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Planning Director
City of Portsmouth Planning Department
City Hall, 3rd Floor
1 Junkins Avenue
Portsmouth, NH 03801

July 28, 2021

Ref. T1105

Re: Raynes Avenue Development – Mixed Use Proposal
Transportation Peer Review #2 – Response to Comments Review

Dear Ms. Walker:

On behalf of the City of Portsmouth, TEC, Inc. (TEC) has reviewed additional documents as part of the transportation engineering peer review of a proposed mixed used development located on the north side of Raynes Avenue in Portsmouth.

The following additional documents were received as part of our review:

- *Traffic Impact Study – Raynes Avenue Development*, prepared for North Mill Pond Holdings by Tighe & Bond – Revision dated July 21, 2021
- *Site Review Permit Application,* prepared by Tighe & Bond – July 21, 2021
- *Parking Conditional Use Permit Request* - prepared by Tighe & Bond – revision dated July 21, 2021
- *Truck Turning Exhibit* – prepared by Tighe & Bond – revision dated July 21, 2021

Comments 1 thru 15 have been retained from the most recent TEC review letter dated May 20, 2021, originally issued as part of the project review. The Applicant did not prepare an item-by-item response letter. TEC's second review responses are shown as *italic*:

TEC completed a review of these documents for the City of Portsmouth, and the following provides a summary of the comments that were compiled during our review:

Transportation Impact Evaluation

1. The Traffic Impact Study (TIS) presents a study area including seven intersections in the vicinity of the site. TEC concurs with the scope of the study area and does not find that additional intersections are warranted based upon the documented trip generation levels.

   7-28-2021 TEC: No response required.

2. Traffic counts utilized within the TIS for the 2020 No Build condition were obtained from the Traffic Evaluation performed by Tighe & Bond for the 111 Maplewood Avenue office building project and were conducted in January 2019. With the ongoing Covid-19 pandemic impacting vehicular traffic volumes, TEC concurs that the use of 2019 volumes as an "existing" condition is appropriate. The TIS indicates that the January 2019 counts were increased 19% to a seasonal peak. TEC concurs with this methodology.

   The weekday evening peak commuter hour was studied to determine the project's overall effect on the study area intersections. While TEC concurs that this time period is generally appropriate to study the impact for a mixed-use development, Tighe & Bond should provide justification for not including the Saturday midday peak hour within the study as the proposed land uses have higher projected traffic generation during the Saturday midday peak hour than during the weekday peak commuter hours.

   7-28-2021 TEC: Tighe & Bond (T&B) included Saturday midday peak hour capacity analyses in the updated Traffic Impact Study (TIS). No further response required.

3. The TIS utilizes the 2020 and 2030 Build condition traffic volumes as found within the Traffic Evaluation performed by Tighe & Bond for the 111 Maplewood Avenue office building as the 2020 and 2030 No Build condition. These volumes include an annual traffic volume growth adjustment factor of 1.0 percent per year, in addition to projected traffic volumes associated with ten pending and recently constructed developments in the vicinity of the study area. NHDOT guidance requires the study of "Opening Year" and "Horizon" (Opening Year plus 10 years) conditions. The Opening Year for this project is unlikely to be 2020. The 2019 traffic volumes should be grown with the background growth rate to a likely Opening Year. The adjacent project volumes would then be added to this condition to create the No Build condition.

   7-28-2021 TEC: T&B revised the proposed development opening year to 2022 in the updated TIS. No further response required.

4. The TIS uses data published in the industry standard Institute of Transportation Engineers (ITE) publication, *Trip Generation, 10th Edition* to estimate the traffic generated by the proposed development. The TIS uses data found under Land Use Code (LUC) 221 – Multi-Family Housing (Mid-Rise) for the apartment units, LUC 310 – Hotel for the hotel, and LUC 931 – Quality Restaurant and LUC 820 – Shopping Center for the commercial areas of the site. It is noted that the April 21, 2021 Site Plan shows 8,100 SF of general commercial area, rather than specific square footages for retail or restaurant land uses, which is slightly reduced from the TIS analysis. Therefore, the trip generation for the two commercial land uses is conservative as presented within the TIS. TEC concurs with the general trip generation methodology.

   The TIS indicates that a portion of the traffic generated by the commercial areas of the site will be "pass-by" trips, or vehicles generated by the site that are existing on the immediately adjacent roadway system. This is appropriate for the retail and restaurant areas of the site. The ITE publication, *Trip Generation Handbook, 3rd Edition*, indicates that retail land uses have an average of 34% pass-by trips during the weekday evening

peak hour and 26% during the Saturday midday peak hour and quality restaurants have an average pass-by rate of 44% during the weekday evening peak hour. The TIS applies a 34% pass-by rate for the retail areas and 43% for the restaurant during the weekday evening peak hour, which is appropriate for the proposed retail/restaurants on the site.

An internal capture rate was applied between the land uses on the site. This accounts for shared trips within the site, such as hotel guests or residents patronize the retail and restaurant land uses. In accordance with the National Cooperative Highway Research Program (NCHRP) Report 684, an internal capture rate of 22% for the entering trips and 29% for the exiting vehicles was applied. TEC concurs that this is appropriate for this mixed-use development.

7-28-2021 TEC: Tighe & Bond (T&B) conducted Saturday midday peak hour capacity analyses. The reported site generated trips for the restaurant for the Saturday midday peak hour (16 (Total), 9 (Enter), 7 (Exit)) is significantly lower than the calculated ITE values for a Quality Restaurant (47 (Total), 28 (Enter), 19 (Exit)). While TEC understands that the additional trips, many of them potentially pass-by or internally captured trips, will not have a significant impact on the adjacent roadway system, the difference should be noted.

5. The vehicular traffic generated by the proposed project was distributed onto the adjacent roadway system based upon prior traffic studies and observed travel patterns. Tighe & Bond should discuss how the projected distribution for the apartments differs, if at all, from available Journey-to-Work data published by the US Census Bureau for persons residing in the City of Portsmouth. This form of trip distribution is more consistent with industry standards for residential developments.

   TEC notes that while pass-by trips are existing on the adjacent roadway system, they should still be applied to the site driveway, as the trips are diverting to this new location and performing new turning movements. The Applicant should review the site distributions and revise the analyses at the intersection of the site driveway / Raynes Avenue, as necessary.

   The April 21, 2021 Site Plan depicts Raynes Avenue with one-way traffic flow in the westbound direction, toward Maplewood Avenue. Tighe & Bond should confirm whether this change in traffic distribution is proposed to be implemented with the development of the proposed project and whether Vaughan Street will also be converted to provide one-way traffic flow northbound. The change in traffic pattern will have an impact on several of the study area intersections. Tighe & Bond should evaluate the redistribution of the existing traffic volumes, future traffic volumes, and site generated volumes and prepare new analyses for the impacted study area intersections.

   7-28-2021 TEC: T&B included a separate trip distribution for the residential component of the development based upon a prior traffic study. T&B included the site generated pass-by trips at the proposed site driveway and redistributed the study area traffic volumes due to the conversion of Vaughan Street and Raynes Avenue to one-way traffic

flow. TEC concurs with this methodology and the results of the revised analyses. No further response is required.

6. TEC generally concurs with the use of the Highway Capacity Manual 6th Edition methodology.

   7-28-2021 TEC: No response required.

7. The TIS indicates that the general impact of the project on the control delay, queue, and level of service along the approaches to the study area intersections is anticipated to be nominal. No off-site mitigation is proposed to be implemented. Mitigation may be found to be necessary with the reevaluation of the traffic operations with one-way traffic flow along Raynes Avenue. Specifically, the intersection of Raynes Avenue with Maplewood Avenue should be evaluated for alternative traffic control options.

   7-28-2021 TEC: With the conversion of the Raynes Avenue to one-way traffic flow, T&B states that the poor operations for vehicles exiting Raynes Avenue at Maplewood Avenue are offset by the improved operations at the intersection of Maplewood Avenue at Vaughan Street. TEC notes that the capacity and queue analysis results indicate that the southbound left turn movement from Maplewood Avenue into Vaughan Street is anticipated to decrease from a LOS of B in the 2032 No Build condition to a LOS of E in the 2032 Build condition with a potential maximum queue length of approximately 6 vehicles (136 feet). The Applicant should discuss whether a southbound left turn lane is warranted or necessary along Maplewood Avenue to remove delayed turning vehicles from the through traffic flow.

8. The comments as noted above may result in modifications to the results of the capacity and queue analysis and therefore TEC reserves the right to provide additional comments and improvement recommendations upon completion of the peer review comment responses.

   7-28-2021 TEC: No response required.

9. The Raynes Avenue approach to its intersection with Maplewood Avenue is shown with an exclusive left turn lane and an exclusive right turn lane in the one-way traffic flow condition. Tighe & Bond should discuss whether two turn lanes are necessary. Provision of two lanes may not significantly improve the operation of this approach and maintaining a minimum crossing distance for pedestrians is preferred.

   7-28-2021 TEC: The TIS indicates that the recommendation of the exclusive turn lanes was based on the consolidation of the existing two exiting access points to Maplewood Avenue and the results of the capacity analyses. TEC notes that the 2022 Build analysis indicates a peak hour queue length of 24 vehicles on the westbound Raynes Avenue left turn movement. This queue length will block the site driveway access onto Raynes Avenue. The Applicant should discuss any signage or striping recommended at the site driveway to maintain access to the site when queues are present.

Comments #10 through #15 involved the parking demand and supply proposed by the site. The Applicant has acknowledged these comments and revised the Conditional Use Permit request for the development. In summary:

- *A total of 96 parking spaces are now proposed to be provided on-site (112 with the 16 tandem spaces), with 25 shared spaces on an adjacent lot for a total immediate supply of 137 spaces. TEC continues to recommend the shared parking agreement with the 145 Maplewood Avenue as appropriate.*

- *The revised Conditional Use Permit request for the development references the City's parking demand requirements instead of ITE's Parking Generation Manual. TEC concurs with this approach.*

- *The revised Conditional Use Permit request to include the lift system including 25 spaces as "reserve spaces" that could be constructed in the future as needed. TEC concurs and recommends that these lift spaces be considered Reserve Parking and not be constructed at this time.*

- *The revised Conditional Use Permit request discusses the use of the tandem spaces by a valet operator that will be on-site permanently. TEC concurs with this approach.*

Please do not hesitate to contact me directly if you have any questions concerning this peer review at 603-601-8154.Thank you for your consideration.

Sincerely,
TEC, Inc.
*"**T**he **E**ngineering **C**orporation"*

Elizabeth Oltman

Elizabeth Oltman, PE
Director of Transportation Planning