

Ref: 7955

July 12, 2018

Mr. Kenneth Comia, Town Planner  
Economic Development & Planning Department  
Town of Southbridge  
41 Elm Street  
Southbridge, MA 01550

Re: Traffic Engineering Peer Review  
Southbridge Mills Comprehensive Permit Development – 5-15 Case Street  
Southbridge, Massachusetts

Dear Mr. Comia:

Vanasse & Associates, Inc. (VAI) has completed a review of the materials submitted on behalf of Southbridge Housing, LLC (the “Applicant”) in support of the proposed Southbridge Mills residential community to be located at 5-15 Case Street in Southbridge, Massachusetts (hereafter referred to as the “Project”). The Project has been submitted to the Town for consideration of the issuance of a Comprehensive Permit under the provisions Massachusetts General Laws, Chapter 40B, Sections 20-23, as amended (Chapter 40B). 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.

In support the Project, the Applicant submitted the following materials which are the subject of this review:

1. *Application for Comprehensive Permit*, Southbridge Housing, LLC, Southbridge Mills, Southbridge, MA; Freeman Law Group LLC;
2. *Southbridge Mills Renovation*, 5-15 Case Street, Southbridge, MA 01550; Dietz & Company Architects, Inc., et al; November 15, 2017, no revisions;
3. *Southbridge Mills Responses to Peer Review*, Southbridge, MA; Nitsch Engineering; April 30, 2018; and
4. *East Main Street at Case Street Traffic Study – Southbridge, MA*; Nitsch Engineering; May 14, 2018.

In addition, VAI reviewed the site locus in order to validate the existing conditions context of the Project and the study area that was assessed in the updated May 14, 2018 *East Main Street at Case Street Traffic Study* (the “May 2018 Traffic Study”), 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 May 2018 Traffic Study and the accompanying Site Plans, we have determined that the materials were prepared in a professional manner and following the applicable standards of care. That being said, the information that was presented as a part of the May 2018 Traffic Study is not sufficient to ascertain the potential impact of the Project on the transportation infrastructure or to render an opinion as to the adequacy of the access to the Project site or the internal roadway network to safely convey vehicles, pedestrians and emergency vehicles. As such, we have requested that the Applicant provide an abbreviated *Transportation Impact Assessment* prepared in accordance with MassDOT's *Transportation Impact Assessment (TIA) Guidelines*. In addition, we have requested that the Applicant's engineer review and revise specific elements of the Site Plans with regard to access, internal circulation, and parking layout.

The following summarizes our review of the materials submitted in support of the Project. Our comments are indicated in *italicized* text, with those requiring responses or additional information **bolded**.

### **PROJECT DESCRIPTION**

The Project will entail the adaptive reuse of the existing three-story brick building located at 5-15 Case Street in Southbridge, Massachusetts, to accommodate a 48-unit residential apartment community to be known as Southbridge Mills. The Project site is located in the southern portion of the historic American Optical Company mill complex, now known as the Southbridge Business Center, which includes a total of 14 buildings and associated parking areas and appurtenances. The subject portion of the mill complex that will contain the Project encompasses 2.4 ± acres of land that is bounded by a canal conveying the Quinebaug River the north; East Main Street to the south and west; and a one-story brick building ("Building 49") that is a part of the Southbridge Business Center to the east.

Access to the Project will be provided by way of Case Street, a private roadway within the Southbridge Business Center that intersects East Main Street (Route 131) at the west end of the Project site, continuing thereafter into the Southbridge Business Center and connecting to Optical Drive.

Parking is proposed for 53 vehicles, of which 31 parking spaces will be located within the Project site and 22 parking spaces will be located on an adjacent parcel of land for which the Applicant has entered into a Ground Lease, or an approximate parking ratio of 1.1 spaces per residential unit.

### **MAY 2018 TRAFFIC STUDY**

The May 2018 Traffic Study provided an existing conditions context for the Project based on available information obtained from MassDOT and a field visit conducted by the Applicant's engineer on Thursday, April 5, 2018. The Applicant's engineer noted several deficiencies related to the access to the Project site from East Main Street for both vehicles and pedestrians for which a series of improvements were suggested for "consideration" as a part of the Project.

**Comment:** *The information that was presented as a part of the May 2018 Traffic Study is not sufficient to ascertain the potential impact of the Project on the transportation infrastructure or to render an opinion as to the adequacy of the access to the Project site or the internal roadway network to safely convey vehicles, pedestrians and*

*emergency vehicles. Given the relatively small incremental impact that the Project will likely have on the transportation infrastructure, the Applicant should provide an abbreviated Transportation Impact Assessment (TIA) for the Project focused on the East Main Street/Case Street intersection and East Main Street in the vicinity of the Project site. The TIA should be prepared in general conformance with MassDOT's Transportation Impact Assessment (TIA) Guidelines. By way of guidance to the Applicant's engineer, we offer the following suggested scope of work for the TIA:*

- *Obtain a 48-hour (two consecutive weekdays) automatic traffic recorder count on East Main Street in the vicinity of the project site to include vehicle travel speeds.*
- *Obtain manual turning-movement and vehicle classification counts for a two-hour weekday morning period (7:00 to 9:00 AM) and a three-hour weekday evening period (3:00 to 6:00 PM) at the intersection of East Main Street at Case Street.*
- *Complete an inventory of pedestrian and bicycle accommodations and available public transportation services.*
- *Obtain motor vehicle crash data for East Main Street in the vicinity of the Project site and at the East Main Street/Case Street intersection for the most recent five-year period available from MassDOT and/or local police department records, and perform crash rate calculations. The calculated crash rates should be compared to the MassDOT statewide and District 3 average crash rates.*
- *Estimate future No-Build traffic volumes from historic traffic counts and from information on recently approved or proposed projects based on consultation with the Southbridge Economic Development and Planning Department. The future conditions horizon year shall be established as 2025, a 7-year projection from the base year (2018) in accordance with MassDOT guidelines.*
- *Estimate traffic generated by the project based on trip-generation data available from the Institute of Transportation Engineers (ITE)<sup>1</sup> for each analysis period (average weekday and weekday morning and evening peak hours). Traffic volumes expected to be generated by the Project should be added to the future No-Build traffic volumes to establish the Build condition traffic volumes.*
- *Assess volume-to-capacity ratios, level of service, and vehicle queuing for existing and future conditions at the East Main Street/Case Street intersection, with the results summarized in a tabular format. The traffic analysis should be based on the existing street system and any planned roadway improvements. The following analysis conditions should be examined:*
  - *Existing conditions – 2018*
  - *Future conditions without the proposed project (No-Build condition) – 2025*
  - *Future conditions with the proposed project (Build condition) – 2025*

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<sup>1</sup>*Trip Generation*, 10<sup>th</sup> Edition; Institute of Transportation Engineers; Washington, DC; 2017.

- *Perform sight distance measurements at the intersection of East Main Street at Case Street in accordance with American Association of State Highway and Transportation Officials (AASHTO)<sup>2</sup> standards. The measured sight distances should be compared to the recommended AASHTO sight distances based on the measured 85<sup>th</sup> percentile vehicle travel speed along East Main Street approaching the driveway or the posted speed limit, whichever is higher, and should include the stopping sight distance along East Main Street approaching the intersection (both directions) and the intersection sight distance for a motorist exiting Case Street looking to the left and right along East Main Street.*
- *Evaluate internal circulation for motor vehicles, pedestrians and bicyclists.*
- *To the extent that turn restrictions may be proposed at the East Main Street/Case Street intersection, the Applicant's engineer should indicate how the restricted movements will be accommodated, either through redirection within the Southbridge Business Center or use of alternative travel routes along East Main Street.*
- *Recommendations for specific improvements to the transportation infrastructure should be made that are designed to: i) provide safe and efficient access to the Project site; ii) address current safety deficiencies; and iii) accommodate project-related traffic (motor vehicles, pedestrians and bicyclists, as appropriate). The responsible party for implementation of the improvement measures should be defined.*

*The TIA should be stamped and signed by the Professional Engineer in responsible charge for the preparation of the document as required pursuant to Massachusetts General Law.*

## **SITE PLANS**

The following comments are offered with respect to our review of the plan set titled, "Southbridge Mills Renovation, 5-15 Case Street, Southbridge, MA 01550", prepared by Dietz & Company Architects, Inc., et al and dated November 15, 2017, no revisions (hereafter referred to as the "Site Plans").

1. *A truck turning analysis should be provided for the Southbridge Fire Department design vehicle and a single-unit (SU) truck (representative of a moving van, trash/refuse truck or similar). The turning analysis should demonstrate that the subject vehicles can access and circulate within the Project site in an unimpeded manner. To the extent that turn restrictions are proposed at the East Main Street/Case Street intersection, the travel route for the fire truck should be confirmed with the Fire Department and reflected in the turning analysis.*

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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); 2011.

2. *Internal to the Project site, circulating roads and drive aisles should be a minimum of 23-feet in width for two-way travel and where adjacent to perpendicular parking, or as required to accommodate truck access and fire truck turning maneuvers. We note that the May 2018 Traffic Study observed that “2 vehicles cannot enter/exit Case Street at the same time” and should be addressed through a redesign of Case Street and the East Main Street/Case Street intersection.*
3. *The Site Plans should incorporate the recommendations from the May 2018 Traffic Study regarding the realignment of the Case Street approach to East Main Street, improving the corner radii and installing curbing along the south side of East Main Street to better define the parking lot opposite the Project site. The improved intersection should be designed so as not to require the implementation of turn restrictions to/from Case Street and to afford the required lines of sight for safe operation.*
4. *Fire lanes and/or emergency access drives, where provided, should be a minimum of 20-feet in width pursuant to the requirements of NFPA® 1.<sup>3</sup>*
5. *The Applicant should indicate how access will be maintained to “Building 49” for trucks and employees, including any required parking accommodations, and how these accommodations impact the parking supply that will be afforded to the Project. A truck turning analysis should be performed for the delivery route to “Building 49” using the requisite design vehicle with the planned roadway and parking lot modifications that are proposed as a part of the Project.*
6. *The centerline profile of the Case Street approach to East Main Street should not exceed 2 percent within 50-feet of East Main Street in order to provide a leveling area for vehicles exiting the Project site.*
7. *Vehicles exiting the Project site should be placed under STOP-sign control with a marked STOP-line provided.*
8. *The Site Plans should incorporate the recommendations from the May 2018 Traffic Study regarding sidewalk installation, the addition marked crosswalks and the construction of ADA compliant wheelchair ramps. In addition, the Site Plans should incorporate the recommendation to install a pedestrian actuated Rectangular Rapid Flashing Beacon (RRFB) and associated pedestrian crossing warning signs at and in advance of the East Main Street crosswalk.*
9. *The sight triangle areas for the East Main Street/Case Street intersection should be shown on the Site Plans 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 windrows located within sight triangle areas that exceed 3.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed.”*

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<sup>3</sup>National Fire Protection Association (NFPA)® 1, Fire Code, Seventh Edition; NFPA; Quincy, Massachusetts; 2015; as amended per 527 CMR.

10. *The Site Plans should be revised to reflect the recommendations from the May 2018 Traffic Study concerning the necessary sign and fence relocation/removal to improve lines of sight at the East Main Street/Case Street intersection.*
11. *A note should be added to the Site Plans stating the following: “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>4</sup>”*
12. *The Site Plans should be revised to reflect the addition of double-yellow centerline pavement markings along Case Street as recommended in the May 2018 Traffic Study.*
13. *The handicapped parking space situated along the north side of Case Street and adjacent to the building should be removed given its proximity to East Main Street and the resulting potential conflicts with vehicles entering and exiting the Project site.*
14. *The parking lot should be reviewed and redesigned to eliminate the dead-end parking aisles. If this cannot be accomplished, appropriate turn-around or maneuvering areas should be provided.*
15. *Curb stops should be provided for the two (2) parking spaces at the west end of the row of parking fronting along the south side of “Building 49” and the length of the spaces increased as necessary.*
16. *A narrative should be provided indicating how tenant moves will be managed. The Site Plans do not include a loading area and Case Street does not afford sufficient width to stage a moving vehicle adjacent to the building. Further, the on-site parking supply is limited and does not allow for temporary use of marked spaces for loading activities.*
17. *A narrative should be provided indicating how trash/recycling will be managed, including the location where these items will be picked-up. The pick-up location should be reflected in the truck turning analysis.*
18. *Secure bicycle parking, including an exterior bicycle rack and a weather protected bicycle storage area should be incorporated into the Project.*
19. *The Applicant should consult with the Southbridge School Department to define the location of the school bus waiting area for the Project.*
20. *Consideration should be given to accommodating electric vehicle charging stations within the Project site.*

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<sup>4</sup>Manual on Uniform Traffic Control Devices (MUTCD); Federal Highway Administration; Washington, DC; 2009.

## **PARKING**

Section 703 - *Off-Street Parking and Loading*, of Article VII - *Special Regulations*, of the Town of Southbridge Zoning By-Laws requires that residential dwelling units with more than two bedrooms provide two (2) parking spaces for each dwelling unit, and that residential dwelling units having one or two bedrooms provide one (1) parking space for each dwelling unit. As proposed the Project will include 12 one-bedroom units, 31 two-bedroom units and five (5) three-bedroom units, which would require 53 parking spaces pursuant to the Zoning By-Laws. The Applicant has proposed to provide 53 parking spaces, of which 31 parking spaces will be located within the Project site and 22 parking spaces will be located on an adjacent parcel of land for which the Applicant has entered into a Ground Lease. As such, the proposed parking supply complies with the off-street parking requirements of the Zoning By-Laws.

**Comments:** *While compliant with the Zoning By-Laws, the parking ratio that is provided (1.1 spaces per residential unit) is relatively low. For context, parking demand data published by the ITE<sup>5</sup> for a residential apartment community located in a suburban setting indicates that the average parking demand is approximately 1.23 vehicles per unit and the 85<sup>th</sup> percentile peak parking demand is approximately 1.94 vehicles per unit.<sup>6</sup>*

***The Applicant should indicate where parking for visitors, staff and prospective tenants will be accommodated.***

## **SUMMARY**

VAI has completed a review of the materials submitted on behalf of Southbridge Housing, LLC in support of the proposed Southbridge Mills residential community to be located at 5-15 Case Street in Southbridge, Massachusetts. Our review focused on the following areas as they relate to the Project: i) vehicle and pedestrian access and circulation; ii) MassDOT design standards; iii) Town Zoning requirements as they relate to access, parking and circulation; and iv) accepted Traffic Engineering and Transportation Planning practices.

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<sup>5</sup>*Parking Generation*, 4<sup>th</sup> Edition; Institute of Transportation Engineers; Washington, D.C.; 2010.

<sup>6</sup>The 85<sup>th</sup> percentile parking demand is defined as the observed parking demand that was found to be exceeded at 15 percent of the observation sites (or 15 percent of the observed values exceeded the 85<sup>th</sup> percentile parking demand). The 85<sup>th</sup> percentile parking demand can be considered a reasonable design value from which to assess potential parking demands for a project.

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circulation, and parking layout. Written responses to our comments should be provided so that we may continue our review of the Project on behalf of the Town.

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  
Principal

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

JSD/jsd

cc: File