



BURNSIDE

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July 24, 2013

Via: Email

Sarah Morrison
Intermediate Planner
Grey County
595 9th Avenue East
Owen Sound ON N4K 3E3

Dear Ms. Morrison:

**Re: Oro Ridge Development
File No.: 300033914.0000**

The property on which the Oro Ridge Development is proposed has had a number of development proposals (water taking) and peer reviews in the past. Burnside has previously reviewed a proposed development identified as "Paradise Springs" on this site during the period of 2007 through 2009 under our File No. MCG12427 on behalf of the Municipality of Grey Highlands.

As directed, we have carried out a review of Addendum Reports entitled "Water Taking Assessment" and "Transportation Review". Also as requested we have referenced the comments received from the public as part of our peer review. Our comments relative to the respective reports are found in the following:

Water Taking Assessment

The comments below are based on our review of the report entitled "Oro Ridge Corp. Water Taking Assessment" prepared by Azimuth Environmental Consulting, Inc. and dated September 14, 2012. We have also reviewed a previous memorandum prepared by Peter Rider, P.Geo and dated March 13, 2007 for the then Paradise Springs Source. In his memorandum, Peter references work completed by Gartner Lee Limited.

Based on our review of the above mentioned documents we are of the opinion that the assessment of flow volumes and the determination of the adequacy of the source to supply the required volumes seems adequate. Based on historic performance it is fair to assume that the sources will be able to produce at the required rates with no adverse impact to the environment. It is noted that the taking as proposed is a passive taking and no drawdown will be generated, in this context there is no expectation of impact on surrounding water users.

There is no mention of water quality in the report; however, based on the history of taking from the area and the location, it is fair to assume that the water quality is suitable for the intended use.

The report correctly indicates that there will be no need for a Permit To Take Water (PTTW) should the taking be limited to below 50,000 L/day.

The report indicates that despite there being no requirement for a permit, the proponents wish to follow the intent of the PTTW process. It is noted that the intent of the PTTW process as outlined on PTTW No. 02-P-1007 is to ensure that the taking of water does not interfere with other water users including the natural functions of the stream. In order to facilitate this, the permits previously granted for this site required monitoring of stream flows and volumes taken on a daily basis. There was also a requirement for reporting of this data on each application for renewal. Having permits expire in 2-3 years allowed the MOE the opportunity to review the data required by the permit.

In the current scenario, the Azimuth report suggests that the proponent will continue to monitor both stream flow and the volume of taking as part of background data compilation. It is inferred from the undertakings mentioned that this data would be provided to the MOE should there be the need or desire to expand production above 50,000 L/day. What needs to be provided (in the current context, with no reporting to the MOE) is a mechanism to assure that the data is in fact being collected. In light of the potential for impacts due to water takings at this site it is recommended that an avenue be sought by which the proponent can provide a summary to the municipality on an annual basis indicating that the previous year's water taking was in keeping with the below 50,000 L/day threshold.

In recognition of the seasonality of flow from the spring, previous MOE permits required that taking be lower than 10% of the instantaneous flow on the day of taking. This clause meant that despite the total volume allowed, on low flow days, the full amount permitted could not be taken if it was greater than 10% of the instantaneous flow for that day. The Azimuth reports suggests that a value of 5% of the 7Q20 will be applied in the current proposal as the threshold below which all taking will be held. It should be noted that the 7Q20 is a set value and no variations on this number should be expected based on instantaneous flows. Azimuth is suggesting that the taking be limited to 5% of 7Q20 as a cap on the taking. It is not apparent in the report if this value has already been established. It can be said from a theoretical perspective that the 7Q20 is a much more rigid cap than the previously used 10% of flow. However if sufficient data has not been compiled to generate the 7Q20 then its use at this point is not possible.

It is recognized that the intent in the MOE permits allowance for 10% of instantaneous flow and Azimuth's proposal for use 7Q20 is to limit taking on low flow days. A more mutually satisfactory approach may be to establish a threshold based on the currently available data which will serve as a trigger below which no taking is allowed. This trigger would be based on available data and an analysis of the environmental requirements of the area.

It is recognized that at this time, with no requirement for permitting as per the current proposal, there would be no avenue for evaluation of compliance with a cap in any form. A requirement for the proponent to provide an annual report to the municipality which

outlines water flows and water takings over the previous year should be considered as an approach to fill the administrative gap.

The proposal does not mention a plan for response should any interference be noted. It is recommended that the proponent be required to provide an interference response protocol that will be implemented for any reports of interference with other water users or with the environment.

The municipality should require the proponent to present a copy of any application to the MOE for a PTTW for any future planned expansion of takings. It is also recommended that an official comment be obtained from the MOE on the need for a permit on a previously permitted source especially in the context of the sensitivity of the water taking.

Transportation Review

The following comments are based on our review of the report entitled Paradise Springs, Transportation Review as prepared by C.C. Tatham & Associates Ltd. We have also referenced the Friends of the Kolapore, Comprehensive List of Concerns re: Oro Ridge and Summary of Concerns Received by Neighbours as prepared by County staff.

The primary conclusions and recommendations of the C.C. Tatham Associates' (CCTA) report are as follows (paraphrased):

- The site development is forecast to generate 1 truck to the site and 1 truck from the site daily (40,000 to 44,000 L water tanker truck).
- A posted speed of 60 km/h is recommended on both Osprey-The Blue Mountains Townline and on Road 45, along the proposed haul route. The reduced posting is based on an evaluation methodology recommended by the Transportation Association of Canada (TAC), and particularly on the risks imposed by the existing vertical profile, narrow road widths and gravel surface. Minimum stopping sight distances are provided along the corridor to meet this reduced posted speed criteria.
- Based on relevant MTO standards, isolated vertical curves with design speeds of 10 to 20 km/h below the prevailing design speeds are acceptable.
- There will be no trucks turning left from the site and therefore the MTO commercial site distance requirements do not apply.
- The commercial site distance requirements would not apply to the existing driveways, due to the low traffic volumes and the available stopping sight distances.
- Modifications to the width or profile of the existing haul roads are not considered to be reasonable, given the local nature of the road, the low traffic volumes and the limited number of trucks being generated by the development.
- Removal of existing trees along the ROW is recommended to improve visibility.
- Signs can be posted to alert motorists to the site access and to existing driveways along the haul route.

The transportation concerns noted in the "Friends of Kolapore" submission include (paraphrased):

- Haul route is not appropriate, with strength, width and safety issues not adequately addressed in the assessment (i.e. a number of accidents have occurred in this area, including one fatality). It is questioned whether there is sufficient width to accommodate a water tanker and a car in opposing directions (i.e. two-way traffic).
- Sight lines were not assessed at field accesses or at vertical and horizontal curves.
- No assessment was provided of the safety impacts on other users of the corridor (pedestrians, bikers, ATV users, cross-country skiers, horses, hunters, fishers etc).

The transportation concerns noted in the "Neighbours" submission include (paraphrased):

- Townline is not suitable for truck traffic (historically dangerous road with safety issues).
- Approval for the haul road and signage must be obtained from Town of the Blue Mountains.
- Concerns over width of trucks, blind spots, vertical curves, poor road condition.
- Maintenance concerns including cost, strength of road, existing safety concerns due to snow banks, high incidence of cars going into ditches in the winter.

Based on our review of the above information we provide the following comments:

1. CCTA noted the gravel roads (Townline and Road 45) to be in good structural condition at the time of their field review (July 2012), however that fresh gravel had just been added and graded. Given these circumstances, it is difficult to see how the structural condition of the road could be assessed. A review of the road in the Spring break-up period, or a detailed subsurface geotechnical investigation would be required to make some judgement on the structural adequacy of the road. We suggest that a geotechnical investigation be completed to confirm if road strengthening is required to accommodate the truck loading proposed.
2. CCTA notes an existing platform width of 5.0 m for both Townline and Road 45, although it is suggested that shoulders have been overgrown (i.e. that the initial road had a platform width of 6.0 metres). Since "platform" is typically taken to include the rounding, a driving surface of only 5.0 metres is provided, even considering the overgrowth. The report does not assess the adequacy of these widths to meet tolerable standards for a haul road. A previous report, prepared by CCTA for this site, recommended that MTO standards be provided for road widths along the haul road (i.e. 3.25 metres driving lanes plus 1.0 metre shoulders, or total platform width of 7.5 metres), and that the haul road does meet these criteria. Considering that the width of a typical car is 2.1 metres and that truck widths may be 2.6 metres, the existing widths do not appear to be sufficient to accommodate the haul road function along either Townline or Road 45. We recommend a widening of these roads.
3. It is not clear whether the sight line distances (driveways and site access), reported by CCTA in Table 2, are the most conservative of either the turning sight distance or the stopping sight distance. It would be preferred if the two sight distances were evaluated separately, to allow for a clearer assessment of requirements. Regardless of this fact, the stopping sight distance has applied an object height of 1.05 m to

1.3 m (ranging from the driver to the roof of the car). We suggest that the stopping sight distance should be based on an object height of 0.38 m (i.e. taillight of car) to account for night conditions. While it may be unlikely that a left turning vehicle will be delayed in turning (i.e. due to low oncoming traffic volumes), which may be conducive to a rear-end collision, it is desirable that the trucks can see the lights of vehicles pulling out of driveways under night operations. We suggest that these more stringent criteria be applied and the sight line analysis re-issued.

4. CCTA identifies one driveway that provides a stopping sight distance that accommodates a 60 km/h design speed, another that accommodates a 50 km/h design speed, with the remainder accommodating a 70 km/h design speed or higher. We note that speeds on the existing roads are not posted and therefore are presently assumed to be 80 km/h. Based on a methodology for establishing posted speeds, introduced by the Transportation Association of Canada in 2009, CCTA calculates that the existing roads should be posted at 60 km/h. This posting considers the risks associated with 11 site-specific geometric and operational factors. It should be noted that this methodology does not use the operating speed (i.e. 85th percentile speed) as a determining factor for establishing the posted speed, although this may be used as a check. Ultimately motorists will drive at a speed which they find comfortable based on visual cues and their surroundings and not from the speed limit signs. Therefore the underlying assumption is that the roadway characteristics will control the operating speeds, with the posted speed only playing a secondary role in maintaining such speeds. To assess if this is the case, we suggest that the applicant provide some speed monitoring to confirm existing operating speeds. Assuming that the actual operating speeds are being controlled by the existing constraints, the sight distance requirements can be based on a design speed that, in turn, is based on this new posted speed.
5. CCTA suggests that a design speed of 60 km/h to 70 km/h is considered appropriate for the gravel haul roads, based on a 60 km/h posted speed. Further they suggest that both the MTO and TAC guidelines make allowance for reduced tolerable standards. In particular, based on MTO guidelines, CCTA suggests that vertical curves may be based on 10 km/h to 20 km/h below design speeds, where there are no hazards and no history of accidents. In addition, TAC guidelines allow for reduced tolerable sight line standards where driveways are along local roads, with low traffic volumes and low traffic speeds. However, based on concerns noted by the area residents, in our opinion the conditions in the study area do not support the implementation of minimum tolerable standards. Therefore, assuming that the road is re-posted to 60 km/h, we recommend that improvements be made to the gravel haul roads to accommodate a design speed of 70 km/h.

We trust the above comments will be of assistance in dealing with this application. If you have any questions, please contact our office.

Yours truly,

R.J. Burnside & Associates Limited

A handwritten signature in black ink, appearing to read "Don McNalty", with a long horizontal flourish extending to the right.

Don McNalty, P.Eng.
DMcN:lm