further, there is concern that intersection sight distance is not adequate for traffic approaching Hayes Street from either Maynard Street or Mystic Lake Drive. Comparison of the traffic volume data between Hayes Street and Maynard Street shows that Hayes should be considered the “main street” because it has a much higher volume of traffic than Maynard Street. Mystic Lake Drive is also expected to be the lower volume street compared to Hayes Street.

The original request was to install STOP signs on Hayes Street at Maynard Street and Mystic Lake Drive. However, the MUTCD notes that “a YIELD or STOP sign should not be installed on the higher volume roadway unless justified by an engineering study.”⁴ Therefore, STOP signs are not recommended on Hayes Street. In order to address the need for intersection control at the two intersections of concern, STOP signs should be installed on the Maynard Street and Mystic Lake Drive approaches to Hayes Street.

Review of Other Traffic Concerns

Neighbors attended two TAC meetings and also raised concerns about traffic traveling at high speed on Hayes Street while cutting through the neighborhood between Mystic Valley Parkway and Medford Street. They also expressed concerns about high traffic volumes on Hayes Street during morning and afternoon peak periods. Based on these concerns they asked for consideration of peak period restrictions (no turns or do not enter) on vehicles entering Hayes Street from Mystic Valley Parkway and/or Medford Street.

² MUTCD 2009 Edition, Part 2, Chapter 2B, Section 2B.04, Paragraph 03-A

³ Ibid., Paragraph 04-B

⁴ Ibid., Paragraph 08

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High Traffic Speeds on Hayes Street

On May 1, 2017, the statutory speed limit on town-owned roadways was reduced from 30 mph to 25 mph. This affects all town-owned roadways that do not have special speed regulations as approved by the Massachusetts Department of Transportation. Hayes Street, Maynard Street, and Mystic Lake Drive do not have special speed regulations and their speed limits are set at 25 mph.

Speed data collected by the APD shows the 85th percentile speed on Hayes Street is 23 mph (i.e. 85 percent of all vehicles travel at 23 mph or less). Furthermore, only 7 percent of vehicles travel faster than 25 mph. Therefore, due to the low numbers of vehicles traveling above the 25 mph speed limit, TAC member concluded that no serious speeding issue exists on Hayes Street.

The original request suggests that STOP signs could be used to slow traffic traveling on Hayes Street, although a speeding issue has not been established. However, this is an inappropriate use of STOP signs. STOP signs control right-of-way at intersections and MUTCD guidance notes that "YIELD or STOP signs should not be used for speed control."⁵

High Traffic Volumes on Hayes Street

Volume data collected by the APD shows that approximately 106 vehicles travel eastbound on Hayes Street towards Medford Street each morning in the peak hour between 8-9 AM. The highest morning peak hour volume was 156 vehicles on Wednesday October 17, and the lowest was 70 vehicles on Friday October 19. Similarly, about 106 vehicles travel eastbound on Hayes Street during the evening peak hour between 5-6 PM. Westbound traffic volumes traveling on Hayes Street towards Mystic Valley Parkway are considerably less, with fewer than 20 vehicles on average during the morning and evening peak periods.

⁵ Ibid., Paragraph 05

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Compared to non-peak periods, the number of vehicles traveling on Hayes during the peak periods can appear high. However, the amount of traffic on Hayes Street is still extremely low compared to many high traffic roadways in the Town. For example, Pleasant Street near Gray Street has over 26,000 vehicles per day based on MassDOT counts from 2010; Broadway has over 10,000 vehicles per day (also 2010 MassDOT traffic counts). The peak hour traffic on Hayes Street is no higher than on many other residential streets in Arlington. There is no clear evidence that this peak period traffic is negatively affecting traffic conditions along Hayes Street compared to other roadways in town. Finally, because Mystic Valley Parkway is owned and maintained by the Department of Conservation and Recreation (DCR), it is not under the Town's power to approve a turn restriction off of this road.

Respectfully submitted,

Howard Muise, TAC Chair

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