

## Proposed Burlington Quarry Expansion JART COMMENT SUMMARY TABLE – Transportation

Please accept the following as feedback from the Burlington Quarry Joint Agency Review Team (JART). Fully addressing each comment below will help expedite the potential for resolutions of the consolidated JART objections and individual agency objections. **Additional, new comments may be provided once a response has been prepared to the comments raised below and additional information provided.**

	JART Comments (February 2021)	Reference	Source of Comment	Applicant Response	JART Response
<b>Report/Date: Transportation / Haul Route Study, February 2020</b>			<b>Author: Paradigm Transportation Solutions Limited</b>		
1.	In addition to the provided comments, the Transportation Planning Department provided the following background studies, with corresponding links, for the TIS to consider in its growth rate assumptions and overall background traffic characterization: <ul style="list-style-type: none"> <li>Dundas Corridor Study - Brant St to Bronte Rd - MCEA Study: (2015) <a href="https://www.halton.ca/For-Residents/Roads-Construction/Municipal-Class-Environmental-Assessment-Studies/Dundas-Corridor-Study-Brant-St-to-Bronte-Rd-(1)">https://www.halton.ca/For-Residents/Roads-Construction/Municipal-Class-Environmental-Assessment-Studies/Dundas-Corridor-Study-Brant-St-to-Bronte-Rd-(1)</a></li> <li>Hamilton - Waterdown/Aldershot Transportation Master Plan – East-West Corridor Study – (2012) <a href="https://www.hamilton.ca/city-planning/master-plans-class-eas/waterdownaldershot-transportation-master-plan">https://www.hamilton.ca/city-planning/master-plans-class-eas/waterdownaldershot-transportation-master-plan</a></li> </ul>	General	Halton Region		
2.	Perform safety analysis for the future crossing of No. 2 Side Road. This is where the access to the proposed southern expansion will align with the existing access and large trucks will be crossing city road.	General	City of Burlington		
3.	Provide information that the applicant's traffic consultant used to come up with the traffic generated by the quarry. It is needed to confirm the number of vehicles, where these vehicles are coming from and travelling to.	General	City of Burlington		
4.	With regard to deemed right of way widths and widening requirements, under the current official plan, the following information is provided, please be advised however that through the application process, through review of the traffic studies, etc., by vested departments/agencies, it may be necessary for additional lands to be dedicated for additional lanes, turning lanes, daylight and visibility triangles etc., Site Engineering defers to the expertise of the City's Transportation department and the Region's Transportation department to confirm requirements.	General	City of Burlington		
5.	No. 2 side Road is a City of Burlington owned road, the deemed right of way is 30.0 metres, the actual width varies from +/- 20.0 metres to 25.0 metres. In order to meet the deemed width a variable widening of up to +/- 5.0 metres would be required. The widening would be dedicated (free of charge and all legal and survey costs would be the responsibility of the applicant) through the planning application process. Only an Ontario Land Surveyor (OLS) would be able to accurately determine the actual dimensions and prepare a drawing which accurately shows the deemed right of way/widening.	General	City of Burlington		
6.	Colling Road is a City of Burlington owned road, the deemed right of way is 20.0 metres, the actual width meets deemed, no widening required.	General	City of Burlington		
7.	Cedar Springs Road is a City of Burlington owned road, the deemed right of way is 30.0 metres, the actual width varies from +/- 20.0 metres to 30.0 metres. In order to meet the deemed width a variable widening of up to +/- 5.0 metres would be required. The widening would be dedicated (free of charge and all legal and survey costs would be the responsibility of the applicant) through the planning application process. Only an Ontario Land Surveyor (OLS) would be able to accurately determine the actual dimensions and prepare a drawing which accurately shows the deemed right of way/widening.	General	City of Burlington		

8.	Guelph Line is a Region of Halton owned road, please contact the Region for deemed width and any widening and daylight triangle requirements.	General	City of Burlington		
9.	Official Plan/Transportation Master Plan Right-of-Way Requirements: Any lands within 17.5 metres (57.4 feet) of the centre line of the original right-of-way of Guelph Line (Regional Road 1) that are part of the subject property shall be dedicated to the Regional Municipality of Halton for the purpose of road right-of-way widening and future road improvements.	General	Halton Region		
10.	Municipal Class Environmental Assessment Study/Environmental Study Report (Transportation Planning) Right-of-Way Requirements Guelph Line (Regional Road 1): Any additional lands that are part of the subject property and have been identified as required for the future widening of Guelph Line (Regional Road 1), as identified in a future Municipal Class Environmental Assessment Study/Environmental Study Report, shall be dedicated to the Regional Municipality of Halton for the purpose of road right-of-way widening and future road improvements. Currently, a Municipal Class Environmental Assessment has not been completed.	General	Halton Region		
11.	Detail Design Project (Engineering & Construction) Right-of-Way Requirements - Guelph Line (Regional Road 1): Any additional lands that are part of the subject property and have been identified as required for the future widening of Guelph Line (Regional Road 1), as identified in a future Detailed Design Project, shall be dedicated to the Regional Municipality of Halton for the purpose of road right-of-way widening and future road improvements. Currently, a Detail Design has not been completed.	General	Halton Region		
12.	A daylight triangle measuring 15.0 metres along Guelph Line (Regional Road 1) and 15.0 metres along Colling Road shall be dedicated to the Regional Municipality of Halton for the purpose of road right-of-way widening and future road improvements.	General	Halton Region		
13.	All lands to be dedicated to Halton Region shall be dedicated with clear title (free and clear of encumbrances) and a Certificate of title shall be provided, in a form satisfactory to the Director of Legal Services or his/her designate.	General	Halton Region		
14.	Please provide a draft reference plan detailing all of the proposed widening (and daylight triangle) dedications. The quarry lands (both the expansion and existing quarry) north of No. 2 Side Road, are, or will be one property, therefore the widening dedications would be taken on both the expansion and existing quarry lands, as well as for the frontage of the south expansion lands.	General	City of Burlington		
15.	Mitigation Measures – Future Operational Analysis Various movements at intersections within the study area were identified as operating at or above capacity during Total Traffic Conditions. The report does not specifically identify how critical movements operating over capacity attributable to the proposed development can be improved. For example, eastbound and northbound through movements during the AM peak hour at Guelph Line and Dundas Street, are expected to operate above capacity. The eastbound through movement is expected to be addressed by the Dundas Street road widening outlined in the Region's Transportation Master Plan (TMP). However, no specific improvements are recommended for northbound movements on Guelph Line by the report or the Region's TMP.  Further information is required regarding proposed improvements for alleviating movements that are expected to operate at or above capacity attributable to the traffic generated by the proposed development.	General	CIMA Canada Inc.		
16.	Mitigation Measures – Queue Lengths Some of the 95th percentile queues reported are expected to exceed the available storage length (e.g., 2024 PM peak hour northbound and westbound left turning movements at Guelph Line & Dundas Street are expected to exceed available storage by 106.0 and 214.0 metres, respectively). The eastbound through movement is expected to be addressed by the Dundas Street road widening outlined in the	General	CIMA Canada Inc.		

	<p>Region's Transportation Master Plan (TMP) as previously mentioned; however, no mitigation measures are recommended to address the excessive northbound left queues.</p> <p>Assess and provide mitigation measure to address the excessive 95th percentile queues that are expected to exceed available storage at Guelph Line &amp; Dundas Street.</p>				
17.	<p><b>Safety Analysis</b> It is suggested for the terms of reference that a 'Safety Analysis' section will be included in the report to discuss potential safety or operational issues (per Region's TIS Guidelines, Section 3.6.2) in the study area. Even if there are no safety issues, a review should be completed and documented in the TIS report.</p> <p>Include a Safety Analysis section in the report to discuss potential safety or operational issues.</p>	General	CIMA Canada Inc.		
18.	<p><b>Haul Route Study</b> Although the Report states that there are no changes to the proposed haul route and no new impacts to the road network are anticipated, the Report does not mention the preparation of a Haul Route Study. It should be noted that the request for a Haul Route Study was identified by the Region's report LPS08-20 – Proposed Expansion to the Burlington Quarry (Nelson), Pre-Consultation Meeting.</p> <p>Complete a Haul Route Study following the requirements identified by the Region's Aggregate Resources Reference Manual for the preparation of a Transportation/Haul Route Study.</p>	General	CIMA Canada Inc.		
19.	<p><b>Travel Demand</b> Figure 2.1 shows that the highest traffic volumes during the PM peak occurs between 2:00 PM and 3:00 PM. This is confirmed by the statement in Section 2.2.3 that says: "Shipping actively begins to taper off around 3PM". However, the TMCs provided in Appendix B for the driveway site show that the highest PM peak hour occurs between 4:30 and 5:30 PM. Please confirm and update the report as necessary to be consistent.</p> <p>Please update Sections 2.2.1 and 2.2.3 to a consistent PM peak hour with the TMCs.</p> <p>If the PM peak hour at the site is the same as the Guelph Line peak hour, no changes in the traffic analysis are necessary. However, if the PM peak hour at the site occurs between 2:00 and 3:00 PM, it is recommended to conduct an additional PM peak operational analysis.</p>	Section 2.2.1, Section 2.2.3, Figure 2.1, and Appendix B	CIMA Canada Inc.		
20.	<p><b>Trip Generation</b> In Section 2.2.3 the report provides details of heavy vehicle generation in recent years at the existing site. It is noted that the Nelson Quarry does not own or operate any trucks for the transportation of materials from the point of origin to the quarry or to an end use location; rather, it is the customer and their contractors, that transports material. Given the report examines the customers' truck fleet, outlines are given for typical truck sizes, trailer configurations and average net load per outgoing trip. However, to determine the estimated truck trips generated by the proposed site expansion, the proponent's consultant conducted a review of detailed shipping records from 2014 to 2018. The report indicates that records used for the review are confidential and only available upon request.</p> <p>The details provided in Section 2.2.3 of the report are satisfactory; however, a review of the detailed shipping records would be beneficial to provide more details on truck</p>	Section 2.2.3 and Appendix A	CIMA Canada Inc.		

	types and material loads to verify the typical truck sizes and load volumes to be expected as part of the Quarry's operations. As such, it is recommended that the Region should request the detailed shipping records from Appendix A.				
21.	<p><b>Trip Distribution</b>                      Future quarry activity estimates are based on the turning movement count done in October 2019 and factored to the maximum quarry production of 2.0 million tonnes per annum. The TMC data indicates 84 AM peak hour trips with 28 (98 passenger car equivalents (PCE)) two-way additional heavy vehicle trips and 15 PM peak hour trips with 1 (4 PCE) two-way additional heavy vehicle trip. No justification is provided for the number of estimated additional two-way trips.</p> <p>Additionally, the trip distributions shown in Figures 4.2A and 4.2B require further explanation or adjustments. For example, Figures 4.2A indicates 28 additional inbound trips are making southbound right-turns from Guelph Line but there are only 21 outbound trips making an eastbound left-turn onto Guelph Line.</p> <p>Please provide further justification for the number of additional trips estimated in Table 4.1. Additionally, update Figure 4.2A and 4.2B to reflect outbound trips returning on the same path as the inbound trips or provide justification for the different origin/destination points. Any changes to the future operations should be reflected in the future improvement scenario.</p>	Table 4.1 and Figures 4.2A and 4.2B	CIMA Canada Inc.		
22.	<p><b>Paradigm Methodology</b>                      Paradigm reviewed the detailed shipping records, provided in Appendix A, that contain shipping details from 2014 to 2018. Based on the shipping details, they estimated trucking levels for a 2.0 tonnes per annum scenario. This scenario includes three distinct types of truck trips entering and exiting the quarry. The first distinct type, which accounts for all the outbound trips, is aggregate material that is mined and processed in the quarry. The second and third distinct types, which are incoming trips to the quarry, are clean fill and recycling materials. Estimates of approximately 50.0% to 58.0% of the incoming trucks with clean fill and recycling material between 2014 and 2017 also left with a load of aggregate. In 2018, the proportion these incoming trucks leaving with aggregate increased by about 23.0%. The estimates were used to calculate the annual inbound and outbound truck trips from 2014 to 2018.</p> <p>Additionally, estimates of the future increase to truck volumes were calculated based on the details shipping records. The estimates were developed by adding the truck volumes from the October 2019 site driveway turning movement count to the volumes estimated from the average daily trucks served in 2018. The volumes from the TMC as well as the estimated volumes are shown in Table 4.1 of the TIS report.</p>	Table 4.1 and Appendix A	CIMA Canada Inc.		
23.	<p><b>Peer Review Findings</b>                      Based on the review of the detailed data provided in Appendix A, CIMA verified that the estimated 50.0% of the clean fill and recycling trips that left with aggregate, was used to calculate annual inbound and outbound truck trips from 2014 to 2017, while 77.0% was used for 2018.</p> <p>Based on the review of the detailed 2018 data provide in Appendix A, the estimated total future truck levels shown in Table 4.1 of the subject TIS are appropriate estimates for the future peak hour truck volumes.</p> <p>From Table 4.1, the future estimated truck volume is 29, which is added to the existing TMC volumes. To verify the estimated volumes CIMA examined the 2018 month-by-month total (aggregate, clean fills and recycling trips) average daily trucks served in</p>	Table 4.1 and Appendices A and B	CIMA Canada Inc.		

	<p>2018. The total average daily trucks served averaged for the year was 31 trucks (rounded up). The value is fairly close to the 29 total trucks estimated by Paradigm.</p> <p>However, CIMA was unable to verify the distribution of the estimated 29 total trucks between the AM and PM peak hours. The subject TIS distributes 28 trucks (evenly distributed between inbound and outbound) to the AM peak hour and 1 outbound truck to the PM peak hour. Based on the TMC volumes shown in Table 4.1, 15.0% of the estimated 29 added trucks, or 4 trucks, should be allocated to the PM peak hour.</p> <p>The TMC provided in Appendix B, does not include a detailed breakdown of the vehicles in the PM peak hour. A detailed breakdown of the vehicle types entering and exiting the site, such as the one for the AM peak hour, is needed to verify the added truck volumes in PM peak hour of the subject TIS.</p> <p>In summary, the process used to estimate the added future truck volumes for both peak hours was verified; however, the distribution of the added truck volumes could not be verified.</p> <p>It is recommended that a detailed breakdown of PM peak hour TMC data be provided, similar to the data provided for the AM peak hour.</p>				
24.	<p>Future Traffic Operations Tables 4.2 and 4.3 show future traffic operations at all study area intersections. Signalized and unsignalized intersections are together in the same table. Signalized and unsignalized intersections should not be in the same table as the level of service for a stop-controlled intersection differs from a signalized intersection.</p> <p>Please provide separate tables for signalized and unsignalized intersections for all traffic operational analyses.</p>	Tables 4.2 and 4.3	CIMA Canada Inc.		
25.	<p>Mitigation Measures – Traffic Signal Warrant A traffic signal warrant analysis was undertaken for the intersection of Guelph Line &amp; No. 2 Sideroad. The report mentions that the traffic signal was not warranted. However, the volumes used for the traffic signal warrant did not match those in Figures 4.3A/B (Total Traffic Conditions).</p> <p>It is recommended to review the volumes used for the traffic signal warrant and update the analysis as necessary.</p>	Figures 4.3A and 4.3B	CIMA Canada Inc.		
26.	<p>Access Road In Section 5.2.1 the second bullet point for site operational assumptions indicates the expected number of working days per year will be 208. However, in Table 5.1 the number of operating days used for calculating average tonnage per year is 250.</p> <p>Additionally, Table 5.1 shows the number of two-way truck trips is 24 per hour (84 PCE). However, the number of PCE vehicles per hour increase from 85 PCEs in the AM peak to 90 PCEs in the PM peak without any further background.</p> <p>Finally, Section 5.2.1 mentions that the South Extension Access Road will be designed to accommodate the heavy truck design vehicle (CAT 775 70-tonne rock truck) and will be stop-controlled, however no reference to the requirements of Halton Region’s “Access Management Guidelines” is presented as part of the report.</p> <p>Update Table 5.1 with the proper estimate for the working days per year and update the affected calculations.</p>	Section 5.2.1 and Table 5.1	CIMA Canada Inc.		

	<p>Please provide clarification for the change in two-way truck traffic crossing Number 2 Side Road from the AM peak hour to PM peak hour.</p> <p>Please refer to Region's Access Management Guidelines for the South Extension's Access Road design considerations.</p>				
27.	<p>Provision of Confidential Truck Counts</p> <p>In Appendix A, an NDA has been requested for release of Confidential Truck Count Data by Nelson Aggregated to the Region. The Region would like to pursue this request to allow for confirmation of TIS analysis and results, including peer review consultant permissions to view the data. Without the held data the Trip Generation assumptions about the typical truck sizes and load volumes to be expected as part of the Quarry's operations based on truck types and material loads cannot be verified.</p> <p>(Note: Planning's direction/assistance on how to proceed with the NDA process will be required.)</p>	Appendix A	Halton Region		
28.	<p>Peak Hour Factor</p> <p>The intersection of No. 2 Side Road and the Quarry driveway was the sole TMC to provide a 15-minute volume breakdown. CIMA was not able to verify the peak hour factor (PHF) for the other study area intersections due to the provided TMCs not having 15-minutes volume breakdowns.</p> <p>Please provide the full TMC for all study area intersections in Appendix B.</p>	Appendix B	CIMA Canada Inc.		