

Memo



Stantec

To:	George Lourenco Capital Paving Inc	From:	Paul Bumstead Stantec Consulting Ltd.
File:	1609-60196	Date:	January 5, 2010

Reference: Capital Paving West Montrose Pit, Township of Woolwich – Traffic Impact Study – Response to Peer Review

The following information is provided in response to the October 16, 2009 Peer Review Memo submitted by iTrans to the Township of Woolwich. The peer review identified concerns/issues with respect to the November, 2008 traffic impact study prepared by Stantec Consulting Ltd. The November 2008 Montrose Pit traffic impact study is a amended report based on discussions during an October 3, 2008, pre-consultation meeting, required by the Region, that included staff from the Region, Township and Stantec. The TIS was completed based on an agreed upon scope at the meeting.

It should be noted, Regional Road 23 (Katherine St.) is under the jurisdiction of the Region of Waterloo and the TIS has been completed in accordance with the “Transportation Impact Study Guidelines” of the Region of Waterloo and that the Regional Municipality of Waterloo provided a letter dated January 28, 2009 to the Township, agreeing with the findings and conclusions of the traffic impact study. Responses to the iTrans peer review are provided on a comment by comment basis as documented in the October Peer Review and are as follows:

1. **Comment:** *On page i of the Executive Summary a reference is made to Figure A, which is not provided.*

Response: Figure A is a typographical error and should read as Figure 1, which provides the location of the subject site and can be found following page 1.2 of report.

2. **Comment:** *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.*

Response: The proposed haul road provides a direct connection between the pit and Regional road (Regional Road 23) and is designed specifically for truck traffic. The location and route for this haul road has been selected to avoid any Township roads that are not designed to carry gravel trucks and to minimize exposure to residential land use.

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The Study area was originally defined as Katherine Street between Road 86 and Mary Hill Road and it was further determined that the trip distribution of a 60/40 north/south split at Katherine Street would be assumed for the purposes of this study. The study area was subsequently expanded at the request of the Region and the Township to include the major upstream and downstream intersections.

These limits prescribe the effective haul route within the Study Area for impact assessment.

Alternative routes were not assessed as the preliminary criteria were used to identify haul road. On the basis of this criteria, only one reasonable alternative was defined.

3. **Comment:** *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.*

Response: Peak Season generally occurs during the summer when construction projects are most prevalent.

4. **Comment:** *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.*

Response:

With respect to Study Area, the original study area was defined as Katherine Street adjacent to the site because of the minimal traffic generation of the site. The Study area was later expanded to include intersections beyond the site access. The executive summary correctly states the scope in this regard.

With respect to safety, it was determined that a road safety review and collision risk analysis review was not required. An access conflict evaluation was required, which is addressed in Section 2.3.4, page 5 of the report. (Item 20 Pre-Study Conference Form)

5. **Comment:** *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.*

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Response: There are no major intersections in/or in the vicinity of Winterbourne and given that the current proposal does not result in traffic impacts to roadways/intersections in the vicinity, this is not considered a significant issue.

6. **Comment:** *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.*

Response: The proposed entrance will be directly across the existing pit east of Katherine St as shown in appendix A. Capital understands that extraction no longer takes place at the existing pit so there is minimal traffic.

7. **Comment:** *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.*

Response: With the exception of a right turn deceleration lane on Katherine Street at the proposed pit access, no changes are proposed to Katherine Street. Vehicles (trucks and passenger autos) will continue to use roadway as they do now. Truck volumes associate with the site are minimal are not expected to result in additional impacts with respect to use of the roadway and shoulder by horse and buggy.

8. **Comment:** *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.*

Response: There are currently no load restrictions on Katherine Street (Regional Road 23), Regional Road 86 or Regional Road 17. The haul road will be designed to handle truck traffic.

9. **Comment:** *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.*

Response: Refer to Item 4 above related to Safety Analysis. It is acknowledged that the subject intersection does not have standard design, but given the low volumes of site traffic assigned to this intersection, it is unlikely that the subject site traffic will drive the need to address this unusual intersection geometry.

10. **Comment:** *On page 2.3 the discussion of trails in the vicinity of the site failed to identify the Grand Valley Trail which follows Letson Drive, which bisects the site.*

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Response: It is noted that the Grand Valley Trail does bisect the site. Pedestrians travelling through the trail currently travel on Letson Drive. This will remain unchanged during and after pit operations.

11. Comment: 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.

Response: Hours of operation for the site are identified on Page 1.3. The peaking characteristics of the proposed operation are described on Page 3.1, and indicate that there is no pronounced peak for site traffic during the hours of operation. During the Pre-Consultation meeting on October 3, 2008, it was agreed that for the purposes of the traffic assessment, peak hours will be the AM, midday and PM weekday peak hours.

12. Comment: *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.*

Response: Traffic volumes identified in section 2.4 should read 2007 and not 2005. The date of April 3, 2007 is the correct date of the traffic counts provided by the Region of Waterloo.

13. Comment: *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.*

Response: Collision information is provided as Appendix E.

14. Comment: *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 come 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.*

Response: Refer to response to Item 11 above. The pedestrian/horse and buggy activity associated with the Mennonite school does not coincide with the street peak analysis period for Katherine Street.

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With respect to the highest contribution to truck traffic, this would refer to the truck activity as a percentage of total flow on Katherine Street. Truck activity will be consistent throughout the day (hours of operation) while auto volumes would peak in the morning or afternoon peak hour. This percentage contribution of truck traffic has no relevance to the peak hour assessment and is therefore not contradictory.

15. **Comment:** *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.*

Response: Nature and intent of comment not clear.

16. **Comment:** *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.*

Response: This is a minor difference related to the rounding of the processing time and will have no significance to the findings of the study. In fact, the report uses a higher number and therefore is a more conservative assessment.

17. **Comment:** *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.*

Response: Processing times were provided by Capital based on the types of equipment that will be used for processing aggregate and their desired rate of extraction.

18. **Comment:** *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.*

Response: Trip distribution is discussed in section 3.1.2. This distribution was agreed to at the Pre-Consultation meeting. Sensitivity testing was undertaken, page 4.3, to confirm the significance of trip distribution.

19. **Comment:** *On page 4.2 no description is provided with respect to the layout of the proposed site access intersection.*

Response: The report states on Page 4.2 that “the proposed access conditions and layout are shown in Appendix A”. This drawing depicts the upgrade of the existing entrance to a commercial truck entrance.

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*20. **Comment:** 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.*

Response: This Comment is inaccurate. Page 4.2 of the report states "The approaching Katherine Street grades..." Katherine Street is a north-south street. The description of the grades relates to the east-west approaches to Katherine Street.

*21. **Comment:** 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.*

Response: References to the TAC Geometric Design Guidelines are the source for the quoted distances and were unintentionally omitted. Katherine Street is a rural road with a posted speed of 80km/h. The design speed for this road is 90-100 km/h. The required minimum stopping sight distance would be 160m-210m or an average of 185m (Table 1.2.5.3 TAC Geometric Design Guidelines for Canadian Roads). For trucks, with conventional breaking systems the minimum stopping sight distance would be 235m-330m or an average of 285m (Table 1.2.5.4). Decision sight distance for avoidance manoeuvre (Table 1.2.5.6) is 225m to 315m. The existing sight distance is approximately 300m to the north and well over 300 m to the south of the proposed sight access. The sight distance requirements are adequate to ensure that vehicles on Katherine Street and those egressing the proposed site access can do so safely.

*22. **Comment:** 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.*

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Response: Analysis should have been undertaken for 2009 and 2017 conditions. However, changes in volume at the site access would not be significant enough to change findings of the analysis.

23. Comment: *On page 4.3 the horizon years are identified in compliance with Township of Woolwich Official Plan Amendment No. 13.*

Response: No response required.

24. Comment: *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.*

Response: The intersection noted is a “five approach” intersection under stop control. See Item 9 above for additional commentary.

25. Comment: *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 Hunsberger 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.*

Response: As the Montrose Pit traffic impact study was completed in November 2008, Capital was unaware of the extent of the other proposed operations as noted. The Hunsberger Pit planning summary report was completed in April 2009, Kuntz was submitted in December 2008 and no traffic study was completed for the Middlebrook Pit expansion (DJ Lockhart excavating), that Capital is aware of. The Montrose Pit Traffic Impact Study was completed using the best information available at the time of submission and that was publicly available. It would be unrealistic to perform a cumulative impact analysis without any accessible information regarding other proposals in the Municipality.

The 1.5% growth rate was developed in consideration of historical growth and is considered conservative given the rural nature of the area. It is likely that the aforementioned applications would be accounted for within the assumed per annum growth.

26. Comment: *On page 4.3 the site generated traffic is not illustrated either in a figure or in the Appendices.*

Response: Site traffic is quantified on a turning movement basis on page 3.1. Volume exhibits for all volume conditions provided in Appendix F.

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*27. **Comment:** 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 60 140 is labelled as 50 | 50.*
- *The analysis does not account for Crows foot Road at the intersection of Katherine Street | Crowsfoot Road at Sawmill Road.*
- *The unsignalized intersection reports do not include vic or LOS. The HCM Unsignalized Report format should be used.*
- *Traffic operations at the site access have not been assessed for any scenario.*

Response: The following is noted with respect to the points made above:

- No Existing Traffic Analysis is provided: analysis is limited to the site access which does not exist currently. All that exists currently is an access lane for farming equipment. Future conditions as assessed show that intersection operating well in the future, as they would be under existing conditions.
- 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 fact that rounding of volumes results in some volumes that are lower than observed shows how few site trips are begin added to the road. The results of the analysis will not change if the volumes were not rounded.
- The 2009 Mid Day Peak Hour - Background Traffic uses the AM volumes: while this error is noted, this is not the critical analysis time period.
- The scenario described in the text as 60/40 is labelled as 50 | 50: the scenario label is incorrect and should read 60/40.

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- The analysis does not account for Crows foot Road at the intersection of Katherine Street | Crowsfoot Road at Sawmill Road: comment noted. Given low volumes assigned to the study area network, it is suggested that intersection will continue to work as it does currently.
- 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: Site access operations were assessed. Very low volumes resulted in very good levels of service.

*28. **Comment:** 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.*

Response: Vehicles egressing the site will do so when the travelled lane is clear traffic and it is safe to do so, as with any minor street access. Vehicles northbound on Katherine Street will have to adjust their speeds as with any other intersection or driveway. Adequate sight distance is available to ensure that manoeuvres are safe and that vehicles already in the travelled lane are able to adjust their speed.

*29. **Comment:** On page 4.4 there is no discussion of the physical impacts of the truck traffic, particularly to the road structure.*

Response: Proposed use of roads by site related trucks limited to Regional Roads which are designed to accommodate truck traffic.

*30. **Comment:** 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.*

Response: Mennonite Children and Horse & Buggy currently walk and travel on the shoulders to get to the Mennonite school across from the pit entrance. The additional site related trucks will be moving at slower speeds in this area as they perform access/egress manoeuvres at the site entrance. Any issues related safety for the aforementioned use should be a consideration with or without the proposed pit operation.

*31. **Comment:** 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*

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removed, the shoulder may not be a viable option for pedestrians and horses, especially in the early spring.

Response: With respect to shoulder widths, refer to Item 7 above.

With respect to snow clearance issues, Capital does not intend to operate during the winter months (early December to late March). The Township is responsible for snow clearance from the shoulder throughout the Township and already does so to accommodate the horse and buggy traffic.

32. Comment: *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.*

Response: Required response unclear.

33. Comment: *The report does not identify the policy framework, such as the Township of Woolwich OPA 13, that the study was intended to address.*

Response: Woolwich OPA 13 was not approved by the Region of Waterloo and not in force at the time the study and application were submitted to the Township. It is understood that OPA 13 came into effect after a settlement with several appellants. OPA 13 was approved by the Ontario Municipal Board on November 23, 2009.

Notwithstanding this, we believe that Capital has provided information to the Township that should address all the studies and other requirements described in OPA 13.

34. Comment: *The report does not identify whether or not an Environmental Assessment is required.*

Response: The study is limited to the assessment of the traffic impacts associated with the proposed site. The findings suggest that the site is a low generator of trips and will have limited impact on the existing roadways and intersections. The lone infrastructure requirement is the addition of a southbound right-turn deceleration lane which would not necessitate an Environmental Assessment in and of itself.

35. Comment: *The impacts to the Foundation Christian School were not addressed by this study.*

Response: Site traffic minimal and not expected to have significant impact on road link operations Katherine Street in Winterbourne.

36. Comment: *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*

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should be taken into consideration and the traffic analysis should be revised accordingly.

Response: Analysis of the peak periods would be only marginally impacted by a reduction in operating hours. Findings of the study would not be different.

37. Comment: *Appendix B is improperly labeled.*

Response: Comment is not clear. Current label “Appendix B – Region of Waterloo Traffic Counts for Katherine Street – Regional Road 86 (Line Road 86) Intersection” is correct and appropriate. Page 1.1, site plan should be identified as shown in “Appendix A”. “Appendix B” is not referenced in the text.

38. Comment: *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).*

Response: the scope of the traffic impact study is to identify and assess the impacts of the site from a traffic perspective. The issues identified above are a matter for an environmental assessment and not an issue with the traffic study as prepared. See response to item 33.

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