



December 1, 2021

Ms. Sue Brown, Town Planner  
Town Hall  
10 Central Street  
Manchester by the Sea, MA 01944

**RE: Proposal for Peer Review Consulting Services  
The Sanctuary at Manchester by the Sea 40B – Manchester by the Sea, MA**

Dear Ms. Brown,

Environmental Partners (EP) is pleased to submit this proposal to provide peer review services related to transportation, traffic, parking and circulation for the proposed “The Sanctuary at Manchester by the Sea” 40B housing development. We understand that the project includes 157 residential units to be located off School Street in the general vicinity of the School Street interchange with Yankee Division Highway (Route 128). It is understood that the proposed project is an affordable housing development under the Chapter 40B state statute that allows local Zoning Board of Appeals approval with flexible rules if at least 20-25% of the units have long-term affordability restrictions.

EP staff's experience in providing traffic and transportation peer review services for municipalities across the Commonwealth in combination with our extensive Complete Streets design expertise is a natural match for the services being requested through the RFP. EP's approach to this and to all transportation peer review services is to ensure accuracy, thoroughness, and adequacy of mitigation to accommodate development-generated traffic. Our focus on Complete Streets and context sensitive multi-modal design, as well as our innovative spirit and safety-focused approach, makes us uniquely qualified to partner with the Town and the Zoning Board of Appeals for the requested services. The goal of EP's services is to ensure that the interests of the Town are protected and that the proposed development and its impacts are in accordance with and consider Town guidelines and industry standards. A writing sample is attached that highlights EP's peer review experience with a 40B development in the Town of Brookline.

We believe our expertise with the latest in Transportation treatments and our out-of-the-box thinking, along with a level of responsiveness, client service, follow-up, and persistence that our competitors cannot match, set us apart from the competition and has led to numerous municipalities to regularly rely on EP to act as an extension of their teams. These relationships have been the foundation of our success in our twenty-four year history and has been demonstrated through our ongoing relationship with all of our clients. EP consistently strives to exceed each clients' expectations.

## Project Team

EP's proposed Project Manager, **Greg Lucas, PE, PTOE, RSP** has extensive peer review experience throughout his 25-year career, including many opportunities to present findings and serve as a resource to municipal boards through public board meetings and presentations. Greg has served as lead traffic reviewer on peer review of 40B housing developments in Arlington, Billerica, Medfield and Millis, and on a variety of other projects, from a 2.1M SF mixed use development to convenience stores and fast-food restaurants. EP's Director of Transportation, **Jim Fitzgerald, P.E., LEED AP**, will lead QA/QC efforts for this project. Jim has provided peer review services to numerous municipalities throughout his almost 30-year career, from a large-scale casino to mixed-use developments to small gas stations. In all instances, the EP team watches out for the best interests of the community and for safe and comfortable accommodations for all users.

EP presents the following hourly rates. Resumes are attached for key staff members.

Name	Title	Hourly Rate
James Fitzgerald, PE, LEED AP	Principal (QA/QC)	\$230
Greg Lucas, PE, PTOE, RSP	Project Manager	\$225
Jane Davis, PE	Senior Reviewer	\$215
Steve Shekari, EIT	Project Engineer/Reviewer	\$165

## Scope of Services

This proposal is based on the following items made available to EP through the RFP:

- Report titled "Transportation Impact Assessment; Proposed Multifamily Residential Development; School Street, Manchester-by-the-Sea, Massachusetts" prepared by Vanasse & Associates, Inc. (VAI), dated September 2020.
- Plans (32 sheets) titled "Site Development Plans for The Sanctuary, School Street, Manchester-by-the-Sea, MA" prepared by Allen & Major Associates, Inc., dated July 16, 2021.
- List of Waiver Requests as of July 16, 2021, supporting the Comprehensive Permit plans (Site Development Plans) dated July 16, 2021.

This proposal includes the following services:

### Traffic Review:

1. Review the pertinent sections of the Manchester-by-the-Sea Zoning Bylaws to identify whether the traffic study is in general conformance with applicable by-laws.
2. Conduct a site visit to observe existing street network field conditions, identify areas of concern related to traffic operations and access, review pedestrian and bicycle access and operations, and note sight distance concerns at the proposed site driveway.

3. Review provided existing traffic volumes and traffic networks including data collection techniques, methodology and seasonal adjustments/background growth.
4. Review existing traffic volumes to determine need for and/or applicability of adjustments to account for the COVID-19 pandemic.
5. Review vehicle crash data and crash rates provided.
6. Review build-out condition analyses and verify other known planned developments have been factored into the analysis based on input provided by the Town.
7. Reference TIAs for known planned developments to understand potential interaction and collective impact within the study area.
8. Review trip generation methodology and compare to standard ITE data, and review trip distribution methodology.
9. Review existing and future conditions analysis including input data for the study area intersections and the interpretation of analysis results (LOS, delays and queue).
10. Review and assess reasonableness of proposed mitigation measures.
11. Review site plans for vehicular, pedestrian, and emergency vehicle access and on-site circulation.
12. Review on-site parking layout, including accessible spaces and accessible access routes.
13. Review requested development waivers and provide assessment of (a) necessity, (b) alternate methods of compliance, and (c) adverse affect of approval.

#### Meetings, Deliverables and Coordination:

1. Prepare a memorandum summarizing the traffic review and describing findings and recommendations.
2. Attend up to two (2) meetings to discuss comments with the Applicant's design team to review/clarify comments.
3. Attend and present at up to three (3) virtual hearings with the Zoning Board of Appeals (ZBA) to discuss findings.
4. Assist in preparation of draft and final recommendations for modifications, approval conditions, and/or best management practices.

#### Additional Services:

The following services will be considered additional services and not included as part of this proposal:

1. Attending additional meetings or hearings not specifically described above.
2. Performing extensive coordination with either Town staff or the Applicant and/or their consultants.
3. Performing additional reviews of traffic studies or review of the Applicant's responses.
4. Performing reviews of additional documents that are subsequently made available.

## Fee

- A. The above services are anticipated to be performed for an estimated fee of **\$16,800** including expenses, to be billed on a time and expense basis. Additional reviews and/or meetings will require additional authorizations of funds.

- B. Work outside of the specified Scope of Services will be performed upon approval by the Client and the Client shall pay Environmental Partners on a time and expense basis based on Environmental Partners billing rates in effect at the time the services are performed. Reimbursable expenses as may be required for these additional services shall be billed to the Client on a direct expense basis at a 1.1 multiplier.

#### Miscellaneous

- A. Unless otherwise provided for hereinbefore, the attached "General Terms and Conditions" dated July 2021 are incorporated herein by reference and shall be considered a part of this proposal.
- B. This Scope of Services does not include the evaluation of components or other services not identified.
- C. It is understood that all information that the Client has available relative to the project (i.e., existing plans, traffic study information, etc.) will be made available to ENVIRONMENTAL PARTNERS at no cost.
- D. Nothing contained herein shall obligate Environmental Partners to prepare for or appear in arbitration or litigation on behalf of the client or to undertake additional work on matters not included herein, except in consideration of additional compensation mutually agreed upon.
- E. Fees for services as described herein will be paid to Environmental Partners by the Client as the work progresses, based upon the presentation of a monthly statement for services by Environmental Partners. (See attached "General Terms and Conditions.")

We appreciate the opportunity to provide our professional services and look forward to working with you. In the meantime, please do not hesitate to contact us with any questions.

Sincerely,  
Environmental Partners Group, LLC



James D. Fitzgerald, PE, LEED AP  
Director of Transportation / Principal  
P: 617.653.6986  
E: [jdf@envpartners.com](mailto:jdf@envpartners.com)



Greg E. Lucas, PE, PTOE, RSP  
Project Manager  
P: 617.657.0267  
E: [gel@envpartners.com](mailto:gel@envpartners.com)

Attachments: Resumes  
Sample Peer Review memorandum  
Environmental Partners Group, LLC Terms and Conditions

## ATTACHMENT A

### Resumes



## James D. Fitzgerald, PE, LEED AP

### PRINCIPAL IN CHARGE

Jim is the Director of Transportation and a Principal at Environmental Partners with over 25 years of experience in a wide variety of Traffic & Transportation projects for numerous municipalities, MassDOT, and private sector clients. His experience includes performing and overseeing all areas of Transportation Engineering from in-depth transportation/traffic studies to peer reviews, from downtown urban design to scenic rural corridors, from optimizing travel times to traffic calming, and from public hearings to expert testimony.

### Select Relevant Project Experience

#### **Peer Reviews** Multiple Municipalities

Performed peer reviews of impact studies for several municipalities to ensure accuracy, thoroughness, and adequacy of mitigation to accommodate development generated traffic. Assisted in representing municipalities and negotiating additional mitigation where appropriate. Locations include:

#### **Casino Peer Review Services** Everett, MA

Traffic Peer Reviewer for the City of Everett for the Wynn proposal to construct a casino along Broadway (Route 99) in Everett. Services included peer review of traffic data, trip generation models, trip distributions, background growth, impacts to region including City intersections and roadways, and mitigation. Project involved regular coordination with various City departments and the proponent. Assisted the City in winning the dispute regarding Surrounding Community status for the casino proposal in Revere including testimony to the Massachusetts Gaming Commission. Assisted City in establishing reasonable mitigation package for both the primary arterials and intersections affected as well as the secondary.

#### **Walnut Street Enhancements** Newton, MA

Jim is the Project Manager for the Complete Streets oriented design for Walnut Street enhancements project. The project includes Newtonville Center from Newtonville Avenue to Newton North High School and focuses on a re-balance of multi-modal accommodations, place making and safety improvements. Work included an extensive public outreach process involving residents, business owners, city officials and boards to determine the proper balance between vehicular, pedestrian, bicycle and transit users. Several alternatives were conceptually designed for public consumption. The design includes substantial geometry and grading alterations, drainage system enhancements, streetscape, landscape, street lighting, Traffic Management, roadway pavement reconstruction and ADA compliance.

#### **Brant Rock Multi-Modal Improvements** Marshfield, MA

Jim is currently the Project Manager providing professional engineering services associated with improvements throughout Brant Rock, along Ocean Street from Dyke Road to Island Street. Work includes

### Education

- B.S., Civil Engineering, University of Notre Dame
- B.A., Engineering, Physics Minor, Stonehill College

### Certifications

- Professional Engineer (Traffic) #45028, MA
- Leadership in Energy and Environmental Design (LEED) Accredited Professional (AP)

### Professional Affiliations

- Institute of Transportation Engineers
- ITE Technical Committee
- American Public Works Association
- American Society of Civil Engineers
- Boston Society of Civil Engineers
- Massachusetts Highway Association
- Essex County Highway Association
- Worcester County Highway Association
- Norfolk Bristol Middlesex Highway Association
- Plymouth County Highway Association
- Barnstable County Highway Association

improvements to traffic circulation, parking accommodations, pedestrian and bicycle facilities and streetscape enhancements in Thai Village Center. Geometric improvements as well as a roundabout are being proposed to improve safety for all users.

**Complete Streets Implementation Design** Medford, MA

Jim is the Project Manager to provide Complete Streets oriented design at seven locations in order to accommodate all modes of transportation. Improvements range from complete reconfiguration of Tufts Square and Haines Square to isolated pedestrian crossings with bump-outs and median islands. Work also includes extensive outreach with the public and town officials from the concept stage to final design.

**Reconstruction of Shank Painter Road and Route 6** Provincetown, MA

Jim is the Project Manager to provide the design of a comprehensive rehabilitation of Shank Painter Road and a portion of Route 6 including converting the roadway to a Complete Street. Shank Painter is the major connection between Route 6 and the town center that also carries significant vehicular, pedestrian and bicycle volumes during summer months. Work includes the preparation of several conventional and unconventional alternatives to present during a comprehensive public outreach program, and the engineered design of the preferred bicycle and pedestrian accommodations to accommodate the high demand during peak summer months.

**Barnstable Village Improvements** Barnstable, MA

Jim is the Project Manager of Complete Streets oriented design for Main Street (Route 6A) corridor in Barnstable Village and for Millway that provides connections to Barnstable Harbor. The design will provide safe access for all users, including pedestrians, motorists and transit riders of all ages and abilities. Objectives of the project include: create a "Village identity" along Main Street that also provides for bicycling, walking and safe movement of vehicles; develop crosswalk locations and pedestrian amenities that will promote a "walkable" village and encourage pedestrians to explore the Barnstable Harbor area; provide accommodations for emergency vehicle access at the Fire Station; develop thematic elements that link the Village area and the waterfront activities; provide an improved storm water system.

**Signal, Sign, and Guardrail Asset Management** Lexington, MA

Served as Project Manager of sign, signal, and guardrail asset management project. Signalized locations were reviewed for equipment function/age, MUTCD compliance, delays and queues experienced, and ADA compliance. Recommendations were provided for each location and classified based on scale of improvements required. Signage throughout the Town was evaluated for MUTCD compliance with legend, size, location, and retroreflectivity; Special Speed Regulations and local ordinance were verified. Guardrails were also inventoried for compliance with current standards, location and placement. CIP for signals, signs and guardrail were prepared.



## Greg E. Lucas, PE, PTOE, RSP

### PROJECT MANAGER

Greg is a Senior Project Manager at Environmental Partners with 25 years of experience in Traffic & Transportation Engineering. Specializing in design of traffic signal systems including application of advanced technologies such as adaptive signal control, traffic responsive timing plans, and peer-to-peer communication, his project experience covers a wide breadth of services. From performing, leading, and overseeing all aspects of traffic and transportation engineering, to Complete Streets design, capacity analysis, roundabout design and analysis, signage and pavement marking design including guide sign design, temporary traffic control plans and construction staging, and peer reviews, Greg approaches every project from a multifaceted perspective.

### Select Relevant Project Experience

#### **Peer Review Services for Planning Board & Zoning Board of Appeals Various Communities\***

Led traffic review for conformance with local, state and federal regulations and general engineering practice. Review includes traffic assessments, as well as site plan review for access, circulation and parking. Provide detailed report on findings, comments and recommendations. Attend public hearings to present findings and answer questions for Boards and/or the public. Peer review services provided for Bellingham, Billerica, Framingham, Franklin, Hopkinton, Medfield, Millis, Norfolk, Plainville and Westwood.

#### **Peer Review Services – Statewide, MA (MassDOT) \***

Lead Traffic Engineer for peer review services to MassDOT on 12 assignments to date. Advise on the completeness and readiness of projects to be bid as part of a multi-disciplinary team. The project assignments typically include a full review of the plans, specifications and construction estimate for each project and include review and counsel on a wide range design features including highway and traffic, structures, drainage, specifications, cost estimating, environmental design and overall constructability.

#### **On-Call Statewide Road Safety Audits, MassDOT Highway Division Boston, MA\***

Project Manager and lead engineer for over sixty Road Safety Audit (RSA) assignments throughout Massachusetts through MassDOT's Safety Section. Facilitated audit meeting with a multi-disciplinary team and led discussion during a site visit intended to identify and document existing safety deficiencies. Led a group discussion of safety issues and potential short-term and long-term countermeasures, and prepared a report summarizing findings of the audit team.

### Education

- B.S., Civil Engineering, Rensselaer Polytechnic Institute (RPI)

### Certifications

- Professional Engineer (Civil) #48146, MA
- Professional Traffic Operations Engineer (PTOE), national, 2010, #2845
- Road Safety Professional (RSP), national, 2018, #116
- International Municipal Signal Association (IMSA), Traffic Signal Technician Level 1
- International Municipal Signal Association (IMSA), Work Zone Temporary Traffic Control Technician

### Professional Affiliations

- Institute of Transportation Engineers (ITE)



**Pedestrian Safety and Feasibility Study** Bourne, MA\*

Traffic study of Barlows Landing Road and Shore Road in the Pocasset village section of Bourne. Evaluated operational and safety benefit of four-way stop control and signal control. Made recommendations to Board of Selectmen on four-way stop control and pedestrian safety improvements including curb ramps, update crosswalks, grading and drainage improvements.

**Dedham Square Improvements** Dedham, MA\*

Lead Traffic Engineer on Dedham Square Improvements, which included reconstruction of an outdated signal and construction of a new signal leading to improved traffic operations and pedestrian safety in Dedham's center. Effort included post-construction monitoring and adjustment of signal phasing and timing in coordination with Town staff to enhance pedestrian safety.

**Complete Streets Program Prioritization Plan**

Lynn, Melrose, Easton, & Billerica, MA\*

Assist communities in developing Complete Streets Prioritization Plan consistent with the Tier 2 requirement of MassDOT's Complete Streets Funding Program. Coordinated existing data and met with the municipality and interested stakeholders to identify key generators of pedestrian, bicycle and transit activity. Conducted evaluations using GIS data analysis, field reconnaissance and municipal input. Developed a Prioritization Plan which led to project funding through Tier 3 of the Program.

**Broadway (Route 107) Traffic Signal System Upgrade** Revere, MA\*

Evaluate advanced traffic signal technologies including adaptive control to improve operations along the congested Broadway corridor. Evaluate existing operations and existing equipment condition at seven signalized locations. Develop design plans detailing proposed improvements, including remote monitoring.

**Route 126/Route 135 Downtown Grade Separation Traffic Model**

Framingham, MA\*

Project manager for development of a VISSIM model for analysis of Downtown Framingham. Model considers impact of growth, increase in peak period MBTA Commuter Rail train service, and potential grade separation of Route 126 and Route 135. Study results presented to DPW for use in capital planning.

**Route 18 at Two Locations Intersection Improvements** Whitman, MA\*

Project Manager on a MassDOT-funded design of intersection improvements at Route 14 and Route 27. Project included full reconstruction of both signalized intersections, including box widening to accommodate turn lanes and shoulders accommodating bicycles. Project expanded to include corrective measures to improve stormwater management, roadway profile and cross slope consistency along Route 18.

\*Project completed prior to joining EP



## Jane R. Davis, PE, ENV SP

### TRAFFIC

Jane is a Project Manager at Environmental Partners with over 15 years of experience in Traffic and Transportation Engineering. She specializes in traffic analysis, with experience in highway design and construction engineering for both public agencies and private civil engineering firms. Her project experience includes analysis and design associated with public improvement projects, private development, and school renovations/relocations in Massachusetts and New York.

### Education

- B.S., Civil Engineering, McGill University, Montreal, QC
- Concentration in transportation engineering & structural design including: Traffic Engineering, Steel Structures Design, Concrete Structures Design, Infrastructure Renovation/ Preservation, and Hydraulic Structures

### Certifications

- Professional Engineer (Civil) #52643 MA
- Envision Sustainability Professional, #11512

### Professional Affiliations

- Massachusetts Institute of Transportation Engineers (MAITE) President
- American Council of Engineering Companies (ACEC)
- Emerging Leaders Program (2018), Genesis Program (2015)
- WTS Boston Member (2014-present)

### Select Relevant Project Experience

#### **Reconstruction of Shank Painter Road and Route 6**

Provincetown, MA

Serving as Traffic Engineer to provide the design of a comprehensive rehabilitation of Shank Painter Road and a portion of Route 6 including converting the roadway to a Complete Street. Shank Painter is the major connection between Route 6 and the town center that also carries significant vehicular, pedestrian and bicycle volumes during summer months. Work includes the preparation of several conventional and unconventional alternatives to present during a comprehensive public outreach program, and the engineered design of the preferred bicycle and pedestrian accommodations to accommodate the high demand during peak summer months. A road diet is proposed along Route 6, converting one side of the multilane separated highway into a shared use path expanding bicycle and pedestrian connections from the downtown to the coast.

#### **Battle Green Rehabilitation** Lexington, MA

Serving as Traffic Engineer for the engineering design services for the rehabilitation of Lexington's Battle Green. The Battle Green project limits include the triangular area surrounded by Massachusetts Avenue on the south, Harrington Road on the north and Bedford Street on the east. The purpose of the rehabilitation is to add ADA compliant paths to monuments and restore paving surfaces surrounding the Battle Green area, while retaining the size and configuration of the green. EP is currently in the Final Design phase, advancing the preferred alternatives for each Battle Green feature into a cohesive design.

#### **Maquan Street (Route 14) Rehabilitation** Hanson, Ma

Traffic engineer for the reconstruction of Maquan Street (Route 14) involving corridor and intersection improvements. Work includes evaluation of intersections along corridor and assisting in the design of multi-modal accommodation improvements.

#### **Intersection Improvements** Acton, MA

Improvements to the intersection of Main Street (Route 27) at Prospect Street in the Town of Acton. The unconventional geometry of the intersection presents challenges for vehicles, pedestrians, and bicyclists. We developed four conceptual designs (two unsignalized, one signalized, and one roundabout) to address the existing issues and presented the

concepts in a public meeting. Discussions with the Town are ongoing, and a preferred concept has not yet been advanced to design.

**Municipal Parking Lots Parking Study** Boston, MA

Parking Utilization and Turnover Study submitted to the City of Boston included four municipal parking lots in the neighborhoods of Roslindale, Dorchester, Hyde Park, and Jamaica Plain.

**Intersection Improvements** Great Barrington, MA

Improvements to the intersection of Main Street (U.S. Route 7/Routes 23/41) at South Main Street and Maple Avenue in the Town of Great Barrington. We submitted two design alternatives to MassDOT as part of the Functional Design Report. The preferred alternative included replacing the existing traffic signal system with a roundabout and providing exclusive bicycle lanes and improved pedestrian accommodations.

**Middleborough High School** Middleborough, MA

Traffic Analysis Report of Middleborough High School included observation of the existing drop-off/pick-up operations and analysis of the improvements for the proposed redevelopment of the high school; Feasibility Study followed to evaluate the impacts on the surrounding roadway network.

**Private Development on Route 9** Framingham, MA

Traffic Impact Study for a proposed development at the intersection of Worcester Road (Route 9) at California Avenue in the City of Framingham included the demolition of an existing building, the reconstruction of an existing Park & Ride lot, and the construction of an 88,000 square-foot, six-story hotel.

**Numerous Road Safety Audits**

Route 138 Corridor, Stoughton; Uptown Rotary, Gardner; U.S. Route 6 at Gardners Neck Road, Swansea; Route 28 at North Main Street and Old Main Street, Yarmouth; Seven corridors incl. 33 intersections, Springfield (associated with design of MGM Casino); VFW Parkway at Spring Street and Bridge Street, Boston; U.S. Route 202 at Lyman Street and Willimansett Street, South Hadley (July 2015); ♦ U.S. Route 7 at Routes 23 and 41, Great Barrington; Two intersections on Route 138, Milton

**Kew Gardens Interchange Contracts 1 & 2**

Contract 2A provided the replacement of the Van Wyck Expressway viaduct. It was critical that the alignment alternative was finalized as early as possible to allow for the proposed pier layouts. This contract also included the evaluation of six existing bridge structures to determine their future rehabilitation or replacement, the reconstruction/widening of Van Wyck Expressway and the ramp to Grand Central Parkway, the relocation and realignment of both the ramp from Westbound Union Turnpike to Grand Central Parkway and the MTA access road, and the reconstruction of the ramp from EB Union Turnpike to Van Wyck Expressway. Contracts 1 included design services for a bridge and highway rehabilitation project including new super and substructures for two bridges, a new pedestrian bridge, a new subway entrance, new geotechnical work such as retaining and sound walls, the design coordination of one bridge.



## Steve Shekari, EIT

### TRAFFIC SUPPORT

Steve is a Project Engineer at Environmental Partners with 6 years of experience in Traffic and Transportation. He specializes in roadway design and traffic analysis. His work experience includes Complete Streets design, intersection and corridor traffic analysis, and Traffic Management Plans.

### Education

- M.S., Civil Engineering - Transportation  
Northeastern University
- B.S., Civil Engineering, Amirkabir  
University of Technology

### Certifications

- Engineer in Training

### Professional Affiliations

- American Society of Civil Engineers (ASCE)
- Association of Pedestrian and Bicycle Professionals (APBP)
- Institute of Transportation Engineers (ITE)

## Select Relevant Project Experience

### **209 Harvard Street Traffic Study Peer Review** Brookline, MA

The project involved a peer review of a TIA for redevelopment of an already-existing medical center and adding retail and residential units to it. The study assessed the impacts of the development on traffic operations on the nearby network. Reviewed the TIA, back-checked the calculations, verified the information, and prepared a memorandum of findings, observations, and recommendations. Performed site visit to make field observations, measure sight distance, and verify existing conditions.

### **Hospital Redevelopment Site Traffic Study Peer Review** Lakeville, MA

The project involved a peer review of a Traffic Impact Assessment (TIA) for redevelopment of a land that was formerly a hospital. The study assessed the impacts of the development on traffic operations on the nearby network. Reviewed the TIA, back-checked the calculations, verified the information, and prepared a memorandum of findings, observations, and recommendations. Performed site visit to make field observations, measure sight distance, and verify existing conditions.

### **Complete Streets Improvements** Dedham, MA

The project involved adding bicycle lanes along Eastern Avenue and East Street. Included sidewalk and pedestrian curb ramp construction, roadway widening, and addressing drainage deficiencies. Prepared preliminary and final design plans and construction cost estimates, and assisted in preparation of specifications. Also performed site visits to check the existing conditions, make field measurements and verify the accuracy and thoroughness of the survey.

### **Intersection Pedestrian and Traffic Improvements** Whitman, MA

The project involved reconstruction of the Park Avenue and Essex Street intersection for improved safety and traffic operations, and sidewalk and pedestrian curb ramp reconstruction for compliance with ADA. Prepared preliminary and final design plans and construction cost estimates, and assisted in preparation of specifications. Also performed site visits to check the existing conditions, make field measurements and verify the accuracy and thoroughness of the survey.

**Enmore Street Improvements** Andover, MA

The project involved reconstruction of the entire named residential street, including full depth reconstruction of roadway, sidewalks, pedestrian curb ramps, and addressing drainage deficiencies. Prepared concept drawings alternative designs, presentation materials for public meetings, preliminary and final design plans including horizontal and vertical alignment, and cross sections. Also assisted in preparing construction cost estimates and specifications. Performed site visit to check the existing conditions, make field measurements and verify the accuracy and thoroughness of the survey.

**Intersection Improvements** Abington, MA

The project involves reconstruction of the Hancock Street and Chestnut Street intersection and installation of a roundabout. The project is aimed at improving safety and efficiency of traffic operations, and providing improved pedestrian facilities. Prepared 25% highway design and right-of-way plan sets, and prepared the design justification document in compliance with MassDOT submission requirements. Performed site visit to check the existing conditions, make field measurements and verify the accuracy and thoroughness of the survey. Assisted in preparing the plan sets and other submission requirements.

**Traffic Impact Study for Proposed Tree House Brewing Company**

Deerfield, MA

The project involves conducting a traffic study assessing the impacts of the proposed project on the nearby roadway network. It includes preparation of a report, summarizing study methodology, safety and operational analysis, demonstrate how different the built conditions will be, and propose mitigation measures. Assisting with preparation of the report by compiling and summarizing back-up information including crash data and traffic volumes, and preparing traffic analysis model. Also performed site visit to verify existing conditions, make field observations, and document existing deficiencies.

**Pleasant Street Pump Station Utility Replacement Traffic Management Plan (TMP)** Framingham, MA

The project involved preparing a temporary traffic management plan, identifying the roadway closures during different phases of construction and drawing the details, for construction of the utility project as part of the submission requirements.

**King Phillip Regional High School Speed Study** Wrentham, MA

The project involved a speed study to introduce a reduced speed zone in the vicinity of the named school for improved safety of students and other residents. Conducted the requested speed study following MassDOT guidelines and standards, and prepared a memorandum of observations and recommendations. Performed site visit to check the existing conditions and verify the existing signage and traffic control devices. Also collected, organized and summarized traffic data.

## ATTACHMENT B

### Sample Traffic Peer Review Memorandum

## MEMORANDUM

**Date** September 22, 2021

**To** Alison C. Steinfeld, Planning Director  
Department of Planning and Community Development  
333 Washington Street  
Brookline, MA 02445

**From** James D. Fitzgerald, P.E., LEED AP  
Jane R. Davis, P.E.

**Subject** 217 Kent Street Traffic Peer Review

Environmental Partners (EP) has reviewed the Transportation Impact Assessment (TIA) prepared by Vanasse & Associates, Inc. (VAI) for the proposed Residential Development (“the Project”) located at 217 Kent Street in the Town of Brookline, dated in February 2021.

In general, VAI has prepared this assessment in a professional manner, consistent with standard engineering practices. The following is a summary of EP’s traffic review. Walker Consultants will provide a separate peer review of the proposed parking.

### Project Description

The TIA outlines the following project description:

“The Project entails construction of a new six-story building with 112 apartment units. Currently, the Project site consists of a 23-unit multifamily building with 36 parking spaces, which will be demolished as part of the proposed Project. Parking will be provided via a parking garage located on the underground floor. The parking garage will accommodate 39 parking spaces including 33 spaces that will be dedicated to tenants, 3 spaces dedicated to guests, and 3 spaces reserved for maintenance and staff during business hours that will revert to guest parking after regular business hours. In addition, an additional parking space located outside of the building and accessible by anyone in the neighborhood will be provided exclusively for a Zipcar vehicle. A bicycle storage room will be provided in the underground parking garage and is designed to house up to 50 bicycles. Access to the Project will remain as it currently exists, through one full-access driveway onto Kent Street. As part of this development, a dedicated drop-off area in front of the building will be provided.”



## Existing Conditions

The TIA included a description of the study area geometry, which consists of three roadways, Kent Street, Longwood Avenue, and Aspinwall Avenue as well as five intersections listed below:

- Kent Street at Longwood Avenue
- Longwood Avenue at Chapel Street
- Kent Street at Francis Street
- Kent Street at site driveway
- Kent Street at Aspinwall Avenue

Figure 1 shows the Site Location Map provided by VAI.



**Figure 1 – Site Location Map (Source: VAI TIA)**

The TIA describes the existing conditions, including geometry, jurisdiction, land use, pedestrian and bicycle facilities, and illumination along the study roadways, and graphically depicts the relevant information about the study intersections in Figure 2 of the TIA. The study area descriptions and figure appear to be accurate, with the exception of the following: the Kent Street at Francis Street intersection has pedestrian crossings across the north and west legs, which are not shown on the figure; the field-measured width of the site driveway is approximately 16 feet, while the figure indicates the driveway is 24 feet wide; Kent Street is functionally classified as an Urban Major Collector (not specified in the TIA) and its southern terminus is at the intersection with Washington Street and Harvard Street (as opposed to Route 9 as described in the TIA).



The study limits comply with the Massachusetts Department of Transportation (MassDOT) Traffic Impact Assessment (TIA) Guidelines related to traffic volume increases.

## Existing Traffic Data

VAI collected manual Turning Movement Count (TMC) data within the study area as well as spot speed measurements in the vicinity of the Project site in November 2019. As the traffic data was collected before the COVID-19 pandemic, no volume adjustments were necessary to account for pandemic-related reductions in traffic. VAI did not collect Automatic Traffic Recorder (ATR) data, which would provide the daily traffic volume in the vicinity of the Project site and illustrate fluctuations of traffic outside peak hours. However, EP understands that VAI collected the TMCs pre-COVID, and supplemented with spot speed measurements, and as such, we do not request further data collection at this time.

### Seasonal Adjustment

VAI used data from a MassDOT continuous count station AET13 on Interstate 90 to determine if the November traffic volumes needed to be seasonally adjusted. EP notes that due to the difference in use for different types of roadways, the seasonal fluctuations may vary between that of an interstate and that of an arterial or collector, such as the study area roadways. We would typically recommend referencing the MassDOT 2019 Weekday Seasonal Factors Report as a secondary source; however, as the MassDOT report indicates traffic volumes for these types of roadways are one percent higher in the month of November than the average month, EP agrees with VAI's approach to not reduce the traffic volumes and we request no further action.

### Traffic Volumes

Figure 3 of the TIA graphically depicts the 2021 Baseline Condition Peak Hour Traffic Volumes. These volumes reflect a one-percent background growth per year from 2019 to 2021, consistent with the growth rate used to project the traffic volumes to the future design year as discussed under the "Future Conditions" section of the TIA. VAI balanced the traffic volumes within the network, although the balancing does not appear to be consistent throughout the network. Further, EP notes that the traffic volumes were collected on two different dates, and therefore manipulating the data through balancing may increase inaccuracy. Though EP is of the opinion that the unbalanced volumes would likely produce more accurate results, as the volumes were balanced upwards and are therefore more conservative, EP does not request further revision.

Table 1 of the TIA summarizes traffic volumes on Kent Street in the vicinity of the site driveway. As VAI did not collect ATR data, **EP requests clarification on how the daily volume and the peak hour percent of daily traffic were estimated.**

## Pedestrian and Bicycle Facilities

VAI collected pedestrian and bicycle volumes as part of the TMCs. Figures 4 and 5 of the TIA graphically depict the Existing Condition Peak Hour Pedestrian Volumes and Bicycle Volumes, respectively. The figures appear to be accurate when reviewed against TMC data in the Appendix, with minor discrepancies that are not expected to impact the findings.

## Public Transportation

VAI described the public transportation options near the project site, which include Massachusetts Bay Transit Authority (MBTA) Bus Route 60/65, MBTA Green Line C Branch, and MBTA Green Line D Branch with closest stations between 0.3 to 0.4 miles from the Project site. EP notes that the project is also approximately 0.5 miles from an MBTA Bus Route 66 stop, which runs along Harvard Street. The project could also benefit from use of this service and **EP recommends including the bus route within the the Transportation Demand Management (TDM) Plan** discussed in the Recommendations section. EP found several discrepancies between the service details summarized in the TIA and those provided in the backups in the Appendix. As neither the additional bus route or the discrepancies in service details impact the findings, EP does not request revision to the TIA; however, we recommend revising accordingly before disseminating information to potential residents.

## Crash History

VAI reviewed crash data provided by MassDOT at each of the study intersections between 2013 and 2017. For a more accurate crash history, **EP recommends reviewing crash reports provided by the Brookline Police Department (BPD).**

Table 2 of the TIA summarizes the MassDOT crash data at each of the study intersections. EP's independent research on crashes through the MassDOT database found several additional crashes within the study area; however, as the crash rates at each intersection remained below the MassDOT District Average with the inclusion of the additional crashes, EP requests no further action.

VAI noted that the study area roadway of Longwood Avenue, which includes the study intersections with Kent Street and Chapel Street, is a high crash location for bicycles and identified as a Highway Safety Improvement Program (HSIP) Bicycle Cluster on MassDOT's Top Crash Locations website. Since the roadway and intersections fall within the HSIP crash cluster for bicycle crashes and since the subject development is anticipated to increase vehicular and/or bicycle traffic in the area, **EP recommends consideration for mitigation related to bicycle accommodations.** Further comment regarding bicycle crashes may be necessary upon review of the BPD crash reports.

## Speed Data

VAI collected spot speed data on Kent Street approximately 500 feet south of the Project site and summarized the results in Table 3 of the TIA. The measurements show an 85<sup>th</sup> percentile speed of 32 miles per hour (mph) in northbound direction, and 34 mph in southbound direction, exceeding the posted speed limit of 25 mph along Kent Street. Although the distance of the speed data collection from the driveway is typically further than EP would recommend, during out site visit we observed vehicles traveling at slightly faster speeds at this location than at the site driveway, which provides a more conservative basis for sight distance calculations, and we therefore do not request further data collection.

## Future Traffic Growth

VAI projected the 2021 existing traffic volumes seven years to 2028 future traffic conditions. They used a one-percent background growth rate per year over the seven-year period and identified other planned developments and/or roadway improvement projects in the area that may add vehicle trips or impact traffic volumes through the study area. Although EP recommends including backup data to justify a general background growth rate, EP does not take exception to the use of a one-percent growth rate, since this rate is within the reasonable range and is consistent with other nearby traffic studies. EP assumes that VAI's research and correspondence with the Town of Brookline has adequately identified all major projects and developments that may impact travel patterns in the seven-year study period; verification from the Town is recommended.

Figure 6 of the TIA graphically depicts the 2028 No-Build Conditions Peak Hour Traffic Volumes, which include the one percent growth per year over seven years and the addition of six other developments in the area. EP agrees with the methodology. Though we found several inconsistencies in which the figures indicated slightly lower volumes than the calculated volumes using this methodology, since the discrepancies are relatively small (six vehicles or less) and are not anticipated to have a significant impact on the operations, EP does not request further revision.

## Project-Generated Traffic

### Trip Generation

As the existing 23-unit building on the project site has similar characteristics to the proposed 112-unit building, VAI used a combination of empirical data based on the collected 2019 TMCs and the methodology of the Institute of Transportation Engineers (ITE) Trip Generation Manual to estimate the proposed project-generated vehicle trips. VAI indicated that *"to be conservative, the highest trip rate between the existing observed 23-unit multifamily building and the ITE rates were used"*.

ITE Land Use Code (LUC) 221 – "Multifamily Housing (Mid-Rise)" describes "Multifamily Housing (Mid-Rise)" as "apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (floors)." EP agrees with the use of this land use code.

EP's understanding of VAI's methodology to estimate the proposed project-generated traffic is as follows:

As shown in Table 4 of the TIA:

- Using the empirical data, VAI calculated vehicle trip rates for the existing 23-unit building (assuming the collected data accounts for vehicle trip reductions based on transit users, walking and bicycling)
- VAI used the calculated vehicle trip rates for the existing 23-unit building to estimate the number of vehicle trips for the proposed 112-unit building (which also accounts for the above-referenced reductions for other modes)

- VAI calculated a net increase between the existing and proposed uses of 31 trips and 19 trips for the weekday morning and evening peak hours, respectively, which was used as the basis for the trip assignment to the network in the following section

As shown in the Appendix:

- VAI used ITE LUC 221 to estimate the trip generation for the proposed 112-unit building
- VAI referenced the mode split data from the 2015-2019 American Community Survey (ACS) for Census Tract 4008 (in which the project is located), and calculated the new vehicle trips using a vehicle occupancy rate of 1.03 and a 60 percent reduction labeled “Transit Discount”, which EP assumes accounts for other modes (transit users, walking and bicycling) based on the census data
- As the new trips established using ITE methodology were approximately the same or less than the net increase described above using the empirical data, VAI used trip generation estimates from the empirical data to assign to the network

EP takes no exception to VAI’s methodology to use the more conservative estimate between that established from empirical data and that established by ITE methodology. We offer the following comments:

- Based on the census data, the mode splits are approximately 30 percent transit, 30 percent walking, and seven percent bicycling for a total of 67 percent (VAI also included the categories of “taxicab, motorcycle, or other means” and “worked from home” in the notes in the Appendix equating to a total of 72.5 percent for non-auto usage). VAI used a 60 percent reduction in the ITE methodology to account for other modes of transportation, but provided no additional backups to justify the modification to the census data, and in particular how it may not accurately reflect the bicycle trip-generation, which is being added to an existing high bicycle crash cluster along Longwood Avenue. As it pertains to vehicles, EP takes no exception to using a lower percent reduction as it is more conservative for the analysis of traffic operations. EP also notes that the mode split data is taken from pre-COVID-19 conditions and could likely change under future conditions; however, in the absence of more up-to-date information, EP agrees with the use of the census data.
- The new vehicle trips established using ITE methodology do not account for the reduction based on the existing vehicle trips, and therefore do not provide an equivalent comparison to the net increase in vehicle trips established using the empirical data. However, as VAI used the more conservative estimate for the proposed trip generation, EP does not request further revision.

#### Trip Distribution and Assignment

VAI determined the trip distribution of the project-generated trips based on a review of existing travel patterns within the study area and the trip generation from other traffic studies in the area. The trip distribution is summarized in Table 5 of the TIA and graphically depicted in Figure 7 of the TIA. The table and figure are consistent with one another and the trip distribution appears to be reasonable; however, no backups have been provided for verification. **EP recommends including backups for the trip distribution.**

Figure 8 of the TIA graphically depicts the trip assignment for the weekday morning and evening peak hours, and the figure appears to be accurate based on the trip generation and distribution outlined in the TIA.

### Future Build Conditions

VAI developed the 2028 Build conditions by adding the vehicle volumes generated by the proposed project to the 2028 No-Build conditions. Figure 9 of the TIA graphically depicts the 2028 Build Peak Hour Traffic Volumes, which appears to be accurate (the figure is mislabeled with the incorrect year as 2026).

VAI summarized the peak hour projected traffic volume increases outside of the study area, just beyond each of the study intersections in Table 6 of the TIA. The table shows the 2028 No-Build and 2028 Build traffic volumes for the morning and evening peak hours, as well as the traffic volume increases over No-Build and the associated percent increase for each of the following locations:

- Kent Street, north Longwood Avenue
- Longwood Avenue, east of Chapel Street
- Kent Street, south Aspinwall Avenue

The three locations represent the trip distribution percentages of 15 percent or greater; using this methodology, it seems reasonable that Aspinwall Avenue, east of Kent Street should also have been summarized in Table 6. However, given the relatively low percent increases at the other locations, we do not request a revision to the table. The calculations otherwise appear to be accurate, and Kent Street, north of Longwood Avenue is projected to experience the largest volume increase of 1.4 percent as a result of the proposed development during the weekday morning peak hour.

## Traffic Operations Analysis

VAI used Synchro 10 software, which is based on the Highway Capacity Manual (HCM) methodology, to analyze each of the study intersections.

Since the TMC data was collected before the COVID-19 pandemic, and traffic has increased to near pre-pandemic levels but has yet to stabilize, EP performed traffic observations during our site visit to compare current observed traffic to the pre-pandemic analysis results. In general, the analysis results represent current traffic operations fairly closely. However, we note the following observations that were inconsistent with the analysis results:

- On the Kent Street southbound approach to Aspinwall Avenue, we observed queues up to 500 feet during the weekday evening peak hour, which took multiple cycles to completely discharge. Analysis results predict a 95<sup>th</sup> percentile queue length of 162 feet for this approach.
- On the Aspinwall Avenue westbound approach to Kent Street, we observed queues up to 250 feet during the weekday evening peak hour. Analysis results predict a 95<sup>th</sup> percentile queue length of 121 feet for this approach.

We offer the following comments on the analysis:

- Roadway grades on approaches to the study intersections are unchanged from the default value of zero. Although EP recommends using the actual roadway grades for more accurate analysis, we would not anticipate a significant impact to the analysis results, and we therefore do not request further revision to the approach grades.
- At the intersection of Kent Street at the site driveway, the peak hour factors (PHF) in the Synchro analysis are not consistent with the PHF in the traffic count data. **Please revise the PHFs in the analysis at this intersection.**
- For all three signalized intersections in the study area, lost time adjust is set at -2 seconds in the Synchro analysis. Lost time adjust is calculated as a function of clearance time, and should vary between signalized intersections with variable phase clearance times. **EP requests clarification on adjustments made to this variable.**
- VAI did not include conflicting pedestrians (or pedestrian calls) or bicycle movements in the Synchro analysis, where applicable. Given the relatively high volume of pedestrians and bicycles in the study area, the analysis should accurately represent the inclusion of all modes. As such, **EP recommends including conflicting pedestrian volumes (and pedestrian calls) and bicycle volumes for more accurate analysis results.**
- The Synchro analysis for the intersection of Kent Street and Aspinwall Avenue shows a 6 second southbound protected lead phase in the weekday morning peak hour, and a 23 second northbound protected lead phase in the weekday afternoon peak hour. Variable phasing during different periods of the day is atypical, and as such **EP requests verification of the existing signal phasing at this location.**

Table 9 and 10 of the TIA present the results of the traffic analyses including volume to capacity ratio, vehicle delay, LOS, and vehicle queues for the signalized and unsignalized study intersections, respectively. The tables are consistent with the Synchro outputs in the Appendix.

As shown in Table 9, with the provided analysis before the above requested edits, all movements at the three signalized intersections are expected to operate at an acceptable level of service (LOS D or better) during both the weekday morning and evening peak hours under both No-Build and Build conditions, and all three intersections are expected to operate at an overall LOS C or better during both peak hours.

As shown in Table 10, with the provided analysis before the above requested edits, all critical movements at the two unsignalized intersections are expected to operate at a LOS C or better during both the weekday morning and evening peak hours under both No-Build and Build conditions.

The largest increase in delay as a result of the project-generated traffic for any movement within the study area intersections is approximately two additional seconds as reported in the TIA with the provided analysis before the above requested edits. While EP agrees these impacts are minor, with the revisions to the analysis as recommended above, we would anticipate that some of the critical movements at the study intersections would degrade in level of service under No-Build conditions, which could potentially result in more significant impacts to the traffic operations with the addition of the project-generated traffic under Build conditions. As such, EP requests the revised analysis to

establish the appropriate mitigation for the Build condition, as discussed in the Conclusions and Recommendations section.

## Sight Distance

VAI did not provide a sight distance evaluation for the site driveway in the TIA. During our site visit, EP noted that parking is permitted adjacent to the driveway to both the north and south, which limits the visibility from the driveway and does not appear to provide adequate sight distance based on AASHTO guidelines. While we understand that this represents an existing condition, the project is expected to generate a notable increase in the volume of vehicles entering and exiting the driveway, and EP recommends mitigation be considered to address the existing deficiency. Additionally, the project includes a proposed semi-circular dedicated drop-off area in front of the building which intersects Kent Street and should also require a sight distance evaluation. **EP requests that the Applicant provide a sight distance evaluation for both the existing site driveway and the location of the proposed semi-circular dedicated drop-off area for both vehicles and pedestrians (pedestrian sight distance as per Town of Brookline Zoning By-Law requirements (Section 6.04.4.f.1)), and depicted on a site plan using sight triangles.**

## Conclusions and Recommendations

EP reviewed the recommendations VAI provided regarding project access and Transportation Demand Management (TDM) plan and we offer the following comments:

### Project Access

- EP agrees with VAI's recommendation to install a "STOP" sign and stop line at the site driveway in compliance with the Manual of Uniform Traffic Control Devices (MUTCD), and that all other signs and pavement markings shall also be MUTCD-compliant.
- EP agrees with VAI's recommendation to maintain signs and landscaping so as not to restrict lines of sight from the sight driveway, and we further recommend a sight distance evaluation with a site plan depicting sight triangles for the existing and proposed access points as discussed in the Sight Distance section above.
- In addition to VAI's recommendations, EP requests that the Applicant provide truck-turning templates for all Project site access for emergency vehicles, refuse vehicles, etc. for review. Fire truck access is of particular importance, as noted in correspondence from the Captain of the Brookline Fire Department to the Town Planner indicating concern that a fire truck will not be able to use the site driveway due to the spacing from the adjacent building and the slope of the roadway and may only be able to access the front of the building. EP requests clarification on the emergency access plan.

### Transportation Demand Management

- In general, EP agrees with the TDM plan and proposed improvements for this project
- As noted above in the Public Transportation section, EP recommends including the additional bus route (Route 66) in the nearby public transportation options for residents



- EP also recommends an off-site, street-level bicycle rack in addition to the proposed bicycle storage inside the parking area for visitors and fast turnover for daily use, which will provide additional convenience and further promote bicycle usage

#### Additional Off-Site Mitigation

The following outlines EP's general recommendations for additional off-site mitigation based on the impacts of the project and the existing conditions of the study area. We recommend coordinating with the Transportation Board to implement any appropriate mitigation measures.

- A key part of the TDM relies on walking alternatives and public transportation services, which itself depends on accessibility for pedestrians; the provided trip generation assumes a substantial 60 percent reduction in vehicular trips to account for other modes, the majority of which will be pedestrians walking or seeking transit. EP reviewed existing pedestrian facilities during the site visit, and noted non-compliance with ADA guidelines throughout the study area. None of the pedestrian curb ramps at the study intersections appear to be ADA-compliant, and some sidewalk locations within the study area appear to contain steep cross-slopes that are likely not ADA-compliant. Since these issues may adversely affect the use of public transportation services and walking alternatives, EP recommends considerations be made for addressing accessibility issues.
- To provide additional mitigation for the increasing pedestrian volume, EP recommends considering pedestrian improvements including:
  - Tightening intersection corners or installing curb bump-outs within the study area (where applicable) to shorten crosswalks and reduce delay for pedestrians at signalized intersections
  - Installing new pedestrian signal systems compliant with current standards at signalized intersections to replace outdated equipment (where applicable), including but not limited to signal displays with countdown, tactile push buttons, and Accessible Pedestrian Signals (APS)
- As noted above, the study area roadway of Longwood Avenue, which includes the study intersections with Kent Street and Chapel Street, falls within an HSIP bicycle crash cluster. Given the significant volume of bicycles traveling through the study area, which is anticipated to grow as a result of the proposed development, EP recommends considering improvements to the bicycle accommodations along the study roadways, including but not limited to designating bicycle lanes where width allows, installing bicycle boxes at intersections, and using green colored pavement and/or signage to heighten awareness of bicycles.
- EP recommends reviewing the signal timing and phasing for the signalized intersections and re-optimizing if appropriate; this should include the yellow and all-red vehicle clearance intervals and the timing for the pedestrian phases and should conform to MUTCD standards. (EP notes that the exclusive pedestrian phase at the intersection of Kent Street at Aspinwall Street is only 14 seconds and does not appear to be adequate.)



## Summary

In addition to the recommendations outlined above within the Conclusions and Recommendations section, the following summarizes the additional requested/recommended information:

- Clarification on the on how the daily volume and peak hour percent of daily traffic were estimated in Table 1
- Supplemental crash data from Brookline Police Department
- Backups for trip distribution
- Updated traffic analysis that includes revision to the incorrect PHFs, the addition of pedestrians and bicycles, revisions to timings and settings as outlined herein (if applicable)
- Sight distance evaluation

## **ATTACHMENT C**

Environmental Partners Group, LLC  
Terms and Conditions (July 2021)

1. References herein to "EP" refer to Environmental Partners Group, LLC. References herein to "Project" mean the project as defined in EP's written proposal to the client. Any proposal submitted by EP for the performance of a proposed Project is subject to renegotiation if acceptance is not received within thirty (30) days or as stated in the proposal. Upon the expiration of such period, EP reserves the right to modify the proposed basis of payment and fees to allow for changing costs and to adjust the time of performance to conform to changing workloads.
2. Unless EP's proposal provides otherwise, the proposed fees constitute EP's estimate of the probable cost required to complete the proposed Project. The estimated probable cost identified in EP's proposal is an estimate and shall not be deemed to be either a guaranteed maximum or "guaranteed not-to-exceed" amount with respect to the cost of performing the Project identified in any such proposal.
3. Cost and schedule commitments contained in EP's proposal shall be subject to re-negotiation for unreasonable delays caused by the client's failure to provide specified facilities or information or for delays caused by unpredictable occurrences such as fires, floods, strikes, riots, unavailability of labor or materials or services, process shutdown, acts of God or of the public enemy, or acts or regulations of any governmental agency. Work stoppage or interruption caused by any of the above may result in additional cost (requiring a change in scope) beyond that identified in EP's proposal for performance of the Project, entitling EP to an adjustment to the cost and schedule.
4. Where the method of payment for EP's services is on a time-and-material or cost reimbursable basis, the following commercial terms shall apply:
  - a. The minimum time segment for charging of field work is four (4) hours. For work done at any of EP's offices, the minimum time segment for charging is one-half hour. There is no premium charge for overtime.
  - b. Where any agreement is based on the salary cost of specific individuals, normal and customary salary increases will become effective immediately upon EP authorization and will be reflected in the next invoice submitted to the client.
  - c. Expenses properly chargeable to the Project shall include: travel and living expenses of EP personnel on business connected with the Project; shipping costs; reproduction, bindery and fax costs at EP's standard rates; computer usage and record processing time and software; equipment rental charges; professional, analytical and technical subcontractors and advisors retained in connection with the Project; identifiable drafting and stenographic supplies; and expendable materials and supplies purchased specifically for the Project. Subcontractor and other project expenses will be charged at 115% of EP's cost. Laboratory services will be charged in accordance with the rate schedule contained in the accompanying proposal. If the services covered by any EP proposal are subject to local or state taxes or fees, such additional costs will be charged to the Project and reimbursed by the client. Because of the unique nature of environmental construction, these percentages do not apply to any environmental remediation or construction activities; those percentages will be addressed in separate terms and conditions applicable to construction projects.
5. Invoices will be submitted on a monthly basis payable upon receipt. Unpaid balances shall be subject to interest at the rate of 1.5 percent per month or the maximum permissible under state law, whichever is less, starting 30 days from the invoice date. Payments received will be applied first to any accrued interest, with the balance of the payment then applied to any unpaid fees. In

## **General Terms and Conditions**

addition, EP may, after giving seven (7) days written notice, suspend services under any agreement without liability until all past due accounts (including fees and accrued interest) have been paid. Timely payment is a substantial condition of client's performance of any

6. Except as provided in Paragraph 5, any agreement may be terminated in whole or in part in writing by either party in the event of substantial or material failure by the other party to fulfill its obligations under such agreement through no fault of the terminating party, provided that no such termination shall be effective unless the other party is given (1) not less than ten (10) calendar days written notice of intent to terminate and (2) an opportunity for consultation with the terminating party and an opportunity to cure prior to the effective date of such termination. A final invoice will be calculated on the first or fifteenth of the month (whichever comes first) following the effective date of termination.
  - a. Where the method of payment is based on a "lump sum" the final invoice will be based on the percentage of the work completed up to the effective date of termination.
  - b. Where the method of payment is based on time and materials, the final invoice will be based on reimbursement for all services and expenses associated with the Project up to the effective date of termination.
  - c. Where the method of payment is based on cost plus a fixed fee, the final invoice will be based on reimbursement for all costs up to the effective date of termination and a pro- rata share of the fixed fee.

For each of the above methods of preparing the final invoice, there shall be an additional charge for Project close-out equal to three percent of all Project billings up to the effective date of termination. This close-out charge shall not be considered a penalty but represents an allowance for recovery of costs for demobilization and reassignment of personnel

## **Environmental Partners Group, LLC**

agreement between EP and client. In the event EP must take legal action to be paid for its services and prevails, all collection and legal costs associated with such action shall be reimbursed by the client.

7. Insurance. EP shall maintain policies of insurance for the following types of coverage, each (with the exception of Workers' Compensation) with a limit of liability of \$1,000,000, combined single limit: Workers' Compensation (statutory) and Employer's Liability; Commercial General Liability; and Automotive Liability and Professional Liability Insurance. EP shall, at the client's request, provide the client with a certificate of insurance or other satisfactory evidence that such insurance has been obtained and that such policies are maintained in force throughout the period in which EP provides services to the client under any agreement. Upon the mutual agreement of EP and the client, EP shall procure and maintain one or more policies of insurance in addition to the types of insurance described above or procure policies of insurance coverage of the same types described above with increased policy limits, to the extent that such insurance is available. Additional premiums and costs incurred by EP in connection with obtaining such additional or different policies of insurance shall be reimbursed by the client as an additional Project expense.
8. Indemnification. To the fullest extent permitted by law for claims covered by EP's Commercial General Liability policy, EP agrees to indemnify and hold harmless the client and its directors, officers and employees, from and against all liability, claims, suits, losses, damages, costs and demands, including reasonable legal expenses and attorney's fees connected therewith, on account of personal injury, including death, or property damage, sustained by any person or entity not a party to any agreement between EP and client and arising out of or connected with the performance of such agreement, to the extent such injury, death or damage is caused by

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the sole or contributory negligence or willful misconduct of EP or its subcontractors or their respective employees, officers and agents in the performances of this Project. EP's obligation hereunder shall not extend to indemnification or holding harmless of a party indemnified hereunder for any claims of loss of profits or any other indirect, special, incidental or consequential damages of any nature whatsoever.

To the fullest extent permitted by law, Client agrees to indemnify and hold harmless EP and its directors, officers, employees, and agents from and against all liability, claims, suits, losses, damages, costs and demands, including reasonable legal expenses and attorney's fees connected therewith, on account of personal injury, including death, or property damage, sustained by any person or entity not a party to any agreement between EP and client and arising out of or connected with the performance of such agreement, to the extent such injury, death or damage is caused by the sole or contributory negligence or willful misconduct of client or its contractors or their respective employees, officers and agents; provided that such injury, death or damage is not occasioned by the sole negligence of EP or its subcontractors or their respective employees, officers and agents in the performance of this Project. Client's obligation hereunder shall not extend to indemnification or holding harmless of a party indemnified hereunder for any claims of loss of profits or any other indirect, special, incidental or consequential damages of any nature whatsoever.

Client acknowledges that EP has neither created nor contributed to the creation or existence of any type of hazardous or toxic waste, material, chemical, compound, or substance, or any other type of environmental hazard, contamination, or pollution, whether latent or patent, or the release thereof or the

## **Environmental Partners Group, LLC**

violation of any law or regulation relating thereto, at the site of the Project or in connection with the performance of the Project, and it is understood that EP shall have no liability for any such condition, and client shall indemnify EP for any and all loss, cost, or damage actually sustained and incurred by EP in connection therewith. The provisions of this Paragraph 8 shall survive the completion of the Project or the expiration, cancellation or termination of any agreement between EP and client.

9. Standard of Care. The Client acknowledges that the Services provided by EP in this Agreement may require EP to make decisions based on experience and professional judgment, rather than on precise scientific or empirical criteria. In performing its Services, EP shall use that degree of care and skill ordinarily exercised by competent members of the engineering profession as of the date of the performance of the Services, in the same locality as the site, and under the same or similar circumstances and conditions. EP shall perform its Services as expeditiously as is consistent with the orderly progress of the Project. No other representations or warranties, whether express or implied, are applicable with respect to the Services rendered hereunder.

In no event shall EP and EP's officers, directors, employees, agents and independent professional consultants, and any of them, be liable to client and/or anyone claiming by, through or under client, including client's insurers, for any lost, delayed, or diminished profits, revenues, or opportunities; losses by reason of shutdown or inability to utilize or complete work at the site of the Project; or any other incidental, special, indirect, or consequential damages of any kind or nature whatsoever resulting from EP's performance or failure to perform services pursuant to any agreement.

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To the fullest extent permitted by law, the Client agrees to limit EP's liability to the Client and anyone claiming by, through, or under the Client, for or on account of all claims and/or damages of any nature whatsoever caused by or arising out of EP's performance of its Services, such that the total aggregate liability of EP for any and all claims and/or damages of any nature whatsoever, arising out of the performance of EP's Services on the Project, whether arising in tort, breach of contract, contractual indemnification pursuant to paragraph 8, breach of express or implied warranty, or any other theory of liability, shall not exceed \$20,000 or the total fee for Services rendered under this Agreement; whichever is greater.

The provisions of this Paragraph 9 providing for limitations of and protections against EP's liability shall survive the completion of the Project or the expiration, cancellation, or termination of any agreement between EP and client, and such provisions shall apply to the full extent permitted by law.

10. Client recognizes that, when it is known, assumed or suspected that hazardous materials exist on or beneath the surface of the site of the Project or within any structure thereon, certain sampling materials, such as drill cuttings and drilling fluids or asbestos removed for sampling, should be handled as if hazardous or contaminated. Accordingly, when sampling is included in the scope of services and when determined by EP in its sole and exclusive judgment to be necessary based on EP's assessment of the degree of contamination, hazard and risk, EP will promptly inform client that containerization and labeling will be performed; will appropriately contain and label such materials; and will leave the containers on site for proper, lawful removal, transport and disposal by client. Client waives any claim against EP, and

## **Environmental Partners Group, LLC**

agrees to indemnify, defend and hold EP harmless from any claim or liability for injury or loss which may arise as a result of the drill cuttings, drilling fluids or other assumedly hazardous materials being left on the site of the Project after their containerization by EP.

11. Client agrees that EP has authority to use its name as a client and a general description of the Project as a reference for other prospective clients.
12. If EP personnel are called or subpoenaed for depositions, examination, or court appearances in any dispute arising out of the Project, EP shall be reimbursed on a time and material basis in accordance with EP's then current, standard billing rates for such matters, including all out-of-pocket costs incurred in connection with such matters.
13. If any of these General Terms and Conditions shall be finally determined to be invalid or unenforceable in whole or in part, the remaining provisions hereof shall remain in full force and effect and be binding upon the parties. The parties agree to reform the contract between them to replace any such invalid or unenforceable provision with a valid and enforceable provision that comes as close as possible to the intention of the stricken provision.
14. Once the client has signified its acceptance of EP's proposal, the express terms of EP's proposal to client and these General Terms and Conditions shall constitute the complete and exclusive statement of the terms of the agreement between the parties and are intended as a final expression of the terms of such agreement and will supersede all prior and contemporaneous agreements, representations or conditions, express or implied, oral or written. No provision of EP's proposal or these General

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Terms and Conditions may be waived, altered, or modified in any manner, unless the same shall be set forth in writing and signed by a duly authorized officer of EP. Client may use its standard business forms (such as purchase orders) to administer any agreement between EP and client, but use of such forms shall be for convenience purposes only, and any typed provision in conflict with the terms of EP's proposal or these General Terms and Conditions and all pre-printed terms and conditions contained in or on such forms shall be deemed stricken and null and void.

## **Environmental Partners Group, LLC**

event that the LSP's legal obligations conflict with the terms and conditions of this Agreement or the wishes or intentions of the Client, the Client hereby agrees that the LSP shall at all times comply with the requirements of the LSP Program. Client covenants not to sue or to otherwise hold or seek to hold liable the LSP or EP for any action taken in accordance with the LSP Program or the MCP. Client agrees to hold harmless the LSP and EP from any claims, losses, damages or penalties incurred in connection with the LSP's fulfillment of his or her obligations under the LSP Program or the MCP.

### **15. General LSP Clauses**

- a. If the Project is performed on a site (or sites) in the Commonwealth of Massachusetts that involves the actual or suspected presence of hazardous materials or oil on or beneath the site or within any structure thereon, the Project may require the engagement of a Licensed Site Professional ("LSP") in accordance with the Massachusetts Oil and Hazardous Material Release Prevention and Response Act, M.G.L. c.21E, and the Massachusetts Contingency Plan ("MCP"), 310 C.M.R. 40.0001-40.1600. In the event that the Project requires the services of an LSP, EP will employ one or more of its staff LSPs unless otherwise instructed in writing by the Client. In some instances, EP may also subcontract with an LSP not otherwise regularly employed by EP. LSPs are registered in the Commonwealth of Massachusetts in accordance with M.G.L. c.21A, §§19-19J and the regulations of the Board of Registration of Hazardous Waste Site Cleanup Professionals, 309 C.M.R. 4.00-4.05 (the "LSP Program").
- b. The MCP requires the application of the "Response Action Performance Standard (RAPS)" to assessment, remediation and other response actions. The client further agrees to compensate EP for reasonable charges incurred in connection with EP's compliance with LSP requirements. In the

- c. Client acknowledges that any opinion issued by an LSP as part of the Project is issued solely for Client's benefit in connection with satisfying the requirements of the MCP. Client agrees not to use an LSP opinion for any other purpose unless authorized in writing by the LSP and EP.
  - d. LSP opinions issued as part of the Project are based solely upon applicable laws and regulations and information known to the LSP at the time of issuance. CLIENT AGREES THAT UNDER NO CIRCUMSTANCES SHALL AN LSP OPINION BE RELIED UPON AS A GUARANTEE OR AN EXPRESS OR IMPLIED WARRANTY OF PERFORMANCE. LSPs employed in the Project shall exercise that degree of care and skill ordinarily exercised under similar circumstances by other registered LSPs and as required by the LSP Program.
16. Client Disclosure Clause. Client agrees to make diligent efforts to locate and disclose to EP and to any LSP engaged on the Project (the "LSP") and all documents and information about the identity, locations, quantity, and nature of any hazardous materials or oil at or under the Project site or in any structure thereon. Client further agrees to furnish or cause to be furnished to EP and the LSP all existing reports, data, studies and documents including, without limitation, any

## **General Terms and Conditions**

existing LSP opinions containing information about surface and subsurface site conditions. All Client- provided documents will remain the property of the Client.

EP shall exercise reasonable efforts, to the extent consistent with the Standard of Care, to comply with all applicable zoning and codes for the Project required by those governmental agencies having jurisdiction over the Project. The Client acknowledges that some zoning and code requirements are subject to interpretation. The proposed language of certificates, affidavits or certifications requested of EP or EP's consultants shall be submitted to EP for review and approval at least fourteen (14) days prior to execution. The Client shall not request certification and/or affidavits that would require knowledge or services beyond the scope of this Agreement and/or beyond the professional qualifications and engineering expertise of EP. EP shall not be required to sign any document(s), that would result in EP having to certify, guarantee or warrant the existence of conditions EP cannot ascertain.

All documents including drawings and specifications, design concepts, inventions, propriety information developed for the Project, including electronic documents prepare or furnished by EP under this Agreement are instruments of service for use solely with respect to the Project ("Documents"). As author, EP shall retain the ownership and property interest in those instruments of service, including copyright, common law and statutory law interest in the Documents whether or not the Project is completed; however, if the Project is completed, the Client may retain a license to use copies of eth Documents solely for information and record reference purposes in connection with the completed Project. These Documents are not intended or represented to be suitable for

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reuse by Client or any other party in connection with (a) the completion of the Project if EPG otherwise is not involved in the Project; (b) extensions of the Project; and /or (c) any other project. Any reuse without written approval, verification or adaptation by EP for the specific purpose intended will be at the Client's sole risk and without any liability or legal exposure to EP or its consultants. The Client accordingly waives all claims and shall defend, indemnify and hold harmless EP, and its consultants, from any and all claims, damages, losses, and expenses including attorney's fees arising out of or resulting from the unauthorized use. At EP's sole discretion, it may allow the Client to reuse the Documents with written approval, verification or adaptation of the Documents by EP, which will entitle EP to additional compensation to be mutually agreed upon by the Client and EP.

Further, EP agrees to provide materials to the Client stored electronically. The Client recognizes that data, plans, specifications, reports, documents, or other information recorded on or transmitted as electronic media ("CADD Documents") are subject to undetectable alteration, either intentional or unintentional, due to, among other causes, transmission, conversion, media degradation, software error, or human alteration. Accordingly, the CADD Documents provided to the Client are for informational purposes only. EP makes no warranties, either express or implied, regarding the accuracy, fitness or suitability for any purpose of the CADD Documents. Accordingly, the Client agrees to waive any and all claims against EP resulting in any way from the any use, reuse, reliance on, or alteration on the CADD Documents.

This Agreement shall be governed and construed in accordance with the laws of the Commonwealth of Massachusetts.

July 2021