

Ref: 7516

April 5, 2021

Ms. Emily Wentworth
Senior Planner: Zoning/Special Projects
Town of Hingham
210 Central Street
Hingham, MA 02043

Re: Traffic Signal Timing Assessment
Beal Street at Sgt. William B. Terry Drive
Hingham, Massachusetts

Dear Emily:

Vanasse & Associates, Inc. (VAI) has completed a review of the March 26, 2021 assessment of traffic operations at the intersection of Beal Street at Sgt. William B. Terry Drive in Hingham, Massachusetts, that was prepared by VHB. This assessment was performed pursuant to Condition E. 1. of the June 19, 2017 Comprehensive Permit issued for the Broadstone Bare Cove residential development located at 230 Beal Street. The subject condition requires that traffic operations (motorist delays and vehicle queuing) be assessed at the subject intersection during the weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods within 6-months of achieving 80 percent occupancy of the number of units approved for the Broadstone Bare Cove residential development (220 units). The purpose of the assessment is to determine if adjustments are required to the traffic signal system to accommodate the change in traffic volumes and turning movements at the intersection resulting from the Broadstone Bare Cove residential development.

In order to complete the assessment, VHB conducted manual turning movement counts and vehicle classification counts at the at the intersection of Beal Street at Sgt. William B. Terry Drive during the weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods on Wednesday, March 3, 2021. A comparison of the March 2021 peak-hour traffic count data to the peak-hour traffic volume data that was presented in the October 2016 *Traffic Impact and Access Study* (TIAS) prepared by VHB for the Broadstone Bare Cove residential development¹ indicated that the March 2021 traffic volumes are between 27% and 41% lower than the 2016 existing peak-hour traffic volumes that were presented in the October 2016 TIAS and between 43% and 49% lower than the 2023 Build condition traffic volumes. It was noted that these significant variations are a result of the restrictions associated with the COVID-19 pandemic.

Using the March 2021 traffic volume data, a traffic operations analysis was performed for the intersection of Beal Street at Sgt. William B. Terry Drive during both the weekday morning and evening peak hours, which occur between 8:00 and 9:00 AM, and 4:30 to 5:30 PM, respectively. The traffic operations analysis was performed following accepted standards and using the software approved by the Massachusetts Department of Transportation (MassDOT). Based on this analysis, the intersection was identified to be

¹*Traffic Impact and Access Study*, Alliance Residential, 230 Beal Street, Hingham, MA; VHB; October 2016.

operating at an overall level-of-service (LOS) of B during both the weekday morning and evening peak hours, with no movement operating below LOS C. For context, a LOS “D” or better is generally defined as the limit of acceptable traffic operations, with LOS “E” indicative of an intersection or movement that is operating at its design capacity. Accordingly, the intersection of Beal Street at Sgt. William B. Terry Drive is operating under acceptable conditions with reserve capacity to accommodate the expected increase in traffic that will occur post pandemic. As such, no adjustments to the traffic signal timing were recommended.

Table 2. Intersection Capacity Analysis

Location	Movement	Morning Peak Hour					Evening Peak Hour				
		v/c ^a	Delay ^b	LOS ^c	50 th Q ^d	95 th Q ^e	v/c	Delay	LOS	50 th Q	95 th Q
Sgt. W.B. Terry Dr. at Beal St.	EB L/T/R	0.24	12	B	34	119	0.38	13	B	66	216
	WB L/T/R	0.30	8	A	27	120	0.29	8	A	30	139
	SB L/T/R ^f	0.20	26	C	23	67	0.28	26	C	34	100
	Overall		12	B				13	B		

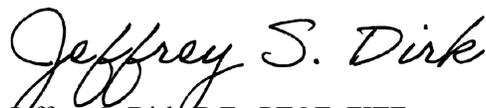
- a. Volume to capacity ratio.
- b. Average total delay, in seconds per vehicle.
- c. Level-of-service.
- d. 50th percentile queue, in feet.
- e. 95th percentile queue, in feet.
- f. Includes volume adjustments to account for short right-turn lane.

This reserve capacity is evidenced by the reported “volume-to-capacity” ratio, or “v/c”, for the individual movements at the intersection, all of which are below 0.40, indicating that all movements at the intersection are operating below 40 percent of capacity. As such, even if the March 2021 traffic volumes were adjusted upward in order to account for the reduction in traffic volumes evidenced as a result of the COVID-19 pandemic, the intersection would not be operating over its design capacity such that adjustments to the traffic signal timing would be necessary.

If you should have any questions regarding our review, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.



Jeffrey S. Dirk, P.E., PTOE, FITE
Managing Partner

Professional Engineer in CT, MA, ME, NH, RI and VA

JSD/jsd

cc: File

