

# Transportation Impact Assessment Executive Summary

Proposed Warehouse Building  
585 King Street  
Franklin, Massachusetts

*Prepared for:*

 **MARCUS PARTNERS**  
Boston, Massachusetts

October 2021

*Prepared by:*

 **Vanasse &  
Associates inc**  
Transportation Engineers & Planners

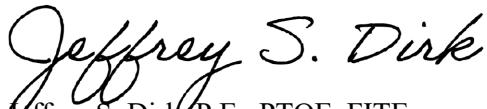
35 New England Business Center Drive  
Suite 140  
Andover, MA 01810

Dear Reviewer:

This letter shall certify that this *Transportation Impact Assessment* has been prepared under my direct supervision and responsible charge. I am a Registered Professional Engineer (P.E.) in the Commonwealth of Massachusetts (Massachusetts P.E. No. 38871, Civil) and hold Certification as a Professional Traffic Operations Engineer (PTOE) from the Transportation Professional Certification Board, Inc. (TPCB), an independent affiliate of the Institute of Transportation Engineers (ITE) (PTOE Certificate No. 993). I am also a Fellow of the Institute of Transportation Engineers (FITE).

Sincerely,

VANASSE & ASSOCIATES, INC.



Jeffrey S. Dirk, P.E., PTOE, FITE  
Managing Partner

## EXECUTIVE SUMMARY

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Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Assessment (TIA) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a warehouse building to be located at 585 King Street in Franklin, Massachusetts (hereafter referred to as the “Project”). This assessment was prepared in consultation with the Town of Franklin and the Massachusetts Department of Transportation (MassDOT), and was performed in accordance with MassDOT’s *Transportation Impact Assessment (TIA) Guidelines* and the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports.

Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the Institute of Transportation Engineers (ITE),<sup>1</sup> the Project is expected to generate 510 vehicle trips on an average weekday (two-way volume over the operational day of the Project), consisting of 334 passenger car trips and 176 truck trips. During the weekday morning peak-hour, the Project is expected to generate 61 vehicle trips, consisting of 55 passenger car trips and 6 truck trips. During the weekday evening peak-hour, the Project is expected to generate 63 vehicle trips, consisting of 54 passenger car trips and 9 truck trips;
2. The Project will not result in a significant impact (increase) on motorist delays or vehicle queuing over anticipated future conditions without the Project (No-Build condition), with all of the movements at the study area intersections shown to continue to operate at level-of-service (LOS) D or better with the addition of Project-related traffic, where an LOS of “D” or better is defined as “acceptable” traffic operations;
3. All movements at the Project site driveway intersection with King Street were shown to operate at a LOS D or better during the peak hours with minimal vehicle queuing predicted (up to 2 vehicles);
4. No apparent safety deficiencies were noted with respect to the motor vehicle crash history at the study area intersections; and

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

5. Lines of sight at the Project site driveway intersection with King Street were found to exceed or could be made to exceed the recommended minimum distance for safe operation based on the appropriate approach speed.

In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with implementation of the recommendations that follow.

## **RECOMMENDATIONS**

A detailed transportation improvement program has been developed that is designed to provide safe and efficient access to the Project site and address any deficiencies identified at off-site locations evaluated in conjunction with this study. The following improvements have been recommended as a part of this evaluation and, where applicable, will be completed in conjunction with the Project subject to receipt of all necessary rights, permits, and approvals.

### **Project Access**

Access to the Project site will be provided by way of a new driveway that will intersect the north side of King Street opposite Constitution Boulevard and will form the fourth leg of the intersection, which is presently under traffic signal control. The following recommendations are offered with respect to the design and operation of the Project site access and internal circulation, many of which are reflected on the Site Plans:

- The Project site driveway should be incorporated into the traffic signal system at the King Street/Constitution Boulevard intersection and designed to accommodate two (2) travel lanes approaching King Street, consisting of a left-turn lane and a through/right-turn lane, and a single travel lane entering the Project site separated by a raised island or double-yellow centerline. Thereafter the driveway and internal circulating drives should be a minimum of 24 feet in width where two-way traffic is to be conveyed and a minimum of 20 feet in width for one-way travel.
- The Project site driveway and internal circulating drives should be designed to accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle and a large tractor semi-trailer combination (WB-67 design vehicle).
- King Street approaching the Project site driveway should be widened to provide a southbound right-turn lane in order to accommodate trucks slowing to enter the Project site.
- Where perpendicular parking is proposed within the employee parking areas, the drive aisle behind the parking should be a minimum of 23 feet in order to facilitate parking maneuvers.
- All signs and pavement markings to be installed within the Project site should conform to the applicable standards of the *Manual on Uniform Traffic Control Devices* (MUTCD).<sup>2</sup>

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<sup>2</sup>*Manual on Uniform Traffic Control Devices (MUTCD)*; Federal Highway Administration; Washington, D.C.; 2009.

- A sidewalk should be provided along at least one side of the Project site driveway and extend to the existing sidewalk along King Street.
- Americans with Disabilities Act (ADA)-compliant wheelchair ramps should be provided at all pedestrian crossings internal to the Project site.
- Signs and landscaping to be installed as a part of the Project within the intersection sight triangle areas of the Project site driveway should be designed and maintained so as not to restrict lines of sight.
- Snow windrows within sight triangle areas of the Project site driveway should be promptly removed where such accumulations would impede sight lines.

## **Off-Site**

### **King Street Traffic Signal System**

In conjunction with the addition of the Project site driveway as the fourth leg of the King Street/Constitution Boulevard intersection and the reconstruction of the traffic signal system at the intersection, the Project proponent will design and implement an optimal traffic signal timing, phasing and coordination plan for the King Street coordinated traffic signal system inclusive of the following intersections:

- King Street/Constitution Boulevard
- King Street/I-495 Southbound Ramps
- King Street/I-495 Northbound Ramps
- King Street/Union Street

These improvements will be completed prior to the issuance of a Certificate of Occupancy for the Project subject to receipt of all necessary rights, permits and approvals.

### **King Street at Franklin Fire Station No. 2**

In conjunction with the reconstruction of the King Street/Constitution Boulevard intersection and the associated traffic signal system to accommodate the Project, the following improvements will be completed in order to reduce the potential for vehicle queues on the King Street northeastbound approach to Constitution Boulevard to block the driveway to Franklin Fire Station No. 2:

1. “Do Not Block” pavement markings and accompanying signs will be installed on King Street across the fire station driveway; and
2. The existing flashing emergency signal that is located to the west of the fire station driveway will be replaced with traffic signal indications that will be incorporated into the traffic signal system at the King Street/Constitution Boulevard intersection and will be timed to initiate a “red” traffic signal indication at the fire station driveway for King Street traffic prior to the initiation of a “red” signal on the same approach at Constitution Boulevard. A “Stop Here On Red” sign will be installed at the stop-line on King Street to the west of the driveway.

The existing traffic signal indications on the King Street northeastbound approach to Constitution Boulevard will be replaced with optically programmed signal indications in order to

reduce the visibility of the signal indications approaching the stop-line to the west of fire station driveway.

The proposed improvements and the sequential termination of the “green” signal phase on the King Street northeastbound approach will limit the introduction of vehicles between the stop-line to the west of the fire station driveway and the stop-line at Constitution Boulevard so that the vehicle queue between the stop-lines will not block the fire station driveway. Upon pre-emption of the traffic signal system by an emergency vehicle leaving the fire station, the new traffic signal indications that are to be installed to the west of the driveway will display a “red” indication to hold traffic to the west of the driveway, with the signal indication on the King Street northeastbound approach displaying a “green” indication to clear traffic in front of the responding emergency vehicle (all other traffic signals will display a “red” indication at the intersection).

The recommended improvements at the King Street Fire Station No. 2 driveway and at the King Street/Constitution Boulevard intersection will be designed and constructed prior to the issuance of a Certificate of Occupancy for the Project subject to receipt of all necessary rights, permits and approvals.

### **Transportation Demand Management**

Regularly scheduled, fixed-route, public transportation services are not currently provided within the study area or to the Project site. The Greater Attleboro-Taunton Regional Transit Authority (GATRA) operates an on-demand microtransit service which allows transit riders to request a vehicle to pick them up for same-day service within the Town of Franklin through the GATRA GO United program. In an effort to encourage the use of alternative modes of transportation to single-occupant vehicles, the following Transportation Demand Management (TDM) measures should be implemented as a part of the Project:

- A transportation coordinator should be assigned for the Project to coordinate the TDM program;
- Information regarding commuting options should be posted in a central location and/or otherwise made available to employees of the Project;
- The transportation coordinator should facilitate a rideshare matching program for employees to encourage carpooling;
- A “welcome packet” should be provided to employees detailing available commuter options and will include the contact information for the transportation coordinator and information to enroll in the employee rideshare program;
- Specific amenities should be provided to discourage off-site trips, including providing a break-room equipped with a microwave and refrigerator; offering direct deposit of paychecks; allowing telecommuting or flexible work schedules; and other such measures to reduce overall traffic volumes and travel during peak-traffic-volume periods;
- Pedestrian accommodations should be incorporated within the Project site to link the employee parking areas to the warehouse building and to the existing sidewalk along King Street; and
- Secure bicycle parking should be provided at an appropriate location within the Project site.

With implementation of the aforementioned recommendations, safe and efficient access will be provided to the Project site and the Project can be accommodated within the confines of the existing and improved transportation system.

# Town of Franklin

355 East Central Street  
Franklin, Massachusetts 02038-1352



Phone: (508) 520-4907  
www.franklinma.gov

## DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

### MEMORANDUM

**DATE:** December 14, 2021  
**TO:** Franklin Planning Board  
**FROM:** Department of Planning and Community Development  
**RE:** 585 King St  
Special Permit & Site Plan

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The DPCD has reviewed the above referenced Site Plan Modification application for the Monday, December 20, 2021 Planning Board meeting and offers the following commentary:

#### **General:**

1. The site is located at 585 King St in the Business Zoning District. The property consists of several lots, as listed below:
  - Map 313, Lots 007, 0055, 053, 054, 006, 007, 005
2. The applicant is proposing to construct a Warehouse/Storage facility. Storage facilities require a Special Permit in the Business Zoning District, under 185 Attachment 4, 3.10.
3. The Planning Board agreed this meeting would be focused on a traffic discussion.
4. BETA submitted a response to the traffic report provided by the Applicant.

#### **Comments:**

1. The Applicant submitted a complete traffic study and has provided an executive summary of the study, which is included in the packet. The Complete traffic study can be found on the Planning Board's website.
2. The Applicant has submitted a reply to BETA's traffic review.
3. The Applicant has not submitted any revised Site Plans. DPCD provided a page for reference.
4. The Planning Board requested hours of operation for the truck traffic.







November 18, 2021

Mr. Gregory Rondeau, Chairman  
Franklin Planning Board  
355 East Central Street  
Franklin, MA 02038

Re: Proposed Warehouse Building  
585 King Street  
Traffic Peer Review

Dear Mr. Rondeau:

BETA Group, Inc. (BETA) conducted a review of traffic related items provided by the applicant for the proposed project entitled 585 King Street – Proposed Warehouse located in Franklin, Massachusetts. This letter is provided to outline findings, comments, and recommendations.

#### BASIS OF REVIEW

BETA received the following items:

- Traffic Impact Assessment (TIA), dated October 2021, prepared by Vanasse & Associates, Inc., Andover, MA
- Plans (26 sheets) entitled: Preliminary Major Site Plan; dated October 8, 2021; prepared by Bohler Engineering of Southborough, MA.

#### PROJECT DESCRIPTION

The Applicant proposes to develop tracts of land located at 585 King Street in Franklin, Massachusetts (the Site) which comprises a total area of approximately 33.5 acres. The Site is located within the Business zoning district, while the surrounding area is located within the Single-Family III zoning district. The Site is bounded to the north by Interstate I-495, to the west by undeveloped woodlands, to the south by single-family residences, and to the east by King Street.

The project proposes to construct a 293,600 square foot warehouse building. Access to the site will be provided via a new driveway that will intersect King Street and Constitution Boulevard via a fourth leg from the north.

The project will include 298 parking spaces, 42 loading bays, and 51 trailer storage spaces for a total of 391 parking spaces.

#### FINDINGS, COMMENTS AND RECOMMENDATIONS

The study area includes the following four signalized intersections in the vicinity of the site:

- King Street at Constitution Boulevard (Site access/egress location) and the fire station signal
- King Street at I-495 Southbound Ramps
- King Street at I-495 Northbound Ramps
- King Street at Union Street

The study area was found to be adequate, and the study methodology follows MassDOT Transportation Impact Assessment (TIA) guidelines.

Manual turning movement counts (TMCs) were collected on Wednesday, May 26<sup>th</sup>, 2021 from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM. These time periods were chosen because they are representative of the peak generator times of the proposed development and roadways.

Traffic volume data were collected via automatic traffic recorder (ATR) on King Street over a 48-hour period on Wednesday, May 26<sup>th</sup> and Thursday, May 27<sup>th</sup>, 2021.

Permanent count station data from I-495 were reviewed to determine the need for seasonal adjustment. Traffic volumes in May were found to be above average-month conditions, therefore, the volumes were not adjusted.

In order to account for the difference in traffic patterns due to the pandemic, permanent count station data from 2018 was compared to the 2021 data. The existing 2021 volumes were increased by 6.1% to account for the volume reduction due to the pandemic.

T1. The developer's traffic consultant prepared a traffic study for a proposed hotel on Union Street dated November 2018 which included traffic volume data collected in 2018. The study area intersections for that project were the same as this project's study area. MassDOT's current Engineering Directive for "Guidance on Traffic Count Data" allows the use of 2018 volume data with the application of factors. Explain the reason behind collecting new volume data during the continued pandemic rather than using volumes collected prior to the change in traffic patterns and decrease in volumes which are acceptable to MassDOT.

T2. Please clarify if a volume comparison between the 2018 and 2021 volume data was performed for reference prior to determining which traffic volumes to use for the study.

Vehicle speeds were also collected via ATR along King Street in the vicinity of the development roadways. The posted speed limit along King Street is 40 miles per hour (mph). The mean and 85<sup>th</sup> percentile speeds were less than the posted speed limit. For example, the measured 85<sup>th</sup> percentile speeds were 4-8 miles per hour less than the posted speed.

Crash data were collected, compiled, and analyzed for the study area intersections for a five-year period, 2014 through 2018, based on the most recent data available from MassDOT. This is an industry standard practice. Crash rates quantified in number of crashes per million entering vehicles were found to be 0.57 or less. All are below the Statewide and District 3 average crash rates of 0.78 and 0.89, respectively.

Based on discussions with the Town of Franklin Planning Department, there are currently no development or roadway projects expected to increase traffic or capacity in the vicinity of the project site. Therefore, no additional development traffic volumes were added to the No-Build condition.

No-Build traffic volumes were determined by applying a one (1) percent per year growth rate over seven years. The review of permanent count station data between 2009 and 2019 shows an average traffic rate of 0.57 percent per year, however 1% was applied to account for any future unforeseen developments. The 1% growth rate is consistent with other recent studies for the Town of Franklin; therefore, BETA agrees with the annual growth rate over a seven-year horizon to 2028.

Project-generated traffic volumes were determined by utilizing trip-generation statistics published by the Institute of Transportation Engineers (ITE) for land use code 150 (Warehousing). The land use and

methodology chosen is accurate and consistent with industry standards. The project site is projected to generate a total of 510 new trips on an average weekday. New peak hour trips are 61 (47 entering, 14 exiting) in the weekday morning peak hour, and 63 (17 entering, 46 exiting) in the weekday afternoon peak hour. Six of the weekday morning peak hour and nine of the weekday afternoon peak hour are expected to be truck trips. It should be noted that the truck trips are based on the peak hour of the main road and not the facility. During the morning and afternoon peak hours of the facility, the number of truck trips is expected to range from 16 to 19 trips.

New trips were distributed through the study area based on existing traffic patterns and the location of the highway system. Backup calculations were not provided for review.

T3. Please provide the trip distribution backup calculations for reference and review.

The level of service analysis for the intersections was performed using the Synchro 11 software and based on the HCM 2000 methodology. Analyses were performed for the Existing, No-Build, and Build conditions. The analysis results show that all movements would operate at LOS D or better during the morning and afternoon peak periods for the Existing, No-Build, and Build conditions and the intersections overall would operate at LOS C or better. Even with the addition of the site driveway approach to the intersection, the Project was not found to change overall Level of Service (LOS) when compared to the No-Build conditions.

T4. As stated previously, the developer's traffic consultant prepared a traffic study for a proposed hotel on Union Street dated November 2018 which included traffic volume data collected in 2018. The LOS results for the same study area intersections indicates that intersections overall would operate at LOS D or better with several movements operating at LOS E or better during the Build conditions. Therefore, the analysis prepared for this study, with the same intersections, results in much better intersections operations. The variation in LOS results is indicative of lower traffic volumes used in this study. Although the comparison of impacts between the No-Build and Build volumes suggests similar degradations, it is important to have a good understanding of the real traffic volumes when providing updated coordination timing plans.

T5. Clarify if the Build conditions analysis incorporates the optimized coordination times intended to be implemented for this project.

The 95<sup>th</sup> percentile queues are anticipated to be similar between the No-Build condition and the Build condition throughout the study area.

#### KING STREET AT CONSTITUTION BOULEVARD/SITE DRIVEWAY

The proponent proposes to provide a 4<sup>th</sup> leg from the north to form a 4-legged signalized intersection with King Street at Constitution Boulevard.

In addition, the proponent is prepared to replace the fire station intersection's emergency flashing signal with a traditional traffic signal. This would provide indications tied into the King Street and Constitution Boulevard/Site Driveway intersection traffic signal. Signal indications will be replaced with optically programmed signal indications and queuing will be prohibited from in front of the fire station. The proposed concept is expected to provide safety improvements to the intersection operations; however, a traffic signal plan was not provided as part of this submission, so a detailed review of the operations was not performed.

T6. The proposed lane use configuration used in the analysis for the King Street southbound approach to its intersection with Constitution Boulevard/Site Driveway is different than that layout shown in Figure 13. Figure 13 – Conceptual Improvement Plan shows a proposed lane configuration and

Mr. Gregory Rondeau, Chairman

November 18, 2021

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associated R3-8a sign which depicts two left-turn only lanes and one shared through/right turn lane. However, the Synchro Build analysis shows two exclusive left-turn lanes, one through lane, and one right turn lane. Please clarify the intended proposed lane configuration.

The intersection is under MassDOT jurisdiction; therefore, the intersection design and traffic signal operations will be thoroughly reviewed by MassDOT before the issuance of a State Highway Access Permit.

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

Very truly yours,

BETA Group, Inc.



Jaklyn Centracchio, PE, PTOE  
Project Manager

cc: Amy Love, Town Planner

Job No: 4830 - 80

Ref: 8863

December 2, 2021

Mr. Gregory Rondeau, Chairman  
Franklin Planning Board  
355 East Central Street  
Franklin, MA 02038

Re: Response to Traffic Peer Review  
Proposed Warehouse Building – 585 King Street  
Franklin, Massachusetts

Dear Chairman Rondeau and Members of the Planning Board:

Vanasse & Associates, Inc. (VAI) is providing responses to the comments that were raised in the November 18, 2021 *Traffic Peer Review* letter prepared by BETA Group, Inc. (BETA) in reference to their review of the October 2021 *Transportation Impact Assessment* (the “October 2021 TIA”) prepared by VAI in support of the proposed warehouse building to be located at 585 King Street in Franklin, Massachusetts (hereafter referred to as the “Project”). Listed below are the comments that were identified by BETA in the subject letter followed by our response on behalf of the Project proponent.

**Comment T1:** *The developer’s traffic consultant prepared a traffic study for a proposed hotel on Union Street dated November 2018 which included traffic volume data collected in 2018. The study area intersections for that project were the same as this project’s study area. MassDOT’s current Engineering Directive for “Guidance on Traffic Count Data” allows the use of 2018 volume data with the application of factors. Explain the reason behind collecting new volume data during the continued pandemic rather than using volumes collected prior to the change in traffic patterns and decrease in volumes which are acceptable to MassDOT.*

**Response:** The November 2018 TIA did not include the intersection of King Street at Constitution Boulevard, the intersection that will serve as the access to the Project site and the location where the Applicant is proposing to advance significant improvements to the transportation infrastructure. As such, updated traffic count data was obtained for the entirety of the study area and adjusted following the guidance and procedures outlined in MassDOT’s April 2020 “Guidance on Traffic Counting Data”.

Subsequent review and comparison between the adjusted 2021 peak-hour traffic volume data and the 2018 traffic volume data for the King Street intersections with Union Street and the I-495 ramps indicated traffic volume variations for specific movements ranging from an increase of 60 vehicles to decreases of 220 vehicles. A detailed comparison of the traffic volume data by intersection and movement is attached.



Given that the identified variations would be considered material and would result in a change in the reported operating conditions at the intersections that were assessed in the October 2021 TIA, the 2018 peak-hour traffic volumes were used to reestablish baseline (2021) traffic volumes from which to reassess traffic volumes and operating conditions at the study intersections, which were adjusted to 2021 Existing traffic volume conditions following the adjustment procedure that is outlined in aforementioned MassDOT April 2020 guidance. The 2021 traffic volume data that was collected at the King Street/Constitution Boulevard intersection (the 2018 traffic count data did not include this intersection) was then added to the reestablished baseline traffic volumes and the traffic volumes at the intersection were adjusted to balance with the traffic volumes at the adjacent King Street/I-495 southbound ramp intersection. The 2018 traffic count data and the adjustment calculations are attached.

Figures 3R and 4R depict the revised 2021 Existing weekday morning and evening peak-hour traffic volumes, respectively, with Figures 5R and 6R depicting the revised 2028 No-Build condition peak-hour traffic volumes and Figures 10R and 11R depicting the corresponding 2028 Build condition traffic volumes.

**Comment T2:** *Please clarify if a volume comparison between the 2018 and 2021 volume data was performed for reference prior to determining which traffic volumes to use for the study.*

**Response:** A comparison between the 2018 and 2021 traffic volumes was not conducted in conjunction with the preparation of the October 2021 TIA. Subsequent review and comparison between the adjusted 2021 peak-hour traffic volume data and the 2018 traffic volume data for the King Street intersections with Union Street and the I-495 ramps indicated traffic volume variations for specific movements ranging from an increase of 60 vehicles to decreases of 220 vehicles. A detailed comparison of the traffic volume data by intersection and movement is attached.

**Comment T3:** *Please provide the trip distribution backup calculations for reference and review.*

**Response:** The trip distribution pattern for the project was developed based on a review of existing traffic patterns within the study area during the peak hours. Backup calculations have been provided as an attachment.

**Comment T4:** *As stated previously, the developer's traffic consultant prepared a traffic study for a proposed hotel on Union Street dated November 2018 which included traffic volume data collected in 2018. The LOS results for the same study area intersections indicates that intersections overall would operate at LOS D or better with several movements operating at LOS E or better during the Build conditions. Therefore, the analysis prepared for this study, with the same intersections, results in much better intersections operations. The variation in LOS results is indicative of lower traffic volumes used in this study. Although the comparison of impacts between the No-Build and Build volumes suggests similar degradations, it is important to have a good understanding of the real traffic volumes when providing updated coordination timing plans.*

**Response:** The traffic operations analysis for the study area intersections has been revised to reflect the reestablished baseline 2021 Existing traffic volumes and the associated revised 2028 No-Build and 2028 Build condition traffic volumes, the results of which are summarized in Table 8R, with the detailed analysis results attached.



A comparison of the analysis results shown in Table 8 of the October 2021 TIA to the results shown in Table 8R indicates that overall intersection operations will be maintained at a level-of-service (LOS) C or better during the peak hours, with no change in overall LOS shown to occur as a result of the addition of Project-related traffic, consistent with the findings of the October 2021 TIA, and all but two (2) movements shown to operate at LOS D or better, where an LOS “D” or better is defined as “acceptable” operating conditions. As noted by BETA, the King Street westbound approach to the I-495 southbound ramps and the Union Street southbound approach to King Street were identified to operate at LOS E during the weekday evening peak-hour under 2028 No-Build conditions, independent of the Project. Project-related impacts on these movements were identified as an increase in average motorist delay of up to 7.9 seconds and in vehicle queuing of up to one (1) vehicle.

**Comment T5:** *Clarify if the Build conditions analysis incorporates the optimized coordination times intended to be implemented for this project.*

**Response:** The 2028 Build condition analysis presented in Table 8 of the October 2021 TIA do not reflect the proposal to optimize the traffic signal timing, phasing and coordination plan for the King Street corridor.

**Comment T6:** *The proposed lane use configuration used in the analysis for the King Street southbound approach to its intersection with Constitution Boulevard/Site Driveway is different than that layout shown in Figure 13. Figure 13 – Conceptual Improvement Plan shows a proposed lane configuration and associated R3-8a sign which depicts two left-turn only lanes and one shared through/right turn lane. However, the Synchro Build analysis shows two exclusive left-turn lanes, one through lane, and one right turn lane. Please clarify the intended proposed lane configuration.*

**Response:** The proposed lane configuration shown on Figure 13 (i.e., two (2) left-turn lanes and one (1) through/right-turn lane) reflects the proposed lane configuration. A revised traffic operations analysis has been performed that reflects the lane use shown on Figure 13, the results of which are summarized in Table 8R with the detailed analysis results attached.

As shown in Table 8R, no change in overall level-of-service is predicted to occur over No-Build conditions, with Project-related impacts defined as an increase in overall average motorist delay of up to 4.5 seconds and in vehicle queuing of up to six (6) vehicles (King Street westbound through/right-turn lane during the weekday morning peak-hour). All movements exiting the Project site are predicted to operate at LOS D during both the weekday morning and evening peak hours with vehicle queues of up to three (3) vehicles predicted. These results are generally similar to those reported in Table 8 of the October 2021 TIA.





Mr. Gregory Rondeau, Chairman  
December 2, 2021  
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We trust that this information is responsive to the comments that were raised in the November 18, 2021 *Traffic Peer Review* letter prepared by BETA. If you should have any questions or would like to discuss our responses in more detail, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.



Jeffrey S. Dirk, P.E., PTOE, FITE  
Managing partner

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

AJA/jsd

Attachments

cc: J. Centracchio, P.E., PTOE – BETA (via email)  
J. Berman – Marcus Partners, Inc. (via email)  
File

