

Mr. Ethan Parsons
Director of Planning & Development
Town of Ipswich
25 Green Street
Ipswich, MA 01938

December 9, 2021

Ref.: T1185

Re: Traffic Peer Review
55 Waldingfield Road – Ipswich, Massachusetts

Dear Mr. Parsons:

On behalf of the Town of Ipswich, TEC, Inc. (TEC) reviewed documents as part of the traffic peer review for the proposed corporate headquarters redevelopment to be located at 55 Waldingfield Road in Ipswich, Massachusetts. Ora, Inc. (the "Applicant") submitted the following documents which TEC reviewed for conformance with the Town of Ipswich Zoning Bylaws and generally accepted industry standards:

- *Traffic Impact Study – Corporate Headquarters – Ipswich, Massachusetts*; prepared by Greenman-Pedersen, Inc., dated July 9, 2021;
- *Sight Distance Evaluation Letter – Proposed Worksite – 55 Waldingfield Road – Ipswich, Massachusetts*; prepared by Greenman-Pedersen, Inc., dated August 31, 2021;
- *Supplemental Traffic Memorandum – Ora at Waldingfield – Ipswich, Massachusetts*; prepared by Greenman-Pedersen, Inc., dated October 15, 2021;
- *Possible Traffic Calming Concepts – 55 Waldingfield Road – Ipswich, Massachusetts*; prepared by Greenman-Pedersen, Inc., dated October 21, 2021;
- Site Plan entitled "*Permit Site Plan – #55 Waldingfield Road – Ipswich, Massachusetts*;" prepared by Hancock Associates, dated July 12, 2021.

Upon review of the documents and plans, TEC has compiled the following comments for the Board's consideration:

Traffic Impact Study

1. The Traffic Impact Study (TIS) included the following intersections within the study area:

- County Road (US Route 1A) at Waldingfield Road
- Waldingfield Road at Site Driveway
- Waldingfield Road at Goodhue Street
- Highland Street at Waldingfield Road
- Highland Street at Goodhue Street

TEC finds that the study area as provided in the TIS is sufficient to capture the effects of the project on surrounding roadways based on the *Traffic Impact Assessment (TIA) Guidelines* (Section 3.I.C) set forth by the Massachusetts Department of Transportation (MassDOT). This includes an evaluation of intersections in which the site generated trips increase the peak hour traffic by more than 5 percent and/or by more than 100 vehicles per hour.

2. Traffic volume counts were conducted at all study intersections in May 2021 when schools were in session and where traffic volumes are expected to be lower based on the continued presence of the Covid-19 pandemic. The volumes were adjusted due to the Covid-19 pandemic by comparing existing volumes to 2019 MassDOT historic traffic counts at permanent count stations in Beverly and Boxford. As a result, the volumes were adjusted upward by 9 percent. TEC finds that this methodology is consistent with the *Guidance on Traffic Count Data* (E-20-005) published by MassDOT in April 2020 for traffic counts conducted during the COVID-19 pandemic and standard engineering practice.
3. The weekday morning and weekday evening peak commuter hours were studied to determine the project's overall effect on the roadway. TEC concurs that these selected time periods are generally appropriate for a commercial land use. TEC concurs that the selected time periods are generally appropriate for the commercial development land use and the timeframes counted – 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM are in accordance with the MassDOT *Traffic Impact Assessment (TIA) Guidelines*.
4. No adjustments to the counts were made to reflect seasonal fluctuation as May represents a month greater than the average-month conditions. TEC finds that this methodology is consistent with the MassDOT *Traffic Impact Assessment (TIA) Guidelines* and the *MassDOT Traffic and Safety Engineering 25% Design Submission Guidelines* (Section I.B.2.a) and standard engineering practice
5. The safety analysis section for the report presents motor vehicle crash data for each of the study area intersections. The crash data detailed the number, type, and severity of crashes at the study area intersections between 2014 and 2018. The TIS calculated the crash rates at all study intersections as below the state and district averages. The TIS also notes that due to the low crash occurrence and crash rates at the study intersections, there is no specific crash trend correctable by engineering measures. TEC concurs with the methodology used to calculate the intersection crash rates, with is in accordance with the *MassDOT Traffic and Safety Engineering 25% Design Submission Guidelines*.
6. A background growth rate of 0.5 percent per year was applied to the 2021 existing volumes to generate the 2028 future year volumes based on traffic volume data provided by MassDOT and the Metropolitan Area Planning Council (MAPC). TEC concurs that the methodology and the data provided by the Applicant is consistent with the MassDOT *Traffic Impact Assessment (TIA) Guidelines*.
7. The TIS identified additional traffic to the roadway based on a proposed 150 dwelling unit project along Essex Road (Essex Pastures) and an expansion of a ±100,000 SF laboratory building at 240 Country Road. The Applicant has included the projected traffic for these projects within the No Build condition within the TIS. The Applicant also identified two additional projects in Hamilton and assumed the projects' impact on the surrounding roadways to be reflected under the annual growth rate due to the scale and location of the projects. TEC

concur that the methodology and the data provided by the Applicant is consistent with the MassDOT *Traffic Impact Assessment (TIA) Guidelines*.

8. The Applicant compared site trip generation calculations based on standard trip rates published in the Institute of Transportation Engineers (ITE) publication Trip Generation, 10th Edition for Land Use Code (LUC) 714 – Corporate Headquarters Building. TEC generally concurs with the use of this publication, as it is an industry-standard, and the latest edition of the manual was utilized at the time the analysis was conducted. Further, TEC concurs that the use of LUC 714 – Corporate Headquarters Building is conservative and consistent with the MassDOT *Traffic Impact Assessment (TIA) Guidelines* and the methods found in the ITE *Trip Generation Handbook*.

The Supplemental Traffic Memorandum provides a comparison using the square footage ($\pm 124,199$ SF) of the development and using the number of employees (200) expected to visit the site on a typical workday as the independent variables. The Applicant projected the trip generation of the site using data found under the peak hour of the adjacent street traffic time period, which provides one or two studies recorded for both independent variables. ITE guidance recommends using caution when considering using data sets with five or fewer data points. The data found under the peak hour of the generator time period for both square footage and number of employees provides approximately twenty data points. Moreover, a more recent version of the Trip Generation Manual (11th Edition) was published at the time of this letter. Within the 11th Edition, the trip data for the peak of the adjacent street traffic and the peak of the generator time periods were combined, as the peak hour of the adjacent street and the peak of the generator for office land uses would typically overlap or be close to overlapping. TEC recommends the use of the fitted curve equations found within the more recent 11th Edition of the manual or changing the time period to the peak hour of the generator instead of the adjacent street traffic with the previous 10th Edition. TEC suggests that the use of the number of employees may be preferable in either calculation, as it appears to represent the operation of the proposed facility more accurately.

9. The distribution of traffic was based on the addresses of the employees. A map was provided in the Appendices showing the general location of employee residences. Due to the sensitive nature of the information, TEC will assume that the data presented in the TIS is correct. TEC generally concurs with the trip distribution methodology, allowable within the MassDOT *Traffic Impact Assessment (TIA) Guidelines*.
10. 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.
11. TEC concurs with the use of the current industry standard Highway Capacity Manual 6th Edition for the capacity and queue analysis of the unsignalized intersections.
12. TEC concurs that overall, the study area intersections appear to have sufficient capacity to accommodate the new site generated traffic. The proposed development is not expected to significantly cause a noticeable new impact to each study area intersection reported.
13. The sight distances reported in the Sight Distance Evaluation Letter are calculated in accordance with the American Association of State Highway and Transportation Officials (AASHTO) requirements. The TIS and the Sight Distance Evaluation Letter both indicate that the western site driveway is to be realigned to meet Waldingfield Road at a 90-degree angle to provide enhanced sight distances. This appears to be the primary driveway to access the

site, as the eastern site driveway is to be gated. TEC concurs with the proposed geometry, as it will improve sight distances for vehicles exiting the site.

14. With the proposed realignment and clearing of any brush within the sight triangles, the Sight Distance Evaluation Letter measurements show that sightlines to the east and west of the proposed driveway location is in excess of AASHTO required Stopping Sight Distances for the 85th percentile speeds as measured by the Automatic Traffic Recorders (ATRs). In addition, the desirable Intersection Sight Distances for vehicles exiting the site driveway onto Waldingfield Road is provided.

The Applicant should commit to maintaining the vegetation within the sight triangle at the site driveway intersection consistently to ensure that maximum possible sight lines remain unobstructed as reported in the Sight Distance Evaluation Letter.

15. Within the Possible Traffic Calming Concepts Letter, a traffic calming concept that includes the provision of three speed tables, one on Waldingfield Road, and two on Goodhue Street is proposed. TEC understands the concern of residents along these roadways that an increase in vehicle speeds may occur with the addition of proposed project traffic. Speed tables are an effective traffic calming device when used in series along a street. When used singly or on only a short distance of roadway, the speed reduction could be localized. TEC also notes that speed tables have been associated with an increase in noise as motorists accelerate away from the devices. Communication with the abutting residents and the overall community regarding the benefits and concerns over this type of traffic calming device is strongly recommended.

Site Plan - Transportation

16. The Applicant should provide on the Site Plans the sight distance triangles in both directions from the primary exit driveways along Waldingfield Road where vegetation and signage are to be removed or kept low.
17. The dimensions of the parking spaces and the adjacent parking drive aisles meet Town of Ipswich Zoning Bylaw requirements.
18. Stop signs should be provided at the terminus of the exit driveway onto Waldingfield Road.
19. The site does not meet the minimum requirements for the number of total parking stalls per Ipswich Zoning Bylaw requirements. Based on the description provided by the Applicant for the full build-out of the project, which consists of ±56,000 SF of office space and accommodation of a maximum of 200 employees, 187 to 200 parking stalls are required to meet the Town's Zoning Bylaw requirements. TEC counted a total of 50 parking stalls as depicted in the Site Plan provided by the Applicant, which is less than the minimum required by the Town. The Applicant should discuss the accommodation of more than 50 employees and visitors on the site and whether the proposed parking supply will meet the anticipated daily parking demand for the full build-out of the project.

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Please do not hesitate to contact me directly if you have any questions concerning this peer review at 978-794-1792. Thank you for your consideration.

Sincerely,
TEC, Inc.
"The Engineering Corporation"

A handwritten signature in blue ink that reads "Elizabeth Oltman". The signature is written in a cursive, flowing style.

Elizabeth Oltman, PE
Director of Transportation Planning