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Proposed Reid Road Reservoir Quarry JART COMMENT SUMMARY TABLE RESPONSE #2

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

	Initial JART Comments (July 2019)	Page / Section	Applicant Response (December 2019)	JART Response (May 2020)	Applicant Response (June 2020)
Report: Transportation Impact Study – June 2018					
Author: Paradigm Transportation Solutions Ltd.					
1.	<p>Consistent with the Halton Region Transportation Impact Study Guidelines Section 3.6.2 Safety Analysis, the Report should be updated to include a “Safety Analysis” section to discuss potential safety or operational issues in the Haul Route study area. The Safety Analysis should consider potential safety or operational issues associated with elements such as corner clearances, sight distances, access conflicts, heavy truck movement conflicts, etc. A review should be completed and documented in the Transportation Impact Study.</p> <div data-bbox="189 1050 1059 1322" style="border: 1px solid black; background-color: #ffffcc; padding: 5px; margin-top: 10px;"> <p>JDCL comment: in previous versions of the table we had documented which of these comments were from MTO. We believe this is important so that we know which agency has to be ultimately satisfied in the end. We appreciate the interrelationships and all parties have an interest but the jurisdictions are discreet in the case of any traffic improvements required so we would like the source of each comment clearly identified.</p> </div>	Sections 4.0, 5.0 and 6.0	<p>Reid Side Road was constructed to safely accommodate truck traffic from this site. The following potential safety concerns, outlined in the Halton Region’s TIS Guidelines, for the study area intersections include:</p> <ul style="list-style-type: none"> • Weaving/Merging; <ul style="list-style-type: none"> ○ All traffic using Highway 401 interchanges are required to occasionally weave/merge with prevailing traffic. • Transit operational conflicts: N/A • Corner clearances; <ul style="list-style-type: none"> ○ No corner clearance issues are identified. The site driveway is over 500 metres in length. • Sight distances; <ul style="list-style-type: none"> ○ There are no sight distance issues identified. • Vehicle-pedestrian conflicts; <ul style="list-style-type: none"> ○ With exception to Guelph Line within the built-out area of Campbellville, the study area roadways currently do not have dedicated pedestrian facilities. The pedestrian facilities at the Guelph Line intersection with Reid Side Road includes a sidewalk along the west side of Guelph Line with a pedestrian crosswalk at the signal. The sidewalk continues north over the Highway 401 bridge and then terminates into a gravel shoulder. ○ The existing count data for the study area intersections indicate very low pedestrian volumes within the study area. This is not 	<p>The applicant provided in October 2019 what appears to be conclusions from a safety analysis. The Region and Town require the detailed supporting documentation in order to review and provide comment on these conclusions.</p> <p>At a minimum, for each of the safety concerns outlined in Halton Region’s TIS Guidelines, the safety report is required to:</p> <ol style="list-style-type: none"> 1) define the potential safety concern (for example, in the corner clearance section, the reader should understand what a corner clearance is); 2) explain how each safety concern is considered in the analysis (see below for additional detail); and 3) identify any potential impacts the additional truck traffic associated with the development application would have on safety. <p>The following are examples of what we would expect in a safety report:</p> <p>Weaving/Merging:</p> <ul style="list-style-type: none"> • Discuss potential for weaving and merging within the study area. Review the collision history to confirm there are no existing safety concerns that could be further impacted by the additional truck traffic associated with the development application. <p>Corner Clearances:</p>	<p>JDCL has provided the completed Traffic Safety Report that addresses these requirements.</p> <p>Please refer to the completed Traffic Safety Report for full conclusions.</p> <p>The crash data indicates that the existing safety performance of the proposed haul route is as expected or better than expected for similar facilities, except for the intersection of Twiss Road at Reid Side Road. At this intersection, truck traffic does not appear to be contributing to the elevated crash risk and the RRRQ will not exacerbate the elevated crash risk. The rate of involvement of trucks in crashes along the proposed haul route is lower than the provincial average during the analysis period. This suggests that trucks are not currently creating any undue crash risk on the proposed haul route. There were no pedestrian-involved, cyclist-involved, or fatal crashes along the proposed haul route during the analysis period.</p> <p>The risk of crashes presented by the RRRQ is expected to be low. Furthermore, the RRRQ traffic is not expected to change the crash risk profile of facilities along the proposed haul route at the 10-year planning horizon. No remedial measures are required to accommodate the RRRQ, from a road safety perspective.</p> <p>A safe systems assessment of the proposed haul route indicates that</p>

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		<p>anticipated to be a safety concern.</p> <ul style="list-style-type: none"> • No site traffic infiltration is expected. Site generated heavy vehicle trips will adhere to the designated haul route. Trips made by employees may originate or be destined to all other areas. • No access conflicts are expected. The site driveway forms the existing fourth leg to the Twiss Road intersection with Reid Side Road. • Cyclist movements; <ul style="list-style-type: none"> ○ All roadways, with exception of the Highway 401 ramps and the Highway 401 mainline, are Shared Roadways where both motorists and cyclists share the same vehicular travel lane. • Heavy truck movement conflicts; <ul style="list-style-type: none"> ○ Heavy vehicle movements impacted by site generated traffic are as follows: <ul style="list-style-type: none"> ▪ Reid Side Road & Highway 401 EB ramp, Eastbound left-turn – The turning movement is permissive with a turn lane provided. The observed 8-hour TMC volume for this movement is noted to be 895 vehicles of which 64 vehicles are heavy vehicles (7%). ▪ Guelph Line & Highway 401 WB Ramps, Westbound left-turn – The turning movement is currently stop controlled and operates as a single lane approach. The observed 8-hour TMC volume for this movement is noted to be 468 vehicles of which 32 are heavy vehicles (7%). ▪ Guelph Line & Reid Side Road, Southbound left-turn – The turning movement is permissive, under an all-red with operation controlled by a traffic control signal. The observed 8-hour TMC volume for this movement is noted to be 1710 vehicles of which 89 are heavy vehicles (5%). 	<ul style="list-style-type: none"> • Confirm if corner clearances related concerns are applicable to this development application. <p>Sight Distances:</p> <ul style="list-style-type: none"> • Sight distance measurements are to be supported with pictures, dimensions and references to the standards in the most current version of the Transportation Association of Canada (TAC) Manual in order to confirm there are no sight line issues. <p>Vehicle-Pedestrian Conflicts:</p> <ul style="list-style-type: none"> • Vehicle-pedestrian conflicts and cyclist movements should be supported by a graphic illustrating the infrastructure in the study area dedicated to accommodating these movements. In addition, a review of existing collision history and traffic count information should be undertaken to confirm there are no existing safety concerns that could be further impacted by the additional truck traffic associated with the development application. The supporting collision and traffic count data should be provided in the appendices. <p>Traffic Infiltration:</p> <ul style="list-style-type: none"> • Confirm how trucks will be compelled to use the designated Haul Route as opposed to traveling through adjacent residential neighbourhoods. <p>Access Conflicts and Heavy Truck Movement Conflicts:</p> <ul style="list-style-type: none"> • The analysis for access conflicts and heavy truck movement conflicts needs to be supported by a review of existing collision trends, traffic count information and auto turn drawings to confirm there are no existing safety concerns that would be further impacted by the additional truck traffic associated with the development application. The information provided by the applicant in October 2019 describes the existing traffic control infrastructure and states the existing 	<p>ongoing annual maintenance and some minor traffic signing changes would enhance the safety performance of the proposed haul route. None of these changes are antecedent to opening the RRRQ.</p> <p>Given the low demand, and the lack of pedestrian and cyclist generators in the area, pedestrians and cyclists are safely accommodated on the existing facilities. “SHARE THE ROAD” signs and sharrow pavement markings may be used to highlight that the proposed haul route is accommodating cyclists and motorized traffic.</p> <p>Based on the prevailing guidelines, the speed limit of Reid Side Road may be lowered by 10 km/h along its length.</p> <p>An unwarranted traffic signal, if installed, at the intersection Reid Side Road and the Highway 401 ramps would result in an additional crash every 18 to 23 years. This is considered a low crash risk and does not preclude the installation of a traffic signal if significant operational benefits are attained via signalization. The decision to implement an unwarranted signal is a policy decision to be made by the MTO. In any event, signalization is not an antecedent to opening the RRRQ, from a safety perspective.</p> <p>Emergency response times are not expected to materially change as a result of the RRRQ generated traffic.</p> <p>It is not expected that the RRRQ-generated traffic will result in an elevated crash risk because of risky driver behaviours resulting from increased congestion along the proposed haul route. Furthermore, it is unlikely that safety will be unduly affected by trucks deviating from the proposed haul route during times that Highway 401 is congested.</p>

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			<ul style="list-style-type: none"> Queuing conditions are outlined in all intersection operation tables contained in the TIS Report. <p>JDCL has professional driver training for its employees and has comprehensive trucking safety policies. These policies promote Safe Work Practices/Procedures and provide drivers with appropriate training related to the operation of their trucks in compliance with the <i>Highway Traffic Act</i>.</p>	<p>traffic volumes without any discussion on how this relates to access and heavy truck movement conflicts.</p> <p>Queueing:</p> <ul style="list-style-type: none"> Please reiterate or provide a specific reference to where in the TIS queuing information is provided. The queuing results should be reviewed with a focus on safety and the results documented. <p>It should be noted that upon receipt of this supporting information the Region may have additional points of clarification or requirements.</p>	
2.	<p>The Transportation Impact Study significantly underestimates the impact of additional heavy trucks to the road network by using a passenger car unit equivalent (pcu/veh) of 2 for heavy trucks. Loaded heavy trucks should have a factor of 3 pcu/veh applied.</p>	<p>Sections 3.0, 4.0 and 5.0</p>	<p>A PCE is used for more conservative analyses, as it accounts for the relative performance of vehicles. Heavy vehicles take up more time and space. More importantly, they have lower acceleration/deceleration rates.</p> <p>It may be a reasonable assumption to use a lower PCE for vehicle trips returning to the site empty, as the vehicle's performance would be improved. However, to remain conservative in the intersection capacity analysis, a constant PCE factor has been applied for all truck trips in all directions of travel.</p> <p>No justification for use of a 3.0 PCE factor is provided.</p> <p>The FHWA sponsored study, the passenger car equivalency factor ranges from 1.1 to 2.5. An average representation can be assumed; that is, an average truck, a recreational vehicle or a bus is equivalent to 2.0 pc¹.</p> <p>Highway Capacity Manual² offers a PCE domain for trucks and buses. Trucking and buses on level terrain are noted as 1.5 PCE. Rolling terrain as 3.0 PCE and Mountainous terrain as 6.0.</p>	<p>Per Section 1.22 of the Town of Milton's Transportation Impact Study Guidelines, for planning purposes, a PCE of 2 can be assumed for trucks, buses, and recreational vehicles. In situations where a high percentage of multi-unit or heavily loaded vehicles can be reasonably expected, the use of a higher PCE may be warranted.</p> <p>As the applicant has noted, the Canadian Capacity Guide, Table 3.2, notes a PCE of 2.5 for Multi-Unit Trucks and 3.5 for Multi-Unit Trucks Heavily Loaded.</p> <p>In order to remain consistent with MTO requirements, the Town requires that a PCE of 2 be used for heavy trucks, and PCE of 3 be used for loaded heavy trucks. As such the TIS needs to be revised accordingly and resubmitted for review by the agencies.</p>	<p>JDCL has provided an updated TIS based on revised PCE assumptions as agreed between the MTO, Town, and Region as per emails May 7 2020.</p>

¹ Ontario Geometric Design Standards for Ontario Highways, Section B.7.2.2 Equivalent Vehicle Volumes

² Highway Capacity Manual Special Report 209 Third Edition, Washington D.C. 2994 Table 3-3: Passenger Car Equivalents on Extended General Freeway Segments

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		<p>As outlined in the Canadian Capacity Guide for Signalized Intersections,³ “Where specific counts by heavy vehicle types are not available, a combined passenger car unit equivalent of 2.0 may be used as an approximate value for trucks and buses.”</p> <p>The Canadian Capacity Guide, Table 3.2, notes a PCU of 2.5 for Multi-unit trucks and 3.5 Multi-unit trucks heavily loaded.</p> <p>The base year traffic conditions converted all observed medium and articulated trucks into PCU using a factor of 2.0 PCE per vehicle. As the makeup of the goods being shipped by the trucks observed in the TMC data is unknown a combined passenger car unit equivalent of 2.0 is supportable and has been carried forward to be applied to site generated traffic.</p>		
<p>3. Under existing conditions, several intersections within the study area / haul route operate with critical movements (LOS F & over capacity). The additional truck traffic generated from the subject site would exacerbate these issues. This is evident in the future conditions analysis even though the incorrect pcu/veh have been utilized. Therefore, operating conditions will actually be worse than indicated in the report.</p>	<p>Section 2.0 and 3.2</p>	<p>The existing capacity issues are outlined in Section 2.3 of the TIS.</p> <p>The existing intersection capacity issues are not attributable to the subject site and would therefore be the responsibility of the road authority to address. Traffic control upgrades could be considered at the two Highway 401 Ramps. However, existing volumes do not meet the minimum criteria outlined by the Ontario Traffic Manual Book 12 for traffic control signals.</p> <p>A more comprehensive intersection control study would be the responsibility of the road authority, as would any required intersection upgrades.</p> <p>All impacts assessed in the study, regardless of the PCE factor are considered conservative. No additional analysis should therefore be required to review intersection capacity.</p>	<p>This is not an MTO comment but impacts the effected intersections that are under the MTO’s jurisdiction. Based on the capacity analyses results, it cannot be concluded that the study area road network can accommodate the site-generated traffic associated with the proposed development. Regardless that some of the critical movements occur under existing conditions, it is the applicants responsibility to adequately justify whether the study area road network can accommodate the anticipated site generated traffic and recommend any potential mitigation measures that would be required. This has not been completed and will need to be documented in the updated TIS, which will need to be resubmitted for review by the agencies.</p>	<p>JDCL has provided an updated TIS.</p> <p>The capacity deficiencies identified under the existing conditions will continue to occur with the addition of background traffic and site generated traffic. The capacity deficiencies are not directly related to the operation of the subject site. To improve the operations, changes to the existing form of stop control could be considered.</p> <p>The existing form of traffic control at the Highway 401 Eastbound and Westbound Off-Ramps requires improvement regardless of the proposed quarry operation. The forecast traffic volumes do not satisfy the signal warrant requirements. Unwarranted traffic control signals could be considered by the MTO for implementation.</p> <p>The introduction of unwarranted traffic control signals provides the additional capacity necessary to accommodate both non-site growth in traffic and traffic generated by the subject site.</p>

³ Canadian Capacity Guide for Signalized Intersections Section 3.1.2 Units of vehicle flow

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					<p>As concluded in the Traffic Safety Report, an unwarranted traffic signal, if installed, at the intersection Reid Sideroad and the Highway 401 ramps would result in an additional crash every 18 to 23 years. The lifespan of the subject site is estimated to be about 20 years.</p> <p>The decision to implement an unwarranted signal is a policy decision to be made by the MTO. In any event, signalization is not an antecedent to opening the [subject site], from a safety perspective.</p>
4.	<p>The site generated traffic triggers critical movements at some of the study area intersections, which are operating satisfactorily in the future background conditions (without the site-generated traffic).</p>	Section 3.2	<p>The TIS forecast traffic for three horizon years, consistent with the MTO TIS guidelines. The horizon years include:</p> <ul style="list-style-type: none"> • Opening date (2020); • five years after opening date (2025); and • ten years after opening date (2030). <p>Background traffic, non-site traffic increases, were forecast using a generalized background traffic growth rate of 1% per annum compounded to the respective horizon years. This growth rate is considered conservative, as the historical growth in traffic along the Highway 401 corridor between 2008 and 2012 was 0.26% per annum.</p> <p>The noted capacity deficiencies under existing conditions will occur under future conditions even without the proposed development (background traffic only). As no site related traffic has been included under the future background conditions, these deficiencies are not related, nor a result of the potential additional traffic generated by the subject site. If required, the road authority is responsible for addressing these existing capacity issues.</p>	<p>The Town did not state that it is or is not JDCL's responsibility to provide improvements at the Highway 401 ramps. That would be at the discretion of the MTO as these intersections are under their jurisdiction.</p> <p>The site generated traffic is triggering a critical movement. In the AM peak hour, the intersection of Guelph Line & Highway 401 WB Ramp has reserve capacity in the Future Background scenarios (without site generated traffic) but is over capacity in the Future Total scenarios (with site generated traffic).</p> <p>Please refer to Response #6 for further clarification from MTO.</p>	<p>JDCL has provided an updated TIS.</p> <p>See comment 3 above for summary.</p>
5.	<p>It is noted that the average load per truck is estimated at 33 tonnes per truck but no information is provided to determine the legitimacy of this assumption. Further to this, the forecast site activity appears to be based on a proxy site (Erin Pit) but no information is provided to verify these assumptions.</p>	Section 3.2	<p>Operational assumptions regarding the proposed pit were provided by the applicant as noted in Section 3.2 of the report.</p>	<p>A revised TIS report must outline the similarities between the proxy site and the subject site and explain why they will generate similar truck traffic volumes. More information regarding the "Erin Pit" is required to be included in the revised</p>	<p>JDCL has provided an updated TIS.</p> <p>The similarities to the Erin proxy site are explained in Section 3.2 of the revised report.</p>

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			<p>The applicant currently operates a fleet of approximately 85 vehicles including:</p> <ul style="list-style-type: none"> • 21 Tri-Axel Straight trucks – 22.7 tonne payload, • 18 Tri-Axle Tractor Trailer – 35.1 tonne payload • 16 Quad-Axle Tractor Trailer – 39.1 tonne payload • 30 Tri-Axel Pony Pub Combinations – 41.4 tonne payload <p>The total payload for the fleet is 2,976 tonnes with an average payload of 35 tonnes per vehicle. To be conservative, a load size of 33 tonnes per truck was assumed in the trip generation calculations.</p>	<p>TIS. Any raw data to confirm the information outlined in Section 3.2 should be appended to the report.</p>	<p>Shipment of materials from the Reid Road Reservoir Quarry is expected to be similar to the Erin Pit which has a similar size licence of 925,000 tonnes per annum. The comparison is also relevant due to its proximity to the market as well as the fact that both sites are expected to focus on similar market segments (ready mix concrete, hot mix asphalt and road construction products in the GTA). Thus, delivery of product to market is expected to utilize the same distribution of truck sizes and have similar shipping times during the day and annual seasonal activity.</p>
6.	<p>Additional trucks generated at north ramp terminal results in significant delays, please provide improvement recommendations as MTO does not install traffic signals, which are not warranted.</p>	Section 3.2	<p>Capacity issues are present under existing conditions without the potential additional traffic generated from the subject site. The existing form of traffic control at the Highway 401 Ramps may require improvement regardless of the proposed quarry operation. The forecast traffic volumes do not satisfy the OTM Book 12 signal warrant requirements.</p> <p>See also response #3.</p>	<p>Site generated trucks at the north ramp terminal is triggering a critical movement which will result in increased delays and extended queues especially in the AM peak period. It is the responsibility of the applicant to demonstrate the study area road network can accommodate the anticipated site generated traffic and recommend any potential mitigation measures that would be required. This has not been completed and will need to be documented in the updated TIS, which will need to be resubmitted for review.</p>	<p>JDCL has provided an updated TIS.</p> <p>See comment 3 above.</p>
7.	<p>In Section 3.2.2, please clarify which month the data was extracted for hourly shipping activity.</p>	Section 3.2.2	<p>Operational assumptions regarding the proposed pit were provided by the applicant. The daily and hourly distribution of truck trips was previously utilized for the James Dick Construction Limited Revised Traffic Impact Study Eramosa Quarry, Township of Guelph-Eramosa, Cole Engineering Group Ltd. April 2016 Project No.:Tr12-0013.</p> <p>The temporal data set provided by the applicant includes 23 days of truck shipments from the Erin Pit site from August 2011 representing the peak month of that year. The historical data referenced the real operational characteristics of the Erin Pit site.</p>	<p>MTO are satisfied with the applicant's response. Please update the TIS to reflect the new information.</p>	<p>JDCL has provided an updated TIS.</p> <p>See Section 3.2 of the revised TIS.</p>

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		<p>A transposition error Table 3.2 (Historical daily Shipping Activity by Hour) of the TIS is noted under the 06:00hr.</p> <p>The transposition error has no impact the analysis as the average number of loads per hour (approximately 12 or 9% of daily shipping) is unchanged. The AM peak hour occurs at 08:00hr with approximately 12% of daily shipping occurring.</p> <p>The revised 06:00hr date points are noted as follows:</p> <table border="1" data-bbox="1358 645 1898 1048"> <thead> <tr> <th>Day/Time</th> <th>06:00</th> <th>07:00</th> <th>08:00</th> <th>09:00</th> <th>10:00</th> <th>11:00</th> <th>12:00</th> <th>13:00</th> <th>14:00</th> <th>15:00</th> <th>16:00</th> <th>17:00</th> <th>18:00</th> <th>Total</th> </tr> </thead> <tbody> <tr><td>Day 1</td><td>14</td><td>21</td><td>20</td><td>12</td><td>20</td><td>16</td><td>16</td><td>20</td><td>8</td><td>17</td><td>2</td><td>0</td><td>0</td><td>166</td></tr> <tr><td>Day 2</td><td>10</td><td>4</td><td>7</td><td>5</td><td>4</td><td>7</td><td>5</td><td>10</td><td>6</td><td>11</td><td>0</td><td>0</td><td>0</td><td>64</td></tr> <tr><td>Day 3</td><td>12</td><td>14</td><td>12</td><td>16</td><td>16</td><td>12</td><td>19</td><td>16</td><td>22</td><td>14</td><td>2</td><td>0</td><td>0</td><td>155</td></tr> <tr><td>Day 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<tr><td>Total</td><td>282</td><td>263</td><td>348</td><td>280</td><td>346</td><td>230</td><td>351</td><td>289</td><td>278</td><td>270</td><td>59</td><td>1</td><td>0</td><td>2,997</td></tr> <tr><td>Average</td><td>12</td><td>11</td><td>15</td><td>12</td><td>15</td><td>10</td><td>15</td><td>13</td><td>12</td><td>12</td><td>3</td><td>0</td><td>0</td><td>130</td></tr> <tr><td>Percent</td><td>9%</td><td>9%</td><td>12%</td><td>9%</td><td>12%</td><td>8%</td><td>12%</td><td>10%</td><td>9%</td><td>9%</td><td>2%</td><td>0%</td><td>0%</td><td>100%</td></tr> <tr><td>Road Peak</td><td></td><td></td><td>±AM</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>±PM</td><td></td><td></td><td></td></tr> </tbody> </table> <p>A rounding error in Table 3.1 (Historical Monthly Shipping Activity – Estimated Percent of Licence Limit) of the TIS reports a percent total of licence limit of 99%. The expected value is 100%. The difference is attributable to years where the pit did not extract material to the licence limit.</p>	Day/Time	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	Total	Day 1	14	21	20	12	20	16	16	20	8	17	2	0	0	166	Day 2	10	4	7	5	4	7	5	10	6	11	0	0	0	64	Day 3	12	14	12	16	16	12	19	16	22	14	2	0	0	155	Day 4	10	12	13	17	13	8	17	12	10	11	0	0	0	123	Day 5	12	8	12	10	16	5	22	12	17	13	1	0	0	128	Day 6	8	14	13	10	5	4	7	5	5	1	0	0	0	73	Day 7	6	13	13	7	17	7	13	8	11	11	0	0	0	106	Day 8	5	15	7	18	14	10	12	11	5	3	2	0	0	102	Day 9	13	15	14	13	20	7	17	8	12	8	2	0	0	129	Day 10	6	2	5	4	2	3	0	0	0	0	0	0	0	22	Day 11	13	7	24	17	21	14	22	14	18	19	1	0	0	170	Day 12	11	8	11	8	24	6	15	17	11	14	1	0	0	126	Day 13	17	14	19	13	22	16	16	17	15	18	5	0	0	172	Day 14	21	16	23	18	12	17	19	20	16	20	2	0	0	184	Day 15	12	14	17	15	11	5	19	12	13	16	2	0	0	136	Day 16	13	13	22	13	22	8	23	18	20	17	4	1	0	174	Day 17	10	10	12	10	11	4	16	5	12	5	6	0	0	101	Day 18	9	12	15	10	7	17	11	22	13	13	9	0	0	138	Day 19	19	12	20	14	24	15	21	11	15	10	1	0	0	162	Day 20	13	10	19	12	15	8	18	12	13	13	7	0	0	140	Day 21	16	12	13	14	15	14	14	13	15	12	7	0	0	145	Day 22	16	12	20	13	22	18	16	19	10	21	2	0	0	169	Day 23	16	5	17	11	12	12	11	12	7	8	1	0	0	112	Total	282	263	348	280	346	230	351	289	278	270	59	1	0	2,997	Average	12	11	15	12	15	10	15	13	12	12	3	0	0	130	Percent	9%	9%	12%	9%	12%	8%	12%	10%	9%	9%	2%	0%	0%	100%	Road Peak			±AM								±PM					
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<p>8. In Section 3.3 (Trip Generation), outbound truck volume from rock quarry, should have a Passenger Car Equivalent factor of 3 (1 truck =3 passenger cars) when calculating trip generation.</p>	<p>Section 3.3</p>	<p>See comment response #2.</p>	<p>MTO has completed different analyses in the past related to trucking routes, and studies have shown that loaded heavy trucks require more time and space. MTO requires that a PCE of 3 be used for loaded heavy trucks exiting the site, and a PCE of 2 be used for heavy trucks entering the site.</p>	<p>JDCL has provided an updated TIS based on revised PCE assumptions as agreed between the MTO, Town, and Region as per emails May 7 2020.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																				
<p>9. Reid Side Road is designated as a Local roadway in the Town's Official Plan. It is not meant to carry a significant amount of traffic or truck traffic. The proposal would result in Reid Side Road not functioning as intended. A comment stated on Page I of the TIS under the Assumptions section that Reid Side Road is a Truck Route is incorrect. Reid Side Road is not a Truck Route. Given that this fundamental</p>	<p>Page I in the Executive Summary</p>	<p>Reid Side Road is an east/west local road that was originally constructed to carry truck traffic from the subject site. The road was constructed in conjunction with the approval of the former Springbank Pit in the late 1970's. There is an executed Road Agreement with Springbank, the</p>	<p>The additional level of detail noted in the applicant responses (October 2019) should be provided in a revised TIS report. Furthermore, Reid Side Road should not be referred to as a truck route. Information regarding the Town of</p>	<p>JDCL has provided an updated TIS. The updated TIS is based on JDCL's understanding from discussions with JART:</p>																																																																																																																																																																																																																																																																																																																																																																																																																																				

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<p>assumption is incorrect, the validity of the rest of the findings in the report are called into question.</p>		<p>Town, the Region and the MTO. Reid Side Road (formerly known as Springbank Haul Road) was constructed specifically to service the quarry at the expense of the quarry operator.</p> <p>While the current Official Plan designation is a local road, the traffic to the quarry is specifically exempted as it is a local delivery. Consequently, should the application be approved, heavy vehicles generated by the subject site would be permitted to use Reid Side Road.</p> <p>See also comment #14.</p>	<p>Milton’s Schedule 26, By-Law No. 1984-1 should be noted in a revised report.</p>	<ul style="list-style-type: none"> JART does not disagree with the JDCL response regarding the history and status of the proposed haul road but requests that it is also acknowledged that it is not a Truck Route; rather, it is a road used by trucks. JDCL agrees and acknowledges that Reid Sideroad is designated as a “local” road in the Town’s Official Plan and trucks are prohibited from using this road except for local deliveries (as per Schedule 26, By-Law No. 1984-1). The permission for local deliveries would allow shipment of aggregate from the quarry if a licence is issued. JDCL notes the Haul Route agreement applies to successors (see clause 6.9) and includes the language “...to the intent that compliance with this agreement shall continue to be a condition of license issuance or renewal for the owner from time to time of that portion of Lots 6 and 7 concession 2 currently owned by Springbank”.
<p>10. The TIS has not considered the potential safety impacts from the increase in truck traffic that could result in a higher number of collisions in the area, as well as increase the severity of the collisions. Further to this, people tend to make more risky manoeuvres when in traffic congestion as is expected per the future conditions analyses.</p>	<p>Section 4.0 and 5.0</p>	<p>See comment response #1.</p>	<p>This information should be provided in a revised TIS report. Please refer to Response #1 for further clarification.</p>	<p>JDCL has provided the completed Traffic Safety Report.</p>
<p>11. The TIS has not confirmed whether truck traffic can enter and exit the site in a forward motion or that the access road and site can safely accommodate two-way truck traffic. No review of on-site queuing while trucks are waiting to be loaded/unloaded has been provided. No review of potential queueing into municipal right-of-way has been provided.</p>	<p>Section 4.0 and 5.0</p>	<p>The haul route between the first pond and Reid Side Road is over 700 metres in length. No queueing activity will occur off-site along Reid Side Road or Twiss Road.</p> <p>The on-site driveway and staging area(s) were previously used for aggregate hauling and have been designed to accommodate the intended heavy vehicles. All trucks that access the site will enter and exit the site in a forward fashion via the Reid Side Road intersection with Twiss Road.</p>	<p>In order to confirm the functionality of the site, please provide cross-sections of the driveway in a revised TIS, confirming that two heavy trucks can simultaneously navigate in opposing directions without striking. Mitigation measures are required for any pinch points where the driveway width cannot safely accommodate two-way heavy truck traffic flow. Considering the design vehicles that need to be accommodated (heavy trucks) a general minimum pavement width of 6.6m (preferably 7.0m) should be provided. A wider pavement width would be necessary along horizontal curves to accommodate heavy truck turning radii.</p>	<p>JDCL will ensure that trucks will not be allowed to cue on external roads.</p> <p>The updated TIS includes information on the function of the internal driveway including measurements and practices that will ensure the internal driveway continues to function and not cause any back up of traffic onto external roads.</p>

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			<p>JDCL trucks must operate in compliance with the Highway Traffic Act, including yielding to emergency vehicles.</p>	<p>These dimensions are based on the Transportation Association of Canada’s heavy truck design vehicle width of 2.6m plus the side-rear mirrors, which typically project approximately 30cm on both sides. This results in a total heavy truck width of 3.2m. A minimal buffer of at least 10cm would be required so that the truck mirrors do not strike when two trucks are travelling simultaneously in opposing directions. This results in a need for minimum 3.3m lanes in each direction (6.6m total pavement width, plus additional width for curves). Please address these concerns in the revised TIS, including the recommendation of any required mitigation measures.</p>	
12.	<p>The TIS recommends installing unwarranted traffic signals at the intersection of Reid Side Road and Guelph Line Off-Ramp. While this intersection is not under the jurisdiction of the Town or Region, it would not meet minimum signalized intersection spacing requirements outlined in OTM and could result in other operational, safety, and queuing issues. This issue should be explored further and documented in the updated TIS in conjunction with comments 17-22 below.</p>	Section 5.0	<p>The TIS recommends, “The MTO consider implementing unwarranted traffic control signals at the Reid Side Road and Guelph Line Off-Ramp with the Highway 401 to accommodate the existing and forecast background and total traffic volumes”.</p> <p>See also comment response #3.</p>	<p>This is not an MTO comment, however, the MTO ultimately has jurisdiction over these intersections. Any proposed mitigation measures should consider feasibility and any potential negative impacts that it may cause to the overall road network.</p>	<p>JDCL has provided an updated TIS.</p> <p>See comment 3 above.</p>
13.	<p>A Town Fire Station and Region EMS station are located on Reid Side Road and the additional truck traffic could negatively impact emergency response times. Opportunities to maintain or enhance the safe and responsive operation of the emergency services station on Reid Side Road in its current location should a quarry be approved by the Province need to be explored in the TIS.</p>	Section 5.0	<p>Can the reviewer explain how access of emergency vehicles might be affected?</p> <p>The EMS station has two driveways to Reid Side Road. The western most driveway measures approximately 26 metres in width and is unlikely to be completely blocked by stopped traffic or traffic generated by the subject site.</p> <p>No stopping any time signage is present along Reid Side Road in proximity to the EMS station. The signage is intended to discourage vehicles from stopping near the EMS driveways.</p> <p>No queueing activity related to the Quarry’s operation will occur off-site along Reid Side Road or Twiss Road. Queueing of vehicles will be accommodated on-site.</p> <p>Under the <i>Highway Traffic Act (HTA)</i> all vehicles are required to stop to the right-hand curb or edge of the roadway when</p>	<p>As previously noted, there is a Fire/EMS station located on Reid Side Road. The additional traffic generated by the subject site could potentially negatively affect emergency response times. A revised TIS report needs to evaluate and comment on this potential issue. It will be through the revised TIS that this matter will be reviewed and hopefully resolved.</p> <p>Halton Region’s objection on this matter would be resolved, per the January 16, 2020, experts meetings, if JDCL provides the agreed upon roadway markings and roadside signage (“upcoming EMS entrance”) to the satisfaction of the Town of Milton and Region of Halton.</p>	<p>JDCL has provided an updated TIS.</p> <p>If a Licence is issued by the Province, the applicant will coordinate with Halton Region and the Town of Milton to install advance warning signage on the Reid Sideroad approaches to Milton Fire Station 2. The advance warning signage should indicate an EMS entrance ahead. Supplementary pavement markings will also denote areas of pavement where vehicles should not stop to allow for emergency response vehicles to exit the station without delay.</p>

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			<p>approached by a vehicle with flashing lights or bell or siren sounding.</p>		
14.	<p>As per Schedule 26, By-Law No. 1984-1, heavy traffic is prohibited all year on Reid Side Road, as well as Twiss Road (Derry Road to North Limit of Roadway). Naturally, this regulation comes with a necessary exemption that stipulates the prohibition does not apply to any vehicle actually engaged in making a delivery or a collection from a premises that cannot be reached except by way of a road or portion of road where heavy trucks are prohibited. These vehicles may only travel on that road to the extent that is unavoidable in getting to/from that premises. Trucks making collections / deliveries to / from the Reid Side Road Quarry (if a Licence is issued by the Province) would fall under this exemption. However, as previously stated Reid Side Road is currently designated as a local roadway and is not intended to carry significant truck traffic.</p>		<p>See comment response to #9.</p>	<p>Information provided in comment #14 should be included in a revised TIS report.</p>	<p>JDCL has provided an updated TIS which includes this information.</p>
15.	<p>The Town of Milton completed a geotechnical investigation for Reid Side Road in 2016. It has to be noted that this study was done and focused for asphalt overlay purposes. This study identified that Reid Side Road is a local rural road. The geotech investigation (2 boreholes for this section of Reid Side Road) indicated an asphalt thickness of 180 – 200mm and granular thickness ranging from 410-560mm. It would therefore appear there are areas within the road structure that do not have the granular thickness required by the Town standards for an industrial road in this location. A copy of this report is available upon request.</p>		<p>Reid Side Road was originally constructed to a standard appropriate for use by heavy trucks and has been used by gravel trucks from the site as well as the Campbellville Industrial Park for several decades.</p> <p>A copy of the Report has been requested by JDCL and is currently being reviewed.</p>	<p>The submitted geotechnical assessment of Reid Side Road is unsatisfactory, The reports received to date from JDCL seem more opinion based in our opinion. The Town wants to see specifics (i.e. traffic volumes, structural capacity, ESAL calculations, specific design recommendations) before we can make a decision, provide additional direction and provide any clearance from a Reid Road perspective. The Town requires the following from the applicant:</p> <ol style="list-style-type: none"> 1. Prepare an updated, comprehensive geotechnical report and associated pavement design report, to address the following: <ol style="list-style-type: none"> a. Recommend a rehabilitation method for the road, using updated traffic volumes (to reflect current and future (a generalized traffic growth rate of 1.0 percent compounded per annum can be assumed for Reid Side Road. This is consistent with the assumptions in the TIS), without the Quarry traffic, to reflect a 20 year design life (i.e. 20 years until next rehabilitation/overlay required); b. Recommend a rehabilitation method for the road, using updated traffic volumes AND the anticipated traffic and increase in truck volumes from the Quarry 	<p>JDCL has provided a geotechnical assessment and responded to the Town's additional comments.</p> <p>As further discussed with Town staff May 21, 2020: JDCL believes that the information presently available from the Town (2016) along with the additional investigations completed by Soil-Mat provide an appropriate understanding of road conditions and support the Soil-Mat conclusions. Having said that, JDCL is content to rely on the Town's planned further investigations in 2021 as a basis for the Town to determine whether or not the Town thinks the traffic from the proposed quarry triggers any requirements for additional pavement structure. JDCL is open to discussions with the Town about necessary road improvements if required.</p>

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			<p>(these volumes to match those in the updated TIS);</p> <ul style="list-style-type: none"> c. Pavement design report to include ESAL calculations to support the recommended pavement designs; d. If additional/increased pavement design is required due to the increased Quarry traffic, then a cost estimate of all work will need to be included (1. Cost to improve without Quarry traffic considered, 2. Cost to improve with quarry traffic considered), the difference in cost between these 2 methods will be paid to the Town by the applicant, to use towards the rehabilitation of this road (which will occur in the Town's capital rehabilitation program, currently forecast for 2022, subject to budget and council approval) – this will account for Quarry associated traffic); e. All costs associated with this geotechnical and pavement design report will be borne by the applicant; and f. The Town reserves the right to peer review this report, and the costs associated with peer review will be recovered from the applicant. <p>2. Geotechnical Site Investigation for the Reid Side Road to include, but not be limited to, the following:</p> <ul style="list-style-type: none"> a. Borehole layout; b. Clearance and protection of underground utilities; c. Boreholes in mid driving lanes (alternating, every 100m) to a depth of 1.5m, with gradations performed on samples; d. Boreholes in shoulder (alternating, every 300m) to a depth of 1.0m, with gradations performed on samples; e. During drilling, soil and groundwater conditions will be recorded and soil samples collected; f. Backfill all boreholes and resurface with cold patch; 	

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				<ul style="list-style-type: none"> g. Ensure safety of public and staff involved in site investigation; h. Protect utilities and property from damage; i. Restore the site to as near original conditions as practical; j. Avoid having equipment/vehicles/staff on shoulders when any seasonal maintenance operations are anticipated (i.e. plowing, grading etc.); k. All signage and traffic control to be in accordance with OTM Book 7; and l. Prepare Pavement Design Report/Geotechnical Investigation Report that is to include the following: <ul style="list-style-type: none"> i. Pavement rehabilitation recommendations in accordance with the MTO’s “Pavement Design and Rehabilitation Manual” and applicable Town design standards; and ii. Identification of soil type and pavement conditions in areas of investigation. <p>If the applicant is of the opinion that they don’t need to perform field work, and can rely on the information already provided to them from the Town (i.e., previous studies), they will need to justify this in writing and submit this opinion along with that a comprehensive pavement design report, which addresses all items listed in #1 a-f above.</p> <p>Once a report is submitted, the Town may opt to have this peer reviewed and will look to the applicant to recover any costs associated with this.</p>	
16.	<p>In order to determine if the existing road structure or make up is sufficient to accommodate the anticipated heavy truck traffic expected to be generated by this development, the Town will require the applicant to have a Geotechnical Investigation completed, which shall address the suitability of the existing road to accommodate the anticipated traffic and loading associated with this development. This report should make a recommendation as to whether the road is</p>		<p>See comment response #15.</p>	<p>See response to Item # 15.</p>	<p>See response to Item #15.</p>

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<p>suitable in its current condition or if improvements are required to accommodate the anticipated site generated traffic.</p>				
<p>17. The Town will review the Geotechnical Investigation and will have this peer reviewed. The Town will look to recover any fees associated with this peer review from the applicant.</p>		<p>See comment response #15.</p>	<p>See response to Item # 15.</p>	<p>See response to Item #15.</p>
<p>18. An assessment in the TIS of the impact on the safe operation of Reid Side Road (and any other road proposed to be used by the aggregate trucks) by cyclists and pedestrians needs to be provided including mitigation measures necessary to provide a safe environment for both cyclists and pedestrians and to separate the cyclists and pedestrians from the proposed truck traffic.</p>		<p>See comment response #1</p>	<p>A safety analysis should be included in the revised TIS report. Please refer to Item # 1 for further clarification.</p>	<p>JDCL has provided the Traffic Safety Report.</p>
<p>19. Proposed elements impact the north and south ramp terminals due to the site traffic generated. Please provided mitigation methods to improve intersection operations. The area is located in an intermediate commuter corridor, seasonal factors are not required to be applied. Please use provided turning movement counts in the updated submission.</p>		<p>The noted capacity deficiencies under existing conditions will occur under future conditions without the development (background traffic). As no site related traffic has been included under the future background conditions, these deficiencies are not related, nor a result of the subject site. The existing capacity issues should be addressed by the road authority.</p> <p>See also comment response #3.</p>	<p>Provided turning movement counts were not used in the updated resubmission. Site generated traffic will result in accelerated intersection improvements. It is the responsibility of the applicant to demonstrate the study area road network can accommodate the anticipated site generated traffic and recommend any potential mitigation measures that would be required. This should be provided in the updated TIS.</p>	<p>The revised TIS maintains the use of the seasonal adjustment factor to reflect a summer condition when the quarry is expected to see the most activity – see Paradigm explanation.</p>
<p>20. Please provide electronic copy of synchro files of updated analysis to the MTO for review and comment.</p>		<p>Synchro files can be provided upon the request from the MTO.</p>	<p>Provide electronic copy of synchro files to MTO for review.</p>	<p>JDCL to provide to MTO based on updated TIS.</p>
<p>21. There is a culvert being replaced within the Reid Side Road right-of-way this summer. Should the road need to be upgraded to accommodate the heavy trucks associated with the JDCL RRRQ, this culvert may need to be replaced again as would others along Reid Side Road.</p>		<p>Initial review of the use of a 1219x1219 Reinforced Concrete STD Box Culvert manufactured to CSA A23.4 standards indicates that it will be more than adequate to support continued truck use of this road.</p>	<p>The culvert that was installed on Reid Side Road is a 1.2x1.2m reinforced concrete box culvert, in accordance with CSA-A23.4 and as per CSA-S6-14, and replaces the previous 900mm CSP culvert.</p> <p>The design life of the culvert is 75 years and typically the structural capacity of the culvert, at the depth installed, would allow for loaded trucks/local heavy traffic to travel overtop.</p> <p>There may be other, smaller, cross culverts along Reid Side Road; if this is the case (JDCL should confirm), then these should be analyzed to ensure they are structurally adequate to accommodate the anticipated heavy traffic. If analysis indicates they are not, then replacement would be required as dictated by a structural analysis (to be completed by the applicant at their cost).</p>	<p>Original comment is resolved.</p> <p>With respect to other smaller culverts: It would be reasonable to conclude that the culverts are structurally adequate since they were built to carry truck traffic to the Town's satisfaction and they are carrying truck traffic today. See response to comment #15 – JDCL is content to rely on the Town's planned further investigations and prepared to discuss the need for improvements.</p>

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22.			MNRF is looking for confirmation from the Town that the road allowance at the west end of the JDCL Reid Road site is closed. JDCL is proposing a 15m setback between Phase 1 and this closed road allowance as shown on the ARA site plans. Please confirm that this is a closed road allowance.	This is a closed road allowance as per unregistered bylaw 153.	Resolved