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**Date:** July 5, 2016  
**To:** Scott Burns  
**From:** Dan Cherepacha  
**Subject:** Peer Review of Alternate Entrance Document

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## MEMORANDUM

As per your request, I have reviewed the May 24, 2016 document for the Arbour Farms Gravel Pit titled Geometric Considerations of Alternate Entrance. The following comments are provided for your consideration. The comments are provided under the same headings as are used in the document.

### Truck Traffic

As part of our previous reviews for the Arbour Farms pit, it was noted that gravel trucks using CR 21 to and from the east (e.g. Barrie) would be using Township roads as part of the route. A check with Township staff indicated that these roads were not intended for regular use by heavy loads, and could be restricted from use as haul routes.

Therefore the gravel truck distribution to and from the east may be less than the 40% or 60% identified as the options. The previous analysis assigned 10% to CR 21 east.

The result of less traffic to and from the east will be more truck traffic to and from Airport Road. However, I don't believe the actual vehicle volumes involved will alter conclusions reached in the report.

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 in each direction is still 16.

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 and it is likely that demand is lower than on typical days through the rest of the year.

### Alternate Entrance

The new entrance will essentially be a private road, so there is no impact on other traffic.

### Intersection of County Road 21 and Alternate Entrance/7th Line

The Stopping Sight Distance design requirement for 100 km/h is 185m, but the County standard for sight line at an entrance is 230m. Therefore the available sight line of 212m to the west is slightly below the County standard. Mitigation in the form of advising eastbound traffic on CR 21 that there is a truck entrance ahead should be considered, in conjunction with other measures as might be required by the County.

I agree that a westbound left turn lane on CR 21 at the pit entrance is not warranted. If the volume of traffic to and from the east is even less as suggested above, this further confirms no need for a left turn lane.

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

#### Intersection of County Road 18 and County Road 21

Reference is again made to a sight line requirement of 185m, which is for Stopping Sight Distance. For Intersection Turning Sight Distance a sight line of 375m is desirable for a design speed of 100 km/h. The available sight line distances of 365m and 366m are satisfactory for this location.

I agree that no left turn lane is required on Airport Road at the intersection.

I also agree that short access lanes for traffic entering Airport Road should not be provided.

#### SUMMARY

In my opinion the alternate entrance on CR 21 is an acceptable option to the entrance on CR 18. The primary benefit of the CR 21 location is the lower volume of traffic on the through road, and therefore fewer potential conflicts. However, some mitigation of the sight line deficiency to the west should be considered for the CR 21 entrance, in conjunction with any other measures that might be required by the County.

The access on CR 18 was improved by the provision of a full southbound lane and a full northbound climbing lane on Airport Road. In my opinion both access points are suitable, but the lower volume and fewer potential turning movement conflicts make the CR 21 entrance preferable.

The overall impact on travel on Airport Road is essentially the same for both options.

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