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July 13, 2016

Ms. Jean Delios
Assistant Town Manager
Town of Reading
16 Lowell Street
Reading, MA 01867

Subject: **Engineering Peer Review Services for
Traffic and Parking for the Proposed
“Reading Village” at 2 Prescott Street
and 39 Lincoln Street
Comments on Revised Site Plans**

Dear Ms. Delios:

Green International Affiliates, Inc. (Green) has reviewed supplemental and revised documents for the Application for Site Plan Approval for the proposed “Reading Village” at 2 Prescott Street and 39 Lincoln Street. This letter serves as a follow-up to our initial review letter, dated March 10, 2016, and is being provided to update Green’s findings, comments, and recommendations. Our review is based on the latest plans presented by the Applicant as shown in the *Reading Village 40B – ZBA Presentation*, dated June 27, 2016, as well as a review of the earlier *Response to Peer Review Comments* letter provided by Vanasse & Associates, Inc. (VAI), dated March 16, 2016.

Although the site plans have been revised since our initial review and the project now includes the Brown’s Automotive parcel on the corner of Lincoln Street and Prescott Street, many of our initial comments remain applicable. For ease of reference, all of our previous comments and the VAI responses have been repeated here, and Green has provided comments on the status of each original comment. New comments are provided at the end of this letter.

Comment 1: The October 2015 Transportation Impact Assessment (TIA) was generally prepared in a professional manner, consistent with industry standards. However, the study was not stamped and signed by the Professional Engineer in responsible charge for the preparation of the document as required pursuant to Massachusetts General Law. A letter should be provided by the Professional Engineer attesting to their oversight in preparing the document and providing their Massachusetts Professional Engineer Registration number and discipline.

VAI Response: This letter shall certify that the October 2015 TIA was prepared under the direct supervision and responsible charge of Jeffrey S. Dirk, P.E., PTOE (Massachusetts P.E. No. 38871, Civil; Professional Traffic Operations Engineer (PTOE) Certificate No. 993).

Green Response: **Issue Resolved.**

Comment 2: The study area included in the TIA is reasonable for a project of this size.

VAI Response: No Response Required.

Green Response: **We concur with the Applicant's response.**

Comment 3: Traffic data were collected on typical weekdays in October 2015 while public schools were in regular session. The traffic study demonstrated that data collected in the month of October represents above-average conditions, and therefore the traffic volumes were not adjusted for seasonal variation in order to provide a conservative analysis condition. The seasonal data that is referenced in the report is outdated; footnote 4 in page 8 of the TIA report mistakenly listed as "...2011 Weekday Seasonal Factors, ...", while the seasonal variation data included in the study's appendix is from 2007. However, after a review of more recent seasonal variation of traffic volumes from three MassDOT continuous count stations in the vicinity of the project, we concur that data collected in October represents above average conditions.

VAI Response: VAI acknowledges Green's comment concerning the oversight regarding inclusion of the 2007 MassDOT seasonal adjustment data in the appendix of the October 2015 TIA. As stated by Green, a review of more recent MassDOT seasonal adjustment data continues to indicate that data collected in October represents above-average conditions. No further response required.

Green Response: **Issue Resolved.**

Comment 4: Crash data were presented from information provided by the MassDOT Highway Division Safety management/Traffic Operations Unit for the most recent five-year period available (2009-2013). During the five-year period that was examined, each study intersection only experienced one reported crash, and none of the study intersections exceeded the MassDOT District 4 average crash rate for unsignalized intersections.

VAI Response: No Response Required.

Green Response: **We concur with the Applicant's response.**

Comment 5: Future traffic volumes were projected seven years to the year 2022, consistent with MassDOT's TIA Guidelines, and we concur with this methodology. The future traffic volume projections included traffic from two other specific development projects: Reading Woods residential project (424 units) and the Criterion Children Enrichment Facility, a proposed day care facility. An annual background growth rate of 1% was also applied to the existing traffic volumes to develop the future volume forecasts. We concur with this methodology for future traffic volume projections.

VAI Response: No Response Required.

Green Response: **We concur with the Applicant's response.**

Comment 6: The Institute of Transportation Engineers (ITE) Trip Generation Manual was used to forecast the number of trips generated by the proposed project. In order to provide a conservative analysis of the impact of the proposed project, no reduction was taken to

account for the likely use of public transportation services by the residents of the proposed site. We concur with the trip generation methodology and calculations.

VAI Response: *No Response Required.*

Green Response: **We concur with the Applicant's response.**

Comment 7: The trip distribution for the site was based upon U.S. Census Journey-to-Work data (for persons residing in Reading) and existing traffic patterns. The methodology used appears to be reasonable. However, the corresponding Census data is not provided in the report or Appendix, and the travel patterns could not be verified.

VAI Response: *The U.S. Census Journey-to-Work data for the census tract area that includes the Project site is attached.*

Green Response: **Issue Resolved. The additional data provided by the Applicant is reasonable and is consistent with the trip distribution patterns provided in the original TIA.**

Comment 8: It is noted that all of the traffic volume figures (existing, no-build, project generated traffic, and build) mistakenly referenced "weekday evening peak hour", even when "weekday morning peak hour" data were displayed.

VAI Response: *VAI acknowledges Green's comment and notes that Green has stated that the traffic volumes shown on the subject figures are correct as presented. No further response required.*

Green Response: **Issue Resolved.**

Comment 9: The minimum sight distances were calculated based upon criteria provided in the American Association of State Highway and Transportation Officials (AASHTO) [A Policy on Geometric Design of Highways and Streets, 6th Edition](#) ("The Green Book"). We agree with the methodology and explanations provided for determining sight distances. The measured sight distances at the proposed driveways exceed required the minimum criteria.

VAI Response: *No Response Required.*

Green Response: **We concur with the Applicant's response.**

Comment 10: The intersection capacity analyses were conducted using the Synchro 8 software and the methodology defined in the 2010 edition of the [Highway Capacity Manual](#) (HCM). The analysis methodology was consistent with current state guidelines and standard industry practice.

VAI Response: *No Response Required.*


Green Response: **We concur with the Applicant's response.**

Comment 11: The TIA provided ten recommendations with respect to the design and operation of the site driveways. We concur with these recommendations, and the project applicant should demonstrate that the site plan is consistent with all of the recommendations.

VAI Response: *The Site Plans will be updated to reflect the recommendations that were detailed in the October 2015 TIA and will be submitted by others under separate cover.*


Green Response: **The most recent site plans do not incorporate all of the recommendations made by the Applicant's own traffic engineer, as cited below. In particular, we recommend that the site plans be revised to address the following recommendations from the October 2015 TIA submitted by the Applicant:**

- **The full access Project site driveway should be a minimum of 24-feet in width and accommodate two-way traffic. [Green note: unless the Applicant provides turning movement analysis figures that demonstrate a narrower driveway is sufficient, we concur with the recommended 24 ft minimum driveway width. As both driveways are now proposed to be two-way driveways, this recommendation applies to both driveways.]**
- **Vehicles exiting the Project site should be placed under STOP-sign control with a marked STOP-line provided.**
- **All signs and pavement markings to be installed within the Project site shall conform to the applicable standards of the MUTCD.**
- **Marked crosswalks and wheelchair ramps should be provided for crossing the Project site driveways and at pedestrian crossings within the Project site.**
- **On-street parking should be prohibited for a minimum distance of 20-feet on either side of the Project site driveways in order to provide and maintain the required lines of sight for the driveways to operate in a safe manner.**
- **A school bus waiting area should be provided at an appropriate location designated by the Town.**

The Applicant should to confirm that the previous recommendations are still valid and should be incorporate the recommendations into the project plans. 

Comment 12: The TIA did not discuss the number of off-street parking spaces provided on the project site for residents and guests, nor did the TIA provide any justification for a lower parking supply than required by the Town.


VAI Response: *As currently proposed, the Project will provide 80 parking spaces to serve 77 apartment units, or a parking ratio of approximately 1.04 spaces per residential unit, where 1.5 spaces per residential unit are required pursuant to Section 9.1.1.7 of the Town Zoning Bylaw. The Applicant will provide parking demand data obtained from apartment communities with similar proximity to a commuter rail station to substantiate the lower parking ratio for the Project. This information is being compiled and will be provided under separate cover as soon as it is available.*

Green Response: **The revised site plan indicates the Project will provide 72 parking spaces to serve 72 apartment units, resulting in a parking ratio of 1.00 spaces per residential unit. The original comment is still applicable. Green notes that the applicant has not yet provided any parking demand data in support of the lower parking supply proposed for the Project, and this data is still requested.** 

Comment 13: Sheet 5 of 9 (proposed layout) indicates that a total of 80 spaces (including 2 accessible parking spaces), are provided. Per the Zoning Bylaw § 9.1.1.7, the minimum numbers of off-street parking spaces is 116 (1.5 spaces per unit) and the minimum number of off-street loading/unloading spaces required is 4. However, the TIA did not discuss the number of parking spaces provided on the project site for residents and guests, nor did

the TIA provide any justification for a lower parking supply than required by the Town. While it may be reasonable to provide a lower number of parking spaces, given the proximity of the MBTA Commuter Rail station, the applicant should provide justification in support of the lower parking, such as data from national studies and/or local examples of other residential projects in eastern Massachusetts in close proximity to commuter rail stations.

VAI Response: The Applicant will provide parking demand data obtained from apartment communities with similar proximity to a commuter rail station to substantiate the lower parking ratio for the Project. This information is being compiled and will be provided under separate cover as soon as it is available.

Green Response: The revised site plan indicates that the Project will now provide 72 parking spaces (including 4 accessible parking spaces) to serve 72 apartment units. Per the Zoning Bylaw § 9.1.1.7 the minimum number of off-street parking spaces is 108 (1.5 spaces per unit) and the minimum number of off-street loading/unloading spaces required is 4. The 4 accessible parking spaces provided now complies with the Town's Zoning Bylaw. However, the original comment is still applicable. Green notes that the applicant has not yet provided any parking demand data in support of the lower parking supply proposed for the Project, and this data is still requested. 

Comment 14: In addition to providing data relative to on-site parking, we suggest the project applicant conduct an off-site parking utilization study to assess the likely impacts to off-street parking due to the reduced parking ratios. This off-street parking utilization study should take into consideration all existing parking restrictions in the vicinity of the project site when evaluating on-street parking, and should provide a discussion of guest parking at the proposed site.

VAI Response: The Applicant will conduct an off-site parking utilization study for the roadways in the vicinity of the Project site on both a weekday and Saturday in order to document parking utilization in the area. This information is currently being collected and will be provided under separate cover when complete.


Green Response: Green notes that the Applicant has not yet provided any data relative to off-site parking utilization. The original comment is still applicable.

Comment 15: The dimensions of each parking space are consistent with the Town's Zoning Bylaw, however, we note that the 24 foot aisle widths for two-way circulation are less than the Town minimum of 26 feet. The applicant should provide vehicle turning movement templates on the plans to demonstrate that the 24 foot aisle widths are sufficient for two-way vehicle circulation.

VAI Response: The requested turning analysis will be provided by others under separate cover. In advance of receipt of the requested plan, we note that a 23-foot wide drive aisle behind an 18-foot deep, 90 degree parking space provides sufficient room for vehicle maneuvering¹.


Green Response: The Applicant has not yet provided turning analysis to show vehicle maneuvering within the project site. We note that the aisle widths on the current site plan have been reduced to 22 feet for two-way vehicle circulation. This is less than the Town minimum of 26 feet, less than the 24 feet provided on the original site plan, and also less than the minimum recommended aisle width of 23-foot wide drive aisle noted by the Applicant's

¹ *The Dimensions of Parking*, Fifth Edition; Urban Land Institute, Washington, D.C.; 2010.

own traffic engineer. The original comment is still applicable, and we request that the Applicant provide vehicle turning movement templates on the plans to demonstrate that the 22-foot aisle widths are sufficient for two-way vehicle circulation and parking maneuvers. 

Comment 16: The proposed two-way driveway on Prescott Street is only 20 feet wide. The site plan should be revised to provide a 24 foot wide driveway for two-way circulation, consistent with the recommendations in the applicant's own Transportation Impact Assessment.

VAI Response: The Site Plans will be revised accordingly and will be submitted by others under separate cover.

Green Response: Although the dimensions of the driveways are not provided in the revised site plan, it appears as though both proposed two-way driveways are only 22 feet wide. The original comment is still applicable, unless the applicant can demonstrate that a narrower driveway is sufficient to safely accommodate two-way vehicle operations. 

Comment 17: On plan sheet 5 of 9 (Proposed Layout), the 9 feet x 18 feet parking space at the northwest corner of the proposed parking lot appears restrict the two-way driveway width. It is recommended to move this parking space to align with other parking spaces, which may require a modification to the proposed building layout, or to move this parking space to a better location on the site.

VAI Response: The Site Plans will be revised accordingly and will be submitted by others under separate cover.

Green Response: Issue resolved. The comment is no longer applicable. The internal parking layout has been changed on the revised site plans, and the driveway width is no longer restricted by a single parking space at the northwest corner of the proposed parking lot.

Comment 18: On plan sheet 5 of 9 (Proposed Layout), the width of one of the aisles in the vicinity of the two-way driveways is measured 24 feet but is not dimensioned. The 39.8' dimension is labeled incorrectly and should be 42.0'.

VAI Response: The Site Plans will be revised accordingly and will be submitted by others under separate cover.

Green Response: Issue resolved. This comment is no longer applicable as the site plan has since been revised, including significant changes to the internal parking and aisle layout.


Comment 19: On plan sheet 5 of 9 (Proposed Layout), only 2 accessible parking spaces are provided. Per § 208.2 of U.S Department of Justice "2010 ADA Standards for Accessible Design" and § 23.2.1 of the Massachusetts Architectural Access Board Requirements (521 CMR 23.00), at least 4 accessible parking spaces should be provided.

VAI Response: The Applicant will review the referenced standards and will revise the Site Plans as may be necessary to provide the required number of accessible parking spaces. The revised plans will be submitted by others under separate cover.

Green Response: Issue resolved. The revised site plan provides 4 accessible parking spaces.


Comment 20: The pedestrian paths within the parking lot and links to the proposed buildings and adjacent sidewalks along Prescott Street and Lincoln Street are undefined.

VAI Response: The pedestrian pathways will be detailed on the Site Plans and will be submitted by others under separate cover.

Green Response: **A pedestrian path is provided from the elevators and staircase #2 to the Lincoln Street sidewalk. However, the width of the pedestrian path is not labeled and appears to be only 3 feet wide in the area in front of the elevators. The width of the pedestrian path should be a minimum of 5 feet to ensure consistency with ADA and MAAB requirements. It is also noted that on the “Ground Floor Plan”, it appears as though a building column is blocking the door to Elevator #1.** 


Comment 21: The existing sidewalks along Prescott Street and Lincoln Street in the vicinity of the project site are in poor condition. It is recommended that the applicant commit to, at a minimum, reconstructing the sidewalks along the southeast side of Prescott Street and along the south side of Lincoln Street, including the area in front of 31 Lincoln Street (Brown’s Auto Repair), where there are no existing sidewalks.

VAI Response: *The Applicant will reconstruct the sidewalks along the Project site frontage in conjunction with the Project. This commitment includes constructing/defining a sidewalk along the frontage of 31 Lincoln Street to the extent that such facilities can be constructed within the public right-of-way and subject to receipt of all necessary rights, permits and approvals.*

Green Response: **While the site plan has changed significantly since the March 2015 proposal, the off-site mitigation measures discussed above remain applicable. It is noted that the project now includes the parcel at 31 Lincoln Street (Brown’s Automotive) and therefore the applicant will not be restricted to making improvements solely within the public right-of-way (ROW). The mitigation measures that the Applicant has previously committed to should be included as a condition of approval.** 

Comment 22: At the Prescott Street/Lincoln Street intersection, the existing crosswalks are faded, and no wheelchair ramps are provided. The ideal location of the pedestrian crosswalks should be evaluated to provide safe and convenient access to and from the commuter rail station. New accessible ramps should be provided, and Continental or ladder style crosswalks² should be provided to allow for convenient, safe, and accessible access between the project site and the MBTA Commuter Rail Station.

VAI Response: *In conjunction with the Project and subject to receipt of all necessary rights, permits and approvals, the Applicant will construct ADA compliant wheelchair ramps for crossing the Prescott Street/Lincoln Street intersection where crosswalks are present, and will install ladder style crosswalks. The locations of the crossings will be determined in consultation with the Town of Reading Department of Public Works and will be situated so as to provide safe and convenient access to and from the MBTA Commuter Rail Station.*

Green Response: **The off-site mitigation measures discussed above remain applicable. The mitigation measures that the Applicant has previously committed to should be included as a condition of approval.** 


In addition to the above comments, Green offers the following new comments based on our review of latest site plan.


Comment 23: The two (2) parking spaces closest to each of the proposed driveways could potentially cause unsafe operations, due to their proximity to the proposed entrance/exits. A vehicle

² “Town of Reading Bicycle Network and Pedestrian Priority Plan”, Metropolitan Area Planning Council, July 2014.

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entering the project site at either driveway would potentially have to stop and block the sidewalk and/or a travel lane on the roadway if another vehicle was maneuvering out of one of those four (4) parking spaces. Green recommends that the Applicant reconfigure the parking layout to eliminate/relocate those four (4) parking spaces, and provide a minimum of 25 feet along each driveway behind the sidewalk before the first parking space to ensure safe traffic operations at the proposed site driveways. 

Comment 24: The revised site plan indicates that trash collection will be in the center of the at-grade indoor parking area. The building elevations indicate that the 2nd floor will be at a height of 12', though it is unclear how much vertical clearance will be available within the parking garage and at the garage entrances. However, it is unlikely that a garbage truck will be able to circulate within the project site under the proposed building. The applicant should clarify how trash pick-up operations will be accommodated at the project site. 

Should you have any questions regarding this additional comments letter please do not hesitate to contact me.

Sincerely,
Green International Affiliates, Inc.



Jason S. Sobel, P.E., PTOE
Project Manager

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