

C5175-02
January 5, 2024

Mr. John Chessia, PE
Chessia Consulting Services, LLC
215 First Parish Road
Scituate, MA 02066

Re: **Paragon Dunes – Mixed-Use Development
Hull, Massachusetts
Traffic Peer Review**

Dear John:

Tighe & Bond has been retained by Chessia Consulting Services, LLC to provide traffic engineering peer review services to the Town of Hull Planning Board of the Traffic Impact Study and Site Plan for the proposed mixed-use development at 0 George Washington Boulevard and 189 and 193 Nantasket Avenue in Hull, Massachusetts (the Project). The development includes 132 residential units, commercial uses, and public open spaces. The Applicant has submitted materials associated with a Nantasket Beach Overlay District (NBOD) Special Permit to the Hull Planning Board.

Tighe & Bond's intent in conducting this review is to assess the accuracy and content of the Traffic Impact Study (TIS), and to confirm its compliance in process to industry standards, particularly MassDOT's Traffic Impact Assessment (MassDOT TIA) Guidelines (2014) so that the Town can make an informed decision regarding the project and its potential impacts to the community and surrounding roadways.

Tighe & Bond has reviewed the following documents as part of the traffic peer review:

- **Traffic Impact Study (TIS)**; prepared by McMahon, a Bowman Company, dated October 2023.
- **Permitting Plans**: Paragon Dunes Mixed-Use Redevelopment (43 sheets); prepared by Civil & Environmental Consultants, Inc, dated October 10, 2023.

In general, the TIS was prepared in a professional manner, consistent with standard engineering practices. The following is a summary of our findings, comments, and recommendations. These comments should be reviewed by the Applicant's traffic engineer and addressed as necessary in support of the application before the Hull Planning Board.

Study Area

The study area includes George Washington Boulevard in the vicinity of the project site, as well as the following intersections:

- George Washington Boulevard at Rockland Circle
- George Washington Boulevard at the north site driveway
- George Washington Boulevard at the south site driveway
- Rockland Circle at the site driveway



Tighe & Bond finds the study area to be appropriate based on the anticipated traffic generation and traffic distribution. The existing driveway is proposed to be modified to serve as the site driveway.

Traffic Volumes

Turning movement counts (TMCs) were collected at the study area intersections during the weekday morning (7:00 to 9:00 AM), weekday evening (4:00 to 6:00 PM), and Saturday midday (11:00 AM to 2:00 PM) peak periods on October 27 and October 29, 2022. Automatic traffic recorder (ATR) data was collected during a 72-hour period from October 27 through October 29, 2022 on George Washington Boulevard, south of the site driveway to collect volume and speed data.

Traffic volumes were adjusted for seasonal variance since the month of October is approximately two percent lower than the average month for a minor arterial (George Washington Boulevard) located in an urban area. As per current MassDOT guidelines, no additional adjustments to traffic volumes due to the pandemic are required. A 0.5 percent growth rate was applied to the raw count data to develop the 2023 Existing condition traffic volumes. The traffic volume data is summarized in the TIS in graphical format. Tighe & Bond generally concurs with traffic volume methodology utilized to develop the existing condition traffic volumes with the following comments:

1. We generally agree with using the Rec-East group data rather than the U4 group data from MassDOT for seasonal adjustment. Since counts were collected in late October, we would typically recommend using the November adjustment factor of 1.08 for the Rec-East group to present a conservative analysis; however, the sensitivity analysis presented in the TIA adequately addresses an assumed peak condition.
2. Provide comment on the balancing done between intersections when generating the 2023 Existing condition traffic volumes.
3. Provide southbound and Saturday ATR data, which is missing from Appendix A.
4. ATR data presented in Table 1 should be seasonally adjusted by the same factor as the TMC data.

Crash Data

Crash data were obtained from MassDOT for the five-year period from 2016 through 2020 for the study intersections and is summarized in the TIA. The MassDOT IMPACT Crash Portal includes closed year crash data through 2020. Crash data available in the crash portal between 2021 and 2023 is considered 'open' and is subject to change and is not considered complete data. The crash analysis indicates the study area intersections experienced crash rates below the District 5 and statewide averages. In addition, no safety concerns or patterns at the study intersections were noted. Tighe and Bond generally concurs with the crash analysis with the following comments:

5. MassDOT crash rate calculation worksheets should be provided.
6. Tighe & Bond recommends reviewing actual crash reports from the Hull Police Department to further assess the crash history of the study area intersections.

No-Build Traffic Volumes

The TIS projects traffic volumes in the study area to 2030, reflecting a seven-year planning horizon consistent with MassDOT's TIA Guidelines. The 2030 No-Build condition volumes have been developed based on anticipated future background growth, with a 0.5 percent annual

growth rate was applied to the Existing traffic volumes to develop the 2030 No-Build condition traffic volumes. Tighe & Bond concurs with the growth rate methodology.

Trip Generation

Trip generation for the proposed development was calculated using the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition) for Land Use Code (LUC) 221 – Multifamily Housing (Mid Rise) and LUC 932 – High-Turnover (Sit-Down) Restaurant.

The project is estimated to generate approximately 114 vehicle trips (48 entering and 66 exiting) in the weekday morning peak hour, 116 vehicle trips (71 entering and 45 exiting) in the weekday evening peak hour, and 131 vehicle trips (67 entering and 64 exiting) in the Saturday midday peak hour.

7. Clarify why LUC 221 Multifamily Housing (Mid Rise) was utilized over LUC 220 Multifamily Housing (Low Rise). The proposed building has 3 residential stories; “low rise” applies to two and three story structures, while “mid rise” applies to buildings with between four and ten stories.
8. An independent review of trip generation data in Table 2 via the ITE TripGen Web-based app reveals a variance of one exiting trip for both LUC 221 in the weekday morning peak hour and for LUC 932 in the weekday afternoon peak hour. Since the presented data is higher by one trip in both instances, no adjustment is necessary.
9. Pass-by data maintained by ITE for LUC 932 varies from 23 percent to 63 percent pass-by trip percentage for the weekday afternoon peak hour for site data largely collected in the 1990s. Provide justification why an average of this data is appropriate for a site in Hull. The geography of the Hull peninsula would likely diminish the likelihood of pass-by trips for restaurants outside of the summer months.
10. Provide justification for using the weekday afternoon pass-by trip rate on the Saturday midday peak hour vehicle trips.

Trip Distribution

Trip distributions for the generated trips were developed for the site. Figure 8 indicates the proposed trip distributions and site generated trips applied to the roadway network. U.S. Census Journey-to-Work data for the Town of Hull was used to understand travel patterns to the proposed development.

11. Provide additional breakdown of US Census Journey-to-Work data presented in Appendix E to inform the assumed 30% of site generated trips to and from George Washington Blvd north of the site. For example, given Hull’s unique peninsula geography, it is unclear how trips to and from Boston would arrive from and depart to the north.
12. The TIS states that retail (restaurant) patrons will utilize the DCR lot and other off-site parking along Nantasket Avenue, but Figure 8 shows both residential and retail (restaurant) trips utilizing the site drive and site parking. Clarify whether site parking will be available to retail (restaurant) patrons.
13. Verify that evening parking would be accessible in the DCR lot for patrons of the retail (restaurant) uses.

Build Traffic Volumes

The TIS establishes 2030 Build volumes by distributing new and pass-by project trips and adding them to the 2030 No Build traffic volumes. The 2030 Build traffic volumes indicate

increases in traffic volumes on George Washington Boulevard between 1.1 and 8.5 percent and between 36.6 to 84.8 percent on Rockland Circle as compared to 2030 No-Build traffic volumes.

Capacity Analysis

The 2023 Existing, 2030 No-Build and 2030 Build traffic volume conditions were developed based upon data collection, calculations and assumptions presented in the TIS regarding existing traffic flow, background growth, and trip generation and distribution. Capacity analyses were conducted for each scenario for peak hour traffic conditions using Synchro 11 software based upon methodology contained in the 6th Edition of the Highway Capacity Manual (HCM).

Capacity analysis results presented in Table 4 indicate minimal increases in delay at the study intersections with comparable Build conditions levels of service (LOS) as compared to the No-Build conditions. Tighe & Bond concurs with the conclusion that the proposed development is not estimated to have a significant impact on traffic operations within the study area.

An additional sensitivity analysis was conducted to determine potential impacts of the project during peak summertime conditions in Hull. Historic traffic count data on Hull Street (Route 228) and seasonal adjustment factors maintained by MassDOT were reviewed to reveal variances between 30% and 46%. A factor of 50% was utilized for the sensitivity analysis. Tighe & Bond concurs with this methodology. The TIS states that the sensitivity analysis suggests that the project will not have a significant impact on traffic operations within the study area.

14. The Applicant should comment on changes in queue length at each study intersection.
15. It should be noted that the comparison of July 2022 and September 2019 permanent count station data assumes that 2022 and 2019 data can be presumed to be comparable, with no adjustment to account for the COVID-19 pandemic. This is consistent with MassDOT guidance, which accepts data collected after March 2022 as "current" data, with no adjustment required.
16. Summary tables and Synchro worksheets should be provided for the sensitivity analysis referenced in the TIS.

Sight Distance

Stopping sight distance (SSD) and intersection sight distance (ISD) were reviewed at all site driveways. The available stopping and intersection sight distances at the site driveways are shown in Tables 5 and 6 of the TIS, respectively. Required SSD is met for all site driveways; ISD is met except for the Rockland Circle driveway, where ISD is limited by the length of Rockland Circle extending to its terminus at George Washington Boulevard.

17. Confirm the posted and/or regulatory speed limits on George Washington Boulevard. A speed limit of 45 miles per hour (mph) was used to calculate required sight distances. Google Streetview shows a speed limit sign of 35 mph on George Washington Boulevard, south of Rockland Circle. It can be noted that SSD is met for the more stringent condition based on a 45 mph limit.

Pedestrian & Bicycle Accommodations

The TIS indicates limited bicycle and pedestrian activity and no bicycle and pedestrian facilities in the vicinity of the project site. Internal site walkways are generally provided from proposed parking areas to proposed buildings as shown on the site plans. No transit services are offered in the vicinity of the site.

18. The Applicant may consider bicycle accommodations such as bicycle racks for residents and employees.
19. The Applicant may consider extending the sidewalk on the northeast edge of the parking strip down to Rockland Circle.
20. Clarify whether public access will be allowed through the site from the DCR lot to Nantasket Avenue between the two commercial areas.

Site Plan Review

Per Section 410-3.12 of The Town of Hull Zoning By-Laws, one parking space per studio or 1-bedroom residential unit, two parking spaces per 2 or more-bedroom residential unit, and one parking space per 250 square feet of retail space is required. The site plan indicates 177 proposed parking spaces, which meets the required 177 spaces required per the town regulation. The six proposed accessible parking spaces (including two van accessible spaces) also meet the minimum required spaces. The 28 required spaces for the retail (restaurant) development space are to be provided via existing public parking in the study area.

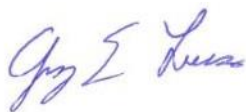
21. Clarify intended operation for loading and delivery vehicles – e.g. restaurant deliveries, residential package deliveries, moving vans/trucks, etc.
22. The plans should indicate proposed location(s) for snow storage.
23. The Applicant should confirm that the 28 parking spaces required for the retail space can be accommodated by the existing parking lots. (see comments 12 and 13)
24. Vehicle tracking paths should be provided to ensure that emergency and delivery vehicles are able to navigate the parking lots and garage.
25. Recommend coordination with the Hull Fire Department to obtain their concurrence with proposed emergency access.

Revisions to the proposed design and traffic study to address review comments may result in additional comments not realized under this review.

We appreciate the opportunity to assist Chessia Consulting Services and the Town of Hull in their review of the Special Permit application for the proposed development at 0 George Washington Boulevard and 189 and 193 Nantucket Avenue. Please do not hesitate to contact us should you have any questions or need additional information.

Very truly yours,

TIGHE & BOND, INC.



Greg Lucas, PE, PTOE, RSP1
Senior Project Manager
(781) 375-2554
GLucas@tighebond.com

Copy: Chris Dilorio, Hull Director of Community Development & Planning