

COPY

MDM TRANSPORTATION CONSULTANTS, INC.  
Planners & Engineers

PRINCIPALS  
Robert J. Michaud, P.E.  
Ronald D. Desrosiers, P.E., PTOE  
Daniel J. Mills, P.E., PTOE

March 28, 2019

Grafton Planning Board  
Grafton Memorial Municipal Center  
30 Providence Road  
Grafton, MA 01519

Attn: Mr. Joseph Laydon, Town Planner

Subject: Transportation Peer Review Comments  
Brigati Village, 41 Church Street and 14 West Street  
Grafton, MA

RECEIVED

APR - 1 2019

PLANNING BOARD  
GRAFTON, MA

EXHIBIT 18

Dear Joe:

MDM Transportation Consultants, Inc. (MDM) is pleased to provide you with the following transportation review comments for the above-referenced project. These comments have been prepared based on a site visit in March 2019, discussions with you and review of the documents identified below. To facilitate response by Applicant, review items requiring response are noted in *Bold Italic*.

In summary, MDM finds that the Transportation Impact and Access Study (TIAS) has been prepared in general conformance with industry standards and reasonably quantifies existing/baseline traffic conditions for area roadways, traffic generation characteristics for the Site, and traffic impacts/operations at study intersections. Supplemental requested information including supplemental traffic counts/parking observations, safety data, pedestrian access improvements and emergency access/circulation improvements are identified below.

#### Documents Reviewed

MDM has reviewed the following documents to gain an understanding of the project and determine if industry standards have been applied in determining the potential impacts of the project. The following relevant documents were reviewed:

- *Transportation Impact and Access Study, Proposed Residential Development, 41 Church Street and 14 West Street, Grafton, Massachusetts, prepared by TetraTech, dated January 2019.*

Grafton Planning Board

March 28, 2019

Page: 2

- *Site Plans, Special Permit/Site Plan Approval, Brigati Village, Grafton MA prepared by WDA Design Group dated February 7, 2019.*

### Proposed Development

The proposed site development consists of a proposed 57-unit multifamily development ("Brigati Village", or "Project") to be located at 41 Church Street and 14 West Street in Grafton. Sole means of access/egress for the property will be provided via West Street which will be modified (widened) by Applicant along its southernmost alignment to accommodate a 24-foot width with adjacent bituminous concrete walkway that connects to Church Street. A total of 132 on-site parking spaces are noted on the submitted Site Plans.

### Traffic Impact and Access Study Comments

#### Existing Conditions

1. *Study Area:* The study area includes four (4) study intersections along roadways that include West Street, Church Street and Millbury Street. MDM concurs that the selected study locations are appropriate and in context with the likely traffic impacts for the Project.

2. *Traffic Volumes:* Traffic volumes for study locations were conducted in July 2018 during mid-week AM and PM peak hours. Seasonal indices as reported in the TIAS suggest that these volume conditions are above average based on nearby permanent count station data published by MassDOT, hence no seasonal corrections are made to the volumes.

*To validate July data and associated seasonal factors (particularly in light of local school trip activity) MDM recommends that the Applicant conduct supplemental 24-hour automatic traffic recorder counts (ATRs) at the following locations: (a) Millbury Street West of West Street; and (b) Church Street adjacent to the Site (i.e, same location as conducted in TIAS). Adjustment of baseline and future-year traffic volumes used in the TIAS should be made if necessary to reflect supplemental count data if these data indicate higher vehicle activity on area roadways.*

3. *Accidents/Crash Data:* The TIAS presents relevant crash data for the study intersections for the period 2014-2016 confirming that crash rates are below statewide and district-level average rates. Review of the MassDOT trop crash locations mapping also confirms that the study locations are not listed as high crash locations (MassDOT HSIP crash clusters mapping). MDM generally concurs with the crash analysis methodology and conclusions as presented in the

MDM

Grafton Planning Board

March 28, 2019

Page: 3

TIAS, notwithstanding our below recommendation to obtain local crash records for the Church Street/West Street intersection and adjacent church parking lot driveways.

*The lack of any specific crashes at the intersection of Church Street and West Street as noted in the MassDOT crash database should be confirmed by Applicant through request and review of local police crash records for the latest available 3-year period. This intersection presents the sole means of access/egress for the Project, contains a lengthy crosswalk that is not to current ADA standards and serves as a primary means of access for the adjacent St. Philips Church and parking lot. Accordingly, detailed and thorough review of crash experience and potential safety countermeasures based on local records is appropriate.*

4. *Vehicle Speeds:* Travel speed data is provided in the Attachments of the TIAS for Church Street west of West Street indicating 85<sup>th</sup> percentile speeds approaching 40 mph. While no posted speed limits are provided along Church Street in this area, these travel speeds exceed the regulatory "Prima Facie" speed limit of 30 mph. MDM concurs with Applicant proposal to place radar-equipped speed advisory signs along Church Street to reinforce lower travel speeds.

5. *Sight Distances:* Measured sight distances for the West Street approach to Church Street should be provided; these measured distances (Intersection Sight Distance and Stopping Sight Distance) should meet or exceed minimum values required for measured 85<sup>th</sup> percentile travel speeds following AASHTO guidance.

#### Future Conditions

6. *Traffic Growth:* Future traffic volumes are projected to a 7-year horizon using 1 percent annualized growth. No additional substantive area background projects are noted based on Planning staff input. MDM concurs that this growth factor which is consistent with protocols customary to the industry and present a reasonable basis for estimating "No Build" traffic volume conditions for purposes of the Project TIAS.

7. *Trip Generation:* Trip estimates for the Project are appropriately based on characteristics published by the Institute of Transportation Engineers (ITE) in Trip Generation 10<sup>th</sup> Edition for Land Use Code (LUC) 220. Resulting total net new traffic activity level of approximately 26 to 32 total vehicle-trips during weekday peak hours. MDM finds that this represents a reasonable estimate of traffic activity for the Site following industry standard protocols.

MDM

8. *Trip Distribution:* Regional trip patterns for Site traffic presented in the TIAS are reasonably consistent with existing travel patterns on area roadways and likely travel path assignment based on US Census Journey-to-Work data. The overall assignment of trips to area roadways presents a reasonable estimate for analysis purposes.

9. *Operations Analysis:* Operational analyses are presented in the TIAS follow generally accepted traffic engineering practices and protocols, indicating ample capacity at study intersections to accommodate Project trip increases. Trip increases due to the Project are not expected to materially change operations or delays relative to "No Build" conditions with nominal delays and level-of-service (LOS) C or better operations at study intersections during peak hours. MDM concurs with analysis results based on field observations and technical analysis presented in the TIAS.

#### Parking Analysis

10. *Parking Supply.* The TIAS relies on the ITE-based (land use code 230) 85<sup>th</sup> parking demand ratio of 1.52 spaces/unit to support the proposed on-site parking supply of 2.0 spaces per unit. MDM concurs with this TIAS finding, further noting that empirical data available to MDM for similar residential uses is consistent with the ITE ratios and data.

11. *West Street Parking Activity.* *The sole means of access/egress for the Project is via West Street, which also serves the adjacent St. Philip's Church and parking lot which is utilized at its highest levels on Sundays. MDM recommends that Applicant document typical parking activity along West Street during church mass times to ensure that curbside parking activity does not inhibit access to/from the Site by emergency apparatus. To the extent curbside parking impairs accessibility to the Site by emergency apparatus, Applicant should explore the possibility of on-street parking restrictions with the Town.*

MDM

Recommendations/Conclusions

12. *Pedestrian Improvements.* Applicant proposes to place radar-equipped speed advisory signs along Church Street to reinforce lower travel speeds; MDM concurs with this as one means of enhancing pedestrian safety. In addition, pedestrian crossing warning signs are proposed to enhance driver awareness of the existing crosswalk at Church Street/West Street.

*MDM suggests that a more substantive improvement of the crosswalk at Church Street and West Street be considered to properly accommodate pedestrians destined to/from the Site and the downtown area, noting the following:*

- *The existing crosswalk is approximately 48 feet in length, has a skewed alignment across Church Street and lacks proper ADA-compliant access ramps;*
- *Access to the crosswalk along the West Street sidewalk is impaired by a telephone pole, rendering it non-complaint with ADA requirements;*
- *Repositioning of the crosswalk to a shorter (25-foot long), perpendicular alignment on Church Street may be feasible on the east side of the intersection. This would require a new pedestrian crossing of West Street and repositioning of STOP line and associated access ramps so as to eliminate the conflict with the utility pole. Applicant should evaluate these improvements and implement to address pedestrian access needs of the project and the area generally. To the extent easements or takings are required for adjacent property to implement improvements, Applicant should engage in discussions with impacted landowners to secure potential agreements for improvements that are in the opinion of MDM mutually beneficial to both the Project and those adjoining landowners.*

**Access/Circulation Comments**

13. *Access/Site Circulation:*

*(a) The Truck Turn Plan dated January 4, 2019 confirms that the largest vehicle type (Grafton Fire apparatus) is accommodated within the Site. Applicant should confirm design treatment of the following:*

- *curb transitions at the grass pavers terminus; MDM recommends that this be sloped granite edging for durability with curb reveal (typically 3") to the*

**MDM**

*specifications acceptable to the Fire Department to ensure reasonable emergency vehicle egress. Appropriate sidewalk grading in this area should be provided to match proposed curb reveal dimensions.*

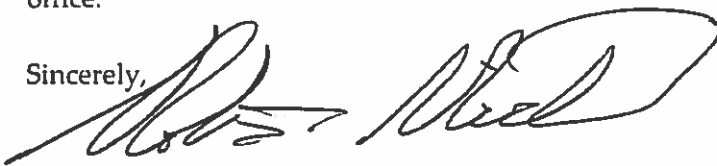
- *Placement of proposed bollards at terminus of the grass paver section may need to be modified to ensure the swept path of the vehicle is reasonably accommodated (this path appears to possibly impact the proposed bollard locations).*
- *Turn analysis for Grafton Fire Apparatus should be conducted at the Church Street/West Street intersection to identify potential areas of parking restriction within the intersection.*

*(b) West Street provides the sole means of access to the Site. Any potential blockage of the street or impediment to travel by emergency apparatus should be carefully considered and addressed through such potential measures as parking restrictions along West Street and regular maintenance including snow removal during winter months to ensure unencumbered 2-way traffic flow of sufficient width to accommodate Grafton emergency apparatus.*

*(c) Signs and pavement markings as proposed by Applicant within public way should conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).*

MDM appreciates the opportunity to provide Transportation Planning & Engineering Services to the Town of Grafton. If you have any questions or concerns, please feel free to contact this office.

Sincerely,



Robert J. Michaud, P.E.  
Managing Principal

MDM