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Ms. Darlene Wynne, AICP
Assistant Planning Director
Beverly Planning Department
191 Cabot Street
Beverly, MA 01915

November 30, 2015

TEC Ref. T0569

RE: Proposed North Shore Crossing – Beverly, MA
Traffic Peer Review Comments – Modified Site Access

Dear Ms. Wynne,

TEC, Inc. previously completed an independent peer review of the transportation, access, and site circulation related aspects associated with the proposed North Shore Crossing development to be located just south of Route 128 in Beverly, Massachusetts. The project was previously approved by the City of Beverly Planning Board, conditioned upon approval by the Massachusetts Department of Transportation (MassDOT) of the proposed access / egress configuration and off-site mitigation measures. Based on an access alternatives analysis prepared by the Proponent's traffic engineer, Ron Müller & Associates (RMA), MassDOT has required the Proponent to modify the proposed access / egress from the Site Development Plans approved by the Beverly Planning Board. Therefore, the Proponent has submitted additional documentation to the City of Beverly Planning Department and Planning Board for review of a modification to the prior Special Permit and Site Plan Review approvals for the project. TEC has completed a supplemental independent peer review of the following documents associated with the site plan modifications:

- *Modified Site Access, North Shore Crossing, Beverly, MA* – Letter from Ron Müller & Associates (RMA) to Aaron Clausen, Beverly Planning Director; November 17, 2015.
- *Chapter 5* – Traffic Impact and Access Study of the Draft Environmental Impact Report for North Shore Crossing (EEA #13060), prepared by Ron Muller & Associates dated November 6, 2015.
- Alternative Connector Road Entrance Exhibit – North Shore Crossing, Brimbal Avenue and Sohier Road; Allen & Major Assicates, Inc.; November 5, 2015.
- Sketch #1 – Sohier Road Curb Cut Redlined prepared by Allen & Major Associates, Inc. dated November 6, 2015.
- Sketch #3 – Connector Road Curb Cut Redlined prepared by Allen & Major Associates, Inc. dated November 6, 2015.
- Site Development Plans – North Shore Crossing, Brimbal Avenue and Sohier Road, Beverly, MA; Allen & Major Associates, Inc.; November 9, 2015.

The following summarizes TEC's findings as part of this review.

1. Access to / egress from the North Shore Crossing development was previously proposed via three driveways located on Sohier Road, Connector Road, and Brimbal Avenue. The Sohier Road and Connector Road driveways were proposed to provide right-in / right-out only

movements, while the Brimbal Avenue driveway was proposed to provide full-access and right-out only egress. Due to the proximity of the Connector Road driveway to the Brimbal Avenue roundabout and a concern for weaving movements between the driveway and the roundabout, MassDOT has requested that the Proponent restrict all exiting patron movements at the proposed Connector Road driveway. As a result, drivers desiring to exit right out of the Connector Road driveway would be redistributed to the Sohier Road driveway and would travel through the Sohier Road roundabout toward the Connector Road.

2. The proposed Connector Road driveway would continue to provide right-out egress from Whole Foods trucks to exit the site as the geometric layout of the site will not allow for an alternative egress for these vehicles. To restrict patron traffic utilizing this driveway, the driveway will be gated and opened only to allow a Whole Foods truck to exit the site.
3. RMA prepared an updated capacity and queue analysis of the Sohier Road / Site Driveway and Sohier Road / Route 128 NB Ramps / Connector Road (aka Sohier Road Roundabout) intersections to evaluate the impact of the proposed access/egress modifications on the operations of the surrounding study area intersections. Although the Brimbal Avenue / Connector Road (aka Brimbal Avenue Roundabout) intersection will also be impacted by the proposed access/egress modifications, the modifications will result in a reduction in site-generated vehicle trips through the intersection, improving the operations of the intersection as compared to the site plan approved by the Planning Board. Therefore, no additional analysis of the Brimbal Avenue / Connector Road intersection is warranted.
4. The results of the updated capacity and queue analysis indicate that all movements at the Sohier Road / Site Driveway and Sohier Road / Route 128 NB Ramps / Connector Road (aka Sohier Road Roundabout) intersections will operate at acceptable levels of service (LOS C or better) under 2022 Build conditions during the weekday morning, weekday evening, and Saturday midday peak hours with the proposed access /egress modifications. The additional traffic through the roundabout generated by the site plan modifications is not expected to increase delay on any given movement by more than two seconds per vehicle. Although the queue on the Sohier Road northbound approach to the roundabout will increase by three vehicles with the proposed access / egress modifications, there is adequate storage available to accommodate this increased queue between the roundabout and the site driveway.
5. Based on the updated capacity and queue analysis, all movements at the Sohier Road site driveway will operate at acceptable levels of service (LOS C or better) with queues not exceeding two vehicles under 2022 Build conditions with the proposed access / egress modifications. The additional traffic exiting the site via this driveway is not expected to increase delay exiting the driveway by more than five seconds per vehicle and all additional delay through the intersection will be incurred on-site.
6. Based on the truck and emergency vehicle turning diagrams prepared by Allen & Major Associates, Inc. (A&M), the proposed site plan modifications provide adequate maneuverability for trucks and emergency vehicles entering, exiting, and circulating through the site. The entrance-only driveway from the Connector Road provides at least 16 feet in pavement width to allow an emergency vehicle to navigate around a disabled vehicle at the northerly end of Building A.
7. The location of the crosswalks along the main drive aisle in front of Building A and the traffic control entering the site from the Connector Road are inconsistent between the Alternative Connector Road Entrance Exhibit, Site Development Plans, and Sketch #3. The

Proponent should clarify whether STOP control is proposed on the main drive aisle approaching the northerly most parking aisle in front of Building A. In addition, the Proponent should clarify the location of proposed crosswalks at this internal intersection. For purposes of this peer review, TEC has assumed that the Site Development Plans dated November 9, 2015 represent the proposed traffic control and crosswalk configuration as these are the most recent plans.

8. Based on the November 9, 2015 Site Development Plans, a sidewalk is proposed along the easterly side of the Connector Road driveway to provide a connection from the site to the Connector Road. The crosswalk configuration at the end of this sidewalk requires pedestrians to cross the main drive aisle in front of Building A, and wait in an unprotected area to cross the first parking aisle. To minimize pedestrian-vehicle conflict on the site, it is recommended that the crosswalk on the main drive aisle be shifted further north to allow pedestrians to cross the drive aisle at the end of the narrow, one-way section just north of the first parking aisle. The crosswalk across the first parking aisle can be eliminated with this crosswalk configuration. If a STOP condition is proposed along the main drive aisle entering the site, a STOP (R1-1) sign should be posted adjacent to the crosswalk. If a free-flowing condition is proposed entering the site along the main drive aisle, pedestrian crossing warning signs (W11-2) should be posted on either side of the crosswalk entering the site.
9. Within the Draft Environmental Impact Report (DEIR) submitted to the Massachusetts Environmental Policy Act (MEPA) office, the Proponent committed to a traffic and transportation demand management (TDM) monitoring study to be conducted for five years following full occupancy of the site to ensure that the project does not negatively impact the operations of the study area intersections. This monitoring study will include traffic counts at each of the site driveways and a comparison of trip generation to the volumes projected in the DEIR. In addition, the monitoring study will include a comparison of collision occurrence at the site driveways and study area intersections pre and post occupancy. The results of the monitoring study will be submitted in a report to MassDOT, Metropolitan Area Planning Commission (MAPC), MassRIDES, and the City of Beverly, and may be utilized to assess whether any additional mitigation measures may be required to minimize impacts of the project.

Please do not hesitate to contact me or Kevin Dandrade at (978) 794-1792 if you have any questions regarding our responses. Thank you for your consideration.

Sincerely,
TEC, Inc.



Rebecca L. Brown, P.E., PTOE
Senior Engineer

cc by email: Ronald Müller, PE, Ron Müller & Associates
Carlton Quinn, PE, Allen & Major Associates, Inc.
Steve Cohen, CEA Beverly LLC