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January 17, 2018

Greenwood Aggregates Limited
R.R. # 2
Orangeville, ON, L9W 2Y9
Attn. S. Greenwood

Re: Response to the Town of Mono Technical Peer Review Comments of the Natural Environment Technical Report

Dear Mr. Greenwood;

This letter is in response to the comments made by Stovel and Associates Inc. in a letter regarding the Natural Environment Report (NETR) prepared by Robin E. Craig for the proposed Greenwood Violet Hill Pit to the Town of Mono dated December 19, 2017. This response will address the concerns in the order in which they were presented in that letter.

The following were reviewed when preparing this response;

County of Dufferin Official Plan, Office consolidation July 2017.

County of Dufferin Web Site - Interactive Map.

Craig, Robin E. 2016. Natural Environment Level 1 and 2 Technical Report, Violet Hill Pit, Town of Mono, Dufferin County. (NETR)

Greenwood Aggregates Limited, Violet Hill Pit Site Plans, July 7, 2017.

Greenwood Aggregates Response Dated January 23, 2017 to NVCA comment letter December 8, 2016.

Greenwood Aggregates Response Dated January 19, 2017 to OMNRF comment letter dated November 10, 2016.

Nottawasaga Valley Conservation Authority. Comment letter dated December 8, 2016 regarding Aggregate Resources Act Application by Greenwood Aggregates Company Limited for Part Lots 30, 31, and 32, Concession 4 EHS, Town of Mono.

Nottawasaga Valley Conservation Authority. Comment letter dated December 14, 2017 regarding Official Plan Amendment (OPA 2016 – 01) and Zoning By-law Amendment (ZBA 2016 – 02) Greenwood Aggregates Company Limited for Part Lots 30, 31, and 32, Concession 4 EHS, Town of Mono.

Ontario Ministry of Municipal Affairs and Housing. 2014. Provincial Planning Statement.

Ontario Ministry of Natural Resources. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Planning Statement, 2005. Second Edition 2010. (NHRM)

Ontario Ministry of Natural Resources and Forestry. Comment letter dated November 10 2016.regarding the Proposed Violet Hill Pit “Natural Environment Level 1and 2 Technical Report (June 2016).

Ontario Ministry of Natural Resources and Forestry. Comment letter dated February 13, 2017 regarding the Proposed Violet Hill Pit “Natural Environment Level 1and 2 Technical Report (June 2016).

Ontario Ministry of Natural Resources and Forestry. 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. (SWHCS)

Ontario Ministry of Natural Resources. 2014. Ontario Wetland Evaluation System, Sothern Ontario, 3rd Edition, Version 3.3. (OWES)

Ontario Ministry of Natural Resources. Bobolink General Habitat Description.

Ontario Ministry of Natural Resources. Interim Guidance for General Habitat of Butternut.

Ontario Ministry of Natural Resources. Eastern Meadowlark General Habitat Description.

Stovel and Associates Inc. 2017. Review of Natural Environment Level 1 and 2 Technical Report Violet Hill Pit – Town of Mono.

Town of Mono Official Plan, Consolidated as of January 2016.

Town of Mono Draft Natural Heritage Atlas, 2017.

Town of Mono Draft Natural Heritage Planning Map, 2017.

Trinity Consultants Ontario Inc. 2018. Best Management Practices Plan for Fugitive Dust, Greenwood Aggregates Company Limited, Violet Hill Pit, Town Of Mono, ON.

Whitewater Hydrogeology. 2016. Proposed Violet Hill Pit Combined Level 1 and 2 Hydrogeological Assessment.

1. Reviewer Concern - 6. Peer Review Assessment

“The applicant should be encouraged to copy the Town with submissions to government agencies (including the MNRF and the NVCA). This will ensure that a comprehensive assessment has been completed.”

Response

The applicant, Greenwood Aggregates Inc. will comply with this request.

2. Reviewer Concern – Study Methods

The peer reviewer identified areas on Figure 3 – “Vegetation Communities” which he circled that do not appear to have been documented. With the high number of species at risk on and adjacent to the site, the reviewer is “of the opinion that the areas need to be mapped and inventoried.” He further suggests “that the Town request copies of the community assessments and a revised vegetation community map.”

Response

The 13 circled “undocumented communities” on the reviewer’s copy of Figure 3 (attached) have been numbered. Each location is described below. Four of the communities, Locations 1, 2, 6 and 13, are off site within 120 m on lands not owned by the proponent. As a result none of these locations were physically visited. Descriptions are, therefore, based on casual observation while conducting on site surveys and review of the air photos on the Dufferin County on-line Interactive Map. All other Sites are on the proposed licence area and were visited during vegetation and wildlife surveys of the site. Vegetation data were not recorded for each specific location but species found were all included in the NETR Appendix 1 Vegetation Species List. Species at risk surveys were completed at all locations, including detailed searches for Butternut because of its preference to grow along the edges of fields and in open areas.

Location 1.

This location is a rural residence. The vegetation community is cultural and is strongly influenced by the resident’s activities and interests. The community consists of about 75 % grassland with scattered deciduous trees. There are 3 buildings at this location. The extraction limit is about 150 m from the south-east portion of this location. No Bobolink or Eastern Meadowlark were observed in the grasslands. The regular cutting of the grassland, the small area and the interspersions of trees limits the potential of the site for threatened grassland bird species. No Butternut were observed but if Butternut are present their habitat only extends 50 m from an individual tree. Since the location is more than 50 m from the extraction limit there will be no impact to potential Butternut.

Location 2.

This location is a rural residence with an area of about 2 ha. The vegetation community is cultural and is strongly influenced by the resident’s activities and interests. The community consists of about 50 % grassland and 50 % tree cover. The tree cover is an equal mix of conifer and deciduous species. There are 1 -2 buildings on the site. . The

extraction limit is about 50 m from the majority of the trees on the site. No Bobolink or Eastern Meadowlark were observed. The regular cutting of the grassland and the relatively small area limits the potential of the site for threatened grassland bird species. No Butternut were observed but if Butternut are present they are more than 50 m from the extraction limit and will not be impacted by the proposed pit.

Location 3 and 4.

These locations are east-west hedgerows within the proposed extraction limit. Location 3 is about 400 m long, extending east from the northern woodland. It ranges in width from 10 to 20 m. The vegetation is deciduous trees, predominantly Sugar Maple and White Ash with an understory of deciduous shrubs and herbaceous plants. The majority of the herbaceous species are non-native species that are often found in conjunction with agricultural such as hay grass species Timothy and Orchard Grass and weedy species Wild Carrot, Lamb's Quarters and Dandelion. These and similar species were found along all the hedge and fence rows on the site. Location 4 is about 325 m long, south of Location 3 dividing 2 cash crop areas. It is about 20 m wide. The vegetation is composed of about 50 % deciduous trees and 50 % grasses and herbaceous plants. The trees are predominantly Sugar Maple.

Four Butternut were found, two in each hedgerow. These were the only Butternut found within the proposed extraction area.

The following mitigation to protect the Butternut in both Locations 3 and 4 is outlined on the site plans;

- *“A minimum 50 m setback will be established and clearly marked around the 4 known Butternut within the proposed extraction limit.”*
- *“Prior to any operational activities occurring within the licenced area, including building haul roads, the operator must demonstrate to the satisfaction of OMNRF, that the Endangered Species Act requirements related to protecting Butternut and their habitat have been met..*

This will accomplished by;

- *Searching for Butternut in an area and within 50 m of an area where an operation is planned.*
- *Conducting the searches during the growing season prior to the operation by a qualified professional following OMNRF protocols.*
- *Marking clearly all Butternut found and protecting each with a 50 m setback.*
- *Completing health assessments by a certified Butternut health assessor on all Butternut found during the above searches.*
- *Submitting the results of the Butternut health assessments to OMNRF within 30 days of completing the assessments.*

- *Seeking appropriate authorization under the Endangered Species Act prior to removing or commencing any operation within 50 m of any Butternut.”*

Location 5.

This location is within a farm yard within the licence area but outside the extraction limit. It is a laneway about 100 m long lane from the 4th Line, thorough the yard to the fields to the west. The lane is lined with 10 to 12 large Sugar Maples, likely planted in the past by a former owner. Ground cover consists of a number of non-native species often found in conjunction with agriculture. There is a low barn that is closed up. No Butternut were found.

Location 6.

This is a rural residence on a 0.2 ha plot of land. The vegetation community is cultural and is strongly influenced by the resident’s activities and interests. Although it is within 120 m it is more than 50 m from the extraction limit. If Butternut are present their habitat will not be impacted by extraction on the site.

Location 7.

This is a north–south fencerow located between two actively cultivated cash crop fields. It is about 390 m long and it is between 8 and 12 m wide. The widest section is at the north adjacent to the northern woodland. The vegetation consists of field species for most of its length with a few deciduous trees, Sugar Maple, scattered along its length. Butternut were found at the north section adjacent to the woodland. These will be excluded from the extraction area and a 50 setback will be established between these trees and the extraction limit. The fencerow will be re-surveyed for at risk species prior to operations beginning as described for Locations 3 and 4.

Location 8.

This is a north-south fencerow between two actively cultivated cash crop fields, west of Location 7. It is about 390 m long and between 8 - 10 m wide. The vegetation consists of field species for most of its length with a few deciduous trees, Sugar Maple, scattered along its length. No Butternut were found along this fence row. It will be re-surveyed for at risk species prior to operations beginning as described for Locations 3 and 4.

Location 9.

This is a farm yard on the site. There are 2 buildings on the site and an old barn foundation. The vegetation community is ultural and is strongly influenced by past resident’s activities and interests. It is cut lawns with scattered trees and rows of trees adjacent to agricultural fields. The trees are deciduous and predominantly Sugar Maple, the result of past plantings. There were no Butternut found. It will be re-surveyed for at risk species prior to operations beginning as described for Locations 3 and 4.

Location 10.

This is a farm yard on the site. There are 5 buildings on the site and an old barn foundation. The barn that appears on earlier images of the site has been removed. The vegetation community is cultural and is strongly influenced by past resident's activities and interests. It consists of cut lawns with scattered trees and several rows of trees along the west boundary, likely planted as a wind break by a former owner. The trees are predominantly mature Sugar Maple with some conifers. There were no Butternut found. It will be re-surveyed for at risk species prior to operations beginning as described for Locations 3 and 4.

Location 11.

This is part of an east-west fencerow along the south boundary of the property. It is about 100 m in length. The vegetation consists of predominantly Sugar Maple. No Butternut were found. It will be re-surveyed for at risk species prior to operations beginning as described for Locations 3 and 4.

Location 12.

This is a north-south fencerow located along the east boundary of the property between two actively cultivated cash crop fields. No Butternut were found. It will be re-surveyed for at risk species prior to operations beginning as described for Locations 3 and 4.

Location 13.

This is part of the southern woodland which is described as a dry-fresh Sugar Maple deciduous forest (FOD 5-1). It is off site and further described in Section 5.4 "Vegetation Communities - Adjacent to the Site" page 16. No Butternut were found in the southern woodland. If Butternut are present in Location 13, they are more than 50 m from the extraction limit and therefore will not be impacted.

3. Reviewer Concerns – Assessment Significance

- a. "Craig asserts that neither the Town of Mono nor the County of Dufferin has designated significant woodlands, and therefore, significance was determined using MNRF criteria." The reviewer believes this statement is not accurate.
- b. The reviewer recommends that the specific areas of the northern and southern woodlands be recalculated.
- c. The reviewer believes that MNRF's "Natural Heritage Reference Manual" is the appropriate reference regarding criteria for establishing significant woodlands and not the MNRF publication "Natural Heritage Assessment Guide for Renewable Energy Projects".

Responses

- a. As noted by the reviewer, Town of Mono Op (June 2016) Policy 14 pg 58 states;

“Woodlands of 10 hectares or more shall be considered potential significant woodlands and may require an evaluation through an environmental impact study. Study requirements shall be determined on a case-by-case basis, at the application preconsultation stage. Larger areas may be used for the determination of significance

depending on the nature, location and extent of the proposed development and the known features of the woodland, applying criteria in the Natural Heritage Reference Manual. The future Natural Heritage Study will only include the identification of woodlands that are considered significant in the Town. For woodlands within the Greenbelt Natural Heritage System and the Oak Ridges Moraine, the criteria for significance is provided in the associated technical papers.”

County of Dufferin OP, Policy 5.3 Natural Heritage Features and Functions, pg 61, Determining Significance, pg 62, subsection b) states;

*“This Official Plan does not contain criteria to determine whether the woodlands shown on **Schedule E** are significant. A woodland would be classified as being significant if it is determined to be an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history.*

The County will establish the criteria for determining significance at the time a natural heritage system strategy is undertaken. In the interim, at the time of application where woodlands have been identified, the determination of significance will be based on criteria provided in the Natural Heritage Reference manual and local municipal official plans.”

The Town of Mono has stated that all woodlands with an area of 10 ha or greater be considered potentially significant and the County of Dufferin has mapped all woodlands but has not yet determined criteria for determining significance. Neither OP supplies criteria for determining the significance of woodlands but both suggest using criteria for determining significance from the MNR Natural Heritage Reference Manual.

- b. The areas of both the northern and southern woodlands have been recalculated using the area measuring tool on the Dufferin County interactive map site. As a result, the northern woodland is estimated to be 13.1 ha in area of which 7.9 ha are on the site. The southern woodland is estimated to be 14.8 ha of which 4.4 ha are on the site.
- c. The significant woodland criteria in both the “Natural Heritage Assessment Guide for Renewable Energy Projects” (2011) (NHAGFREE) and the “Natural

Heritage Reference Manual” (2010) (NHRM) have been examined. The criteria in both are very similar and one is likely based on the other. The NHGFREE, however, is more detailed possibly because it was published after the NHRM and, therefore, was thought to be more up to date. Since the municipalities refer to the NHRM, then it is probably the best document to source criteria for significant woodlands. What is important here is that significant woodlands have been identified as present and are to be excluded from the licence area. A 50 m setback from each woodland has been established to further protect the woodlands and their ecological functions and will also be excluded from the licence area.

4. Reviewer Concern

The Craig report does not make reference to a water course south-east of the site within 120 m that has been identified by the Town of Mono OP as a “significant cold water stream”.

Response

Absence of this stream within 120 m of the site is discussed in both the Hydrogeological report and the NETR. In the Hydrogeology Report, Section 3.1 “Physiography and Drainage”, page 7, paragraph 8, states that although a head water stream is shown south-east of the site on Provincial information and is displayed on Figure 3 of the report, a site inspection revealed that there was no culvert leading from the site or a defined channel or stream at that location. In the Natural Environment Report, Section 3.4 Watersheds and Surface Water, page 9, paragraph 2 states “Background data indicate that there is a water course immediately south-east at the 4th Line and another flowing from the woodland to the south-west of the site toward the 3rd Line. Site inspections revealed that there are no defined channels or streams at either location. Furthermore, there is no culvert anywhere along 30 Sideroad, indicating that surface water flow from the site does not occur past this road.”

Therefore, there are no cold water streams south-east or south-west, within 120 m of the site.

5. Reviewer Concern

Several hedgerows that have been identified in the County of Dufferin OP, Schedules E – “Natural Heritage Features” and Schedule E1 – “Preliminary Natural Heritage System” that have not been identified or addressed in the NETR. It is recommended that the polices and Schedules of the Town of Mono OP, the Town’s Draft Natural Heritage Strategy and the County of Dufferin OP be reviewed to determine if there are additional significant features on and adjacent to the site. It is also recommended to consider the features and functions of the onsite and adjacent lands in the framework of a Natural Heritage System including links and corridors and review these features in the context of the Natural Heritage Reference Manual (NHRM). For example, the northerly Hedgerow provides habitat for Butternut but is included in the proposed extraction limit.

Response

The Dufferin County OP Schedule E indicates the presence of 2 isolated natural areas that correspond to the northern and southern woodlands on the site. Schedule E1 indicates hedge rows leading east from the northern woodland but not connecting to any other natural feature. Schedule E1 also indicates scattered unconnected and isolated hedgerows on the site. The Provincially Significant Wetland (PSW) west of 3rd Line is identified as part of the County Natural Heritage System. No other natural heritage features are identified on or within 120 m of the site.

The Town of Mono OP Schedule A does not assign any natural heritage features to the site. Figure 3 of the OP does indicate a cold water stream within 120 m south-east of the site. This was determined not to be present through field investigation as discussed in the response to Concern 4. It also identifies the Provincially Significant Wetland within 120 m west of Concession 3 as an “Escarpment Natural Area”.

The Town of Mono Draft Natural Heritage Atlas indicates the presence of the northern woodland with its east hedgerow extension and the southern woodland, similar to that which is indicated on Schedule E 1 of the Dufferin County OP. It indicates that they are both significant woodlands. (It is interesting that in the text regarding woodlands, it is stated that woodland areas over 20 ha are considered significant whereas the Mono OP recommends woodland areas over 10 ha have potential of being significant). Both the northern and southern woodlands have been estimated to be less than 20 ha in area (see Response to Concern 3. b.). The stream to the south east is also incorrectly located within 120 m of the Greenwood site. No other elements of a natural heritage system have been indicated to be present on or within 120 m of the site.

The most important considerations to take from these documents are the desire to protect existing natural features and to create a connected natural heritage system throughout the Town of Mono and the County of Dufferin. The northern and southern woodlands and 50 m setbacks have been excluded from the proposed licence area to further protect these features and their functions. These setbacks will also protect Butternut habitat. The extensions of these woodlands and their functions off site within 120 m are also protected because these areas are more than 50 m from the proposed licence area.

Currently the hedgerow east of the northern woodland is a maximum of 20 m wide and much narrower along most of its length. It terminates before reaching the 4th Line. There are no natural features within 120 m east of the 4th Line because there is a 20 m wide road allowance, occupied rural residential properties and intensively cultivated agricultural lands. Other hedgerows are narrow and isolated and do not provide the ecological functions of linking to other natural features. This hedgerow east of the northern woodland and the hedgerow in the south-east central area of the site both provide habitat for Butternut, an endangered species. Site plan notes state that Butternut will be identified and clearly marked prior to any operations occurring on the site. Currently intensive agricultural activities occur adjacent to these hedgerows and within the general habitat of the Butternut. If any are found there will be 50 m setbacks established and

clearly marked around each Butternut to protect them and their habitat from the negative impacts of the pit operational activities. At some time during the life of the pit it is proposed that these hedgerows and any Butternut present will be removed. The following site plan note has been proposed to address this,

- *“Prior to any operation occurring within the licenced area, the operator will demonstrate to the satisfaction of OMNRF, that the Endangered Species Act and all requirements related to protecting Butternut and their habitats have been met.”.*

OMNRF has accepted these recommendations.

The other identified features are isolated treed areas or narrow fencerows on site that are not connected to any natural features on or adjacent to the site. None of these identified features provide significant ecological functions. Naturally vegetated corridors are important on the landscape. The NHRM states that a wider linkage is better than a narrow one and width should increase relative to length. The NHRM suggests a minimum of 50 m. There are no fencerows wider than 20 m of the site. The SWHCS suggests that there is, however, uncertainty about the optimum width and mortality risks of corridors. A corridor may be beneficial for some species but detrimental to others. For example, narrow linear corridors, such as are present on the site, may allow increased access for raccoons, cats, and other predators. Also, narrow corridors dominated by edge habitat may encourage invasion by weedy generalist plants, such as are present along the narrow fencerows on the site, and opportunistic species of birds and mammals.

The treed feature along 30 Sideroad contains a number of mature Sugar Maple trees. These will remain in the 30 m setback along the road and will not be removed. The entire length of the setback along both sides of 30 Sideroad will be bermed in places and seeded with native and non-native non-invasive vegetation that will provide wildlife habitat and protected travelways where little to none exists currently. The setback, although not 50 m wide, will be 30 m wide and will improve connectivity east-west in the local area. Similar setbacks along other property boundaries will also be seeded and will provide additional wildlife habitat connections.

6. Reviewer Concern

Recommendations for the Progressive Rehabilitation and final Rehabilitation of the site should be considered within the overall landscape context with the goal of achieving a net environmental enhancement.

Response

The best opportunity to achieve better connectivity and general natural heritage enhancement is through progressive rehabilitation of the site during and after extraction. The NHRM provides guidance with regard to linkages and corridors across landscapes. The manual suggests that linkages connect natural features. It recommends that corridors linking natural features should be as wide as possible to accommodate as many species as possible and as a minimum, should be at least 50 m wide. It further

suggests that water courses provide the best corridors because of the combination of water and the presence of natural vegetation. Unfortunately none of the hedgerows on site connect to any other natural features.

If Butternut removal is required and authorized, a new natural woodland feature consisting of more Butternut than are removed along with companion vegetation will be planted in a protected location, more than 50 m from an extraction area on the site, to compensate for the loss.

West of the northern woodland are lands that are currently cultivated and lands that are identified as Cultural Thicket. A 50 m setback will be established along the north boundary through the cultivated lands to the Cultural Thicket connecting the northern woodland with the thicket. The cessation of cultivation and the exclusion of this area from the licence will allow a naturally vegetated corridor to develop and provide a linkage between the northern woodland, the cultural thicket and the Violet Hill PSW west of the 3rd Line.

As part of the progressive rehabilitation of the site, the pit side slopes, which are estimated to be 50 m wide will be planted by experienced professionals with a native grass and forb mixture which will include the following native and non-invasive non-native species. This mixture will be subject to seed availability and substitutions may be required;

- **Oat** (*Avena fatua*) for a cover crop along with
- **Perennial Rye** (*Lolium perenne*)
- **Canada Wild Rye** (*Elymus canadensis*)
- **White Clover** (*Trifolium repens*)
- **Common Milkweed** (*Asclepias syriaca*)
- **New England Aster** (*Symphotrichum novae-angliae*)
- **Goldenrod** (*Solidago sp.*)

This will provide grassland habitat for many species including Eastern Meadowlarks, Grasshopper Sparrows and Monarchs to name a few. Natural succession will be allowed to proceed allowing the side slopes to naturally re-vegetate with woody and other vegetation, increasing overall site species diversity. These re-vegetated side slopes linkages will expand the connectivity throughout the site both north-south and east-west. These linkages will offer connectivity to other off site natural features in the long term.

The following is proposed to address invasive species.

- All rehabilitated areas and setbacks within the licence will be surveyed annually by an experienced professional to determine if individual or colonies of invasive species including the following listed species have become established;

Common Buckthorn (*Rhamnus cathartica*)
Glossy Buckthorn (*Frangula alnus*)
Dog-strangling Vine (*Cynanchum rossicum*)
Black Dog-strangling Vine (*Cynanchum louiseae*)
Garlic Mustard (*Alliaria petiolata*)
Japanese Knotweed (*Polygonum cuspidatum*)
Phragmites or Common Reed (*Phragmites australis subsp. australis*)
Giant Hogweed (*Heracleum mantegazzianum*)

- If an individual or colony of any of the above listed invasive species is found within the licence area the individual or colony will be eradicated if feasible. The eradication method and/or methods will be determined and implemented by an experienced professional and may include manual, mechanical and/or chemical means.

Three nesting structures offering 18 nest cups for Barn Swallows, a threatened species, have been erected in the Cultural Meadow at the corner of the 3rd Line and 30 Sideroad. Structures to provide habitat for bats will also be constructed in appropriate areas.

7. Reviewer Concern – Impact Assessment 1.

Grasshopper Sparrow is a species of concern that was found on or within 120 m of the site and has not been assessed with regard to the extraction limits of the pit or the proposed haul road and entrance onto Concession 3.

Response

Grasshopper Sparrow is listed as a species of concern. Two singing males, which indicate nearby breeding, were encountered in the 8 ha CUM 1-1 community north-west of the proposed licence boundary. Only the south portion of this community is within 120 m of the proposed licence boundary.

The Grasshopper Sparrow lives in open grassland areas with well-drained, sandy soil. It will also nest in hayfields and pasture, as well as alvars, prairies and occasionally grain crops such as barley. It prefers areas that are sparsely vegetated. Its nests are well-hidden in the field and woven from grasses in a small cup-like shape.

The majority of the grassland habitat where the Grasshopper Sparrows were found is beyond 120 m (Figure 4 revised Jan 2018). A 50m wide west extension of the northern woodland separates much of the sparrow habitat from the proposed pit. A section of about 100 m in the north-west corner of the proposed pit is separated from the south portion of the sparrow habitat by a treed hedgerow. This setback will be expanded to 50 m and planted to provide greater separation from the grassland habitat.

Therefore, there will be no negative impact to the Grasshopper Sparrows or their habitats.

8. Reviewer Concern – Impact Assessment 2.

The Craig report recommends that the Cultural Thicket community be excluded from the extraction limit while information in Figure 3 of the report shows that the cultural thicket community has not been completely avoided and that some of it will be removed as a result of extraction and the creation of the internal haul road and entrance onto 3rd Line.

Response

The Cultural Thicket will be excluded from the extraction limit as stated in the NETR. This will be clearly shown on the site plans.

The impact of the changed location of the internal haul route will be discussed in a separate document after details of the proposal have been finalized.

9. Reviewer Concern – Impact Assessment 3.

“The report acknowledges that Category 2 and 3 Bobolink habitat and Category 1, 2, and 3 Eastern Meadowlark habitat may fall within the proposed extraction area. Even if the habitat is unoccupied, it still represents habitat for the Bobolink and Eastern Meadowlark according to the ESA definitions of their general habitat.”

“It is recommended that the site plans specify that authorization will be required for the Bobolink and Eastern Meadowlark and it be possible to attain it prior to the commencement of extraction.”

Response

The Endangered Species Act, generalized habitats for Bobolink and Eastern Meadowlark and their nesting locations on and within 120 m of the site were re-examined. The attached Figure 4, revised Jan 2018 provides the locations of the likely nesting sites of the Bobolink and Eastern Meadowlarks on and within 120 m of the site and the demarcated locations of Bobolink and Eastern Meadowlark general habitats on and adjacent to the site.

Category 1 habitat (nesting location) for Bobolink is up to 10 m from the nest site. Category 2 habitat (defended territory) is 10 – 60 m from the nest. Category 3 habitat (feeding, rearing of young, resting, dispersal and concealment from predators) is continuous habitat 60 – 300 m from the nest. The single Bobolink was located in a grassy meadow (CUM 1-1) more than 300 m from the extraction limit and therefore no Category 1, 2 or 3 habitats are present within the extraction limit. Although stated in the NETR that the boundary may be within Category 2 habitat (10 - 60 m) it is not likely because Bobolink prefer to nest more than 100 from a habitat edge such as a tree line or field edge. The meadow habitat is not continuous onto the site but changes to either woodland or intensive cash crop land. Therefore, there is no Category 3 habitat within the extraction limit.

Therefore, there are no Category 1 - 3 Bobolink habitats within the extraction limit.

Category 1 habitat (nesting location) for Eastern Meadowlark is up to 10 m from the nest site. Category 2 habitat (defended territory) is 10 – 100 m from the nest. Category 3 habitat (feeding, rearing of young, resting, dispersal and concealment from predators) is continuous habitat 100 – 300 m from the nest.

The NETR does not acknowledge that Category 1 habitat for Eastern Meadowlark may fall within the proposed extraction limit. Two of the three Eastern Meadowlarks presumed nesting sites were located more than 200 m from the extraction limit. One was in the grassy meadow (CUM 1-1) north-west of the site (same field as the Bobolink) and the other in the Cultural Meadow (CUM 1-1) along the 3rd Line near 30 Sideroad. Therefore, meadowlark Category 1 habitat (nest site, 0 -10 m) and Category 2 habitat (defended territory, 10 – 100 m) for these two are not within the extraction area. In both situations the meadow habitats are not continuous onto the extraction area rather the habitat changes to either woodland or intensive cash crop land. Therefore, there is no Category 3 habitat (foraging, rearing etc. 100 – 300 m of continuous habitat) within the extraction limit.

The third meadowlark was located on adjacent lands, south of 30 Sideroad in grassy meadow habitat. The nest site was more than 10 m from the licence boundary therefore there is no Category 1 habitat (nest habitat) on the site. Although Category 2 habitat (defended territory) usually extends up to 100 m from the nest site, 30 Sideroad restricts the north boundary and a row of mature trees limits the east boundary of the Category 2 habitat. The meadow habitat is not continuous onto the extraction area because of 30 Sideroad and intensive cash crop land to the north and mature trees and a farm yard to the east. Therefore, there is no Category 3 habitat (100 – 300 m of continuous habitat) within the extraction limit.

Therefore, there is no Bobolink or Eastern Meadowlark habitat within the extraction limit and there will be no negative impact to the Bobolink and Eastern Meadowlarks or their habitats adjacent to the site. As a result no ESA authorization will be required.

Section 8.3 of the NETR provides mitigation to address endangered and threatened species on the site including Bobolink, Eastern Meadowlark. The mitigation is included on the site plans and is stated as follows;

- *“Prior to stripping, the area to be cleared will be surveyed during appropriate survey time periods by a qualified professional for the presence of endangered and threatened species.*
- *A report of the above described surveys will be kept on file at the pit site and will be provided to OMNRF if an endangered or threatened species is found.*
- *If required, approvals/authorizations will be obtained under the Endangered Species Act and/or amendments made to the site plan as necessary.”*

Therefore, if Bobolink and/or Eastern Meadowlark are found within the extraction limit, appropriate actions will be taken to protect these species and their habitats or authorizations to impact these species and/or their habitats will be obtained.

OMNRF has reviewed the NETR and has accepted these proposed mitigative measures.

10. Reviewer Concern – Impact Assessment 4.

Although significant natural features have been documented in the NETR, ecological functions have not been discussed and this discussion is required to ensure compliance with the PPS.

Response

a. Significant Woodlands on Site

The ecological functions of the 2 on site woodlands are outlined in Section 6.5.2 Ecological Functions of the NETR. The northern woodland provides habitat for the endangered species Butternut and meets the criterion for woodland diversity. The southern woodland meets the criterion for woodland diversity. The following mitigation is proposed to comply with NVCA requests to exclude this woodland from the licence area.

- The northern woodland will be excluded from the licence application therefore existing Butternut and woodland diversity will not be negatively impacted.
- A setback of 50 m will be established between the woodland edge and the extraction limit to protect Butternut habitat and separate the woodland from the operation of the pit. This setback will also be excluded from the licence application.
- To ensure no negative impacts from dust, Trinity Consultants Ontario Inc. has prepared a “Best Management Practices Plan for Fugitive Dust” for the proposed Violet Hill Pit by dated January 2018 that will be implemented.

Therefore there will be no negative impacts to the ecological functions of the northern woodland.

The following mitigation is proposed to comply with NVCA requests to exclude this woodland from the licence area.

- The southern woodland will be excluded from the licence application therefore woodland diversity will not be negatively impacted.
- A setback of 50 m will be established between the woodland edge and the extraction limit to separate the woodland from the operation

of the pit. This setback will also be excluded from the licence application.

- To ensure no negative impacts from dust, Trinity Consultants Ontario Inc. has prepared a “Best Management Practices Plan for Fugitive Dust” for the proposed Violet Hill Pit by dated January 2018 that will be implemented.

Therefore there will be no negative impacts to the ecological functions of the southern woodland.

b. Significant Woodlands Within 120m of the Site

Both the northern and southern woodlands have been excluded from the licence area thus there will be no negative impacts to these adjacent woodlands.

A White Cedar Swamp woodland community has been identified within 120 m of the licence boundary west of the 3rd line. This swamp area is also part of the Violet Hill PSW. Mitigation will be discussed below in the context of impacts to the PSW.

c. Provincially Significant Wetlands Within 120 m of the Site

The Violet Hill PSW is located west of the site and the eastern boundary of the wetland is within 120 m of the licence boundary. The extraction limit will be more than 150 m from the PSW boundary. The ecological functions of this 150 m area would include forage and nest/den areas for wetland wildlife and water for the wetland. Minimal to no surface water flows from the site to the wetland but ground water does flow west to the wetland, as has been discussed in the NETR and Hydrogeological report. Water infiltrating into the pit more than 150 m from the wetland also flows to the wetland.

The Hydrogeological report states on page 29, in Section 7.4 “Potential Interference with Surface Water Features” that groundwater infiltration may increase approximately 14%. It goes on to state that this slight increase will be dispersed into the overburden resulting in slight to no measurable increase in water levels at the site and therefore will not result in any negative impact to local surface water systems. This would include the Violet Hill PSW.

Since the entire natural area along the west boundary of the licence area will be left natural, the current foraging, nesting and denning opportunities for wetland wildlife will remain and not be negatively impacted. To protect the vegetation and wildlife from the impacts of dust, in January 2018 Trinity Consultants Ontario Inc. has prepared a duct control a “Best Management Practices Plan for Fugitive Dust” for the proposed Violet Hill Pit.

Groundwater infiltration within the 150 m area between the pit and the wetland will not be increased or decreased and will continue to flow to the wetland unimpeded. To protect groundwater that flows from the pit extraction area the following is proposed;

- Gravel extraction will remain 5 m above the established water table.
- Site washing operations will include an on-site washing facility consisting of a lined closed loop system, which will recycle water in ponds perched above the water table. Approvals will be obtained under the Water Resources Act.
- Water levels and temperatures will be monitored at 4 monitoring wells during the period May to November.
- A ten point “Spill Contingency Plan” is described on page 2 of the site plans.

The impact of the new haul road location will be discussed in a separate report outlining study methods findings and assessment.

d. Significant Wildlife Habitat – Shrub/Early Successional Bird Breeding Habitat

There are about 10 ha of this habitat along the west boundary area of the site. The ecological functions include providing nesting and foraging habitat for a number of bird species including Brown Thrasher an indicator species and common species Eastern Towhee, Field Sparrow and Clay-colored Sparrow. The area is currently bordered to the east by intensively cultivated lands that offer no nesting and limited or more likely, no foraging habitat. Neither the extraction limit nor the proposed berms will intrude into the existing shrub habitat. Therefore the shrub habitat area will not be reduced. The berms will provide a visual and sound barrier to pit activities adjacent to the habitat.

Therefore the ecological functions of the significant shrub/early successional bird breeding habitat will not be negatively impacted.

The proposed new haul road will be discussed in a separate report.

11. Reviewer Concern – Impact Assessment 5.

- a. Concerns regarding the natural heritage impacts of the new proposed internal haul road and proposed 3rd Line road improvements.
- b. Consider whether the SWT 2-2 wetland community should be complexed with the Violet Hill PSW to the west.

Response

- a. The impact to natural features of the new proposed internal haul road on site will be completed in a separate document. The environmental impacts of future 3rd Line road improvements will be completed when design details are finalized.
- b. The Ontario Wetland Evaluation System, pg 40, “Wetland Complexes” states the following;

“Note that wetland units less than 2 ha in size may be included as part of the complex. Such tiny wetlands may be recognized when, in the opinion of the evaluator, the small wetland pocket may provide important ecological benefit. Some examples of such benefits would be a grassy area used by spawning pike; an area containing a community or specimen of a rare or unusual plant species; a seepage area in which a regionally or provincially significant plant or animal species is found; or a wetland which strengthens a corridor link between larger wetlands or natural areas. The evaluator must attach to the Wetland Data Record a brief documentation of the reasons for inclusion of those areas less than 2 ha. The reasons for recognizing any group of wetlands as a complex together with the outer boundary line should receive the approval of the appropriate MNR.”

The Willow Mineral Swamp Thicket (SWT 2-2) community located near the 3rd Line on the west boundary of the site has an area of about 0.5 ha. There was no standing water at anytime between May and August of 2015. The wetland shrub species present included Bebb’s Willow, Pussy Willow and Red-osier Dogwood which grow equally well on dry or wet sites (facultative species), are all common and are not dependant on wetlands. There were no rare or unusual plants present, it was not a seepage area in which a regionally or provincially significant plant or animal is found and it does not provide a linkage with other wetlands or natural areas.

Therefore, complexing SWT 2-2 with the Violet Hill PSW is not warranted.

12. Reviewer Concern – Minor Inconsistencies

- a. On page 15 of the NETR is stated that there are four polygons of Dry-Fresh Coniferous Forest (FOC 2-2) on the site, but only two appear on Figure 3 and the community type does not appear in the legend.
- b. On page 18, White Cedar Coniferous Swamp is referred to as SWC 3-1 and is indicated on Figure 3 as SWC 1-1.
- c. There are typos and errors in the scientific names on the plant and wildlife lists.

Response

- a. There are three polygons of FOC 2-2 on the site. Figure 3 has been revised to reflect the concern and is attached.

- b. The correct code for White Cedar Swamp is “SWC 1-1”
- c. The following are the corrected scientific names;

Page 53 Silky Dogwood *Cornus amomum*

Page 54 Dewey’s Sedge *Carex deweyana*

Page 55 Small White Leek *Allium tricoccum*

Page 56 the following species have had their scientific names changed;

Mouse-eared Hawkweed *Pilosella aurantiaca*

King Devil Hawkweed *Pilosella piloselloides*

Page 57 Broad-leaved Toothwort *Cardamine diphylla*

Page 59 Clammy Ground-cherry *Physalis heterophylla*

Swallowtails are not members of the Skipper Family Hesperidae but are members of the Swallowtail Family Papilionidae.

Black-capped Chickadee *Poecile atricapillus*

Brown Thrasher *Toxostoma rufum*

Rose-breasted Grosbeak *Pheucticus ludovicianus*

13. Reviewer Concern – Comments Related to the Site Plans and Planning Application

- a. The reviewer is concerned that “inert fill” brought to the site may increase the potential for invasive species to establish and that the fill will affect the types of vegetation that may be planted on the side slopes during rehabilitation.
- b. The reviewer is unclear whether the side slopes will be planted with woody vegetation or will they allowed to naturally re-vegetate. The Town should be circulated and provided opportunity to comment on the re-vegetation plans.
- c. The reviewer would like a reference to specific dust control measures.
- d. The site plans need to be updated with regard to protection of Butternut.

Responses

- a. The site plans, page 2 clearly states under “General Operational Notes – number 17” “*Clean inert fill may be imported to facilitate the establishment of screening berms around the site. The licensee must ensure that the material is tested at the sources, before it is deposited on-site., to ensure that the material meets the Ministry of Environment and Climate Change (MOECC) criteria under Table 1 of*

MOECC's Soils, Ground Water and Sediment Standards for use under Part XV.1 of the Environmental Protection Act. Sampling results will be provided to MNRF upon request."

An invasive species plan has been outlined in response to Concern 5. above that will address rehabilitation of the side slopes. If the imported fill meets MOECC Soil, Ground Water and Sediment Standards it will not negatively impact the establishment of vegetation planted on the side slopes.

- b. The side slopes will be planted with a grass forb mix as described in response to Concern 5. Above. This is clearly stated in the site plans, page 3 under "Progressive and Rehabilitation Notes" number 6 that;

"Side slopes will be seeded with a seed mix which contains native grass and forb species and avoids invasive species such as crown vetch." and The NETR which states in Section 9.0, bullet 7 "Side slopes not suitable for agriculture will be seeded with grass/legume mixtures to create grassland wildlife habitat and prevent erosion."

The Town will be circulated planting plans for the side slopes.

- c. To address duct control, Trinity Consultants Ontario Inc. has prepared a "Best Management Practices Plan for Fugitive Dust" for the proposed Violet Hill Pit.
- d. The site plans will be updated to reflect changes in agency policies and recommendations. For example, after the NETR was completed OMNRF revised the general habitat for Butternut, increasing the setback required from 25 m to 50 m. This has led to some confusion.

14. Reviewer Concern

"The author of the Natural Environment Level 1 and 2 Report is encouraged to review and consider the comments from government agencies and the peer review consultants from the Town of Mono. In particular, there are comments related to the hydrogeology, traffic and erosion potential that could affect the study program and impact assessment that needs to be completed."

Response

The comments from all reviewers regarding all aspects of the proposed pit will be considered when assessing the impacts to natural heritage features that could be affected.

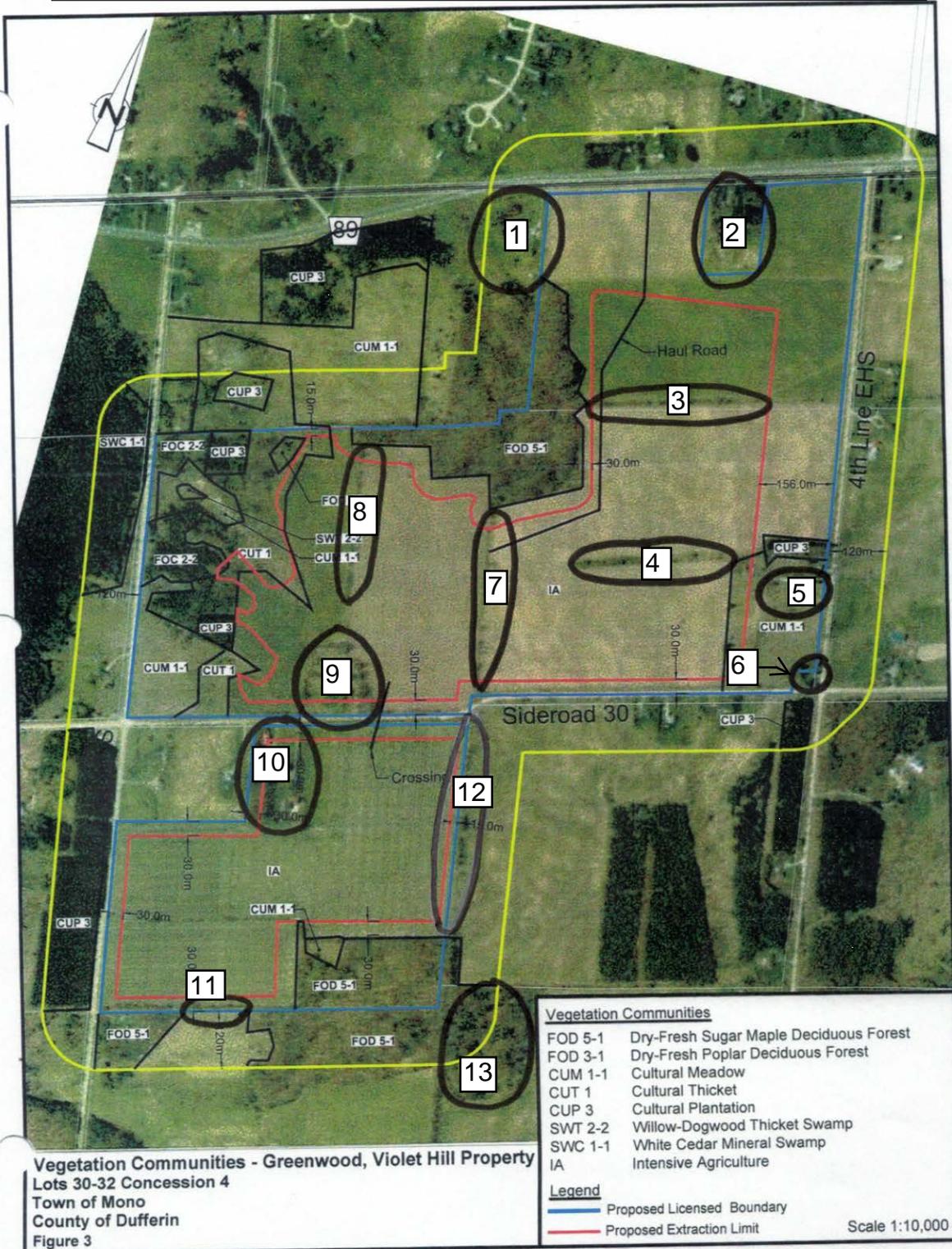
Conclusion;

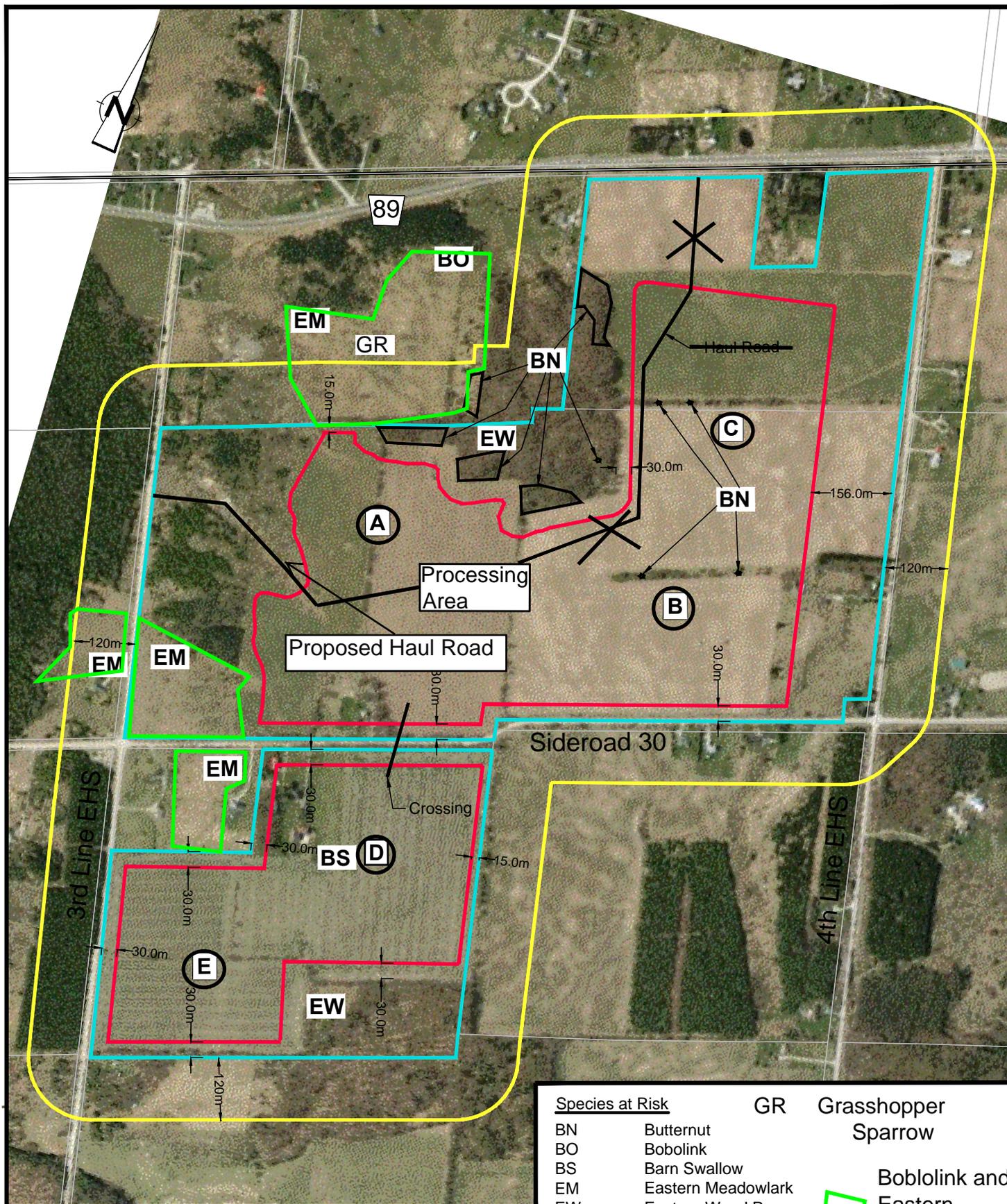
I believe this response addresses the concerns raised by the Town of Mono in their review of natural heritage information, impacts and mitigation as it relates to the proposed Violet Hill Pit application. If the Town accepts all or some of the recommendations, changes will need to be made to the site plans.

Respectively submitted;

Robin E. Craig BSc., MSc.,
Certified Wildlife Biologist, Environmental Consultant

Vegetation Communities Needing Descriptions - requested by Town of Mono Peer Review





Species at Risk
Greenwood, Violet Hill Property
 Lots 30-32 Concession 4
 Town of Mono
 County of Dufferin

Species at Risk

- BN Butternut
- BO Bobolink
- BS Barn Swallow
- EM Eastern Meadowlark
- EW Eastern Wood Pewee

GR Grasshopper Sparrow

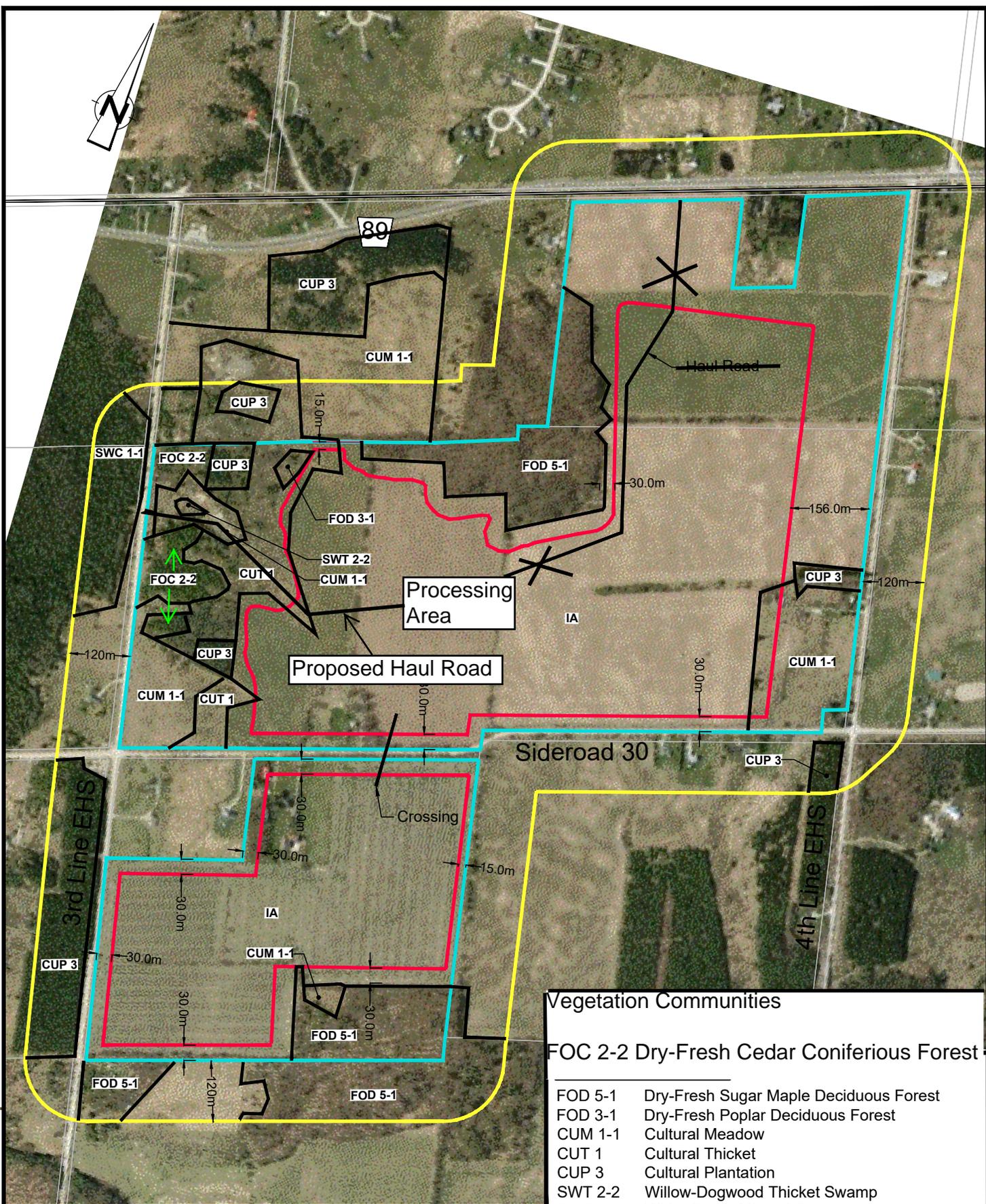
Bobolink and Eastern Meadowlark General Habitat

Legend

-  Proposed Licensed Boundary
-  Proposed Extraction Limit
-  Phasing

Scale 1:10,000

Figure 4 (revised Jan 2018)



Vegetation Communities - Greenwood, Violet Hill Property
Lots 30-32 Concession 4
Town of Mono
County of Dufferin
Figure 3 (revised Jan 2018)

Vegetation Communities	
FOC 2-2	Dry-Fresh Cedar Coniferous Forest
FOD 5-1	Dry-Fresh Sugar Maple Deciduous Forest
FOD 3-1	Dry-Fresh Poplar Deciduous Forest
CUM 1-1	Cultural Meadow
CUT 1	Cultural Thicket
CUP 3	Cultural Plantation
SWT 2-2	Willow-Dogwood Thicket Swamp
SWC 1-1	White Cedar Mineral Swamp
IA	Intensive Agriculture
Legend	
	Proposed Licensed Boundary
	Proposed Extraction Limit

Scale 1:10,000