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March 10, 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**

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Dear Ms. Delios:

On behalf of the Town of Reading, Green International Affiliates, Inc. (Green) is submitting this letter report of the findings from our engineering peer review of the application package for the proposed “Reading Village” at 2 Prescott Street and 39 Lincoln Street. The scope of our review included a review of the traffic study and the proposed site plans, as they relate to vehicular access, pedestrian access, traffic circulation, and parking at the proposed site.

This review included an examination of the following documents submitted in support of the proposed project:

- Report titled “Transportation Impact Assessment – Proposed Residential Development, 2 Prescott Street & 39 Lincoln Street, Reading, Massachusetts” prepared by Vanasse & Associates, Inc. (VAI), dated October 2015; and
- Plans titled “Proposed Apartment Building – 2 Prescott Street and 39 Lincoln Street, Reading, Massachusetts”, prepared by DeCelle-Burke & Associates, Inc., dated December 2, 2015 and containing 9 sheets.

In addition to the above documents, Green visited the project site and the surrounding roadways to gain a better understanding of the existing conditions and the context of the proposed project. Our review evaluated the documents for consistency with MassDOT’s “Transportation Impact Assessment (TIA) Guidelines” (March 13, 2014), the Town of Reading’s Zoning Bylaw and Traffic and Parking Regulations, and Americans with Disabilities Act (ADA) and Massachusetts Architectural Access Board (AAB) design standards.

Green offers the following comments resulting from our review of the above documents:

**October 2015 Transportation Impact Assessment**

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.
2. The TIA included the following three study intersections:
  - Prescott Street / Washington Street
  - Lincoln Street / Prescott Street
  - Lincoln Street / Washington Street / Minot Street

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

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.
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.
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.
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.
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.

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.
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, 6<sup>th</sup> 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.
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.
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.
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.

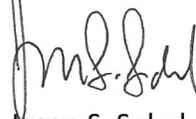
#### Site Plan / Zoning Compliance Comments

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 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.
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.
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.
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.
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.
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'.
  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.
  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.
  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.
  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 crosswalks<sup>1</sup> should be provided to allow for convenient, safe, and accessible access between the project site and the MBTA Commuter Rail Station.

Should you have any questions regarding this Peer Review please do not hesitate to contact me.

Sincerely,  
**Green International Affiliates, Inc.**



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

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<sup>1</sup> "Town of Reading Bicycle Network and Pedestrian Priority Plan", Metropolitan Area Planning Council, July 2014.