IMPROVING COMMUNITIES TOGETHER

April 29, 2023

Mr. Douglas McLean, AICP, Principal Planner
City of Cranston
869 Park Avenue
Cranston, RI 02910

Re: Proposed Mixed-Use Development
Knights Corner Development
1390 Cranston Street, Cranston, Rhode Island
Responses to Traffic Review Comments

Dear Mr. McLean:

BETA Group, Inc. (BETA) is pleased to submit the following responses to review comments received from Pare Corporation dated April 26, 2023, for the above referenced development project in the City of Cranston. In an effort to expedite the review, we have only included in this letter, the comments that required a response. A number of the comments submitted were only general statements of review and agreement, where no response is necessary. We offer the following responses to address those comments requiring additional information or clarifications;

Traffic Impact and Access Study:

4. *Safety Analysis Section:*

   c. There does not appear to be any discussion about intersection sight distance at the site driveway. This analysis should be added.

   Response: Intersection Sight Distance (ISD) was not included in the analysis as the safe stopping sight distances were in excess of 500 feet and much greater than the required safe stopping sight distance. In accordance with AASHTO the safe stopping sight distance is the minimum intersection sight distance required in design, as this parameter is only an operational consideration that is subject to driver gap acceptance behavior, which is highly variable. Drivers will enter the roadway where they feel the maneuver can be safely made regardless of the available intersection sight distance, which for instance could be over 1,000 feet. This entering maneuver that is completed based on the gap acceptance behavior of the driver, could be made at a 300 feet gap distance and may potentially require a main street driver to adjust their speed slightly, thereby affecting operating speeds along a roadway but not adversely affecting safety.

   For reference, the intersection sight distance analysis was calculated for the Left Turn ISD and Right Turn ISD on Cranston Street and was determined to be 345 and 300 feet, respectively. The Left Turn ISD and Right Turn ISD for Dyer Avenue is 390 feet and 335 feet, respectively where clearly both of these conditions are met at the site driveways.

BETA GROUP, INC.
701 George Washington Highway, Lincoln, RI 02865
P: 401.333.2382 | F: 401.333.99225 | W: www.BETA-Inc.com

d. While it is agreed that adding dedicated left turn bays to Cranston Street would help reduce the number of angle and sideswipe crashed at the intersection, it is noted that the City is attempting to improve conditions for cyclists in the area. Adding the left turn bays would have the consequence of eliminating the shoulder area in the vicinity of the intersection and decreasing bicycle safety.

Response: Based upon our field review, the roadway width of Cranston Street is 45 feet in the vicinity of the intersection. This width will permit restriping to include a dedicated left turn lane while providing five foot shoulders that are sufficient to accommodate bicycles, therefore not affecting any future plans the city may have to improve conditions for cyclists in the area.

5. *Impact Analysis Section:*

e. It appears trips are distributed within the Cranston Street / Dyer Avenue intersection strictly based on existing volumes for each movement. It is likely that users will enter / exit the site at whichever driveway is closest to their residence or the restaurant. So it is likely that the distribution of traffic oriented to / from the east on Cranston Street and to / from the north on Dyer Avenue would be reasonably similar regardless of whether the driver used the Dyer Avenue driveway or one of the two Cranston Street driveways. Yet they are vastly different. Is there any reason this should be expected?

Response: Existing traffic conditions derived from count data found an approximate 50/50 split of vehicles traveling along Dyer Avenue and Cranston Street, therefore trips were assumed to follow these same conditions, with 50% being split between both driveways on Cranston Street. However, trips related to the restaurant land use were assumed to utilize the "valet drop-off" area called out on the most recent site plan, so all restaurant trips were allocated to the driveways along Cranston Street, with the west driveway used for vehicles entering and the east driveway used for vehicles exiting. This was not applied in the morning as the restaurant will only be open during the evenings.

f. Capacity Analysis - Based on the worksheets provided, the analyses appear to have been conducted in a manner consistent with standard professional practice. However, the information such as peak hour factors and heavy vehicle percentages, which can significantly affect the analysis results. The unsignalized intersection analyses used default values for peak hour factor and truck percentages. This is acceptable as manual turning movement counts were not completed at these locations and that data is not available.

It is worth noting that the results of the analyses for this development are significantly different that the analysis results for the Cranston Print Works project, which showed LOS F conditions on the eastbound approach under build conditions without mitigation. As both of these studies started from the same traffic counts and included the traffic data from both developments, the analysis results should not be significantly different.

Response: Detailed Synchro analysis result sheets can be provided that include the heavy vehicle percentages and peak hour factors. For reference both the peak hour factors and truck percentages obtained from the traffic count data included in the report were utilized for the analysis.

The capacity analysis calculations in the BETA study differed from the Cranston Print Works project because their analysis assumed a Max Recall setting on the Dyer Avenue approaches. This setting in the analysis results in greater delays calculated on Cranston Street than what a fully actuated

signal operation would yield as demonstrated by the BETA analysis results. This is described on Page 15 of the report and is the reason for the differing results. BETA assumed this is a temporary maintenance issue that can be fixed at any time and the fully actuated operational condition should be presented for comparison purposes in the study.

6. *Conclusions and Recommendations Section:*

   b. We agree with recommendation nos. 2 and 3. The reasoning for recommendation no. 1, while sound, is based strictly on impacts to vehicular traffic and does not appear to consider impacts to non-motorized users. The City will need to carefully weight the impacts to both sets of users before accepting the implementation of this recommendation.

   Response: Refer to Response to Comment 4d.

7. *General: There is no discussion regarding how pedestrians and bicyclists associated with the development will be accommodated. The applicant's engineer should address this.*

   Response: Pedestrian and bicycle accommodations will be provided from the public right of way into the site and between buildings and other elements of the development. This level of detail will be designed at the next phase of the review process in coordination with the requirements of the Planning staff and other Departments in the city.

Site Plans:

8. *The conceptual plans do not show any pedestrian amenities, such as sidewalks. Future plans should show pedestrian amenities, including accessible accommodations from all doors to parking areas and public rights-of-way.*

   Response: Refer to Response to Comment 7.

Should you have any questions or require additional information, please contact us at your earliest convenience in order to facilitate review of the application.

Very truly yours,
BETA Group, Inc.

Paul J. Bannon
Associate