5A-150 Pinebush Road
Cambridge ON N1R 8J8
p: 519.896.3163
905.381.2229
416.479.9684

www.ptsl.com

09 April 2019
Project: 180041

Carmen N. Jandu, RPP
Orangeville Highlands Ltd.
C/o Ventawood Management Inc.
2458 Dundas Street West, Unit 9
Mississauga L5K 1R8

Dear Ms. Jandu:

RE: ORANGEVILLE HIGHLANDS PHASE 2 RESIDENTIAL DEVELOPMENT TRANSPORTATION IMPACT STUDY – PEER REVIEW RESPONSE

In May 2018, Paradigm Transportation Solutions Limited (Paradigm) prepared a Transportation Impact Study (TIS)[1]. Since submission of the study, Town of Orangeville's consultant Triton Engineering Services Ltd. (Triton) peer reviewed the report. Additionally, a memorandum from the Town of Mono was received with comments provided by the Mono residents who live in the Starrview subdivision north of the subject site. The resident memorandum is dated 10 August 2018[2].

Table 1 outlines our responses/clarification to the peer review comments. **Table 2** outlines our responses to residents of Mono Traffic related comments.

TABLE 1: PEER REVIEW COMMENTS - TRITON ENGINEERING

Comment	Responses/Clarification
Comment 1: Site Traffic Estimates The study does not include trips generated by the park areas (2.08 ha). Trips generated by the park should be in the analysis.	The Institute of Transportation Engineers[3] (ITE) average trip generation rates corresponding to Land Use Code 411 (Public Park), suggest that the proposed park blocks could generate zero AM peak hour trips and one outbound PM peak hour trip.

[1] Orangeville Highlands Phase 2 Residential Development Transportation Impact Study, May 2018. Paradigm Transportation Solutions Limited. Project Number: 180041
[2] Town of Mono Memorandum. Subject: Letter from Mayor Ryan to Mayor Williams (Town of Orangeville) regarding a proposed development by Orangeville Highland. 10 August 2018.
[3] Trip Generation Manual 10th Edition Institute of Transportation Engineers Washington DC 2017

	The additional trips generated by the park blocks is not expected to change the overall findings of the study. The additional trips are well within the typical daily variation in traffic volumes along a collector roadway. It is recommended that the park block be designed to encourage and promote Active Transportation (AT) rather than automobile-oriented trips. No refinements to the trip generation is warranted.
The 232 am peak hour and 285 pm peak hour development trips generated is comparable to, but higher than, the 193 am peak hour and 238 pm peak hour trips generated in the 2008 Hansen Boulevard Functional Design Study. The differences in volumes can be attributed to using the 10th Edition of the Trip Generation Manuals, rather than the 7th Edition used for the 2008 study, and the revised site plan. The use of the Multifamily Housing ITE Codes is acceptable as it produces a slightly higher volume of trips generated compared to the 7th Edition codes used in the 2008 study.	Acknowledged. No refinements to the trip generation is warranted.
The study does not describe how site generated traffic was distributed over the two site entrances, although the 80/20 split between Street A and B seems appropriate. It should be noted that if the intersection of Street A/Victor Large Way with Hansen Boulevard were not signalized, more site generated traffic may use the Street B to enter/exit the development due to the existing signals.	The assignment of site traffic to the Street “A” and Street “B” connections to Hansen Boulevard is based on the general layout of the site and the proposed unit densities for each block. It is estimated that approximately 85 percent of the proposed units are closer to the Street “A” connection and would be more inclined to use this connection as it offers a direct route to/from the proposed land uses. The applicant intends to work with the Town of Orangeville to implement the traffic control signal, identified in the Functional Design

<table>
<tr><td></td><td>Study[4] (FDS) and the TIS, at the Street “A”/Victor Large Way intersection with Hansen Boulevard.</td></tr>
<tr><td>The external site distribution is a 50/50 split in the east/west directions in the AM peak hour and a 55/45 split in the PM peak hour. We would expect a higher distribution to the east, given the proximity of the site to First Street and Highway 10. A sensitivity analysis could be carried out to examine the effect of a higher distribution to the east. This would likely indicate increased delays for vehicles turning left out of Street A.</td><td>The site trip distribution, in terms of an east/west split, was estimated using the travel patterns forecast to occur along Hansen Boulevard. This is consistent with the approach used in the Hansen Boulevard FDS.

Overall, the forecast traffic volumes in the TIS are similar to the forecast traffic volumes in the Hansen Boulevard FDS. This is noted by Triton below in Comment #2 and Comment #3.

Table A summarizes the trip distribution used in the TIS. In reviewing the trip distribution with the expected directional distribution of site generated traffic (inbound/outbound split), the peak direction of travel for site generated traffic during the AM peak hour (outbound) and PM peak hour (inbound) are estimated to be more heavily weighted to/from the east.

TABLE A: TRIP DISTRIBUTION SUMMARY

<table>
<tr><th rowspan="2">O/D</th><th colspan="2">AM</th><th colspan="2">PM</th></tr>
<tr><th>In</th><th>Out</th><th>In</th><th>Out</th></tr>
<tr><td>East via Hansen Boulevard</td><td>45%</td><td>50%</td><td>55%</td><td>45%</td></tr>
<tr><td>West via Hansen Boulevard</td><td>50%</td><td>45%</td><td>40%</td><td>50%</td></tr>
<tr><td>South via Area Streets</td><td>5%</td><td>5%</td><td>5%</td><td>5%</td></tr>
<tr><td>Total</td><td>100%</td><td>100%</td><td>100%</td><td>100%</td></tr>
</table>

We concur that higher delays would likely occur at the Street “A” connection should more site generated traffic travel to/from the east. However, as the Street “A’ intersection is forecast to operate with delays in the LOS F range with a v/c ratio greater than 1.00 any additional traffic assigned to/from the east</td></tr>
</table>

[4] Hansen Boulevard Functional Design Study, April 2008, Triton Engineering Services Limited

	would not impact the finding that the approach is at capacity. Moreover, as outlined in the FDS and the TIS, traffic control signals are anticipated to be implemented at the Street "A"/Victor Large Way intersection with Hansen Boulevard. Traffic control signals are anticipated to provide additional capacity to the Street "A" approach. As outlined in the TIS Table 5.2 (Total Traffic Operations with Remedial Measures) the volume to capacity ratio estimated for the Street "A" approach is noted to be less than 0.50. Furthermore, should drivers find the Street "A" connection undesirable the existing signalized intersection of Amelia Street will provide additional capacity to the subject site. The applicant intends to work with the Town of Orangeville to implement the traffic control signal, identified in the FDS and the TIS, at the Street "A"/Victor Large Way intersection with Hansen Boulevard.
Comment 2: Background Traffic Forecast The 2.0% annual growth rate the study used is a reasonable assumption and provides a more conservative approach than the 1.0% annual growth rate used in the 2008 Functional Design Study.	The generalized growth rate was recommended by the Town of Orangeville during the pre-study consultation. No action recommended at this time.
The study is including the trip generated data for the Edgewood Valley 2A site from the 2008 Functional Design Study. This development has been constructed so the traffic would be included in their existing traffic movement counts. This would not have a significant impact on the results.	Town staff identified the future developments between Blind Line and Veterans Way (including Alden Hill, Edgewood Valley, Transmetro, and the Town-owned former Humber College lands). The Edgewood Valley 2A site was included in the background traffic forecast at the direction of the Town of Orangeville during the pre-study consultation.

	Removing the Edgewood Valley trips would result in an estimated reduction of -152 AM trips and -200 PM trips from the Orangeville road network. No action recommended at this time as the traffic forecast would be considered conservative.
Since the 2008 Functional Design Study was completed, there have been changes to the proposed land uses west of Blind Line, and some uses are still unknown. Overall, the Hansen Boulevard traffic volumes in the study are similar to the 2008 forecast numbers and are considered to be acceptable for planning purposes.	Acknowledged. The Hansen Boulevard traffic volumes in the TIS are noted to be acceptable for planning purposes. No action recommended.
Comment 3: Traffic Control Improvements The TIS has identified that the intersection of Street A/Victor Large Way with Hansen Boulevard will require unwarranted traffic signals to address the excessive delays for outbound traffic on Street A. The 2008 Functional Design Study had a similar conclusion. The signal are “unwarranted” because they are not projected to meet warrants over an eight hour period as per Ontario Traffic Manual Book 12 Justifications. However, signals will be required to address the excessive delays that would be experienced by existing traffic and will help pedestrian connectivity.	The applicant intends to work with the Town of Orangeville to implement the traffic control signal, identified in the FDS and the TIS, at the Street “A”/Victor Large Way intersection with Hansen Boulevard.
Comment 4: Future Total Traffic Operations with Remedial Measures We concur with the assessment to retain the existing geometry of Hansen Boulevard.	Acknowledged. No action recommended.
Comment 5: Recommendations We concur with the recommendation for traffic signals at Victor Large Way and Hansen Boulevard. Phasing of the development was not identified in the TIS. We suggest that the implementation of traffic	The applicant intends to work with the Town of Orangeville to implement the traffic control signal, identified in the FDS and the TIS, at the Street “A”/Victor Large Way intersection with Hansen Boulevard.

signals be deferred until the development is sufficiently built out and significant delays are experienced at the intersection. The cost of traffic signals should be borne by the developer.	The cost sharing to implement the unwarranted traffic control signal should be determined through consultation with the Town of Orangeville. The applicant should begin discussions to determine an appropriate cost sharing solution and to identify the timing for implementation.

TABLE 2: TOWN OF MONO – RESIDENTS TRANSPORTATION COMMENT

Comment	Responses/Clarification
Traffic To date, a traffic impact study has not been done for Starrview Crescent and 1 Street and 1 Street and the provincial road called Highway 10. How will residents of Starrview access Highway 10?	No Changes are proposed to the vehicular access point serving the Starrview Subdivision. The existing connection to First Street will be maintained. Residents of Starrview will continue to have access as it exists today. Prior to commencing the Orangeville Highlands Phase 2 Transportation Impact Study, the terms of reference were submitted to the Town of Orangeville. The Town and its consultant, Triton Engineering Services Limited, provided input on the terms of reference for the study. The terms of reference confirmed the study area intersections and other inputs necessary to complete the study. The terms of reference were found to be acceptable by the Town of Orangeville on 13 March 2018. **Attachment A** contains the pre-study consultation material. The terms of reference did not identify the need to or requirement to assess the intersections at First Street and Starrview Crescent or First Street and Highway 10. Traffic generated by the Orangeville Highlands Phase 2 residential development is not expected to utilize Starrview Crescent as it is a cul-de-sac with limited access.

	Traffic using this roadway is expected to be local in nature. The Town's Official Plan Schedule "E" identifies the extension of Hansen Boulevard from First Street to Highway 10. The plan indicates that the existing Highway 10 and First Street intersection would be closed following the extension of Hansen Boulevard. Residents of the Starrview Subdivision will have access to Highway 10 via Hansen Boulevard, once the extension is implemented. The closure is not expected to impact access to the Starrview Subdivision. The Hansen Boulevard FDS estimates that 80% of traffic using First Street would be diverted to the extension. This would result in significantly lower traffic volumes using First Street north of Hansen Boulevard.

Summary and Conclusion

The May 2018 Transportation Impact Study prepared for the Orangeville Highlands Phase 2 Residential Development summarizes the anticipated traffic impacts to the Hansen Boulevard corridor from First Street to Blind Line. To accommodate the development of the subject site, an unwarranted traffic control signal is recommended at the Hansen Boulevard intersection with Victor Large Way/Street A. The 2008 Functional Design Study for Hansen Boulevard also identified the need for the unwarranted traffic control signal.

Based on the forgoing, no additional action is recommended at this time to update or revise the submitted May 2018 Transportation Impact Study.

The applicant should begin discussions with the road authority to determine an appropriate cost sharing solution and to identify the timing for implementation of the traffic control signal at the Hansen Boulevard intersection with Victor Large Way/Street A.

The proposed development of the Orangeville Highlands Phase 2 residential development will not impact how residents of the Starrview Subdivision access Highway 10. The existing connection to First Street will be maintained.

We trust that this information is responsive to the comments that were raised from the Triton peer review and by the residents of the Town of Mono. If you should have any questions or would like to discuss our responses in more detail, please feel free to contact us.

Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED

Scott Catton, Dipl.T., C.E.T. MITE
Senior Project Manager

Stew Elkins, B.E.S., MITE
Vice President