75 State Street, Suite 701
Boston, Massachusetts 02109
tel: 617 452-6000

October 8, 2021

Jamie Ponte
Commissioner, Department of Public Infrastructure
1105 Shawmut Avenue
New Bedford, MA 02746

Attention: Stephanie Crampton, Assistant City Engineer

Subject: Draft Peer Review of Traffic Impact Assessment –
Proposed Starbucks with Drive-Through– New Bedford, MA

In accordance with your request, we have undertaken a Peer Review of the traffic analysis materials prepared for the proposed re-development of (formerly known as) 0 & 8 Mitchell Street & 171 Coggeshall Street, New Bedford, MA 02746. The current proposal includes the demolition of an existing building, and the development of a 2,280 square-foot Starbucks Coffee facility. Access will be provided via three access points: a driveway on Coggeshall Street, a driveway on Mitchell Street, and an internal driveway from the adjacent gas station at 171 Coggeshall St.

We have received a copy of the following documents from your office pertaining to our Peer Review:

- 1. SITE PLAN SET FOR ALRIG USA DEVELOPMENT, LLC PROPOSED STARBUCKS WITH DRIVE-THRU FACILITIES (hereafter referred to as the 'Revised Site Plan'), prepared by Stonefield Engineering & Design, dated **September 3, 2021**
- 2. RENDERED SITE PLAN EXHIBIT (hereafter referred to as the 'Revised Site Rendering'), prepared by Stonefield Engineering & Design, dated **September 7, 2021**
- 3. Letter to the City of New Bedford Department of Public Infrastructure, prepared by Stonefield Engineering & Design, dated **September 1, 2021**
- 4. Letter to the City of New Bedford Department of City Planning, prepared by Stonefield Engineering & Design, dated **September 1, 2021**
- 5. Letter to the City of New Bedford Planning Board (hereafter referred to as 'DPI Memorandum'), prepared by City of New Bedford Department of Public Infrastructure, dated **August 11, 2021**

- 6. Planning Board Staff Report (hereafter referred to as 'Staff Report'), prepared by City of New Bedford Department of City Planning, dated **August 2, 2021**
- 7. Site Plan Review Application for Site Plan Set (7/1/21) ALRIG USA Development, LLC, dated **July 13, 2021**
- 8. Planning Board Special Permit Application for Site Plan Set (7/1/21) ALRIG USA Development, LLC, dated **July 12, 2021**
- 9. SITE PLAN SET FOR ALRIG USA DEVELOPMENT, LLC PROPOSED STARBUCKS WITH DRIVE-THRU FACILITIES (hereafter referred to as the 'Preliminary Site Plan'), prepared by Stonefield Engineering & Design, dated **July 1, 2021**
- 10. Architectural Plans, prepared by Cortland Morgan Architect, dated **June 14, 2021**
- 11. Starbucks Coffee 21-56172 Brand Book, prepared by Hilton Displays, dated **June 30, 2021**
- 12. Traffic Impact Assessment, Proposed Starbucks with Drive-Through (hereafter referred to as 'Starbucks TIA'), prepared by Stonefield Engineering & Design, dated **July 1, 2021**
- 13. Stormwater Management Report, prepared by Stonefield Engineering & Design, dated **July 1, 2021**
- 14. Rejection Packet, Various, Not Dated

Traffic Impact Study Methodology

The analysis and documentation submitted by the project proponent were generally prepared in accordance with accepted industry procedures and standards including the 2014 MassDOT Transportation Impact Assessment (TIA) Guidelines. We offer the following comments:

Methodology

In this section, analysis methods are described.

1. The methodology section and the attached Synchro Reports utilize HCM 2000, while the LOS/ Average Control Delay Criteria section references HCM6. The project proponent should perform intersection analysis using the latest edition of the Highway Capacity Manual (HCM6). In situations where individual intersections are not able to be analyzed using HCM6 methodology, the proponent should indicate which intersections are analyzed with HCM 2000 methodology. *"Motor vehicle level-of-service, average delay, and volume-to-capacity ratios shall be calculated using procedures from the most recent edition of the Highway Capacity Manual (HCM), published by the Transportation Research Board." (MassDOT TIA Guidelines, 3.III.A)*
2. The project proponent should include queue results for all analyzed intersections, "*Queue length analysis – Provide a summary (tabular and graphic) of 50th (average) and 95th Percentile existing Back of Queue calculation results (including a summary of available queuing capacity) per Section 3.III.H, General Analysis Methodology Requirements." (MassDOT TIA Guidelines, 5.I.B.7)*

2021 Existing Condition

In this section existing geometry, volumes, and crash information is described.

3. Study area description should include description of bicycle and pedestrian facilities, "*…bicycling, and public transit network, with specific attention to connectivity, desire lines, and gap analysis in order to maximize travel choices and promote these modes.". (MassDOT TIA Guidelines, 3.I.A)*
4. The Mitchell Street description specifically says that on-street parking is permitted along the westerly side of the roadway; however, Google street view shows cars parked along the eastern side, which will impact visibility at the Mitchell Street access point. The proponent should address how this will affect site access, especially sight distance.

5. The intersection of Mitchell St at Sawyer St should be included in the assessment of the network. Based on Volume Figures 6 and 9, this intersection is anticipated to increase traffic on its southern leg by approximately 8%. "*Intersections (to be assessed by approach) or roadway segments where site-generated trips increase the peak hour traffic volume by a) five (5) percent or more or b) by more than 100 vehicles per hour should be included in the study." (MassDOT TIA Guidelines, 3.I.C)*
6. The project proponent should include transit service frequency information, which should include the locations of the nearby bus stops and the accessibility to those stops. *"Transit routes, stops, passenger loads (when available), frequency of service, and service operating hours shall be documented." (MassDOT TIA Guidelines, 3.II.I)*
7. The project proponent should confirm that the crash data queried for intersections extended as far back as the calculated 95th percentile queues for each approach.

2023 No-Build Condition

In this section, growth factors and other nearby developments are described.

8. The project proponent should confirm why a horizon year of 2023 was chosen, *"Future conditions in the TIA shall cover at least a seven-year time horizon from the filing date of the subject project EENF or EIR" (MassDOT TIA Guidelines, 5.I.C.1)*
9. The project proponent should include either supporting references for the 1.5% annual growth rate that is used between 2021 and 2023.

2023 Build Condition

In this section, trip generation, distribution, comparative analysis, and mitigation efforts are described.

10. The project proponent should measure and graphically illustrate the available sight distance at the two proposed driveways. *"Document the available intersection sight distance at proposed site driveway(s). Sight distance measurements must be in conformance with the latest edition of the AASHTO manual, A Policy on Geometric Design of Highways and Streets." (MassDOT TIA Guidelines, 5.I.G)*
11. The project proponent should include an assessment of the mode split assumptions for this development, and identify potential for pedestrian, bicycle, and transit improvements, "*The TIA should include an assessment of the mode split assumptions, as well as the proponent's plan to maximize travel choice, promote non-SOV modes, and achieve the*

assumed mode shares. If a facility is impacted by a proponent's trips and the facility has an access or accommodation deficiency in the mode under review (bicycle, pedestrian, transit), the proponent must assess options to facilitate safe, convenient, and attractive access via these modes." (MassDOT TIA Guidelines 3.IV.C.1)

12. The proponent should label 'Table 2 – Proposed Trip Generation' with "Enter", "Exit", and "Total" for each peak.
13. The Trip Generation Values from Table 2 for AM, PM, and SAT (listed below) were confirmed based on TRIP GEN MANUAL, 10TH EDITION. The proponent should document where the rates for 'Weekday Midday Peak Hour' were sourced from.
    a. Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (Average Rate)
    b. Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (Average Rate)
    c. Saturday, Peak Hour of Generator (Average Rate)
14. The "pass-by" trip calculations for Weekday AM and Weekday PM do not appear to equate to 49% and 50%, respectively. The values provided are lower; thereby providing a more conservative estimate for "new" trips.
15. The project proponent should include methodology of how the proportion of vehicles using the Starbucks Coggeshall St exit versus the Starbucks Mitchell St exit were determined and provide the existing distribution percentages along each study roadway. Is it reasonable to assume that 55% of the exiting traffic will use the Coggeshall Street driveway? Is it reasonable to assume that the pass-by traffic along Coggeshall Street will exit via the driveway on Coggeshall Street or are they more likely to exit from Mitchell Street and then turn left onto Coggeshall from Mitchell?

Site Circulation/ Parking Supply

In this section, parking supply and demand are described.

16. As noted in the TIA, Section 11A-12 of the Massachusetts Amendments to the 2009 MUTCD states, *"It is recommended that an area be provided that will accommodate at least a minimum of 12 vehicles for take-out restaurants/coffee establishments and 25 vehicles for a car wash."* The proponent should provide calculations regarding the arrival rates of vehicles into the drive thru and the average processing time per customer, assuming that the facility is operating at capacity. The proponent should confirm that the 16 queued vehicles represent use of both lanes and also confirm that both lanes will be open during the peak hours of both the generator and adjacent traffic.

17. In this TIA, the number of parking spaces is listed as 30, but in the site plan 29 spaces are shown. The project proponent should confirm which is correct.

Technical Appendix

Level of Service/Average Control Delay Criteria, Turning Movement Count Data, MassDOT ATR Data, Traffic Volume Figures, and Synchro Capacity Analysis Worksheets have been provided.

18. The following maps should be included in the Attachments as recommended by MassDOT TIA Guidelines, Section 5.I.A.
    a. Site plotted centrally on the USGS map
    b. Site plotted in accordance with the massDOT Road Inventory Maps
    c. Zoning map

19. The following additional information should be included in the Attachments as recommended by MassDOT TIA Guidelines, Section 5.II.
    a. Pedestrian and Bike Counts
    b. Calculations for MassDOT Seasonal Adjustment Factors, Growth Rates, and Pandemic adjustments
    c. Signal Layout Plans
    d. Transit Service Existing Conditions Data
    e. ITE Trip Generation Land Use Code Sheets
    f. Plotted intersection sight distance analyses
    g. Collision Diagrams
    h. Speed Data

20. The proponent should include the MassDOT Crash Rate Worksheets for all studied intersections, *"Calculation of the study area intersection(s) and segment(s) crash rates, as applicable, using the standard MassDOT Crash Rate Worksheet are required." (MassDOT FDR Guidelines, I.C.2).*
21. The proponent should modify Figure 9 so that the volumes on the northbound leg of

Coggeshall St at Belleville Ave are visible.

22. The proponent should show traffic signal phasing information for any analyzed traffic signals.

Additional Comments

23. The AutoTURN design vehicle drawings in the revised Site Plan show pathways through the parking lot.
    a. The project proponent should show that these vehicle paths are still possible with the on-street parking that exists on the west side of Mitchell Street.
    b. The project proponent should consider showing the design vehicle's ability to navigate through the drive-through paths.
    c. The project proponent should indicate where delivery vehicles will park within the site and describe the anticipated impact to their customers.
24. The proposed access is located at the beginning of the eastbound left-turn lane area along Coggeshall Street. The project proponent should consider the crash history in the vicinity and consider restricting the access to 'Right-Out' only, to minimize potential for conflicts with eastbound Coggeshall Street traffic.
25. Parking on the east side of Mitchell Street is not allowed, however based on aerial imagery and Google StreetView, it appears that vehicles park there. The project proponent should consider methods to prohibit parking within the vicinity of the proposed site driveway on Mitchell Street to allow for appropriate sight distance.

Summary

Based on our review of the Proposed Starbucks with Drive-Through Traffic Impact Assessment, we find that the study has generally been prepared in accordance with accepted industry standards and procedures. We do however recommend the proponent address the concerns noted above.

We appreciate the opportunity to provide the City of New Bedford with these peer review services. We anticipate providing review of the project proponent's responses to these comments in accordance with our task order contract. Please do not hesitate to call if you have any questions relative to our review of the traffic-related issues associated with the proposed redevelopment.

Sincerely,

Lisa D. Sherman, PE, PTOE, PMP
Principal/Project Manager IV
CDM Smith Inc.

cc: Manuel Silva, DPI