

# READ, VOORHEES & ASSOCIATES LIMITED



99 Toynbee Trail  
Toronto, Ontario  
M1E 1G4

Tel: 416.445.4360

danc@rva.ca

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**Date:** October 4, 2016  
**To:** Scott Burns  
**From:** Dan Cherepacha  
**Subject:** Peer Review of October 3 2016 Updated TIS for Arbour Farms Gravel Pit

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## MEMORANDUM

As per your request, I have reviewed the October 3 2016 update to the Traffic Impact Study (TIS) prepared by MMM as part of the settlement of the ongoing OMB hearing for the Arbour Farms Gravel Pit application. The following comments are provided for your consideration. The comments made are referenced to the heading titles and numbers that are in the TIS document.

### 2.0 Existing Conditions

#### 2.2 Site Access

The sight distance requirement for vehicles exiting the site is stated as being 185m. The Stopping Sight Distance design requirement for a vehicle on County Road 21 at a design speed of 100 km/h is 185m, but the County standard for sight line for a vehicle at an access is 230m.

Therefore the available sight line of 212m to the west is slightly below the County standard. This distance was measured for a passenger car, and I agree that the sight distance will be greater from a gravel truck. Nevertheless, mitigation in the form of advising eastbound traffic on CR 21 that there is a truck entrance ahead should be considered as a minimum, in conjunction with other measures as might be required by the County. This mitigation is referenced in the Conclusions section, but it would be useful to explain the reason in this section.

The proposed tapers of 60m inbound and 30m outbound at the entrance are desirable features.

I agree that a westbound left turn lane on CR 21 at the pit entrance is not warranted. As discussed in a comment under a later section in the report, if the volume of traffic to and from the east is even less, this further indicates no need for a left turn lane.

#### 2.3 Traffic Data

Typo. Second bullet of the list of intersection should be 'County Road 21.'

Intersection volumes have been updated to summer 2016 conditions, which is desirable since the peak pit activity and background traffic is likely to occur during the summer period.

#### 2.4 Intersection Operations

The analysis shows that all intersections are operating at good level of service.

As concluded in the previous peer reviews that have been carried out for the Arbour Farms pit application, capacity of the area road system is not an issue. The primary issue is the operation and safety of the pit access to the public road system.

Typo. In Table 1 the Intersection Control column entry for the last two intersections refer to 'County Road 25', but should be the cross street name.

### **3.0 Future Background Conditions**

#### **3.1 Traffic Growth Rates**

Comparison of the updated 2016 peak hour turning movement volumes on CR 18 with the previous 2011 volumes indicates that application of a 3% annual growth rate is still appropriate.

#### **3.2 Intersection Operations**

The analysis shows that all intersections will continue to operate at good level of service with the 2021 background volumes, and that capacity of the area road system is not an issue.

Typo. In Table 2 the Intersection Control column entry for the last two intersections refer to 'County Road 25', but should be the cross street name.

### **4.0 Site Generated Traffic**

#### **4.1 Arbour Farms Operational Characteristics**

The operation of the gravel pit is satisfactorily described. This is very similar to the previous assumptions, with the only minor variation being a starting hour of 7:30 rather than 7:00.

#### **4.2 Trip Generation**

The number of hours of operation per day previously used for pit activity was 11 hours, compared to the 10.5 hours used for the alternate entrance review. This difference will not affect the conclusions in the report, since the number of trucks generated by the pit over a typical peak hour at 16 inbound and 16 outbound is the same as previously calculated.

#### **4.3 Trip Distribution and Assignment**

The gravel truck distribution assumptions in the TIS have traffic to and from the east estimated at 40% or 60% as identified in the options. The previous analysis assigned 10% to CR 21 east. However, I don't believe the actual vehicle volumes involved will alter any conclusions reached in the report.

Figures 5 and 6 show the trips to and from the west direction as all coming from or going to the north on CR 18, based on the assumption that traffic to and from the south on CR 18 would be subject to restrictions agreed to by Arbour Farms. There is no discussion of how this is to be enforced, but in my opinion even if some pit traffic used CR 18 to and from the south this will not affect the intersection analysis to any noticeable extent. Addition of some pit traffic to CR 18 south of CR 21 will have minor impact on traffic operation and will not require any mitigation measures.

It is noted that CR 18 and CR 21 are restricted to 5 tonnes per axle in the spring from March 1 to May 15. This would affect the calculation of number of trucks per day during this period, although

it is assumed that operators are aware of this restriction. Further, it is likely that market demand is lower than on typical days through the rest of the year and particularly the summer activity.

## **5.0 Total Future Conditions**

### **5.1 Basis of Assessment**

As noted above, assignment of pit traffic south on CR 18 in the TIS is assumed to be restricted, but I have considered the possibility of some pit traffic turning to and from the south.

Typo: Reference to background traffic in third line should be Figure '4'.

### **5.2 Intersection Operations**

The analysis shows that all intersections will continue to operate at good level of service with the 2021 background volumes for both distribution options. As noted previously, capacity of the area road system is not an issue.

Typo. In Tables 4 and 5 the Intersection Control column entry for the last two intersections refer to 'County Road 25', but should be the cross street name.

## **6.0 Conclusions**

The TIS conclusions indicate that no improvements are required at the existing intersections in the study area. I agree that the impact of pit traffic is negligible on the existing road system, and as I have stated capacity of the area road system is not an issue.

The conclusion section does acknowledge the need for mitigation of the deficiency from the County's access sight line standard of 230m by placing a sign advising motorists of a truck entrance and exit ahead.

The proposed tapers of 60m inbound and 30m outbound at the entrance are desirable features.

## **Appendix B**

Typo: Calculation in fifth bullet equals 173.3 rather than 201.5.

## **SUMMARY**

In my opinion the alternate entrance on CR 21 is a preferable option to the entrance on CR 18. The mitigation plan for the access on CR 18 made it suitable and acceptable, but the primary benefit of the CR 21 location is the lower volume of traffic on the through road, and therefore fewer potential conflicts at the pit access for the same volume of pit traffic.

Please give me a call if there are any questions on these comments or any other information is required.