



ENGINEERING SUCCESS **TOGETHER**

April 19, 2016

Town of Medfield
Town House
359 Main Street
Medfield, Massachusetts 02052-2009

Attn.: Mr. Keith Diggans, Chairman
Planning Board

Attn.: Mr. Stephen M. Nolan, Chairman
Zoning Board of Appeals

Re: Assisted Living Residence in Medfield, Massachusetts Peer Review

Dear Mr. Diggans & Mr. Nolan:

BETA Group, Inc. has reviewed supplemental and revised documents for the proposed Assisted Living Residence in Medfield for compliance with the Town of Medfield bylaws and regulations and general engineering practice. This letter is provided to outline BETA's findings, comments and recommendations.

BASIS OF REVIEW

BETA reviewed the following items:

- Response to Comment Letter dated March 24, 2016 prepared by Beals and Thomas, Inc., Southborough, MA
- Application for Site Plan Approval **Assisted Living Residence** dated October 26, 2015 prepared by Beals and Thomas, Inc., Southborough, MA
- Plans (20 Sheets) entitled: **Assisted Living Residence in Medfield Massachusetts (Norfolk County)**, dated October 23, 2015 revised March 23, 2016, Beals and Thomas, Inc., Southborough, MA
- **Traffic Impact Study for the Assisted Living Community Main Street (109) Medfield Massachusetts** dated September, 2015, prepared by McMahon Transportation Engineers and Planners
- **Stormwater Management Report for the Assisted Living Residence 361 Main Street Medfield Massachusetts** dated August 17, 2015, prepared by Beals and Thomas, Inc., Southborough, MA
- Supplemental Information including: View Perspectives (3 Sheets), prepared, dated March 18, 2016, by Beals and Thomas, Inc., Southborough, MA; Emergency Vehicle Turning Exhibit, dated March 22, 2016; Site Owner's Manual, dated March 2016; Preliminary Assessment of Outdoor Noise Emissions, prepared by Acentech, dated January 29, 2016; Hydrant Flow Test Results, prepared by Xcel Fire Protection, Inc., dated October 30, 2015; and Air Boss ATS Air Purification System Specifications, Grease Viper, Commercial Kitchen Air Cleaner Specifications, and Natural Gas Emergency/Standby Generator Specification.
- **Parking Demand Analysis Memorandum**, prepared by McMahon Associates, dated March 23, 2016.
- **Trip Generation Comparison Memorandum**, prepared by McMahon Associates, dated March 23, 2016.

Review by BETA included the above items along with the following:

- **Town of Medfield Bylaws Zoning Chapter 300** amended through August 29, 2012
- **Zoning Map of the Town of Medfield, Massachusetts** dated April 28, 2008

COMPILED REVIEW LETTER KEY

BETA reviewed this project previously and provided review comments in letters to the Board dated November 25, 2015 (original comments in italics), Beals and Thomas, Inc. (BAT) provided responses (responses in standard text), and BETA has provided comments on the status of each (status in bold italics).

PROJECT OVERVIEW

The existing parcels include undeveloped forested land located off of Main Street (Route 109) and a single family home and driveway. The abutting land use is residential and includes conservation restrictions. The project is zoned in both the Residential Suburban (RS) district and the Secondary Aquifer Zone of the Aquifer Protection Overlay District. It is also noted that a portion of the project is within the Watershed Protection District, located 25 feet from the normal high water of Vine Brook and adjacent wetland areas. Bordering Vegetated Wetlands and a NHESP certified vernal pool exists on the project site. The site is also within a Zone II Wellhead Protection Area. The Flood Insurance Rate Map (FIRM) for the area indicates that the project is not within the 100-year flood plain.

The proposed project includes demolition of the existing residential building and driveway, combining the two lots, and construction of a new 78 unit assisted living facility with associated access, parking, stormwater management facilities, landscaping, and utility services. The building is proposed to contain 85 beds, be 2.5 stories high, and span 24,000± square feet.

FINDINGS, COMMENTS AND RECOMMENDATIONS

ZONING

Use Regulations - Article 5

The project is located within the Residential Suburban 20,000 sq. ft. (RS) district as well as the Secondary Aquifer Zone of the Aquifer Protection District. The proposed use, "4.10 Hospice or nursing homes, convalescent and assisted-living facilities and medical and dental offices," are permitted in the district by a special permit from the Board of Appeals.

Multifamily dwellings are required to dispose all wastewater via a connection to the sewage system of the Town of Medfield (§300-5.3.F). The project proposes to connect to the Town sewage system through the use of a forcemain discharging to an existing sewer.

The existing residential building was built around 1949 and is therefore not subject to Historic property requirements.

Area, Height and Bulk Regulations – Article 6

The assisted living facility building is proposed to be 35 feet tall (2.5 stories), with a floor area ratio of 0.23, and a lot coverage of 19%. The area of the lot is 13.80 acres, and the area of the lot without conservation restrictions is 7.05 acres. The perfect square dimensions of the parcel are stated to be greater than 96' by 96', the frontage is 418 feet, the width is 127 feet, and the depth is greater than 125 feet. The yard of the proposed parcel has a front dimension of 30.7, a side dimension of 5, and rear dimensions of 135.3 feet.

Based on the data provided, the project meets the minimum requirements for lot area, front yard, rear yard, depth, building height, floor area ratio, and coverage.

Appurtenant structures shown on the building (P-101_Elevations) appear to be approximately 5.5 feet higher than the maximum building height permitted (35 feet). As such, side yards, rear yards, and front setbacks shall be increased one foot horizontally for each two feet that the height of such structure exceeds the height permitted in the district. Accordingly, these setbacks should be increased by approximately 2.75 feet.

- 6.1. *Revise design of building appurtenant structures, building height, or provide setbacks to be in compliance with modified setbacks (§300-6.3.A.2).* BAT: Some of the mechanical equipment has been relocated from the roof to the ground to lower the maximum building height. In addition, the building footprint has been revised in the southwest corner to increase the setback from the property line. The maximum height of the building including appurtenant structures is 41 feet and the building setbacks from property lines have been updated on the revised Dimensional Layout Plan (Sheet C3.2.) The height of the building roof remains 35 feet above the finish floor elevation. **BETA2: Building heights greater than those maximum specified in the zoning bylaws require property line setbacks to be increased 1 foot horizontally for each 2 feet in height above the height permit. Applicant has increased side yard clearance from 12.5 feet to 20.1 feet – issue resolved.**
- 6.2. *Place dimensions of perfect square, frontage, width, depth on Dimensional Layout Plan.* BAT: Required zoning dimensions have been added to the revised Dimensional Layout Plan (Sheet C3.2). **BETA2: Dimensions added to Dimensional Layout Plan – issue resolved.**
- 6.3. *Provide dimensions of legal service driveway on Dimensional Layout Plan (§300-6.2.C).* BAT: The site driveway has been revised. The width of the driveway is 24 feet to comply with the zoning requirement and the dimensions have been added to the zoning table on Sheet C3.2. **BETA2: Dimensions added to Dimensional Layout Plan – issue resolved.**

Off Street Parking and Loading Regulations – Article 8

The application materials and plans indicate that there will be 78 total units. The Traffic Impact Study analysis generates trips based on 84 beds. It is assumed that each unit will contain one bed. Therefore, based on the use of “hospitals, extended care facilities or homes,” there are 2 parking spaces required per bed at design capacity and therefore a minimum total of 156 parking spaces is required. Of these 156 required parking spaces, a minimum of 6 parking spaces are required to be handicapped accessible. Of these six spaces, one space is required to be handicapped van accessible. The design includes 50 proposed parking spaces, two of which are handicapped accessible spaces. Provide minimum number of required parking spaces and handicapped accessible parking spaces.

- 8.1. *Provide required parking or request a waiver with supporting documentation.* BAT: The Town of Medfield Zoning Bylaw §300-8.1 is silent as to the required parking for the applicant’s proposed use (assisted living). Accordingly, the applicant is seeking a Special Permit from the Zoning Board of Appeals pursuant to Bylaw §300-8.2(G) to allow the proposed number of parking spaces. Based on the Institute of Transportation Engineers’ publication, Parking Generation Handbook, 4th Edition, the proposed 51 parking spaces will be more than sufficient to meet expected parking demands. Please see the attached Parking Demand Analysis memorandum for details of the expected parking demand for the proposed project. **BETA2: The Parking Demand Analysis memorandum uses industry standard data to confirm that the parking supply will be adequate based upon the size of the facility. BETA concurs with the appropriateness of this methodology; however, further discussion at the April 14th ZBA meeting suggests that the Applicant should provide parking data for comparable facilities to confirm appropriateness of parking supplied for the site. Comparable**

data should include the size of the comparable facility by number of beds and square footage, as well as the number of beds dedicated to memory care. It is assumed that memory care requires a greater concentration of staff. The Applicant should also provide an estimation of employees anticipated at the proposed facility, as well as shift distribution of employees to identify the maximum number of employees expected on site at peak periods. The Applicant should also provide an estimation frequency and volume of other service providers not employed by LCB expected on site.

- 8.2. *Consider revising location of handicapped accessible parking spaces, or provide data conveying this is the most direct route. BAT: Handicap parking has been relocated closer to the building and an additional handicap accessible space has been provided. **BETA2: Location of handicapped spacing revised and grades comply with ADA guidelines – issue resolved.***
- 8.3. *Provide correspondence from Fire Department (e.g. letter, email, etc.) detailing that proposed gravel fire lane and parking lot meets their requirements for access and use. BAT: The surface material of the fire lane has been revised to pervious pavement. Emergency Vehicle Turning Exhibits have been provided showing that emergency vehicles can navigate the site. **BETA2: Fire lane material modified to be pervious bituminous asphalt pavement. Emergency Vehicle Turning diagram provided – issue resolved.***
- 8.4. *Provide screening of northeast parking lot adjacent to residential lot in accordance with Article 6 §300-6.21 I and J. BAT: The screening referenced in Bylaw §300-6.2(I) only applies to lots within the IE zoning district, and the screening referenced in Bylaw §300-6.2(J) only applies to lots within the B, BI, and RU zoning districts. Accordingly Bylaw §300-6.2 does not apply to locus as it is located in the RS zoning district. However, the revised site plans include additional screening to all residential abutters. **BETA2: Additional screening provided adjacent to residential abutters – issue resolved.***
- 8.5. *Provide ADA van accessible parking space detail and on plans. BAT: Handicap van accessible parking spaces and a detail have been included in the revised plan set. Dimensions have been added to the Layout and Materials plan to clarify the handicap parking spaces. **BETA2: ADA van accessible parking spaces provided – issue resolved.***
- 8.6. *Provide a marked crosswalk connecting crosswalk located on the parking lot island with the entrance of the facility. BAT: Handicap parking spaces have been relocated closer to the building. A cross walk is no longer needed. **BETA2: Handicapped parking location revised – issue dismissed.***

Sign Bylaw – Article 13

One sign is proposed at the access/egress to the project site. However, the details on the dimensions, materials, and content of the sign were not included with the permit application submission.

- 13.1. *Provide details of proposed signs including, but not limited to content, dimensions, any proposed lighting, framing and support details. BAT: A detail of the proposed sign has been added to the revised plan set (Sheet C8.4). **BETA2: Information provided – issue resolved.***

Aquifer Protection District – Article 16

The project is located in the Secondary Aquifer Zone. The proposed use is permitted in the district. The proposed project includes rendering greater than 15% and 2,500 sq. ft. of the lot impervious but includes a system for the capture and recharge of stormwater. This system includes the installation of deep sump catch

basins, proprietary water quality units, and a subsurface infiltration chamber system. This management system will provide treatment of runoff prior to recharge via the underground chambers - refer to detailed review of stormwater management system by others.

- 16.1. *Provide list of specific cleaning solvents expected to be used and stored at the site.* BAT: The applicant engages Ecolab for all commercial cleaning products. A list of all cleaning products has been included with this letter. All products are registered as required and follow State and Federal Requirements. No hazardous chemicals are used. **BETA2: List of cleaning solvents to be used and stored on site provided – issue resolved.**
- 16.2. *Provide spill prevention and emergency response plan with application.* BAT: Section 3.4 of the revised Site Owner's Manual outlines the spill response equipment that will be kept on-site and the procedures on-site staff will take if a spill occurs. **BETA2: Spill prevention and emergency response plan included in the Site Owner's Manual – issue resolved.**

LAYOUT AND GRADING

The site design includes multiple site enhancements surrounding the proposed building. Parking includes 50 parking spaces with 2 handicapped parking accessible spaces. The parking is proposed to be bituminous pavement with both vertical granite curb and concrete curb. A gravel fire lane is located northeast of the proposed building and is accessed by the bituminous parking area. Other site enhancements include cast in place concrete walkways and patio areas, concrete dumpster pads and associated screening, and three retaining walls. Safety bollards are placed at the entrance to the building on the southwestern side.

The site is graded such that drainage flows from the north to the south. Three retaining walls are proposed for site. The northernmost retaining wall is proposed to be approximately 1-4 feet high. The retaining wall on the eastern side is proposed to be approximately 4 feet high. The retaining wall on the western side is proposed to be approximately 2-4 feet high.

- LG1. *Provide a plan showing truck turning maneuvers at the site driveway and the circulating route within the site specifically for delivery and service vehicles.* BAT: Plans have been included with this letter which shows emergency vehicle turning movements into the site driveway and through the site. **BETA2: Truck and emergency vehicle turning movement figure provided – issue resolved.**
- LG2. *Provide documentation from Police and Fire Departments that the site layout provides adequate access for emergency service vehicles.* BAT: We have met with the Fire Chief to confirm the site layout provides adequate emergency access and the Police Chief has provided written comments. Both the Fire Chief and Police Chief have attended public hearings for the project. **BETA2: BETA defers to the recommendations of the Police and Fire Departments – issue resolved.**
- LG3. *Depending on residents care requirements, consider adding a walking path that loops around the building for passive recreation of the residents. Consider connecting any walking path to existing bridle path adjacent to the site.* BAT: The proposed fire lane can be utilized as a walking path. In addition, a gravel walkway has been added to the revised plan set connecting the fire lane to the Bridle Path. **BETA2: Gravel walkway added to plans – issue resolved.**
- LG4. *Consider extending concrete walkway on landscaped island to extend to edges for easier resident access.* BAT: The grading of the landscaped island prohibits extending the sidewalk to the far end of the island. Due to the relocated handicapped parking spaces, the sidewalk has been removed from the revised plan set. The site design includes a drop off loop directly in front of the main entrance

for residents or visitors with reduced mobility. **BETA2: Design revised and handicapped spaces location modified – issue dismissed.**

- LG5. *Show locations of handicapped ramps on the concrete walkways and provide details.* BAT: Flush curbing and a handicapped ramp have been added to the sidewalk on the revised plan set. **BETA2: Location and details of handicapped ramps provided – issue resolved.**
- LG6. *Provide additional spot elevations showing proposed parking spaces and walks meet ADA requirements.* BAT: Additional spot elevations have been added to the revised Grading and Drainage Plan to clarify the proposed grading. **BETA2: Additional spot grades provided – issue resolved.**
- LG7. *Provide details of proposed retaining walls, dumpster fence screening, tree protection, and transformer pad.* BAT: The additional requested details have been added to the revised plan set. **BETA2: Details added to plan – issue resolved.**
- LG8. *Clarify what edging treatment will be used along roadway when existing driveway to 361 Main Street is removed.* BAT: After the pavement for the existing driveway is removed, the disturbed area will be loamed and seeded or landscaped with plantings. **BETA2: Information provided – issue resolved.**

STORMWATER MANAGEMENT

The site design includes a stormwater collection system of deep sump catchbasins, pipes and manholes and flow and water quality controls including water quality units, subsurface infiltration system, and a surface infiltration basin. Review of this design was completed by the Board of Health and Conservation Commission and therefore a detailed review was not included at this time.

UTILITY SERVICES

The site design includes public water, sewer services, underground electric, and gas. Water will be provided to the facility by tapping into the existing watermain on Main Street and providing an 8" ductile iron (DI) service to the building. The plans show an 8" DI and 2" domestic service on the northeast side of the building. A fire hydrant is proposed to be installed in the landscaped island.

Sewer services include the installation of a grease trap, and a 6" gravity service line to a pump station system. From here, sewage is pumped to a new sewer manhole and discharged to the Town's sewerage system. The forcemain is proposed to be 2" PVC. Pump station is proposed to be two 0.5 horsepower sewage pumps with a pump chamber of dimensions of 6' diameter by 10' tall.

Underground electric is proposed to be brought from existing Utility Pole #12-80 and routed adjacent to the sewer forcemain to the building. Gas is proposed to be provided to the site. A service line is proposed to be tapped on the existing line on Main Street and routed to the building adjacent to the proposed building.

- U1. *Verify material of 2" domestic service and verify it is compliant with Medfield Water Department Standards.* BAT: The domestic water service will be copper piping unless a different material is requested by the Medfield Water Department. The Medfield Water and Sewer Board has provided comments on the proposed project. In addition, a building permit is required prior to construction and will require the sign off from the DPW superintendent. **BETA2: Information provided. BETA defers to the Medfield Water and Sewer Board and DPW Superintendent – issue resolved.**
- U2. *Provide grease trap sizing data, and data that existing waterline is sufficient to service the proposed project for water demand and any fire demand.* BAT: Grease trap sizing calculation has been added

to the grease trap detail (Sheet C8.4). **BETA2: Grease trap sizing provided – issue resolved. BETA defers to the DPW and Fire Department regarding the results of the hydrant flow testing.**

- U3. *Provide the size and material of existing water main in Main Street.* BAT: The existing water line in Main Street is a 10 inch ductile iron pipe. A hydrant flow test was conducted at the site. The results of the test have been included with this letter. **BETA2: Information provided – issue resolved.**
- U4. *Provide riser pipe installation detail on existing utility pole.* BAT: The electrical feed from the existing utility pole will be coordinated with the electric company prior to construction. **BETA2: Information provided – issue resolved.**
- U5. *Verify the size and material of the existing gas line and provide size and material of proposed gas service line to building.* BAT: The existing gas line in Main Street is a 4 inch high pressure steel. The proposed gas line will be sized by an MEP engineer based on the design loads for the building prior to the building permit. **BETA2: Information provided – issue resolved.**
- U6. *Provide information regarding pump controls.* BAT: A detail of the proposed pump chamber is provided on the revised plan set. The electrical details for the pump controls will be designed prior to the building permit submission. **BETA2: Information provided – issue resolved.**
- U7. *Provide information for emergency power supply for building and sewer pump station.* BAT: The on-site generator will be serviced by natural gas and provide emergency/standby power for the building and sewer pump. Specifications for the generator have been included with this letter. **BETA2: Information provided – issue resolved.**
- U8. *Provide information on proposed rooftop units to determine noise impacts.* BAT: The generator and chiller have been relocated to the rear of the building on the revised plan set. A preliminary noise analysis has been performed and included with this letter. A complete noise analysis with on-site noise measurements is being conducted. **BETA2: Noise impacts should be evaluated following the completion of the noise analysis – issue remains outstanding.**
- U9. *Provide information on controlling odors from building and dumpster.* BAT: The dumpster location has been revised and is located inside the building as noted on the Layout and Materials Plan (Sheet C3.1). The kitchen and trash room will have an air purification system and be vented to the roof of the building. The air purification system information has been included with this letter. **BETA2: Dumpster and trash area modified to be inside building with commercial kitchen air cleaner – issue resolved.**

LANDSCAPE DESIGN

A landscaping and lighting plan was provided with the submission identifying the proposed planting throughout the site. Tree Planting, Shrub Planting, and Groundcover Planting details were provided as well.

- LA1. *Proposed building will be seen from residential house numbers 339, 347, 353, and 355. From these locations there are mostly deciduous trees between the houses and the proposed development. Provide additional evergreen screen planting to provide screening in the winter.* BAT: The landscaping plan (Sheet C6.1) has been revised and significant evergreen plantings consisting of primarily white pine trees have been added to screen the properties listed above. **BETA2: Additional evergreen plantings provided to provide screening between facility and residential homes – issue resolved. Consider replacing 12-15 of the white pines with alternative evergreen species for aesthetics and long-term viability.**

- LA2. *Proposed parking lot and building will be seen from residential building #365. Add deciduous trees between each of the proposed light poles along the west side of the parking lot.* BAT: The house at #356 Main Street will be screened from the proposed development by existing deciduous trees on both sides of the #361 Main Street Driveway. The revised layout provides additional buffer between the parking lot and the property line with the #361 Main Street driveway. The additional buffer allows many of the tall existing deciduous trees along the property line with the #361 Main Street driveway to remain. The applicant is proposing to plant a row of evergreen trees to screen the parking lot below the tall deciduous trees. **BETA2: Additional plantings and information provided. – issue resolved.**
- LA3. *Retain (protect) existing trees and other plants to remain, especially along the east side of house #361 (to be razed). Identify the trees to remain on the plan and include tree protection details.* BAT: The existing trees that are to remain have been called out on the revised site preparation plan and tree protection details have been added to the plan set. **BETA2: Trees to remain provided and tree protection detail included – issue resolved.**
- LA4. *Consider adding screening on the south side of Main Street opposite the proposed driveway entrance to block view from residential building #354.* BAT: The applicant is willing to work with the owner of #354 Main Street and install landscaping to screen the project. **BETA2: Recommend condition to coordinate additional landscaping through the Board.**
- LA5. *Consider adding large deciduous trees (3) along the front (west) of the building to provide shade for residents.* BAT: The front portion of the western wing of the building is intended to be a sun room. Shade trees were intentionally avoided from this area. **BETA2: Information provided – issue resolved.**
- LA6. *Provide additional plants in the area between the parking (near the handicapped spaces) – the large hatched area is planted with only 7 hostas and one small tree as compared to a small area just opposite near the building which has 50 plants plus a small tree.* BAT: The landscaping plan (Sheet C6.1) has been revised and includes additional plantings in this area. **BETA2: Additional plans provided – issue resolved.**
- LA7. *Consider using reinforced turf for the fire lane; gravel is unsightly, dusty and tough to maintain.* BAT: The revised design include pervious pavement for the fire lane instead of gravel to reduce dust and sediment erosion while not increasing impervious area. A detail of the pervious pavement is included with the revised plan set. **BETA2: Gravel fire lane modified to be pervious asphalt pavement – issue resolved.**
- LA8. *Salvage stones from exiting stone walls and reuse on-site.* **BETA2: Response from Applicant not provided – no further comment.**
- LA9. *Will rear patios be screened or fenced off? If not, consider adding vegetative screening.* BAT: The patio on the east side of the building will be fenced off. Additional plantings have been added to the revised Landscape and Lighting Plan to provide screening from the Bridle Path. **BETA2: Clarification provided – issue resolved.**
- LA10. *If bridle path is still in use, consider additional screening between the path and the building.* BAT: **BETA2: Information provided in LA9 – issue resolved.**

SITE LIGHTING

Project plans indicate installation of two double and 14 single 60 watt LED luminaries mounted 12 feet off the ground. Five pedestrian 12 watt LED walkway lighting units are proposed adjacent to the building. A limited photometric plan was included. This plan only includes proposed parking light and pedestrian lights. The lighting plan analyzes the poles separately and does not show cumulative impacts. There are no lights shown on the building. No summary of light distribution table has been provided on the photometric plan. Light distribution in the new parking area appears to vary from 0.00 to 1.0 foot candles.

The Illuminating Engineers Society of North America (IESNA) recommends the following for parking lots:

Level	Horizontal Illuminance (min)	Vertical Illuminance (min)	Uniformity (max/min)	Ratio
Basic Maintained Illuminance	0.2	0.1	20/1	
Enhanced Security Illuminance	0.5	0.25	15/1	

- SL1. *Include building lighting as well as any other lighting proposed on the site on the photometric plan. Revise photometric plan to be cumulative instead of the individual analysis of each light fixture. BAT: The revised photometric plan (Sheet C7.1) includes proposed lighting for the parking lot and around the building. **BETA2: Building lighting and additional lighting added to photometric plan – issue resolved.***
- SL2. *Recommend revising lighting to meet the minimum light levels IESNA recommends. BAT: The revised Photometric Plan (Sheet C7.1) complies with the IESNA recommended minimum light levels. **BETA2: Parking area lighting complies with IESNA recommended minimum light levels – issue resolved.***

TRAFFIC IMPACT ANALYSIS

Study Area Intersections

The study area consists of the one unsignalized site access driveway and the unsignalized intersection of Main Street (Route 109) at Pound Street. BETA concurs with the appropriateness of the study area.

Existing Traffic Volumes

The proponent conducted turning movement counts (TMC) during the weekday morning (7-9AM), and weekday afternoon (4-6PM) at the study area intersection. The counts were conducted on Thursday, March 5th, 2015. Although a school is located near the study area causing heavy traffic during school arrival and dismissal times, especially on Pound Street, the trips generated for this project would not heavily impact the peak school periods.

Seasonal Variation

The proponent compared the March volumes collected with a MassDOT permanent counting station (ID 3180), which showed March data to be slightly lower than the average month. To be conservative, the proponent increased the volumes to reflect average month conditions and BETA finds this acceptable.

Crash Summary

The proponent performed crash analyses for the years 2011-2013 based on the most recent data available from MassDOT which we find acceptable. The calculated crash rate for the intersection of Main Street (Route 109) at Pound Street is 0.62 crashes per million entering vehicles (MEV) which is **higher** than the State average of 0.60 MEV.

- T1. *Request crash data and reports for the most recent 3 years from the Town of Medfield Police Department and create a collision diagram to evaluate if specific safety deficiencies contributed to crashes at the intersection. At a minimum the proponent should suggest mitigation at the*

intersection which could help to reduce the higher than average crash rate at the intersection. BAT: The crash rate based on the MassDOT crash data was misreported in the Traffic Impact Study. The correct crash rate for the intersection of Main Street and Pound Street is 0.41 crashes per million entering vehicles. The updated crash rate is well below both the MassDOT District 3 and statewide average crash rates for unsignalized intersections. The low crash rate indicates that no significant safety deficiency exists at this location and therefore, no mitigation was suggested at this location. The updated MassDOT crash worksheet is provided as an attachment for your records and review. McMahon Associates has since coordinated with the Medfield Police Department to request local data for the intersection of Main Street and Pound Street, and to discuss other traffic safety concerns raised during the Planning Board Hearing on December 7, 2015. A summary of the local crash data is attached. The local crash data provided includes 13 crashes that occurred within the approximate study area over the three year period from 2013 to 2015. The data indicated that six crashes occurred directly at the intersection of Main Street (Route 109) and Pound Street while the remaining crashes occurred within the vicinity of the study area on Main Street (Route 109). Of the 13 crashes reported, six were single vehicle crashes, four were rear end crashes, two were head on crashes and one was an angle crash. Based on a review of the local crash data and discussions with the Police Chief, vehicle speeds along Main Street (Route 109) may be contributing to the crashes in the vicinity of the study area. Therefore, as recommended by the Police Chief, the project proponent will work with the Police Department to install digital speed limit radar signs to aid in the enforcement of vehicle speeds along Main Street (Route 109). **BETA2: Information provided – issue resolved.**

Background Traffic Growth

Traffic volumes were projected to 2022 to reflect a future 7-year planning horizon. To be conservative, No-Build conditions were calculated by increasing existing traffic volumes by a historic annual growth rate of 1% per year (over a 5-yr period). In addition, projected trips from the proposed Clark Tavern were added to the 2022 base traffic volumes. BETA finds the Clark Tavern trips and growth rate of 1% per year acceptable.

Site-Generated Traffic

The proponent estimated trip generation based on data from the ITE Land Use Code 254 –Assisted Living Facility. Trips were generated based on 84 “beds” which would generate 12 new trips during the morning peak hour and 16 during the evening peak hour.

- T2. *Using the “occupied beds” type of unit generates a more conservative 16 new trips during the morning peak hour and 25 during the evening peak hour. Clarify why the more conservative number of trips was not used in this study.* BAT: The ITE Trip Generation Manual, 9th Edition provides a number of variables that can be used when estimating trip generation. Land Use Code 254 (Assisted Living) has two variables for the weekday morning and weekday afternoon peak periods: one noted as “occupied beds” and one as “beds”. Utilizing the “occupied beds” results in a more conservative trip generation during the weekday morning and weekday afternoon peak hours studied than “beds”. However, the “beds” variable was utilized instead of “occupied beds” because the data sets for “occupied beds” during the weekday morning and weekday afternoon peak hours only contain two data points. With data sets this small, ITE recommends that they be used with caution. The “beds” variable contains more data points, does not have this warning and was, therefore, utilized for the analysis contained within the submitted Traffic Impact Study. It should be noted that the difference in trip generation related to the use of the more conservative “occupied beds” variable would not be expected to change the conclusions or recommendations of the study. **BETA2: Information provided – issue resolved.**

Project Site Distribution and Assignment

Site generated trips were distributed onto the study area network based on existing traffic patterns.

- T3. *Based on the existing traffic percentages it appears that Pound Street should have a higher traffic distribution percentage. Verify how these trip generation percentages were determined for the peak periods.* BAT: The distribution percentages for the proposed trip generation were based on an average of weekday morning and weekday afternoon peak hour traffic volumes entering and exiting the study area intersection. During the weekday morning peak hour, approximately 13 percent of the traffic at the intersection was shown to travel to/from Pound Street and approximately 9 percent of the weekday afternoon peak hour traffic was shown to travel to/from Pound Street. Therefore, an approximate average of 10 percent was utilized for the trip distribution to/from Pound Street. If a higher average percentage were utilized (such as 15 percent), the resulting change in distributed vehicles would be negligible (less than one vehicle) due to the low traffic generating characteristics of the proposed assisted living project. **BETA2: Information provided – issue resolved.**

Capacity Analysis Results

Overall, the analysis reflects a degrade in level-of-service (LOS) for the Pound Street northbound approach to the Main Street at Pound Street intersection during the 2022 Build PM peak hour. The approach degrades from a LOS D to LOS E (8 second increase) between the No-Build and Build condition. It should also be noted that the queue extends up to 20 vehicles long exiting Pound Street during the morning peak hour.

Sight Distance

The measured available sight distance approaching the site driveway is sufficient based on the measured 85th percentile speeds along Main Street.

Mitigation

No off-site mitigation measures have been provided by the proponent.

- T4. *Refer to comment T1.* BAT: Please refer to the response to comment T1. **BETA2: Information provided – issue resolved.**

Additional Comments

The March 23rd *Trip Generation Comparison Memorandum* documents a project change which includes acquisition of the adjacent Clark Tavern property, which had previously been approved by both the Medfield ZBA and the Medfield Planning Board as a 90-seat restaurant. The Applicant proposes to restore the building as a two unit condominium, and as such the number of trips expected to be generated by the Clark Tavern site will be significantly reduced. The memorandum correctly notes that the number of trips expected for the assisted living facility and the proposed two-unit condominium is less than the number of trips expected for the previously-approved Clark Tavern restaurant usage alone. It should be noted that this does not reflect a change in the number of trips expected to be generated by the assisted living facility from what was previously quantified in the TIS.

- T5. ***Discussion at the April 14th ZBA meeting suggests that the Applicant consider providing supporting peak hour entering and exiting trip data at comparable facilities. Comparable data should include the size of the comparable facility by number of beds and square footage, as well as the number of beds dedicated to memory care. The great variance in styles of assisted living facilities supports the need to reinforce industry-standard data with locally-sourced data for comparable facilities.***

As specified in Section 300-14.10.E – Special Permit by Board of Appeals may be granted

“If it concludes that a special permit is warranted by the application and the evidence produced at the public hearing and if it makes the following specific findings of fact:

- (1) The proposed use will not result in a public hazard due to substantially increased vehicular traffic or parking in the neighborhood. In deciding this, the Board shall find affirmatively that the road's structure, surroundings and configuration are such as will support the added traffic, safely. **Refer to findings and comments in the Traffic Impact Analysis section.***
- (2) The proposed use will not have any adverse effect upon property values in the neighborhood. **Refer to findings and comments in the all sections.***
- (3) The proposed use is architecturally and aesthetically consistent with the other structures in the neighborhood. **Refer to findings and comments on architecture by others. Refer to findings and comments in the Landscape Design section.***
- (4) The proposed use will not create any hazard to public safety or health in the neighborhood. **Refer to findings and comments in the Layout and Grading and Utility Design sections.***
- (5) The proposed use will not create any danger of pollution to public or private water facilities. **Refer to findings and comments in the Utility Design section and review of Stormwater Management by others.***
- (6) The methods of drainage at the proposed site are adequate. **See Stormwater Management Review completed of the Board of Health and Conservation Commission.***
- (7) If public sewerage is not provided, plans for on-site sewage disposal systems are adequate and have been approved by the Board of Health. **Refer to findings and comments in the Utility Design section.***
- (8) That no excessive noise, light or odor shall be emitted. **Refer to findings and comments in the Utility Design section.***
- (9) That no nuisance shall be created. **Refer to findings and comments in all sections.***
- (10) There is an adequate supply of potable water approved by the Board of Health or the Water and Sewer Board.” **Refer to review by the Board of Health and Water and Sewer Board.***

As specified in Section 300.14.12.C – Site Plan Approval by Planning Board requires the following findings:

“To the extent feasible, new building construction or other site alteration shall be designed, after considering the qualities of the specific location, the proposed land use and buildings, grading, egress points, and other aspects of the development, so as to meet these objectives:

- (1) For multifamily site plans for which more than one structure is proposed, placement of structures on the site is appropriate to the site and compatible with its surroundings. **Project does not include multiple buildings.***
- (2) The proposed use will not result in a public hazard due to substantially increased vehicular traffic or due to inadequacy of the structure or configuration of the road(s) directly serving the site. **Refer to findings and comments in the Traffic Impact Analysis section.***
- (3) The proposed use will not create any danger of pollution to public or private water facilities. **Refer to findings and comments in the Utility Design section and review of Stormwater Management by others.***

- (4) *The methods of drainage at the site are adequate and meet the standards of the Subdivision Rules & Regulations of the Town of Medfield. See Stormwater Management Review completed of the Board of Health and Conservation Commission.*
- (5) *No excessive noise, light or odor shall be emitted. Refer to findings and comments in the Utility Design and Site Lighting sections.*
- (6) *The site plan and proposed use(s) conform to all requirements of the Zoning Bylaw of the Town of Medfield." Refer to findings and comments in the Zoning section.*

If we can be of any further assistance regarding this matter, please contact us at our office.

Very truly yours,
BETA Group, Inc.



Matthew J. Crowley, PE
Project Engineer



Greg E. Lucas, PE, PTOE
Project Manager



Christopher Luppino, PE
Senior Engineer

cc: Sarah Raposa, Town Planner