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Project # 5549

## Memorandum

**To:** Township of Woolwich

**Cc:**

**From:** Stewart Elkins

**Date:** October 16, 2009

**Re:** **Peer Review of Capital Paving West Montrose Pit,  
Township of Woolwich Traffic Impact Study**

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Based on our review of the Capital Paving West Montrose Pit, Township of Woolwich Traffic Impact Study prepared by Stantec Consulting Ltd. in November 2008, we have the following comments:

- On page i of the Executive Summary a reference is made to Figure A, which is not provided.
- On page 1.1 the report identifies the proposed haul road as the haul route. The report does not identify the routes that trucks would take from the pit access road to the delivery locations. The report also does not evaluate alternative routes.
- On page 1.2 the hours of operation during the peak season are identified, however the times of year that constitute “peak season” are not.
- On page 2.1 the study area is described as “the proposed Katherine Street north access and Katherine Street roadway adjacent to the proposed entrance, between Regional Road 86 and Maryhill Road.” On page i of the Executive Summary the objective of the study is the “determination of the impacts (if any) to traffic operations at the intersections of Katherine Street (Regional Road 23) at Line 86 and Katherine Street at Sawmill Road.” These study areas are not consistent. The report only considers the impact of traffic volumes to the intersection of Katherine Street at Sawmill Road and does not include the safety implications.
- On page 2.1 the existing land uses in the study area were identified in compliance with Township of Woolwich Official Plan Amendment No. 13. The community of Winterbourne south of the site is not addressed.
- On page 2.1 the West Montrose Mennonite School is identified as being opposite the proposed pit access road on Katherine Street. In Appendix A, the second drawing shows the pit access road as being opposite an existing pit entrance (Licence No. 2020), south of the school. This pit is not mentioned in the report. There is no

discussion of whether the pit is currently operational or existing traffic volumes at this intersection.

- On page 2.2 it is implied that the shoulder width is 3.5 metres for the entire length of the road. At intersections with turning lanes the shoulder is significantly narrower, such as in the area of Winterbourne and at the proposed pit entrance, and a horse and buggy cannot pass by a stopped vehicle.
- On page 2.3 the physical characteristics of the roads in the study area are described in compliance with Township of Woolwich Official Plan Amendment No. 13. Load restrictions are also not discussed.
- On page 2.3 there is no discussion of the unusual and challenging geometry of the intersection of Katherine Street / Crowsfoot Road at Sawmill Road with respect to safety.
- On page 2.3 the discussion of trails in the vicinity of the site failed to identify the Grand Valley Trail which follows Leston Drive, which bisects the site.
- On page 2.4 the report refers to the peak hours of traffic operations for the site, but does not specify what these hours are.
- On page 2.4 the traffic volumes for the intersection of Katherine Street North at Regional Road 86 were identified as a 2005 count, however the count provided in Appendix B is dated April 3, 2007.
- On page 2.5 the collision history for the intersection of Katherine Street / Crowsfoot Road at Sawmill Road is not included. As part of the addendum to address the above noted issues, the most recent collision data should be obtained from the Region of Waterloo for all links and intersections in the study area, including the intersection of Katherine Street / Crowsfoot Road at Sawmill Road.
- On page 3.1 the report states that “Operations are constant throughout the operating period and not expected to experience any pronounced peaks during the day. As such, the distribution of truck trips is expected to be roughly equal hour to hour.” However, previously, on page 2.4, it was noted that peaks would not coincide with traffic to and from the West Montrose Mennonite School. Also, on page 5.1 it is noted that “the highest contribution to truck traffic volumes on Katherine Road com[e] during the mid-day peak.” These statements are contradictory and must be resolved. Furthermore, anecdotal evidence from other pits operating in the Township of Woolwich indicates that very pronounced peaking occurs, particularly in the morning in anticipation of the pit opening.
- On page 3.1 the increases in traffic caused by the extraction operations are discussed in compliance with Township of Woolwich Official Plan Amendment No. 13.
- On page 3.1 the report states that 133 aggregate loads would be processed over a 10 hour operating day. This would require a processing time of 4.5 minutes per load, however the report claims 4.6 minutes per load. A 4.6 minute processing time would allow 130 aggregate loads per day. This mathematical discrepancy must be resolved.

- On page 3.1 the number of aggregate loads per day is derived from an assumed processing time. No source is provided for the processing time.
- On page 3.1 no justification for the trip distribution is provided. There is no discussion of the destination of the trucks nor the probable split for these destinations.
- On page 4.2 no description is provided with respect to the layout of the proposed site access intersection.
- On page 4.2 the grades on Katherine Street “both east and west of the entrance” are described. All other references to direction in the report imply Katherine Street runs north / south.
- On page 4.2 the required minimum stopping sight distance stated for a design speed of 100 km/h is 185 metres. This source of this site distance is not noted. Table 1.2.5.3 of TAC Geometric Design Guide for Canadian Roads reports a Stopping Sight Distance of 160 – 210 metres for a passenger vehicle. The average of this range is 185 metres. The table is accompanied by a paragraph explaining the variation for trucks based on the greater breaking distances for conventional breaks. Table 1.2.5.4 indicates that trucks with conventional breaking systems have a Stopping Sight Distance of 235 – 330 metres for a design speed of 100 km/h. Furthermore, the Stopping Sight Distance only addresses the distance required to bring a vehicle to a stop. This does not address the requirements to safely exit the pit access road and merge with traffic. These requirements are detailed in Section 2.3.3 of the same manual. Further clarification is required to explain the sight distances used as well as document the required decision sight distance and turning sight distance appropriate at the site access.
- On page 4.2 a left turn lane assessment was conducted at the intersection of Katherine Street and the Site Driveway using derived volumes based on a count conducted at the intersection of Katherine Street at Line 86. This traffic count was conducted in 2007 and the volumes are not projected to either horizon year. The count does not incorporate existing traffic patterns at the existing intersection where the proposed site access road will connect.
- On page 4.3 the horizon years are identified in compliance with Township of Woolwich Official Plan Amendment No. 13.
- On page 4.3 the intersection of Katherine Street at Sawmill Road is introduced. As previously mentioned with reference to page 2.3, there is no discussion with respect to the unique geometry of the intersection. The type of intersection control is also not identified.
- On page 4.3 the growth rate used is identified. The source of the growth rate is not provided. The background growth does not address other proposed developments in the area, particularly the Hunsburger Pit further south on Katherine Street, the Kuntz Pit, or the Middlebrook Pit. The cumulative impacts from these other Pit operations must be addressed in context with this application.
- On page 4.3 the site generated traffic is not illustrated either in a figure or in the Appendices.

- On page 4.3 the traffic analyses are not summarized in the text. The thresholds used to determine critical movements are not identified. The traffic volumes for each scenario are not provided in the text. On review of the Synchro analyses in the appendices, the following observations were made:
  - No Existing Traffic Analysis is provided.
  - The volumes in all scenarios have been rounded to multiples of 5 and 10. In several instances this results in the projected traffic volumes for 2009 being lower than observed in 2006 and 2007.
  - The 2009 Mid Day Peak Hour – Background Traffic uses the AM volumes.
  - The scenario described in the text as 60 / 40 is labelled as 50 / 50.
  - The analysis does not account for Crowsfoot Road at the intersection of Katherine Street / Crowsfoot Road at Sawmill Road.
  - The unsignalized intersection reports do not include v/c or LOS. The HCM Unsignalized Report format should be used.
  - Traffic operations at the site access have not been assessed for any scenario.
- On page 4.4 it is noted that the site trucks will be accelerating or decelerating, which would reduce the speed differential with horse and buggies. This does not address the problems such speed differentials would cause with other vehicle traffic.
- On page 4.4 there is no discussion of the physical impacts of the truck traffic, particularly to the road structure.
- On page 4.4 the need for children to cross the street to reach the school is not addressed. There is no mention of an existing crosswalk, and no discussion for the possible need for a future one. Any young child can act unpredictably, which is a safety concern. Provisions to alert truck drivers of the potential danger have not been recommended.
- On page 4.5 the existing shoulder widths are stated to be sufficient to accommodate pedestrian and buggy traffic. The quality of snow clearing and impact to pedestrian and buggy traffic is not discussed. If the snow is not sufficiently removed, the shoulder may not be a viable option for pedestrians and horses, especially in the early spring.
- On page 5.2 studies are noted to justify the safety of familiar drivers around horse and buggies. The exact studies are not identified, and as such these conclusions cannot be verified.
- The report does not identify the policy framework, such as the Township of Woolwich OPA 13, that the study was intended to address.
- The report does not identify whether or not an Environmental Assessment is required.
- The impacts to the Foundation Christian School were not addressed by this study.

- The proposed hours of operation exceed those permitted by the noise by-law. An adjustment in hours of operation will impact the site trip generation. This should be taken into consideration and the traffic analysis should be revised accordingly.
- Appendix B is improperly labelled.
- While impacts to the Natural Environment (air quality, terrestrial heritage, and aquatic heritage) and Social Environment (noise, vibration, and cultural heritage) may not be directly attributable to increases in traffic associated with pit operations, other related studies are needed to provide an overall assessment of the cumulative impacts from the pit. The traffic component must be considered with the other related assessments (Hydrogeologic Assessment, Natural Environment Technical Report, Archaeological Assessment, Assessment of Potential Noise, Air Quality and Dust Management Plan, Visual Assessment Report, Planning Opinion, Cultural Heritage Landscape Study, Final Air Quality Assessment Report).