

Ref: 9718

May 1, 2023

Mr. Michael B. Silveira  
Senior Planner  
Town of Hingham  
210 Central Street  
Hingham, MA 02043

Re: Traffic Engineering Peer Review  
Bishops Lane Definitive Subdivision – 16 Bishops Lane  
Hingham, Massachusetts

Dear Michael:

Vanasse & Associates, Inc. (VAI) has completed a review of the materials submitted on behalf of the Young Family Trust (the “Applicant”) in support of the proposed Definitive Subdivision that has been proposed for the property located at 16 Bishops Lane in Hingham, Massachusetts (hereafter referred to as the “Project”). The Applicant is requesting approval of a Definitive Plan for the Project. Our review focused on the following specific areas as they relate to the Project: i) vehicle and pedestrian access and circulation; ii) Massachusetts Department of Transportation (MassDOT) design standards; iii) Town Zoning requirements as they relate to access, parking and circulation; and iv) accepted Traffic Engineering and Transportation Planning practices. The Applicant has submitted the following supporting materials which are the subject of this review:

1. *Form C , Application for Approval of Definitive Plan*, Deborah W. Keller, P.E. on behalf of the Young Family Trust; March 18, 2023;
2. *Waiver Request, Definitive Subdivision Plan – Bishops Lane, Applicant: Young Family Trust, Steve and Caroline, Trustees*; Deborah W. Keller, P.E., Merrill Engineers and Land Surveyors; March 28, 2023; and
3. *Bishops Lane Definitive Subdivision Plan*, Assessors Map 70, Lots 20 and 22, Hingham, Massachusetts; Merrill Engineers and Land Surveyors; March 24, 2023, no revisions.

In addition, VAI reviewed the site locus in order to validate the existing conditions context of the Project and to observe factors that could impact the design and location of the access to the Project site and potential off-site improvements.

Based on our review of the materials that have been submitted in support of the Project, we have determined that the materials were prepared in a professional manner and following the applicable standards of care. That being said, we have provided comments that the Applicant should address in a subsequent submission.

## **PROJECT DESCRIPTION**

The Project entails the creation of a four (4) lot subdivision on approximately 3.51± acres of land located at 16 Bishops Street (Assessors Map 70, Lots 20 and 22) in Hingham, Massachusetts. The proposed subdivision will allow for the construction of three (3) new single-family homes on Lots 2, 3 and 4, with Lot 1 to contain the existing single-family home located at 16 Bishops Street. A drainage parcel (Parcel A) containing 0.565± acres of land will be situated in the southeast corner of the subject property and will be improved with a stormwater basin to serve the Project, with a second parcel (Parcel B) containing 0.098± acres of land situated in the northwest corner and designated as “Not a Buildable Lot”. Access to the Project site will be provided by way of the existing private way known as Bishops Lane that provides access to single-family homes located at 2, 6 and 16 Bishops Lane and 248 South Street. The existing private way will be improved to provide a 24-foot wide roadway within a 46-foot wide right-of-way that will include a 22-foot wide traveled-way with 1-foot wide Cape Cod berms along both sides. The improved roadway will terminate in a cul-de-sac approximately 760 feet south of South Street (measured to the center of the cul-de-sac)

On-site parking will be provided for a minimum of two (2) vehicles per unit in attached garages, with additional parking provided in the driveways leading to the garages. The parking supply complies with the requirements of Section V-A, *Off-Street Parking Regulations*, of the Town of Hingham Zoning By-Law, which requires that two (2) parking spaces per unit be provided for a residential use.

Using trip-generation statistics published by the Institute of Transportation Engineers (ITE)<sup>1</sup> for single-family homes, the Project (three (3) new single-family homes) is expected to produce 40 new vehicle trips on an average weekday (20 vehicles entering and 20 exiting), with 3 to 4 new vehicle trips expected during the peak commuter hours. These increases would not result in a material increase in motorist delays or vehicle queuing over existing conditions.

## **COMMENTS**

1. A vehicle turning analysis should be provided using the AutoTurn© software for the Hingham Fire Department design vehicle. The turning analysis should depict all maneuvers required to enter and exit the Project site, and should demonstrate that the subject vehicle can access and circulate in an unimpeded manner, including around the cul-de-sac.
2. The right-of-way for the subdivision road should be 46-feet for the entire length of the roadway pursuant to requirements for a Minor Street as defined in Table 1 of Section 4.B(3)(a) or a waiver should be requested. The current design maintains the existing 40±-foot wide right-of-way for the existing private way and then increases to 46-feet for the new section of roadway.
3. The radius of the center island within the cul-de-sac should be reviewed for compliance with Section 4.B(4)(b) of the Hingham Subdivision Rules and Regulations.
4. A sidewalk should be added along one side of Bishops Lane that should extend to South Street pursuant to Section 4.G of the Hingham Subdivision Rules and Regulations. We do not support granting the requested waiver from this section of the Hingham Subdivision Rules and Regulations.

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<sup>1</sup>*Trip Generation*, 11<sup>th</sup> Edition; Institute of Transportation Engineers; Washington, DC; 2021.



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5. The centerline grade of Bishops Lane is proposed to range from 4.5 percent to 10 percent, with the 4.5 percent grade at South Street (sloping downward toward South Street). The 10 percent grade is proposed approximately 350 feet south of South Street. The Applicant has requested two (2) waivers from the Hingham Subdivision Rules and Regulations related to the proposed roadway grade. The first request is a waiver from the maximum centerline grade of 8 percent for a Minor Street defined in Table 1 of Section 4.B(3)(a). The second is a request from the leveling area with a maximum grade of 3 percent within 100 feet of an intersection defined in Section 4.B(3)(f). We do not support the granting of both of these waivers as the combination of a 10 percent downgrade transitioning to a downgrade of 4.5 percent approaching South Street impacts the ability of vehicles to stop under all weather conditions before entering the traveled-way at South Street. In addition, the lack of a proper leveling area will also impact sight lines at the Bishops Lane/South Street intersection (sight distance considerations assume that a leveling area is provided on the minor street approach to the intersection).
6. Pursuant to Section 4.B(3)(b) of the Hingham Subdivision Rules and Regulations, a sight distance analysis (intersection and stopping sight distance) should be completed for the intersection of Bishops Lane with South Street following American Association of State Highway and Transportation Officials (AASHTO)<sup>2</sup> standards and using the higher of the measured 85<sup>th</sup> percentile vehicle travel speed along South Street or the posted speed limit. We do not support granting the requested waiver from this section of the Hingham Subdivision Rules and Regulations.
7. The sight triangle areas for the Bishops Lane should be added to the Definitive Subdivision Plan along with a note to indicate: “Signs, landscaping and other features located within sight triangle areas shall be designed, installed and maintained so as not to exceed 2.5-feet in height. Snow accumulation (windrows) located within sight triangle areas that exceed 3.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed.”
8. A note should be added stating: “All Signs and pavement markings to be installed within the Project site shall conform to the applicable specifications of the Manual on Uniform Traffic Control Devices (MUTCD).<sup>3</sup>”

This concludes our review of the materials that have been submitted to date in support of the Project. 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

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<sup>2</sup>A Policy on Geometric Design of Highway and Streets, 6th Edition; American Association of State Highway and Transportation Officials (AASHTO); Washington D.C.; 2011.

<sup>3</sup>Manual on Uniform Traffic Control Devices (MUTCD); Federal Highway Administration; Washington, DC; 2009.

