May 5, 2009 Project # 4313

Ms. Heather Travis, MCIP, RPP
Senior Planner
City of Hamilton
77 James Street North, Suite 400
Hamilton, ON L8R 2K3

Dear Ms. Travis:

Re: St. Marys Flamborough Quarry
Response to "Consolidation of CART Comments"
Dated July 10, 2008

CART provided in an email on July 18th, 2008 with an attached document entitled "Consolidation of CART Comments on Baseline Conditions and Supporting Material for Haul Route Study PIC#4", dated July 10, 2008.

The following table provides the responses to these comments from the Flamborough Quarry proponent team.

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Transportation Baseline Conditions Report		
Section 1. Introduction		
1.	Page 1: It would be helpful to set out the study criteria the transportation report is intended to address within the actual report (the same applies to all reports). The proposed criteria, provided separately, do not indicate the source of changes to the TOR comments (i.e. the St Marys consulting team, public submissions).	The transportation related "Example Evaluation Criteria" from the Terms of Reference were added to Section 1 as well as the confirmation that all of these criteria were used in the evaluation of alternatives. The criteria and indicators used are described in detail in draft Transportation Report Section 19 and preliminary draft Haul Route Report Section 10.
2.	Page 2: The description of the proposed quarry does not indicate the location of the quarry entrance.	The quarry entrance for the preliminary preferred alternative haul route will be located on Milburough

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	While CART has been told informally that the access would be on Milburough Line, this information does not appear on any of the background or poster board materials received to date.	Line, north of Concession 11 E. The site accesses are described and functional drawings provided in Sections 11 and 20.2. The site access for the preliminary preferred haul route is included in a draft display board for PIC#5.
3.	Page 4, para. 4: The report should explain the relationship of the study with potential requirements under the Municipal Class EA and the MTO Class EA.	A section was added that describes this relationship and incorporates the information from Section 1.0 of the Terms of Reference.
4.	Page 4, para. 6: Highway 6, Guelph Line and Reid Sideroad are also Provincial highways. Hamilton-Wentworth is no longer a jurisdiction.	We could not find the references to Highway 6, Guelph Line or Reid Sideroad in paragraph 6 on p. 4. The reference to Hamilton-Wentworth has been removed.
Section 2. Existing Provincial, Regional and Municipal Policies and Initiatives		
5.	Page 6, Section 2.1.1: The Planning Act Regulations are not strictly part of the Act itself. The relationship between the Act and the PPS etc. should be more clearly explained.	Additional information provided regarding the legislative authority of the Provincial Policy Statement. Reference: Provincial Policy Statement, Ministry of Municipal Affairs and Housing, 2005
6.	Page 6, Section 2.1.2: The Growth Plan has more to say about "where and how future growth should be accommodated" than the Greenbelt Plan. There are specific policies in the Greenbelt Plan (such as the objective that infrastructure should support resource use in Section 4.2.1) – or all of this could be deferred to Report C, Land Uses as it relates to general policies (not all alternative routes), where this is	Added additional information Section 4.2.1.1. of the GreenBelt Plan. Reference: Greenbelt Plan, Ministry of Municipal Affairs and Housing, February 28, 200 5.

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	referenced.	
7.	Page 7, Municipal Policies: The section should refer (at least generally) to the broader policy framework including objectives etc., following the principle of looking at the entire Plan and not just specific sections.	Added additional information on the purpose, objective and goals of the various municipal plans. References: City of Hamilton Rural Official Plan, September 2006;Halton Region Website, http://www.halton.ca/ppw/Planning/OP/#Q2; Town of Milton, www.milton.ca/townhall/depts/planning/policy/officialplan.htm; City of Burlington, www.cms.burlington.ca/Official_Plan.htm ; City of Burlington,www.cms.burlington.ca/Official_Plan/Part_I/part_i_5context_of_plan.htm
8.	Page 10: Halton's Transportation Master Plan was updated in 2007, and the reference to 2004 should be changed.	Added additional information on the 2007 Transportation Master Plan Update. Reference: Report to Chair and Members of the Planning and Public Works Committee, Commissioner of Planning and Public Works, March 5, 2008, Report No. Re: PPW36-08 – Halton Region Transportation Master Plan Update (2007)
Section 3. Study Area		
9.	Page 14: Milburough Line is considered by Hamilton to be a cautionary unsigned bike route. The document describes it as an "on-street bike route" which implies an upgraded facility. (Bike routes, trails & parks map)	Document now reads “Milburough Line between Concession 7 E and Concession 8 E and north of Carlisle Road/Kilbride Road is a cautionary un-signed bike route.”
10.	Page 16: It should be made clear that that Guelph Line & Reid Side Road are under MTO's jurisdiction (not Halton Region). Also, Guelph Line and the westbound Highway	The document now states that the Highway 401 westbound ramp is unsignalized. The information we received

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	401 ramp is unsignalized.	indicates that Guelph Line is under the jurisdiction of Halton Region, and Reid Side Road is under the jurisdiction of the Town of Milton.
11.	Page 18: Concession 11 E is considered a cautionary un-signed bike route and not an on-street bike route.	Document now reads "Concession 11 E is a cautionary un-signed bike route between Highway 6 and Centre Road."
12.	Page 19: Carlisle Rd is considered a cautionary un-signed bike route and not an on-street bike route.	Document now reads "Carlisle Road is a cautionary un-signed bike route between Highway 6 and Milburough Line."
13.	Page 20: Concession 7 E, Concession 6 E and Parkside Drive are considered cautionary un-signed bike routes and not on-street bike routes.	Document now reads as follows for each respective link: "Concession 7 E is a cautionary un-signed bike route just west of Milburough Line." "Concession 6 E is a cautionary un-signed bike route between Green Spring Road and Milburough Line." "Parkside Drive is a cautionary un-signed bike route from Highway 6 to Robson Road."
14.	Page 21: Dundas Street, 2nd paragraph only mentions 5 signalized intersections...there are many more, they should all be listed for baseline conditions.	Document now reads "Dundas Street is signalized at its intersections with Highway 6, Development Access to the east of Highway 6, Hollybush Drive/ Howlandmills Drive, Riley Road, Hamilton Street, Main Street, Mill Street, Evans Road, Cedar Springs Road/ Brandt Street, and Guelph Line."
15.	Page 21: Re: Dundas Street (2nd Paragraph). The posted speed along Dundas Street is 80km/h except in the vicinity of Guelph Line (60km/h). Also (3rd Paragraph), Dundas Street is	Our field visits and video footage indicate other posted speeds. There are pockets of residential land uses along Dundas Street where the speed limit dips to 50 km/h. We have not changed the report content.

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	signalized.	
Section 4. Project Description		
16.	Page 34: Re: proposed fleet: is there a "fleet" as such, or does the mix of vehicles depend on individual decisions of contractors and agents?	The term “fleet” was removed and replaced with “trucks accessing the quarry”
17.	Page 34: The document proposes daily hours of operations but does not indicate seasonal hours – would the quarry be open all year long? Also, the vehicle configurations only consider single unit dump trucks. As the price of diesel fuel climbs, it may be more efficient for companies to use "pup trailers" in conjunction with the dump trucks (i.e. tri-axle dump trucks with tri-axle dump trailers and tandem dump trucks with tandem dump trailers). This will increase vehicle lengths, turning radii and may lower operating speeds.	The quarry would be open all year long and the approximate daily hours of operation are not expected to change seasonally. This is now reflected in Section 4. The following was added to Section 4:“It is acknowledged that the use of double-trailers may increase in the future but only single unit dump trucks were used to provide a more conservative estimate of trips generated by the quarry.” Both single unit and double-trailer trucks were used as design vehicles for the recommended road alterations.
18.	Page 34: Why was an 85th percentile used to calculate daily trips? While the 85th percentile is used in other traffic engineering applications it is not normally used to justify trip generation. While information on quarry operations is proprietary, reviewers such as CART need to be provided with more details about the data to better evaluate St. Marys conclusions.	The daily trips were calculated according to the proposed extraction (3 million tonnes per year) and the carrying capacity of an average truck. In order to reflect days with higher than average truck demands for quarry traffic, a factor was established using the 85th percentile day from other nearby facilities. This factor was applied to the proposed site traffic only in lieu of applying other more general assumptions or factors derived for general traffic.
19.	Page 35: The document refers to peak hours...is this the street peak hour or the facility peak hour?	Documentation provided to CART on May 20, 2008 titled “A Summary of Transportation Analysis,” clarified

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		that peak hour refers to the street peak hour and a note has been included in the report.
Section 5. Aggregate Supply and Demand		
20.	Page 39, Section 5.2, Areas of Supply and Demand for Aggregates: There should be discussion of why this information is important, and how it is to be utilized in selecting a haul route(s).	These data were not used to select haul routes as explained in the Memorandum dated May 20, 2008.These details are intended to provide an estimate of the current and future market demand for Amabel Dolostone and were used to establish trip distribution for quarry trucks. They are not intended to guide the selection or interpretation of evaluation criteria and indicators. However, it could be recognized that through the application of the approved criteria, the alternative haul routes are both directly and indirectly sensitive to the length of the route. Alternatives 4 and 5 represent combined alternatives and the option of representing the shortest distance to market by having the trucks dispersed in the cardinal direction of their intended markets. Our document now includes the following in section 5.2, "Understanding these details helps to provide an estimate of the current and future market demand for Amabel Dolostone and for the purposes of establishing trip distribution rates for quarry trucks."
21.	There may be a cost and environmental advantage to minimizing haul route distances, (as indicated in the MNR quote in Section 6.1, page 59) but this is not specifically reflected in the TOR/final comparison criteria or the screening criteria on page 75. It	This is correct; the alternative haul routes are both directly and indirectly sensitive to the length of the haul route in terms of impacts.

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	is also not clear how the TOR/final comparison criteria might be used to identify whether there should be one or more haul routes to link with Provincial highways, in terms of minimizing haul distances. The proponent team commented in the May 20, 2008 memorandum accompanying the first PIC #4 poster boards that that alternative haul routes are directly and indirectly sensitive to the length of the route (presumably in terms of impacts).	
22.	This supply/demand analysis essentially reflects data available to the present day, and does not address the future development scenario as set out in the Growth Plan (notwithstanding the use of Growth Plan mapping in Exhibit 5-10), or with the proposed quarry in place. It also does not address the degree to which dolostone and other aggregate materials can be substituted for each other ("crushed stone" appears to be crushed dolostone and not unconsolidated gravel and rocks extracted in situ and then crushed). The analysis also appears to assume that the Greater Golden Horseshoe is a discrete entity in terms of aggregate supply and demand, when there is presumably importation from outside and export as well. The proponent team responded in the May 20, 2008 memorandum accompanying the first PIC #4 poster boards that their: "supply and demand details also	Additional text was added to the transportation report explaining that MNR makes a distinction between "crushed stone" which is derived from bedrock sources (mainly limestone and dolomite including Amabel formation) and "sand and gravel" or unconsolidated material. With respect to interchangeability, it depends on the application. For base and granular materials you could use either, but certain product specifications, notably high strength concrete and some types of asphalt paving (e.g., for 400 series highways), require high quality limestone. The chemical properties of the Amabel formation make it the highest quality of limestone available in the province.

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	focused on the Greater Toronto Area and assumed there would be sortie importing and exporting of crushed stone from outside this area; to be conservative the majority of the local supply was distributed to the deficient markets within the GGH". It also indicates that: "Although our analysis suggests that one hundred percent of the future crushed stone deficiently is to the east in York Region and Toronto, we have adopted a more conservative distribution that accounts for distribution in all directions based on subsequent discussions with CART." There was no response to the comment on future as opposed to present demand, however, nor on the interchangeability of different types of stone.	
24.	Halton Region has commented that it is anticipated to double its population and employment by 2031, and has requested clarification as to why, with this level of growth, the report states that no quarry trucks will be utilizing Guelph Line or Dundas Street, even though the proponents estimate that approximately 10% of aggregate demand will come from within Halton Region.	We recognize that Halton Region will experience growth in both population and employment, however, trucks will be restricted to the proposed haul route leading directly to a 400 series highway. From there trucks will have to travel east on Highway 401 or Highway 403 to reach their Halton Region destination. In section 4.0 of the Terms of Reference there is a statement that notes “If the proponent can rationalize/demonstrate why some travel directions from the quarry would not be used, or that the volume of truck traffic would be so low

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		throughout the entire life of the facility so as to not result in any appreciable negative effects, then routes in these directions would not need to be assessed." We are of the opinion that despite being a designated truck route, Guelph Line fits this criterion for the following reasons: The 10% aggregate demand for the south east catchment area highlighted in Exhibit 5-10 covers Oakville and Mississauga with a very small percentage destined for Burlington. Taking Highway 401 east is a much more favourable route for trucks destined for Peel Region. Guelph Line (while a truck route) is only two-lanes and has unfavourable vertical and horizontal alignment issues. The lower speed limits, settlement areas and multiple traffic signals make it a more difficult route than others for trucks. Some truck drivers may prefer the efficiency of taking Highway 401 east to Highway 407 west to reach southern Burlington. There is another licensed quarry on an Amabel Dolostone deposit in Burlington in the southern portion of the study area (Exhibit 5-10). Thus given the proximity of other quarries and the fact that the Peel Region deficiency is estimated as 8.1% versus 0.8% for Halton Region, it is anticipated that there only be a 2% demand that may be inclined to use Guelph Line. This works out to 12

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		trucks in a day and 1 truck in the peak hour for the maximum day. No sizeable projects that may cause a blip in the demand for western Halton Region have been identified. Therefore, given the addition of only one truck per day per direction in the peak hour, it was rationalized that further assessment of impacts along Guelph Line need not be assessed.
25.	Although the proponent has responded to CART's request for more information on the distribution of supply and demand, the Supply and Demand analysis does not provide a clear linkage between the analysis and the future "proposed" (or estimated?) distribution of truck trips to and from the proposed quarry on page 56, nor is it clear how this information is to be used.	A note was added to Section 4 that the distribution of quarry trucks is provided in Section 5.6 and the following table was added to Section 5.6.
Section 6. Alternative Transportation Solutions		
26.	Page 59: The quote from the Ministry of Natural Resources is not sourced. The environmental assessment approach being used for this process requires that all aspects of the environment be considered. It is unclear how this Ministry approach would assist in the selection of preferred haulage route(s), unless it is to say that the directness of an alternative route to the area of highest demand should be considered in a route comparison. This has not been identified by the agencies or the proponent as an evaluation criterion for this study, however it is mentioned in the proponent's	Reference is now provided: Ministry of Natural Resources, "Managing Aggregate Resources." http://www.mnr.gov.on.ca/en/Business/Aggregates/2ColumnSubPage/STEL02_167024.html. (August 13, 2008) We are considering all aspects of the environment as demonstrated by our multi-category analysis matrix that follows the Terms of Reference. As mentioned previously, although length of haul route is not an explicit criterion the evaluation impacts of the routes are both directly and indirectly sensitive to the length of the route.

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	evaluation matrix provided in May 2008 with respect to greenbelt considerations.	
27.	Also with regard to page 57/58, Halton Region asks which routes would be used by St. Marys to deliver aggregate to Halton Region, estimated at 10% of the production of the proposed quarry.	Please see response to comment #24. We recognize that Halton Region will experience growth in both population and employment. However, trucks will be restricted to the proposed haul route which leads directly to a 400 series highway. From there trucks will have to travel east on Highway 401 or Highway 403 to reach their Halton Region destination depending on the selected haul route. Trucks would not be permitted to use Guelph Line.
28.	Page 63, Section 6.4: Again, the report shows details of alternative rail spur options, but not the proposed road access point which is of greater ultimate importance.	The proposed road access point is discussed in Sections 11 and 20 of the Transportation Report.
Section 7. Alternative Strategies for Quarry Trucks		
29.	Page 68: Tools to Control Truck Traffic: the proponent should address how agencies can enforce a truck management policy, and how the system would survive any future change in ownership of the quarry. There are concerns among CART members as to how, for example, trucks would be prevented from using Guelph Line, which is currently a truck route.	In addition to the St. Marys Cement, Truck Haulage and Safety Policy (March 2007), wherever possible, signage and recommended road alterations will facilitate truck movements in the direction of the selected alternative haul route and prevent un-designated truck movements. These measures include significant site access design features, intersection alterations, road signage, and recommended truck prohibitions for most roads adjacent to the preliminary preferred haul route. St. Marys trucking policy has been implemented successfully at their other locations. For additional enforcement of quarry truck haul

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		routes, St. Marys will coordinate efforts with local police and will conduct its own enforcement. These truck control measures are described in the Transportation Report sections 7.2, 11.3, 20, and Haul Route Report Section 12. Trucks will be restricted to the proposed haul route which leads directly to a 400 series highway. From there trucks will have to travel on Highway 401 or Highway 403 to reach their destination depending on the selected haul route. Trucks would not be permitted to use Guelph Line. Also, Guelph Line (while a truck route) is only two-lanes and has unfavourable vertical and horizontal alignment issues. The lower speed limits, settlement areas and multiple traffic signals make it a more difficult route than others for trucks. Please also see response to Comment #24.
Section 8. Selection of Alternative Haul Routes		
30.	The report is more than a report on baseline conditions. It also describes the process of reaching a long and short list of links and preferred routes for the proposed haul route(s). This process was illustrated on the poster boards discussed in the November 16, 2007 CART meeting and shown (in revised form) at the Public Open House on November 29, 2007. This process was the focus of Panel 25, and CART's comments on that panel at the CART	We have acknowledged these comments in subsequent correspondence with CART and will clarify again.

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	meeting were recorded as:	
30a.	"What was the evaluation criteria/value system, in particular why are some communities and churches/schools avoided while others are not? What thresholds were applied to determine the inclusion/exclusion of routes?	Our approach was not to consider any one threshold as fatal criteria for eliminating a road link, rather the constraints were considered collectively. A road link was eliminated from further consideration where there was a better candidate as determined through the collective consideration of all potential constraints. A new Section 8.3 was added to improve the explanation of the alternative haul route identification process.
30b.	Furthermore, why are extensions or new road constructions considered to be a constraint? Why is Guelph Line, Milburough Town Line, Derry Road ruled out? Guelph Line is a designated truck route and an alternative route to reach the Queen Elizabeth Expressway (QEW).	Extensions and new road construction were considered a constraint because of the significant impact on the surrounding community in terms of land acquisition. The details on the disadvantages of Guelph Line, Milburough Line south of Concession 11E, and Derry Road are described in detail in Section 8.0; however, key reasons on Guelph Line include avoidance of settlement areas, long and steep grades, and unfavourable geometric conditions at the intersection of Guelph Line and Campbellville Road. Without Guelph Line there is a discontinuation between Derry Road and Milburough Line south and a 400 series highway. Please also see response to Comment #24.
30c.	Right-of-ways; pavement widths; and road structure/quality are considered a constraint, but this information may require considerable research.	We have investigated the existing right-of-ways, pavement widths, and road structure and they are all given consideration in the analysis through

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	However, may be beneficial for future PIC's as a panel.	both Transportation and Cost categories.
30d.	Campbellville was not entirely avoided as Reid Side Road is directly adjacent to the neighbouring subdivision.	While it is preferred to avoid all settlement areas, it is not a fatal flaw criterion. Furthermore no settlement areas were bisected and the intersection of Campbellville and Guelph Line was avoided.
30e.	Lastly, a key constraint will be access location (yet to be determined). This will potentially affect the choice of route."	The access location was not considered a constraint in the evaluation of the alternative haul routes. Instead the access location was identified and designed based on the preliminary preferred haul route to minimize impacts on the surrounding road network. As mentioned previously, the proposed road access point is discussed in Section 11 and 20 of the Transportation Report in the context of the preliminary preferred haul route and recommended road alterations.
31.	The first level screening is a qualitative assessment of alternatives rather than a screening, which implies a more definitive approach (i.e. exclusionary rather than cumulative or comparative factors) to including or excluding options from further study. The descriptions of the screenings do not represent a clearly traceable account of the criteria applied and the individual or aggregate conditions that exclude or qualify a link or route for further study.	A new Section 8.3 was added to improve the explanation of the alternative haul route identification process.
32.	Exhibit 8-3 shows the eliminated links and other maps show the alternative haul routes, but there should be a key map that identifies all links and their number references. The number references	Exhibit 8-3 has been modified to reflect the link id's identified in Section 8.2.2 and the link numbers in Section 8.2.1 have been updated so that they can be easily cross referenced.

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	for the eliminated road links have been changed in Section 8.2.1 and on Exhibit 8-3 so that they are not easily cross-referenced with the descriptions in Section 8.2.2 and Appendix B (which should be referenced in Section 8).	Appendix B is referenced in Section 8.2.2.
33.	There is a lack of supporting information for the "carry forward" decision for each link, and where there is information there appears to be a lack of consistency in presenting and applying it. For example, in Appendix B, Table 1, Link #1 has 34 driveways as a "disadvantage" under Existing and Planned Land Use, whereas it has an "advantage" – "not many homes and driveways" under Social Environment. On page 79 of the report, Link #1 is reported to have not 34 but "approximately 47 driveways". These may include business and institutional as well as residential driveways, but this is not made clear. For Link #13, the presence of only 14 driveways is a disadvantage for both land use and social criteria. For most links, the number of driveways is not provided.	The number of driveways is not provided for all links because for links where there were other more prominent criteria that resulted in omitting the link, it was deemed unnecessary to count driveways through reconnaissance. A new Section 8.3 was added to improve the explanation of the alternative haul route identification process. The previous references to the number of driveways as “advantages” were removed.
34	The report therefore identifies advantages and disadvantages — though not consistently — without providing a traceable account of the information on which they are based, the applicable decision rules, and how advantages and disadvantages (or potential environmental effects) were combined to make decisions as to whether to carry links forward.	A new Section 8.3 was added to improve the explanation of the alternative haul route identification process.
35	Halton Region has requested	A new Section 8.3 was added to

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	details of any criteria or weighting applied in arriving at the short list of routes. In addition, the overall environmental effect of a haul route would be an aggregate of the effects of the component links, and this information is not provided in the descriptions of the haul routes in Section 8.5. The proponent team responded to this concern in their May 20 memo, stating: "Prior to the analysis and evaluation, a long list of alternatives was reduced to a short list of alternatives. The short list of alternatives comprises the 5 alternative haul routes carried forward. Details of the rationale used to arrive at the short list can be found in the existing conditions report submitted previously. Our approach was not to consider any one constraint as a fatal criteria for eliminating a road link, rather the constraints were considered collectively. A road link was eliminated from further consideration where there was a better candidate as determined through the collective consideration of all potential constraints." This explanation may describe an overall approach but it does not explain why one link or route survived and not another. The concerns have not been resolved in the Baseline Conditions Report or in subsequent submissions by the proponent.	improve the explanation of the alternative haul route identification process.

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Section 9. Traffic Operations Approach and Methodology		
36	Page 117: are the sight distances based on trucks, passenger vehicles, bicycles, or all types of vehicles? Do they take the level of visibility or the relative speeds of different types of vehicle into account?	Each alternative was analyzed and comparatively evaluated with respect to the number of locations with inadequate sight distance for passenger vehicles (described in Transportation Report Sections 10 and 19). The stopping sight distances adjusted for large trucks were also analyzed for site access designs and the preliminary preferred haul route and it was determined that the existing vertical profile along this route supports truck traffic (described in Sections 10 and 20). However, detailed consideration of vertical profile alterations should be conducted during an Environmental Assessment.
37	The City of Hamilton Transportation and Transit Section has commented that the evaluation should have included consideration of equivalent standard vehicle units (rather than simply the number of vehicles), V/C ratios and the future level of service. These matters can be addressed further in the CART peer reviewer's detailed review.	The evaluation and traffic analysis was based on passenger car equivalents as stated in the May 20, 2008 Summary of Traffic Analysis submission: "The intersection operations were assessed using the software program Synchro 6, Traffic Signal Coordination Software version 6 Build 614, which employs methodology from the Highway Capacity Manual (HCM2000) published by the Transportation Research Board National Research Council. The software converts trucks to equivalent passenger car units for analysis (1 truck = 2 passenger car units)." A similar note has been added to Section 9 of the report to clarify.
Section 10. Alternative Haul Route Analysis of Existing Baseline Conditions		

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38.	At the November 15, 2007 and January 16, 2008 meetings between the proponent team and CART it was agreed that railway crossings are to be addressed by the study, but no baseline information on railway crossings is provided in the report. There is also no discussion of Emergency Detour Routes, as was agreed to at the meeting.	A section covering the existing rail crossings complete with photos, and rail survey results has been added to section 12. Also, we have included a section on Emergency Detour Routes in the draft Haul Route Evaluation Report Section 12.7.
39	Page 125, Existing Cycling Facilities: There is no information on the extent to which these routes are used for bicycle transportation or recreation, as agreed to at the November 2007 meeting, and the factors that encourage or discourage their use for these purposes.	As discussed in the Draft Transportation Report Section 12, there were no counts conducted to estimate the volume of cyclists that use the roadways in the study area or the breakdown of recreation versus utility cycling trips. These data are very sensitive to specific events and seasonal changes. Rather than using the specific volumes to dictate recommendations, the recommended cycling infrastructure reflects the applicable Transportation Master Plans, municipal cycling maps, and other municipal policies and goals. These municipal policies were developed through public consultations and with participation from various cycling agencies. The length of each alternative haul route roads that coincide with designated or cautionary bike routes was analyzed and comparatively evaluated (described in draft Transportation Report Section 19.4.1).
40	Page 134, Collision Analysis, 4th paragraph: St Marys should verify that no collisions were reported along Campbellville Road, Twiss Road or Reid Side Road (2002-	St. Marys requested clarification from the Town of Milton regarding the collisions along Campbellville Road, Twiss Road, and Reid Sideroad on January 28, 2008 via

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	2006). This would appear to be an error.	email and received the following reply “No reportable collisions, therefore no data.”
41	Appendices C1 and C2 should label "Reid Side Road".	Agree and will label for future submissions.
42	Appendix C2, (Existing Volume with Seasonal Adjustment): Eastbound left-turn volumes are too low at Guelph Line & Reid Side Road. Halton Region's May 2005 TMC indicates higher volumes. This assessment should be re-evaluated.	Using the data we collected for this movement and also applying a seasonal adjustment factor, the maximum volume to capacity ratio was is 0.62. This intersection provides adequate capacity for this movement for any variations that may occur.

Natural Heritage Existing Conditions Report

The following preliminary comments on the Natural Heritage Existing Conditions Report were provided by City of Hamilton staff. Conservation Halton has been asked to further review these materials.

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Section 2.2 Vegetation Communities		
43	Please include a colour copy of the ELC mapping in the report. The mapping that was included could not be interpreted.	A copy of the ELC mapping is provided in the Natural Environment Report.
44	There were numerous site visits conducted for vegetation community studies (October, November, December); however, all of them are outside of the appropriate timing window (usually June till September). Additional field work would have to be conducted within the appropriate timing window.	Timing of terrestrial field surveys: We agree that there are timing windows for inventories for many groups of plants and wildlife. However, the Existing Conditions Report did not conduct species-specific inventory, instead, vegetation communities were characterized through Ecological Land Classification (ELC). Neither the City of Hamilton EIS guidelines (2004) or the ELC manual (Lee et al., 1999) identify a preferred timing window for ELC (although the City's EIS guidelines

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		recommend that botanical inventories take place between May and September). It is our belief that sufficiently skilled field personnel can collect the information necessary to apply the ELC in late fall, when our field surveys were conducted.
Section 2.3 Aquatic Resources		
45	The field surveys were completed outside of the appropriate timing windows. Winter surveys are not suitable for determining existing watercourse conditions. Additional field work will have to be completed within the appropriate time period.	Late fall field surveys were supplemented by Savanta field surveys in June 2008 (which falls within the City's guidelines' timing window for aquatic habitat).
Section 4.0 Baseline Conditions		
46	The report notes that 14 ESNs, and one ANSI are located within 100 metres of one or more of the alternate routes. As a component of this study an examination of amphibians, reptiles and mammals that are within these natural heritage features should be examined. Existing road crossings by faunal species should be examined to determine if there is an alternative route that tends to be used more for crossings than another. Also any faunal species that may be more sensitive to noise or increased disturbance should be examined.	Existing wildlife conditions: It was not possible to obtain permission to access all lands along the alternate routes, to conduct field surveys of amphibians, reptiles, and mammals. The presence of deer yards and information from the Nature Counts projects were used as an indirect surrogate for field inventories. Truck traffic movements in association with the operation of the proposed quarry will occur outside of key movement periods for some fauna (e.g., rainy late March-early April nights when frogs and salamanders might be on the move). Certain types of detailed crossing studies would not be helpful during impact assessment investigations. Other forms of investigations might be helpful in informing crossing designs and details.

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47	The proposed haul routes cross numerous watercourses of four sub-watersheds of Bronte Creek. Consideration should be given to the type of watercourse (i.e. warmwater vs. coldwater) intended to be crossed. The route that would have the least amount of impact on the fisheries should be considered. The proposed crossings of Bronte Creek appear to all contain fish habitat and specifically potential redside dace habitat. Perhaps an alternative route should be considered that would not impact such a sensitive habitat.	The Natural Heritage Existing Conditions Report was not intended to address the impacts or compare alternatives Impacts have been addressed in the new Natural Environment Report. A high sensitivity was attached to all alternatives that posed a potential effect on aquatic habitat, regardless of cold versus warmwater conditions. All fish habitat was deemed to be important. During mitigation planning consideration was given to impact avoidance, mitigation and potential enhancement opportunities.
48	Planning staff recommend that due consideration be given to accurately inventoried natural environment heritage features and their functions when choosing potential haul routes. Areas should be chosen that would have the least amount of impacts to the features and ecological functions of existing natural heritage features (ESA's, ANSI's, fisheries, wildlife, amphibians and reptiles).	Due consideration was given in the evaluation of alternatives to all defined features and functions.

Land Use Existing Conditions Report

Halton Region staff comments as follows:

The report, prepared by Glen Schnarr and Associates and dated April 2008, was reviewed within the context of the policies of the Halton Region Official Plan [2006]. The following is a list of issues or concerns identified through this review:

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49	The report itself would benefit from an appendix dealing with the Halton Region Official Plan and an overlay of the proposed Haul Routes on this plan.	An excerpt of the Region of Halton Official Plan Map 1: The Regional Structure has been included in the Flamborough Quarry Haul Route Study: Land Uses Report as Figure 18, and the Alternative Haul Routes have been overlaid. As shown on Figure 18, the lands located within the Region of Halton that are adjacent to the Alternative Haul Routes are designated as follows: "Escarpment Rural Area" - along east side of Guelph Ln. "Agricultural Rural Area" - along west side of Guelph Ln "Agricultural Rural Area" - along Reid Side Road "Agricultural Rural Area" - along Twiss Road "Greenlands A" and "Greenlands B" - along Campbellville Road "Agricultural Rural Area" and "Greenlands A" - along Milburough Line Regional objectives for lands within the **"Agricultural Rural Area"** include preserving agricultural land, recognizing agriculture as the primary activity and land use, protecting farms from incompatible land uses, promoting agricultural-related uses, and encouraging a strong farm support service industry. Permitted uses in this land use designation include agricultural

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		operations, existing uses, single detached dwellings on existing lots, non-intensive recreation uses, and small-scale public uses and home occupations. Regional objectives for lands in the **"Escarpment Rural Area"** include maintaining scenic values of lands, maintaining the open landscape character of lands, encouraging forestry and agriculture, and providing a buffer to ecological sensitive areas of the Escarpment. Permitted uses in this land use designation include those uses that are permitted in the Region's "Agricultural Rural Area", subject to the policies of the Niagara Escarpment Plan. Regional objectives for lands within the **"Greenlands A"** and "**Greenlands B"** designations include defining and protecting hazard lands for the protection of life and property, protecting and enhancing the diversity of ecosystems, plant communities, and significant landforms, contribute to a continuous natural open space system, and protect or enhance significant habitat of endangered or threatened species. Permitted uses in these land use designations include existing uses, non-intensive recreational uses, essential transportation and utility facilities, and forest, fish and wildlife management.
50	The page numbers as identified in the Table of Contents do not correspond with the sections or text of the report.	Care will be taken to ensure that this error does not occur on subsequent submissions.
51	On page 6, at the end of Section 3.0, it states that the St. Mary's Quarry will be consistent with among other	The last sentence contained in Section 3.0 of the Land Uses Existing Conditions Report reads as follows: "The evaluation of the Alternative Haul Routes for the St.

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	things public health and safety. How do we know this as being true in the absence of a full and complete review?	Marys Flamborough Quarry will be consistent with the policies of the Provincial Policy Statement regarding building strong communities, wise use and management of resources, and protecting public health and safety". To clarify the CART comment, the Existing Conditions Report states that the evaluation of the alternative haul routes will be consistent with the PPS. This evaluation is ongoing, and consistency with Provincial policies, including the PPS, is integral and essential to the evaluation.
52	On page 15, Section 7.1.3, these lands are also designated Escarpment Rural Area in the Region of Halton Official Plan. This land use designation and the associated policies need to be examined and included in this assessment.	Section 7.1.3 of the Land Uses Existing Conditions Report (now included as Section 3.1.3 in the final Land Uses Report) relates to LINK 13 (Campbellville Road, in between Milburough Line and Twiss Road). This stretch of Campbellville Road falls within the planning jurisdiction of the Region of Halton and Town of Milton. These lands are not contained within the limits of the Niagara Escarpment Plan and, accordingly, lands along this LINK are not designated "Escarpment Rural Area".
53	On page 17, Section 7.1.6.1, last paragraph, there are no lands designated Greenlands "B" along the stretch of road identified as a potential haul route. This section indicates that the assessment is in between Concession 11 and Campbellville Road. The lands designated as Greenlands "B" are substantially east of Milburough Line.	Section 7.1.6.1 in the Land Uses Existing Conditions Report (now included as Section 3.1.6 in the final Land Uses Report) relates to LINK 5 (Milburough Line, in between Concession 11 and Campbellville Road). This stretch of Milburough Line represents the municipal boundary separating the City of Hamilton and the Regional Municipality of Halton. Accordingly, this corridor falls within the planning jurisdiction of the City of Hamilton (west side of the road) and Region of Halton and Town of Milton (east side of the road).

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		The Region of Halton Official Plan designates the lands along the east side of Milburough Line as “Agricultural Rural Area” and “Greenlands A”. Permitted uses in the “Agricultural Rural Area” include agricultural uses, single detached dwellings on existing lots, non-intensive recreation uses, accessory buildings, incidental uses, and small-scale home occupations. The “Greenlands A” land use designation is intended to protect significant ecological, scenic and heritage resources. Permitted uses in the “Greenlands A” designation are limited to existing agricultural operations, non–intensive recreation uses, forest, wildlife and fisheries management, and essential transportation and utility facilities.
54	On page 18, Section 7.1.8, 2nd paragraph, within the C.3.1. Schedule of the Town of Milton Official Plan, no lands along Reid Side Road are designated "Hamlet Industrial" or "Institutional". Are these designations outside this land use schedule on lands located on the north side of the road and if so, the references need to be corrected and the appropriate schedule identified. There are lands however designated Church or Cemetery in the Campbellville Hamlet land use schedule C.3.A that are along this stretch of road.	It is confirmed that Schedule C.3.A (Campbellville Hamlet Land Use) shown as Figure 22 in the final Land Uses Report designates lands along Reid Side Road as “Hamlet Residential”, “Hamlet Industrial”, Institutional”, and “Church or Cemetery”. A December 9, 1997 version of Schedule C.3.A (Campbellville Hamlet Land Use) was inadvertently included in the April 2008 Land Uses Existing Conditions Report as Exhibit 9; whereas a version dated September 1999 should have been. The latest version, showing lands designated “Hamlet Industrial” and “Institutional” along the north side of Reid Side Road is included as Figure 22 in the final Land Uses Report.

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55	On page 19, Section 7.1.9.2, 1st paragraph, on the lands located between the south side of Highway #401 and the Reid Side Road, there are no lands used for agricultural purpose. These lands are used in their entirety for the Highway 401 interchange.	This clarification has been noted and will be reflected in further evaluation of the Alternative Haul routes.

Socio-Economic and Business Impact Existing Conditions Report

Halton Region comments as follows:
The report prepared by Gartner Lee and dated March 2008 was reviewed within the context of the policies of the Halton Region Official Plan [2006] and also assessed through a site visit by staff. The following is a list of issues or concerns identified through this review:

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56	On page 33, Table 17, the reference in the table to St. David's Presbyterian Church and Cemetery should also have an "X" on Criteria 1 and 3.	"X" has been added on criteria 1 and 3 (Table 1) in the Socio-Economic and Business Impact Report
57	On page 30, Section 4.15.3, the report states that the Community of Campbellville businesses should be taken into consideration yet on page 34, Table 18, they are not included in the review.	Counts in Campbellville within the study area were included in the Evaluation Table (Appendix B) of the Socio-Economic Business Impact Report

Other members of CART may provide additional comments on the socio-economic and business impact report.

Agriculture Existing Conditions Report

Halton Region comments as follows:

The report, prepared by Conna Consulting Inc. and dated March 31, 2008, was reviewed by Regional Staff. The Region of Halton has no comments on this report at this point in time. We do however reserve the right to comment as the study progresses.

Other members of CART may provide additional comments on the agricultural report.

Air Quality Existing Conditions Report

The report prepared by RWDI and dated April 3, 2008 was reviewed by the Halton Region Health Department and the following are their comments:

"RWDI Air Inc. was retained to evaluate ambient air quality baseline conditions and baseline health impacts along five alternative haul routes for a proposed quarry at 11th Concession Road East and Milburough Line, City of Hamilton. In the Introduction, the Final Report states "This Air Quality Existing Conditions report...documents baseline ambient air quality along proposed haul routes and discusses the potential impacts on human health associated with existing air quality." (p.1)

The Region is concerned about the potential haul routes which run through Halton Region, particularly Links 26 and 27 through Campbellville. Our comments are restricted to whether or not the `existing conditions report' adequately assesses existing air quality and human health impacts in the vicinity of the five alternative haul routes as a basis for evaluating future impacts due to increased truck traffic along potential haul routes.

General Comments:
Overall the report is confusing and does not clearly explain the methods, the limitations of the methods, or the results. This study does not appear to indicate anything meaningful about air quality in the local community examined. Nor does it provide any basis for making an evaluation of health impacts. For a study such as this to properly assess existing air quality, two things are required.

- First, an assessment of ambient air quality in the area of the proposed undertaking is required. This may be determined by selecting air quality data from a nearby representative site (i.e., not influenced by a point source) or by selecting several surrounding sites and averaging the results or by installing air monitoring equipment in the local area and collecting data for a period of time.

- The second piece of information required is an assessment of air quality along the roadways as impacted by existing traffic emissions. The traffic volume counts provided need to be used with data (or defensible assumptions) about fleet composition and a vehicle emissions model to estimate the contribution from existing traffic to the air quality in the localized area. This would provide the baseline for comparison to increased traffic volumes resulting from the undertaking. Determining these baseline air levels would also provide information to assess potential impacts on human health — the stated purpose of the study.

A number of problems arise when examining air quality from monitoring stations near roads of similar traffic volume and then inferring air quality in the area of interest (as appears to have been done for this study). Traffic volume is just one variable influencing air quality in a region and traffic volume counts give no indication of the fleet composition, e.g., light duty gasoline vs. heavy duty diesel, which is crucial when evaluating vehicle impact on air quality. There is no indication for the `representative' sites selected, how close the monitors at those sites are to the nearby roads — the influence on air quality of traffic emissions drops dramatically with distance from a roadway. Other influences on general air quality in an area can include water bodies (e.g., Lake Erie for the Simcoe site) and general topography (e.g., the area around Dorset)."

Response from RWDI Air Inc.:

"For clarity, the purpose of the existing conditions report was to provide a general assessment of ambient air quality within the study area for the purpose of ranking and prioritizing the various haul route alternatives based on potential health impacts. This requires an understanding of the differences in air quality and human exposure potential between the different haul routes rather than an absolute understanding of existing (and future) conditions. Once the preferred haul route is identified, then a more detailed assessment of the air quality and health impacts can be completed if necessary. As the Region correctly identified, this could include the use of air quality data from a nearby representative site (i.e., not influenced by a point source) or by installing air monitoring equipment in the local area would provide more reliable data that could be used to evaluate health impacts to local residents."

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58	On page 3, the report indicates that between 80 and 95% of DPM is fine particles ($PM_{i}o$) when in fact, between 80 and 95% of DPM is fine particulate matter ($PM_{2.5}$), which is much more harmful to human health than "coarse" particulates, PM_{10}. Terminology regarding particle size is confused. Fine particles are PM2.5 (also known as respirable particulate) not $PK_{\circ}$ (also known as inhalable particulate). The terminology chosen should be clearly explained and then used consistently throughout the report.	It was correctly identified that fine particulate matter (PM) is the major component of DPM, but PM10 was mistakenly inserted rather than PM2.5. Fine particles are PM2.5 and are defined as the respirable fraction whereas PM10 is known as the inhalable fraction.
59	On page 3 the report states "Since diesel exhaust is not a significant source of these substances [SO_2, VOC, PAHs], the potential for adverse health effects due to exposure to these substances contributed by the additional truck traffic by local residents is considered minor." There are many traffic corridor studies that dispute this premise; they all suggest that human health along traffic corridors can be negatively affected by vehicle-related exhaust, particularly from diesel-fuelled vehicles, because of the localized impact	Traffic corridor studies consider impacts due to all emissions regardless of the type of engine (diesel + gasoline). On a mass percent basis, data from the US EPA clearly show that the substances identified (SO2, VOC, PAHs) are emitted in much smaller amounts. Health impacts observed in traffic corridor studies related to exposure to all substances present in vehicle exhaust and do not necessarily support the notion that the substances identified as being 'minor constituents' in diesel exhaust are important contributors to health risk. It is acknowledged that diesel exhaust emissions can adversely impact human health.

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	associated with emissions along busy traffic corridors. Also, the statement is unsupported by projections of increased truck traffic and is premature — the report is supposed to be assessing existing air quality, not dismissing potential future impacts on air quality should the undertaking proceed. Presumably, that is the subject of a future, detailed study referred to in the previous paragraph, which the Health Department would like to review when it is completed.	
60	On page 5, the methodology needs to be more clearly explained including limitations. More recent traffic count data may be available from municipalities for vehicle emissions modeling. It may be useful to examine multiple years to determine potential trends in direction of air quality prior to the undertaking.	Further clarification of the methodology has been provided in the revised report. Because there were no background ambient air monitoring data for the study area it was necessary to rely on data from MOE monitoring stations located in other areas of the province. These were selected based on proximity to roadways with traffic volumes similar to those along various haul route road segments and located in areas with similar land uses and intensification as that of the Study Area. Ministry of Transportation (MTO) traffic data for roads in close proximity to the MOE monitoring stations were used. Although not reported, review of annual air quality reports issued by the MOE indicate that air quality in Ontario is generally improving over time, at least for many criteria pollutants. Ozone (which is not emitted by vehicles) and PM2.5 continue to be of most concern. However, ambient concentrations of these substances is significantly impacted by transboundary

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		pollution from the US and photochemical smog events. The MOE (2005) report entitled Transboundary Air Pollution in Ontario states: "Ontario's NOx emissions in the regional air shed (comprised of Ontario and 22 neighbouring mid-western and eastern U.S. states) are about 6 per cent of the total NOx emitted and about 7 per cent of the total anthropogenic VOC emitted. During widespread smog episodes, the U.S. contribution to ozone excluding background levels is expected to be as much as 90 per cent in Ontario cities and towns on the northern shore of Lake Erie, the eastern shore of Lake Huron and in the extreme southwest near the U.S. border. Like ozone, PM2.5 can be transported many hundreds of kilometres from its point of origin. Neighbouring U.S. states release approximately 28 times as much primary fine particulate matter as does Ontario, mainly from on-road transportation and point sources such as industry."
61	To help determine ambient air quality in the area, monitoring data are available for both $PM_{2.5}$ and PK◦ for a number of years and locations in Ontario (see historical Air Quality in Ontario reports by MOE and results from the federal government's NAPS network).	Air Quality Index (AQI) results were used to evaluate overall air quality and the potential for health impact. The data used to calculate the AQIs were from MOE monitoring stations located in the Guelph/Burlington area. These data are believed to provide a reasonable approximation of regional air quality within the Study Area. See also response to Comment 3.
62	On pages 6, 7, and 8 the report says that it is conducting a baseline health impact assessment and that it relies on the AAQC and the AQI foTtl-Tal purpose.	The purpose of the existing conditions report was to provide information necessary for ranking and prioritizing the different haul route alternatives. Specifically, it is indicated that analysis criteria and indicators were used to evaluate air quality and potential health impacts for

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	The AAQC are the Ministry of the Environment's air standards for these air pollutants. However; the standards for CO, NO_2 and SO_2 are based on health studies that are decades old, and health impacts have been demonstrated at air levels well below the air standards for these air pollutants as demonstrated by the work of Toronto Public Health, McMaster University, the Ontario Medical Association, and Health Canada. So the report can indicate that the air levels are within the air standard but that is not a health impact assessment. The AQI has been shown to be a poor indicator of human health impacts. A study conducted by Dr. David Pengelly for Toronto Public Health demonstrated that about 92% of the air pollution health impacts experienced by Toronto residents occur when air quality is rated as "good" or "very good". This is why the Federal and Provincial governments have worked to develop the new Air Quality Health Index (AQHI) which is being piloted in communities across the country.	determining the preferred haul route. These indicators were adopted in order to evaluate and prioritize the various haul routes based on potential impacts to air quality and human health. They are not intended to represent a quantitative measure of impact per se but rather allow a comparison of potential impacts. A detailed air quality and health risk assessment will be conducted for the preferred haul route, if necessary. It is possible that some sensitive individuals may experience adverse health impacts due to exposure to pollutants present in air at a concentration below their AAQC. Potential health impacts associated with existing air quality within the study area were also evaluated based on MOE Air Quality Index (AQI) readings. The AQI is used to relate pollutant concentrations in ambient air with potential to cause adverse human health impacts. Since the AQI is reported for the pollutant that generates the highest AQI reading, it is possible to evaluate air quality associated with this pollutant. This analysis was conducted in order to provide a general indicator of the potential for adverse health impacts. It was not intended to imply that adverse health impacts are not expected. A more detailed analysis using human health toxicological reference values would imply a degree of certainty beyond that afforded by the study objectives.

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63	On page 7, the statement is made "Except for benzene, these substances [in Table 4: formaldehyde, 1, 3-butadiene, acetylene, benzene, propane] are not considered overly toxic to humans." Formaldehyde and 1, 3-butadiene are listed in IARC under Group 1: Carcinogenic to humans. Although data may not be available for formaldehyde for 2003, data are available for at least 2001 and 2002 in appendices to the Air Quality in Ontario reports for those years. The inhalation unit risk presented for benzene comes from a Health Canada document intended to be used as guidance for risk assessment at federally owned contaminated sites. Depending upon assumptions, such as defining negligible risk as 1 in 100,000, this may not be applicable for comparison with ambient air levels of benzene.	Valid comment, the wording has been rephrased in the revised report. The reference value for benzene was derived using Health Canada's tolerable concentration value, assuming a 1 in 1,000,000 excess cancer risk as per MOE policy. This value is considered protective of human health
64	In Table 2, some pollutants are compared to an Ontario average and some pollutants are compared to one or three of the four 'representative' sites listed on page 5. The only pollutant compared to all four representative sites is ozone which is a secondary pollutant not emitted by vehicles. There is no discussion of why the 50^{th} percentile for $PM_{2.5}$ is	'Surrogate' data was used to provide a general indicator of air quality within the study area. Differences in PM levels between two different sites from outside the study area would not improve our understanding of air quality within the study area. The fact that average concentrations from two sites located near roadways with vastly different traffic patterns is likely related to the fact that PM2.5 levels in southern Ontario are largely influenced by regional photochemical processes and transboundary

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	virtually the same from a site near traffic volumes of less than 2,000 vehicles a day and a site near traffic volumes of almost 10,000 vehicles a day.	air pollution, as previously discussed above.
65	In Table 3, it appears that the 50^{th} percentile for NO_2 from the Simcoe site (9,950 vehicles/day) is being used as representative for the Hwy 6 segment South of Parkside Drive (42,500 vehicles/day) and for Concession 11 between Milburough Townline and Centre Rd (516 vehicles/day) with no explanation or justification.	PM data from MOE monitoring stations located near to the study area were used. Traffic volume was one criteria used to select representative monitoring stations. However, stations were also selected based on land use and intensification.

Halton Region and other members of CART may provide additional comments on air quality existing conditions and impacts as the study proceeds.

Noise Conditions Existing Conditions Report

The report, prepared by RWDI (Noise Conditions Existing Conditions Report for Flamborough Quarry Haul Route Study), dated April 4, 2008, was reviewed by Halton Region's Transportation Services and provides the following preliminary comments:

"None of the 'Short Listed' Haul Routes include Halton Regional roads, except for Guelph Line at the MTO ramps. At this point in time, we do not have any preliminary concerns/comments.

Halton Region and other members of CART may provide additional comments on existing noise conditions and impacts as the study proceeds."

Built Heritage and Cultural Landscape Assessment

"This report was reviewed by Halton Region. Halton Region has no comments on this report at this point in time. We will rely on our municipal partners, at the Town of Milton, to identify any built heritage related issues related to the two houses identified to be located within the Region.

Other members of CART may provide additional comments on existing noise conditions and impacts as the study proceeds."

Archaeological Assessment (Stage 1) — Existing Conditions Report

"The Region of Halton will rely on the expertise provided by the Ontario Ministry of Culture. This report should be provided to them for their review and comment.

Other members of CART may provide additional comments on existing noise conditions and impacts as the study proceeds."

Road and Pavement Engineering — Existing Conditions Report

"The report prepared by Golder Associates (Road & Pavement Engineering — Existing Conditions Report for Flamborough Quarry Haul Route Study), dated April 2, 2008 was reviewed by Halton Region's Transportation Services and provides the following preliminary comments.

None of the 'Short Listed' Haul Routes include Halton Regional roads, except for Guelph Line at the MTO ramps. At this point in time, we do not have any preliminary concerns/comments on this report.

Other members of CART may provide additional comments on existing noise conditions and impacts as the study proceeds."

Municipal Structures and Drainage Existing Conditions Report

"As none of the 'Short Listed' Haul Routes include Halton Region related infrastructure, except for Guelph Line at the MTO ramps, Halton Region does not have any comments or concerns on this report as this time."

PIC #4 draft poster boards and background material, May 20 and June 11, 2008.

"The following is a consolidation of material from memos prepared for the City of Hamilton and distributed to CART to assist CART members in reviewing the PIC #4 materials, together with comments submitted by CART members. The review is structured around the materials initially received from the St. Marys team on May 20.

<u>CART Memorandum</u>

This memorandum introduces the package of materials and provides information on aggregate supply and demand, and on the selection of alternative haul routes. The latter two sections of the memo appear to provide responses to comments

provided by CART members on the proponent's Baseline Conditions materials, provided in April 2008, however these CART comments are not referenced."

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66	The discussion of aggregate supply and demand reaffirms the material contained in the Baseline Conditions report and does not address a number of the concerns raised in earlier comments to the proponent regarding the calculation and use of haul direction information. It indicates that the details on supply and demand "are not intended to guide the selection or interpretation of evaluation criteria and indicators.", but this information is in fact used to support findings under the Greenbelt Plan policy criterion in the comparison of alternatives.	This comment was addressed earlier in Section 5.0. Document now includes the following in section 5.2, "Understanding these details helps to provide an estimate of the current and future market demand for Amabel Dolostone and can be used to establish trip distribution for quarry trucks."
67	The discussion of the selection of alternative haul routes also does not resolve the concerns regarding the traceability of the process of selecting the short list of haul routes, as raised earlier in relation to the description of that process in the Baseline Conditions transportation report. While the Baseline Conditions material provides a large volume of data on the alternative links, the process of collective consideration of criteria and the identification of "better candidates" and the elimination of other links is	A new Section 8.3 was added to improve the discussion concerning this issue related to the identification of the short list of alternative haul routes.

	unclear.	
68	CART members also raised other concerns with the Baseline Conditions report including a lack of future total traffic projections, and missing information on the proposed quarry entrance location and background information on rail crossing interruptions that are not resolved here. One of the poster boards provided on June 11 shows peak hour traffic volumes to 2031 on the recommended preferred route, and supporting information for this information will be considered as part of the peer review by IBI Group. An estimate of the percentage of traffic that would be delayed at rail crossings is used in the short list comparison, but, again, supporting information is not provided. City staff were informed during a conference call on May 13, 2008 that the truck entrance is proposed to be on Milburough Line.	The Baseline Conditions report is intended to provide an inventory of the existing conditions and does not look at future horizon years. The site access is described in Section 11 and 20 of the Transportation Report. Existing rail and survey information has been added to Section 12 of the transportation report. Background and Total traffic volumes are projected for 2021 and 2031 for all of the Alternatives in Sections 13 through 18.
69	The unresolved issues raise questions as to whether the information and analysis provided to date is sufficient to support the selection of the short listed routes that were carried forward into the selection of the recommended preferred site that was to have been presented at Public Information Centre #4.	To resolve CART questions the St. Marys project team is submitting a preliminary draft report (in advance of the final PIC #5) that is intended to provide the level of detail CART and its peer reviewers are seeking.

Summary of Transportation Analysis

As noted above, the transportation analysis is to be subjected to detailed review by CART's transportation peer reviewer; therefore these comments are provisional, pending that review.

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70	Page 2, Trip Generation and Distribution: The study team re-calculated the projected total number of trucks per day generated by the proposed quarry and arrived at the estimate of maximum truck traffic that had been established previously – 570 return trips per day or 1140 inbound and outbound trips.	Thank you, we appreciate your thorough check.
71	Although the proponent team's initial analysis indicates that all unmet aggregate demand would be to the northeast, this is not a reasonable real-world conclusion on which to base the likely distribution of truck trips. It is inevitable that truck trips will be made in other directions both to and from the site. Concerns earlier provided by City staff regarding the projected distribution of truck trips remain unresolved. Although Growth Plan information and mapping is provided, the actual anticipated distribution appears to be based on a more intuitive and short-term approach. Short-to-mid range trips that would not be made via Highway 401 (e.g. into Halton via Guelph Line and west along Campbellville Road) are not addressed.	The short-to-mid range trips mentioned were not addressed because they do not comprise any of the short listed haul routes. Also, although our analysis suggests that one hundred percent of the future crushed stone deficiency is to the east in York Region and Toronto, we have adopted a more conservative distribution that accounts for distribution in all directions based on subsequent discussions with CART, as mentioned in our May 20, 2008 and as discussed with CART during our January 16, 2008.

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72	In terms of employee trip distribution, it is unclear as to how the 2006 Transportation Tomorrow Survey (TTS) conducted by the University of Toronto Joint Program was utilized in this analysis.	A summary of the raw TTS output is now included in the report along with a write up that explains that the trips were divided based on the likely travel route to the site. For the trips that originate in Flamborough, population density was used to determine trip location and then trips were assigned to the network based on the probable route.

The intersection data provided in the report will be examined as part of IBI's detailed peer review.

Analysis Matrix

In some cases alternatives are rated in the range of low-medium-high, or there is information on the incidence of features potentially affected (stream crossings, for example), and in other instances both are provided. Some effects such as noise and air quality that depend to a degree on the number of trucks are expressed as a "truck exposure index" or a similar score or rating reflecting the number of affected features, sometimes the degree of effect, and the number of trucks. There is usually no specific description of potential mitigation or enhancement measures that would assist in determining how a net environmental effect was derived.

Response from iTRANS Consulting Inc.:

The analysis matrix is intended to provide a summary of the analysis inputs. The details on how each of the inputs was derived are provided in the individual analysis reports that are provided in the appendix of the Haul Route Evaluation Report.

Particular items noted from the matrix are as follows:

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73	Information on natural heritage and land use features, for example, is not supported by mapping that would show reviewers where these features are. Conservation Halton has been	Figures 5 and 6 of the Natural Environment Report (Savanta Inc and Stantec Ltd. Sep 16, 2008) provide this information.

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	asked to review the natural heritage information provided in the Baseline Conditions natural heritage report, and this will complement the review conducted by the City of Hamilton as described above.	
74	The City of Burlington has questioned the assignment of "sensitivity" levels to different types of land use in the land use evaluation, as well as comments on the degree of conformity with plans. This can be reviewed further by other affected municipalities during the more detailed review.	As suggested, please review the more detailed Land Uses Impact Report submitted more recently.
75	The matrix provides information on the number of properties where there is potential for property removal to accommodate road widenings, but there are no maps showing where these widenings would occur.	At this point the analysis of the potential for property impacts is conceptual in nature which makes it difficult to identify specific segments of property that may be required. Also, road cross-section alternatives have been proposed that do not require any changes to the property boundaries.
76	The Transportation evaluation includes information as to the percent chance of being delayed at level crossings, but there is no information on the length of such delays or the implications for mixed quarry and non-quarry traffic.	There is information on the rail survey that has been added to Section 12.0 that provides details on number of trains in a day, average delay, and percent of time the rail crossing is occupied.
77	Where information is provided on change in road function it should be noted that most of the increased traffic will comprise heavy trucks. Also, there is potential for existing /	A note has been added in Section 19 that acknowledges that the majority of the increase in traffic is comprised of heavy trucks.

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	projected traffic to be redistributed if a quarry is implemented.	
78	It is not clear which road sections would undergo the estimated increase in traffic under the "Increase in Traffic" indicator.	There is a table provided in Section 19 that provides detail on the increase in traffic for each of the road links (excluding Highway 6). The maximum increase for each haul route is the value used for the evaluation.
79	While effects on bicycle safety are said to be mitigated by the provision of bicycle lanes, the change in the nature of the use of the haul route has the potential to deter recreational and other cyclists from using the route, at least while the quarry is operating.	The change in character of the road and the length of cycling route (designated or suggested) that coincides with each Alternative Haul Route was analyzed and comparatively evaluated. (Discussed in Transportation Report Sections 12 and 19, and Haul Route Report Section 10.
80	The cost evaluation includes only horizontal and not vertical road alignment alterations.	The analysis of the approximate existing vertical profile along the preliminary preferred haul route alternative was determined to support large truck movement in regards to the required stopping sight distance. Detailed consideration of vertical profile alterations should be completed during a subsequent Environmental Assessment. Furthermore, the cost estimate is only an estimate utilized for a comparative evaluation.
81	Highway #6 was included in all of the preferred routes, with different truck traffic levels depending on the route configuration, so the numbers and extent of features in the matrix reflect this for all alternatives. Under some criteria different impact values are identified for different sections of the route,	Where a qualitative ranking of high-medium-low is applied, it is not possible to calculate a truck exposure index. Also to be conservative, it is viewed that even one additional truck is a disruption to residents.

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	whereas for others (such as potential for disruption to residents' use and enjoyment of property), no distinction is made despite the differing character and the mix and volume of background traffic levels along different sections of the route.	
82	Ratings and information are provided for each alternative under each indicator, but are not aggregated by criteria or categories of criteria.	The St. Marys proponent team felt that presenting aggregate values for the analysis results of criteria or categories of criteria would add complexity and confusion to the interpretation of the analysis table.

Evaluation Approach and Results

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83	The sequence of activities set out in the Terms of Reference for the Transportation Study indicates that the evaluation approach is to be provided to the Agency Review Group for review and comment before it is actually applied, however the Proponent team has [p]rovided this information with its first draft of the evaluation materials.	The evaluation of the five alternative haul routes has been conducted in a systematic manner and is consistent with the Ontario Environmental Assessment Act. It addresses all requirements as listed in the Terms of Reference for this study. The evaluation is based on the results that are summarized in the analysis tables and centred on the evaluation criteria and indicators as approved by CART.
84	Alternative Route #3 is preferred to the other alternatives under the Aquatic Environment, Social and Community Impacts, Economic Environment and Business Impacts, Cultural and Heritage Resources and Transportation criteria groups. It is not preferred	The five haul routes carried forward were considered viable alternatives and it is unlikely that one would emerge as the unanimous front runner in all of the categories analyzed. Hauling costs were not a criterion that was part of the evaluation, however, length of haul route which has a direct impact on hauling costs was indirectly given consideration in other categories.

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	under the Terrestrial Environment, Land Uses and Costs categories, although none of these latter categories comprise "most important" categories. Alternative # 1 is indicated as the lowest cost option, but the evaluation does not reflect additional haul costs resulting from indirect routes to primary markets - Route 3 is claimed to be the most direct.	
85	There is a brief narrative description of how different elements within each category were considered, however there is no supporting mapping to show where affected features and required right-of-way widenings are located. With the exception of mitigation of sight distances and the introduction of bicycle lanes, there is no explicit consideration of the availability and effectiveness of mitigation or enhancement measures as applied to potential environmental effects, so that it is unclear whether the preferences are as a result of full consideration of net environmental effects, as required by the Municipal Class EA, for example.	At the time of the submission for which these comments were made the mitigation and enhancement measures were not fully developed. However, they are documented and assessed in the subsequent reports. Regarding the right-of-way widenings, at this point the analysis of the potential for property removal is conceptual in nature which makes it difficult to identify specific segments of property that may be required. Also, road cross-section alternatives have been proposed that do not require any changes to the property boundaries.
86	For the "quantitative evaluation", the description indicates that the proponent team assigned numerical weights to the criteria categories, criteria and	Details on the quantitative evaluation and the development of the weightings is provided in the Haul Route Report under Section 11.0.

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	indicators, to reflect their relative importance. These weightings are said to be informed by input from the public and agencies, but the process of deriving the weighting scheme is not explained. Table 2 shows these weightings by category, but not by criterion or indicator. While the highest weightings are given to the Social and Community Impacts (26) and Transportation (17) categories, the Aquatic (12) and Terrestrial (12) Environments are weighted separately.	
87	The City of Burlington has commented that the weighting scheme does not give sufficient consideration to the range of importance of categories, because all categories are given relatively high ratings.	The weightings the City of Burlington is referring to are on the PIC Board that weights the categories as "important," "more important," and "most important." These are relative weightings and are designed to ensure the public has a sense that all of the categories are important.
88	Also, the methodology appears to favour individual (Alternatives # 1-3) rather than combined (#4-5) routes.	The methodology is not intended to favour the combined haul routes, however the criteria and indicators recommended by CART are directly and indirectly sensitive to the length of the route which in many instances favours the first three Alternatives. One way we have tried to mitigate for this factor is by including the truck exposure index.
89	Levels of preference or performance ratings for each alternative route under each criterion were determined on a scale of 1 -10. These are based on values such as	This comment is acknowledged but this change is not anticipated to impact the overall evaluation.

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	numbers of features, as a surrogate for actual environmental effects. The scores indicated for different levels of performance do not allow for a zero impact or zero value performance rating, and it is unclear how this affects the overall evaluation.	
90	The description indicates that minimum and maximum values of the range of conditions encountered (such as the range in the number of residences on the alternative routes) were used to define the range of effects from "low" to "high" (rather than a professional judgement of what actually is a high or low impact). This has the potential to distort the evaluation for example where there is a narrow range of impacts that are, in reality, all "high" or "low". At the same time, some ranges of values in the matrix do not cover the full range from "low" to "high". Ratings are provided for some criteria in the evaluation matrix but not for others. Also, neither the matrix nor the description of the evaluation approach provide the weightings or the scores under each criterion or indicator.	Where there was a quantitative value, such as number of residences, that value was used. Where criteria had to be evaluated qualitatively, a “low” to “high” ranking was applied based on professional judgment. That ranking was later converted to a numerical score for the quantitative evaluation as described in Section 11.0 of the Haul Route Evaluation Report. Further details on the weightings and evaluation scores are also capture in Section 11.0.

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	Table 2 indicates that the scores in the table are "weighted scores", however the maximum score under each criteria category is 124 in every case. Since the criteria categories have different weightings, it would be expected that the maximum weighted scores under each category would have been different, with higher maximum scores for the categories with the highest weightings. In their June 11 response the St Marys team identified an error in producing this table and provided a table with revised scores, however CART was not provided with the calculations that led to these new results.	The new table and results are provided in the Haul Route Evaluation Report.
93	The range of total scores among the route alternatives was relatively narrow in the May 20 information, however it became wider with the submission of a revised table on June 11. The difference between preferred Route #3 and Route #1 is now 7.6%, which is still fairly narrow and susceptible to minor changes in weightings and values. The description indicates that sensitivity testing was done, using a range of weightings, but the weightings utilized and the results of this testing are not provided. Supplementary information was provided on	The sensitivity analysis can now be fully traced in Section 11 of the Haul Route Report.

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	the June 11 revised poster boards, but it still does not allow the sensitivity analysis to be traced.	
92	Potential effects on Highway 6 play a role in making Alternative Route 3 preferable to Alternatives 1 and 2. In some instances, however, no distinction is made between a feature such as a residence on Highway 6 and a residence on a more rural road.	We treated all residences equally regardless of location and used the truck exposure index to evaluate the intensity of the impact.
93	Overall, for both the qualitative and quantitative evaluations of the alternative routes the proponent team has provided details of findings under each of the criteria and indicators, and the overall results of the evaluation. At the same time, much of the information required to trace the identification of scores and preferences from the base data is not provided and the supplementary information provided on June 11 does not resolve this concern. It is possible that the proponent team intends to provide this information as part of its draft and final reports, however not enough information has been provided to fully test the validity of the evaluation process at this time.	Additional information is provided in the draft Haul Route report that is intended to assist in the traceability of the evaluation.

Recommended Preferred Alternative and Potential Mitigation

This material includes a detailed description of design features of Alternative #3 and associated road alterations and mitigation measures. These will be examined in more detail as part of the review by CART's transportation peer review consultant.

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94	The material concludes with a recommendation that "environmental assessment studies for the proposed road alterations (following the Provincial Class Environmental Assessment guidelines) are carried forward and involve public consultation". In fact any Class EA work would be conducted under the Municipal Class EA and/or Class EA for Provincial Transportation Facilities. Both of these documents require public consultation for prescribed types of project. The proponent does not indicate whether a screening will be required under the Canadian Environmental Assessment Act.	As stated in the Terms of Reference, Section 1: "Should there be a need to improve roadways to support the project, a Class EA for these alterations will likely need to be undertaken…. This haul route evaluation would serve to support the preferred alternative as part of possible future EAs to fulfill Ontario EA Act requirements and possibly the Canadian Environmental Assessment Act." The information received from the Canadian Environmental Assessment Agency indicates, that at this stage, not enough information is known if the Canadian Environmental Assessment Act will apply. This is usually determined during an environmental assessment with the help of the Agency by first submitting a project description to the Agency.

Display Boards for PIC #4

The hard copies of the draft display boards provided to the Agency Review Group are in a different order to those provided in digital format. The following commentary relates to and utilizes the numbering sequence of the hard copies, and the number in parenthesis is the digital format reference. The comments relate only to the substantive content of the transportation study as reflected on the display boards, particularly where information is presented that does not appear in the background materials, and not to details of format.

Response from iTRANS Consulting Inc.:

The order provided in digital format was reconfigured by Microsoft Outlook and the order provided in hardcopy was correct. We apologize for any inconvenience or confusion.

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95	Board 8 (7) Implementation of Haul Route Study Recommendations Does the proponent team anticipate a need for an Official Plan Amendment to implement the proposed haul route? Note that the only likely trigger for CEAA would be a requirement for a permit under the Fisheries Act.	The need for an Official Plan Amendment is addressed in the Land Uses Report which states the following: "Concession Road 11 may require an amendment to the Town of Flamborough Official Plan to accommodate a ROW in excess of the permitted 20.0 maximum for Concession Road 11 if a Rural Cross Section is selected" and "Twiss Road may require an amendment to the Town of Milton Official Plan to accommodate a ROW in excess of the permitted 20.0 maximum if a Rural Cross Section is selected."
96	Board 10 (21) PIC #2 Results Note that under item 20 the proponent has committed to be responsible for "development costs associated with the accommodation of quarry trucks". This should include a statement as to whether this includes all of the cost of implementing Alternative 3 as currently proposed. Under item 34, we suggest that the proponent maintain a web archive of all material posted on its website, rather than removing material as time goes on. Overall, responses to comments are very brief.	This PIC information board has been amended to state that all community alterations would be discussed with the municipalities. The PIC material from previous PIC's is available for download on the project website (http://www.flamboroughquarry.ca/haul_route.php) Responses to comments are brief because we are limited in space on how much we can fit on a poster board. Additional details on the PICs, a summary of the public comments, and a record of the public comments are all included in Section 13.0 of the Draft Haul Route Report.

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97	Board 12 (31) PIC #3 results For Item 28, it should be noted that the proponent owns additional lands adjacent to the quarry that could be used for an expansion at some future date. Again, responses to comments are very brief. While PIC#3 was intended to obtain input on the evaluation approach and the importance of the evaluation criteria, this information is not included in the display.	As above, responses to comments are brief because we are limited in space on how much we can fit on a poster board. Additional details on the PICs, a summary of the public comments, and a record of the public comments are all included in Section 13.0 of the Draft Haul Route Report. One can recall that at PIC #3 Councillor McCarthy discouraged workshop attendees from filling in workbooks. However, comments were received by one of the groups.. The data collected at PIC #2 on the evaluation criteria came from a much larger sample size.
98	Board 15 (12) Preliminary Constraints Map The proponent should provide mapping of land use and natural heritage and other features and areas where additional right of way width will be required so that PIC attendees can readily identify effects on their own properties and neighbourhoods. St Marys provided sample mapping of the required ROW in their June 11 supplementary materials, but no additional mapping of other features.	The different types of land uses that would potentially be impacted by right-of-way widening are discussed in the Land Use Report, Natural Environment Report and Agricultural Report. At this point the analysis of the potential for property removal is conceptual in nature which makes it difficult to identify specific segments of property that may be required. Also, road cross-section alternatives have been proposed that do not require any changes to the property boundaries.

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99	Boards 16-21 (14-18): Individual Alternative Haul Route Maps None of the maps show the proposed access between the proposed quarry and the public road system (the proponent team has informed Hamilton staff that the access would be onto Milburough Line). There is potential for the access itself to generate environmental effects that should be considered as part of the haul route selection process. The recommended section types all show cross sections as accommodated within existing rights – of – way, whereas the evaluation indicates that additional property will be required to widen rights-of-way in some areas.	The quarry entrance for the preliminary preferred alternative haul route will be located on Milburough Line, north of Concession 11 E. The site accesses are described and functional drawings provided in Sections 11 and 20.2. The site access for the preliminary preferred haul route is also included in a draft display board for PIC#5.
100	There is a proposal to improve visibility on Campbellville Road west of Milburough Line, even though this section of Campbellville Road is not on a proposed haul route. This appears to recognize that some haul trucks will use this route even though the proponent has indicated it can enforce adherence to a formally defined haul route. The "alterations" on Milburough Line comprise reconstruction, widening, bicycle lanes and a	We apologize if this recommendation created confusion, however, this suggestion is not intended to recognize that haul route trucks will use the route on Campbellville west of Milburough. It is intended to improve the safety of passenger vehicles that are travelling east on Campbellville and may need to decelerate as a result of a northbound truck turning right onto Campbellville. This also improves visibility for westbound trucks that are expected to turn south onto Milburough Line. Detailed consideration of vertical profile alterations should be completed during a

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	50km speed limit. These design details will be considered as part of the detailed peer review to be conducted for CART.	subsequent Environmental Assessment.

Yours truly,

iTRANS Consulting Inc.

Matthew McCumber, M.Eng, EIT