



March 31, 2015

Jacque Tschekalin
Director of Planning
Township of Adjala-Tosorontio
7855 Sideroad 30
Alliston, ON L9R 1V1

Dear Ms. Tschekalin:

**RE: Official Plan and Zoning By-Law Amendments
Aggregate Resources Act Application
Alliston Aggregates (Nelson Aggregate Co.)
5556 & 5670 County Road 13, Part Lots 6 & 7, Concession 4
Township of Adjala- Tosorontio, County of Simcoe**

**Member
Municipalities**

- Adjala-Tosorontio
- Amaranth
- Barrie
- The Blue Mountains
- Bradford-West Gwillimbury
- Clearview
- Collingwood
- Essa
- Grey Highlands
- Innisfil
- Melancthon
- Mono
- Mulmur
- New Tecumseth
- Oro-Medonte
- Shelburne
- Springwater
- Wasaga Beach

The Nottawasaga Valley Conservation Authority (NVCA) staff offer the following comments on the above noted proposal based our review of the below listed documents:

- Planning Report dated January 2015 prepared by Cuesta Planning Consultants.
- Site Plan drawings, dated January 2015, prepared by C.C. Tatham and Associates.
- Combined Level 1 and 2 Hydrogeological Assessment, dated November 2014, prepared by Whitewater Hydrogeology.
- Surface Management Report, dated November 2014, prepared by C.C. Tatham and Associates.
- Natural Environment Level 1 and 2 Technical Report, dated November 2014, prepared by Robin E. Craig Environmental Consultant and LRG Environmental.

GENERAL COMMENTS:

NVCA staff understands that the proposed planning applications are intended to permit a below the water table proposed aggregated operations. The project is also subject to an application for a Class A, Category 1, Pit Licence under the Aggregate Resources Act (ARA).

NVCA staff would advise that at this point in time more information is required from the applicant to demonstrate that the proposal is appropriately protected from natural hazards (flooding) and it will not result in adverse impacts to the areas natural heritage features (watercourses, wetlands) and water resources (groundwater). The following detailed review comments provide a more depth explanation of NVCA staff concerns with the current proposal.

**Watershed
Counties**

- Dufferin
- Grey
- Simcoe

Member of



Conservation
ONTARIO
Natural Champions

www.nvca.on.ca

March 31, 2015

Re: Alliston Aggregates (Nelson Aggregates)

SITE CHARACTERISTICS:

Our review indicates that the property is traversed by the Boyne River and Tosorontio Creek, which are considered cold water fisheries habitat. The site also appears to contain unevaluated wetland features adjacent the Boyne River and to the southwest of the property. Due to the noted features and associated hazards the site is regulated by the NVCA pursuant to Ontario Regulation 172/06.

In addition, the property is identified as being within the Greenlands within the County of Simcoe's Official Plan. Furthermore, the Nottawasaga Valley Source Protection Area Updated Assessment Report (2014) has mapped the area within a Significant Groundwater Recharge Area (SGRA) and a Highly Vulnerable Aquifers (HVA). This report can be found at: <http://www.ourwatershed.ca>.

NATURAL ENVIRONMENTAL LEVEL 1 AND 2 TECHNICAL REPORT:

Fisheries/Aquatic Habitat

1. Section 2.4 – NVCA staff identified brook lamprey ammocoetes on the Boyne River at Concession Road 3 in 2013. Given proximity to Tosorontio Creek and proximity to older records on the Boyne River, northern brook lamprey may be present in this reach of the Boyne River.
2. Tosorontio Creek – the report notes that there is no habitat for northern brook lamprey (Section 6.7.3.4). However, Section 5.7 notes that there are some areas of gravel/stone with associated (assumed) creek chub spawning areas. Although habitat may be suboptimal for northern brook lamprey, one cannot conclude that they are absent from this reach of the creek. The report notes that a spawning survey along Tosorontio Creek was conducted. It is our understanding that this survey was likely undertaken on May 28, 2014 more than one month after the peak rainbow trout spawning period and it is unclear whether rainbow trout were actively spawning in this reach.
3. Municipal drain between Boyne River and Tosorontio Creek (identified in red on attachment): The report notes that this is cool water habitat. MTE (2010) identifies the feature as an "intermittent stream" whereas the NVCA municipal drain layer identifies it as a permanent cold/cool system with no sensitive fish species present (Class A). What are the potential impacts of the pit on this feature?
4. Further downstream (off property), there is another water feature that is identified in NVCA's fish habitat mapping as cool water habitat (depicted in yellow). The feature does not appear to extend onto the proposed pit property; however, would the pit impact potential groundwater discharge that appears to be feeding the feature?
5. Section 3.5 (Groundwater) notes that groundwater contribution to Tosorontio Creek is "neutral" overall. Please advise as to the basis that this statement. Are there flow records at the upstream end and downstream end of the property that substantiate this? Also, will there be no/negligible change to groundwater contributions as a result of pit operations?

March 31, 2015

Re: Alliston Aggregates (Nelson Aggregates)

6. Please provide supporting documentation confirming that the groundwater travel time between pit/pond and all watercourses is sufficient to mitigate thermal impacts.

Other Natural Heritage

7. Large numbers of bobolink (Threatened) were observed in the north portion of the property (similar to my 2012 observations). We understand that the proponent is working with MNRF who are the approval body on this matter.
8. NVCA staff note that no amphibian surveys were conducted in support of the report. Potential amphibian breeding habitat is present in the Boyne oxbow and the farm pond. The farm pond is highly disturbed by cattle activity as are areas immediately adjacent to the pond. Based on the high level of disturbance, we do not believe that any significant breeding habitat is present in the pond. However, the Boyne oxbow provides stronger potential for breeding habitat. Removal of cattle grazing from this area and restoration activities within the Boyne River setback will enhance existing habitat functions. Based on this assessment, NVCA staff is not requesting that amphibian surveys be undertaken in support of this application.
9. Section 5.4: A small woodland area is noted near the southwest corner of the property. NVCA has identified this feature as a wetland. MNRF has identified a portion of the woodland as "unevaluated wetland". A 15 metre (m) setback/berm is proposed immediately east of this feature (existing land use is row crop). What are the potential impacts of pit activity on the hydrology of this feature? In addition, NVCA typically requires a 30 m setback/buffer from these features. This wetland should be identified as an unevaluated wetland in Section 6.2 and addressed in Section 8.1 (impact assessment and recommended mitigation)
10. Figure 3 – NVCA staff agree with the report's assessment of the County Greenland and revised boundary.
11. Species at Risk: With the exception of northern brook lamprey, NVCA staff agrees with their assessment of SAR and their recommendation to review the SAR list annually and to work with MNRF to address SAR on the property.
12. Section 6.6 (Significant Valleylands): Please provide the basis for using the "Natural Heritage Assessment Guide for Renewable Energy Projects" (MNR, 2011) to review Significant Valleylands for this project rather than the "Natural Heritage Reference Manual". At this point, one could make the case that Tosorontio Creek lies within the broader Boyne River valleyland.
- 13.6.7.3.2 Monarch: NVCA staff believes that naturalization/regeneration within the Tosorontio Creek corridor and, possibly, along proposed berms will improve habitat conditions for Monarch on the property.

Proposed Enhancement

14. Boyne River Enhancement: Additional tree and shrub planting along the south bank within the setback area is recommended to provide shading and bolster the riparian

March 31, 2015

Re: Alliston Aggregates (Nelson Aggregates)

corridor/associated functions through this reach. The conceptual planting plan identified in Section 9.0 is satisfactory however NVCA staff request to be involved with detailed planting plan development. In addition, other, instream works which could be implemented to improve fish habitat in this reach of the Boyne as well as a project upstream of the property.

15. Boyne River Cattle Access: – In the event that application is approved, the existing pasturing use along the Boyne River should be immediately curtailed and the enhancement plan placed into effect. A permanent agreement/mechanism to ensure cattle no longer pasture within the setback area needs to be in place to ensure long-term protection of riparian habitat along this reach of the Boyne River.

Section 9.0 suggests that “some areas may be returned to agricultural production...where feasible”. The Boyne River setback area and Tosorontio Creek corridor in their entirety should be identified as excluded from a return to agricultural production.

16. Tosorontio Creek Enhancement: Section 9.0 identifies that current agricultural lands will be retired and planted with a native grass seed mixture to stabilize the soil. Areas of obvious soil erosion will be stabilized and soil imported to raise bank height, replace eroded soil material and increase bank gradient. In addition, the proposed planting plan appears to be nodal and the concepts are generally satisfactory. We request to be involved with further developing the stabilization and planting plan details.
17. Pond Rehabilitation: The report notes opportunities to enhance the natural features of the area within the ponds and particularly opportunities for wetland creation in shallow areas < 1 m. Irregular shoreline features will be added. Any large rocks/cobble retrieved during excavation will be salvaged and replaced to add structure/diversity. The report notes that large trees/woody material “can be added” to the pit pond to add structure/diversity. NVCA staff requests that this wording be revised as follows: “will be added”.

Monitoring Plan

18. A monitoring program is proposed to monitor water quality, temperature and stream flow in the Boyne River and Tosorontio Creek. This includes pre-extraction baseflow monitoring. This program needs to include impact thresholds and mechanisms to mitigate any observed impacts. Progressive pit activities in each phase (i.e. proceeding from maximum distance from watercourses toward watercourses) would provide a precautionary approach whereby any impacts can be identified early on and mitigated before significant impacts occur within the watercourses. Sentry wells could be useful to identify potential thermal impacts to groundwater associated with pit operations.

THE SURFACING WATER MANAGEMENT REPORT:

19. The Surface Water Management report should include a section addressing the not address the potential for fuel spill but the detailed sheet (DE-1 signed and sealed Jan 13, 2015) in the drawing set has a Spill Response Plan section.

March 31, 2015

Re: Alliston Aggregates (Nelson Aggregates)

20. The applicant should address flood protection/flood proofing of the equipment associated with the gravel extraction either in previous comments or in the latest floodline study provided by C.C. Tatham. The applicant should address how the infrastructure and equipment would be protected in the event of a regulatory flood.
21. The Site plan drawings identify a crossing of Tosorontio Creek however no details have been provide on this component of the project.

LEVEL 1 AND 2 HYDROGEOLOGICAL ASSESSMENT:

22. Tosorontio Creek is characterized as a cold water fisheries habitat. The groundwater contribution to Tosorontio Creek in the proposed Alliston Pit area has not been quantified in the report although vertical hydraulic gradients have been defined. Quantification of groundwater contribution to this creek in the study area is requested. Further, the use of Dupuit equation should be employed to approximate the groundwater flux calculations in addition to the presented D'arcy flux calculations for comparison to the Boyne River.
23. Ostrander et al. (1998) indicated that any thermal influence from the up-gradient rehabilitated ponds should not be detected at wells located great than 200 m from the rehabilitated ponds. The total buffer area to Tosorontio Creek is 63m or 31.5m per side. Quantify the thermal impact from both pit ponds to Tosorontio Creek and the anticipated thermal impact to the fisheries for the during extraction and post extraction phases. It is agreed that there is an anticipated minimal thermal impact to the Boyne River.
24. Regarding final lake level, it is listed a 0.15m reduction in water inputs will result in local adjustment in the groundwater levels. The review indicates a 0.2m reduction due to change in water balance (i.e. greater evaporation), plus 2-3% reduction due to water lose in handling water consumed by the gravel. This indicates a greater than 0.15m lose. Please clarify and indicate on how this change will affect the final lake level and associated stream level.
25. During extraction, 64 L/s of water will be infilling the pond. It is noted that groundwater flow to the Boyne is estimated at 1 L/sec and is not defined for the Tosorontio Creek (see comment 22). During extraction, how will the infilling of the pond(s) affect the flow and groundwater contribution to the creek, especially at MW1 (losing reach) and during the different phases of extraction.
26. Support is given for components of the proposed groundwater and surface water monitoring program. Given the close proximity of the proposed pit locations to the surface water features, it is recommended that thermal triggers be considered for development for Tosorontio Creek in support of the cold water fisheries.
27. A detailed domestic well survey is recommended to be undertaken to confirm the location, use, and details of the domestic well supply within 500m of the site boundary.
28. It is assumed that the logger data has been corrected to the monthly static measurements; however, the April 29 value for AA-1 doesn't align with the hydrograph in figure 7. Also, a separate graph of the monthly statics given the short period of record

March 31, 2015

Re: Alliston Aggregates (Nelson Aggregates)

for the majority of the wells where the pressure transducers were deployed (e.g. AA-10, AA-11, AA-12, etc.) would be beneficial.

OTHER COMMENTS:

29. The Planning Report does not address section 3.1 of the Provincial Policy Statement (2014).
30. In the event that the proposal is approved the protected environmental features, including the appropriate buffer areas, should be restrictively zoned (Open Space)
31. Under the post operation conditions it appears that the majority of the site will be flood susceptible. Future uses should be directed outside of the natural hazards as well as the key natural heritage features. Subsequently, upon completion of the extractive operation the site should be placed in a restrictive land use zoning/designation categories (Open Space, Environmental Protection, etc.) to limit or prohibit future uses within these areas. Please advise on a mechanism to address this matter.

NVCA staff requests that the applicant provide additional details addressing the above comments, which may include possible revisions or inclusions to the site plan drawings. We would be pleased to meet with the applicant and the municipality to further discuss our comments.

Thank you for the opportunity to provide input on this stage of the process and please feel free to contact the undersigned at extension 229 should you have any questions regarding the above remarks.

Regards,



Chris Hibberd, MCIP, RPP
Director of Planning

Copy: County of Simcoe, Ms. Rachelle Hamill
Ministry of Natural Resources and Forestry (Midhurst), Mr. Brent Armstrong
Nelson Aggregates, Mr. Stephen Drew
File