



August 27, 2015

**Via: Email**

Ms. Kim Wingrove  
Chief Administrative Officer  
Township of Guelph/Eramosa  
8348 Wellington Road 124  
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Rockwood ON N0B 2K0

Dear Ms. Wingrove:

**Re: Peer Review of Traffic Impact Study and Haul Route Study  
Proposed Eramosa Quarry (Hidden Quarry)  
James Dick Construction Ltd.  
Project No.: 300032475.0000**

This letter provides our ongoing peer review of the following studies:

- Revised Traffic Impact Study, Eramosa Quarry, Township of Guelph-Eramosa; prepared by Cole Engineering; dated August 20, 2015;
- Revised Haul Route Study, Eramosa Quarry; Township of Guelph-Eramosa; prepared by Cole Engineering; dated August 20, 2015.

In completing this peer review we have also considered the following documentation:

- Potential Impact of Hidden Quarry on the 6th Line & Residents; presentation to Guelph/Eramosa council by Concerned Residents Coalition (Perry Groskopf, CRC Rockwood Inc.); dated February 3, 2015;
- Letter Re: Comments on the Town of Halton Hills – Hatch Mott Macdonald Report; prepared by James Dick Construction Limited (Greg Sweetnam); dated July 23, 2015;
- Email response matrix to Burnside Haul Route Study Comments (June 26, 2015); prepared by James Dick Construction Limited (Greg Sweetnam); dated July 23, 2015.

Burnside has provided peer review comments on a number of earlier versions of these reports, and therefore the current review is a culmination of these efforts, focusing on the items that remained outstanding at the time of these earlier reviews. Reference should be made to these earlier review comments for the complete peer review assessment completed.

## **Item 1 - Revised Traffic Impact Study**

The main conclusions and recommendations of the Traffic Impact Study (TIS) were summarized in Burnside's peer review letter dated April 7, 2014. The additional, or revised, conclusions and recommendations of the revised TIS are summarized as follows (paraphrased):

- a) It is confirmed that a westbound left turn lane is warranted at Highway 7 / 5th Line and that an eastbound left turn lane is warranted at Highway 7 / 6th Line, together with a continuous turn lane to be provided between 5th Line and 6th Line.
- b) Fleet data has been provided to confirm the assumption of 33 tonnes per truck, to estimate yearly truck trip generation from the quarry.
- c) A westbound right turn lane is proposed at 6th Line / Highway 7, including the addition of oversize truck entrance signs, to improve the safety of truck turning movements at this location.

## **Burnside Comments on the Revised TIS**

1. **Upgrading of 6th Line to Accommodate Eramosa Quarry** – Upgrades, to 6th Line will include the removal of the crest to provide sufficient sight distance to the intersection with Highway 7, plus upgrade of the road base, including an asphalt surface, to accommodate the quarry traffic. The revised TIS recommends that profile adjustments be made to 6th Line; however, improvements to the road base are not addressed in the revised TIS. It is recommended that the improvements identified be included in the detailed designs / agreements for this project.
2. **Horizon Period** – It is noted that a ten year horizon period has been analyzed in the TIS, while a twenty year operational period is forecast for the quarry. It is recommended that the longer horizon period be considered in any designs for improvements to the roads in this area.
3. **Traffic Operations at the Intersection of Highway 7 / 6th Line** – It is noted that the egress from 6th Line onto Highway 7 is forecast (2023 total traffic conditions) to have a poor Level of Service (LOS F) (i.e., long delays), but that sufficient capacity is available. There are no practical mitigation measures to reduce the delays for this movement, since traffic signals are not warranted. Improvements to this intersection (i.e., westbound right turn deceleration lane, eastbound left turn lane, improvements to stopping sight distance on 6<sup>th</sup> Line) will assist in maximizing overall operational efficiencies / safety.
4. **Left Turn Lanes on Highway 7 at 6th Line and at 5th Line and Right Turn Lane on Highway 7 at 6th Line** – Based on a left turn warrant analysis, the revised TIS recommends a continuous turning lane on Highway 7, between 6th Line and 5th Line, to provide for an eastbound left lane at 6th Line and a westbound left turn lane at 5th Line. The revised TIS recommends a westbound right turn deceleration lane on Highway 7 at 6th Line. The responsibility, designs, and permits for these improvements should be confirmed with the Ministry of Transportation.

5. **Impacts to 6th Line and Highway 7** – The Concerned Residents Coalition raised a number of issues pertaining to traffic impacts on 6th Line and on Highway 7 in the area of the Eramosa Quarry. Based on our peer review of the TIS we believe that the improvements identified for 6th Line and for Highway 7 are sufficient to mitigate the traffic impacts from this development in this area. The relocation of 6<sup>th</sup> Line and 5<sup>th</sup> Line into a single signalized intersection is not justified from a traffic perspective, given the potential for less obtrusive mitigation measures being available (i.e., left turn lanes at each of the intersections, with a continuous turn lane between intersections, plus a right turn deceleration lane at 6th Line). The background traffic using the 6th Line intersection is forecasted to be very low (i.e., 11 vehicles per hour in the peak hours), which does not justify the bridge replacement on 6<sup>th</sup> Line to the north, which would be required to provide an alternate travel route. The improvements to Highway 7 are subject to approvals / permits being obtained from the Ministry of Transportation (MTO), since Highway 7 is under their jurisdiction. Previous comments from the MTO have not identified the spacing between 5th Line and 6th Line to be a potential concern.

## **Item 2 - Revised Haul Route Study (HRS)**

The main conclusions and recommendations of the Haul Route Study (HRS) were summarized in Burnside's peer review letter dated June 26, 2015. The additional, or revised, conclusions and recommendations of the revised HRS are summarized as follows (paraphrased):

- a) Fleet data is now provided to confirm the use of 33 tonnes per truck to calculate daily truck generation.
- b) Additional information has been provided to confirm measures that are proposed to control against the potential for trucks to queue on 6th Line before the gates are opened at the Eramosa Quarry (i.e., on-site queuing potential, space between the gate and the road for one truck, policies to discipline drivers who arrive early).
- c) Detailed shipping data is now provided for the proxy site (Erin Pit), to confirm the truck trip generation calculations.
- d) Calculations are provided to confirm that the Eramosa Quarry has the potential to reduce truck travel in the Province by 1,505,282 km, due to this source being closer than alternate sources to the areas of aggregate demand.
- e) Turning templates are provided for the intersection of Main Street / Mill Street (Acton) that confirm that large trucks may encroach onto the curb for the westbound to northbound movement. Trucks straddling the approach lanes are able to negotiate the turn without encroachment. Possible improvements were identified to address this issue, including elimination of the westbound right turn lane and adjustment of the signal timing to provide additional east-west green time to maintain capacities.
- f) It is forecasted that the Eramosa Quarry will increase the heavy vehicle proportion of traffic along Regional Road 25 by approximately 15%. Assuming a linear correlation of collisions to traffic volumes, it is forecasted that the increased traffic from the Eramosa Quarry has the potential to increase the collision rate in this area by less than one collision over its 20 year lifespan.
- g) The revised HRS continues to maintain that Sections 5 to 8 of the *Haul Route Study – Terms of Reference* are not required, due to the low volume of additional trucks forecasted on the haul routes.

## **Burnside Comments on the Revised HRS**

1. **Coordination of HRS Study with TIS Study** – Various improvements are identified in the TIS as being warranted on Highway 7 at 6<sup>th</sup> Line (Township of Guelph/Eramosa) and at 5<sup>th</sup> Line (Town of Milton). The warrant analysis in the revised TIS is consistent with the trip distribution from the Eramosa Quarry that is assumed in the revised HRS. It is expected that the detailed designs, agreements and permits for the Eramosa Quarry will be based on the conclusions and recommendations set out in both the HRS and the TIS, suitably coordinated, once approved. MTO permits and approvals are required for improvements to Highway 7.
2. **Forecasted Truck Generation** – The revised HRS now provides additional details on the anticipated truck fleet for the Eramosa Quarry. The revised information supports the use of the 33 tonne capacity for calculating the yearly truck generation. However, we note that peak hourly truck generation has been based on operational data from the proxy site (Erin Pit), as discussed further below.
3. **Coordination of Operations Between Guelph Quarry and Eramosa Quarry** – Previous comments had requested quantification / clarification on how many trucks, from the existing Guelph Quarry, may be supplanted by the new Eramosa Quarry. The requested information will provide a better assessment of net impacts due to increased truck volumes, particularly through sensitive areas (e.g. connecting links through Guelph, Rockwood, Acton and Georgetown). It may also provide a better assessment of whether alternate haul routes (e.g. Guelph Line (RR1)) may present some relief to the use of eastbound Highway 7 as the primary haul route. The revised HRS does not provide any quantification of the net change in truck volumes and therefore, in the absence of such information, we assume that the new truck traffic will supplant very little of the existing truck traffic through Acton.
4. **Potential Reduction in Provincial Truck Traffic** – In the related documentation, James Dick Construction Limited has provided additional information on the supply and demand of crushed stone in the Greater Toronto Area (GTA). The revised HRS does not include this additional information, which appears to support the assumptions made in the calculation of potential reduction in Provincial truck traffic kilometers, which may result from the implementation of the Eramosa Quarry (i.e., source closer to demand). While the information provided is insufficient to fully justify the magnitude of the forecasted reduction, it is reasonable to assume that some benefit will be derived from the implementation of the Eramosa Quarry.
5. **Safety Issue at Intersection of Main Street / Mill Street (Highway 7, Acton)** – The revised HRS now provides a turning template analysis of the intersection of Main Street / Mill Street in Acton. The analysis confirms that quad-axle tractor trailer trucks may mount the curb in making the westbound to northbound movement at this intersection. The HRS notes that the lane configuration allows for trucks to straddle the two westbound lanes (i.e., right turn lane and through-left turn lane) to make this turn without mounting the curb. While this may be possible during uncongested periods, the ability of trucks to take command of both lanes may be restricted during more congested periods. The analysis in the HRS also shows that the elimination of the right turn lane (i.e., thus forcing trucks to make the turn further from the curb) is also a possibility. However, under such operations the westbound movement is forecasted to operate at 95% of capacity during the peak p.m. period and this lane configuration does not efficiently address the traffic volumes at this location. Therefore, while this may provide some improvement for the westbound right turns, overall we do not recommend it as a long term mitigation measure to address the

issue identified. We suggest that the HRS should also include further review of the following additional potential mitigation works to address the safety issue identified at this intersection:

- Improvement of the northeast curb radius; and/or
- Reduction of the length of the westbound right turn lane (i.e., rather than elimination of the lane), to better allow for westbound trucks to take control of both lanes to make the turn, rather than being forced into the relatively narrow right turn lane in advance of the intersection.

We confirm that the safety issue identified already exists for large trucks turning at this location. The data provided forecasts that between 12 and 14 heavy vehicles per hour (vph) currently make the westbound right turn movement at this intersection during peak periods. Based on the HRS we forecast that the Eramosa Quarry may increase the volume of heavy vehicles making this turn by about 10%, adding about 10 heavy truck turning movements on a daily basis during peak operational periods at the quarry.

While the revised HRS provides some additional analysis of the truck issues along the Highway 7 connecting links (i.e., analysis of the intersection of Main Street / Mill Street in Acton), it does not confirm the magnitude of safety issues along the corridor. We understand that the Town of Halton Hills will be requesting the Minister of Transportation to partner with the Town to commence a study for long-term transportation alternatives for aggregate haul routes impacting the Town of Halton Hills, including reviewing the need for an Acton By-pass to accommodate truck traffic.

- 6. Forecasted Truck Traffic in the Peak Period and on a Daily Basis** – The revised HRS forecasts a maximum of 13 truckloads shipped from the Eramosa Quarry per peak hour at peak operation during the peak season, based on average rates over the peak period (i.e., including Saturdays, which have significantly lower production rates). The monthly production data for the proxy site (Erin Pit) has now been included in the revised HRS. Based on our review of the proxy shipping data we suggest that a more appropriate design peak hour rate should be in the range of 20 vehicles per hour (vph), which is closer to the 30th highest hour that is typically used for peak hour traffic analysis purposes. The data recorded shows a maximum hourly shipping rate of 23 vph, which would be experienced on an infrequent basis.

The HRS forecasts an average daily truck shipping volume of 114 trucks per day during the peak month. The proxy data provided shows that the peak day of the peak month had a truck shipping volume of 174 vehicles per day (vpd) and that 65% of the days in that month had shipping volumes that exceeded 114 vpd. Based on this review we conclude that the forecasted daily truck volumes, used for analysis, may under-estimate typical peak period conditions.

While the HRS may under-estimate the peak hour and peak day volumes of trucks generated by the Eramosa Quarry, it is unlikely that the higher volumes will substantially change the conclusions reached in the impact assessment that has been provided to date in the HRS.

- 7. Need for Additional Environmental Review** – The HRS concludes that Sections 5 to 8 of the *Haul Route Study – Terms of Reference* need not be completed because it has been demonstrated that the additional truck traffic on the haul routes would be very low. As noted above we believe that the truck volumes may be under-estimated in the HRS. However, with the exception of the safety issues identified at the intersection of Main Street / Mill Street (Acton), there has not been sufficient information provided to identify the potential

issues along the haul routes. Therefore, in our opinion, it is premature to conclude that a more holistic environmental review is not warranted.

8. **Consideration of Alternate Haul Routes** – The response matrix provided by James Dick Construction Limited (JDCL) provides some rationale for not diverting additional traffic to Guelph Line, in lieu of sending almost all of the traffic to the east on Highway 7. The disadvantages identified for this route include the following:

- Adds 9 km to the typical haul route;
- Requires travel on Milton Townline (Regional Road 32) which has seasonal truck restrictions;
- Requires additional turning movements to access Highway 401.

The revised HRS does not provide an assessment of this alternate haul route. It is recommended that the HRS be revised to include an appropriate assessment of this haul route option.

9. **Truck Queuing at the Quarry Site Access** – The issues surrounding truck queuing at the site access have now been adequately dealt with in the TIS.

In conclusion, we believe that the TIS has provided sufficient information to confirm the requirements for road improvements in the area of the Eramosa Quarry, which should be implemented through the detailed design and approval process. Further, we conclude that matters remain outstanding with respect to the HRS, which should be further addressed before this study is approved.

Yours truly,

**R.J. Burnside & Associates Limited**



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cc: Elizabeth Howson, Macaulay Shiomi Howson Ltd. (enc.) (Via: Email)

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