Environmental Impact Study (EIS)
4361 Appleton Side Road

Part Lot 6, Concession 10
Township of Mississippi Mills
County of Lanark

May 8, 2024

Prepared By:

BCH Environmental Consulting Inc.
20373 Bethune Street,
South Lancaster, On
K0C 2C0

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

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20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

1.0. Introduction

As requested by Ottawa Valley Grain Products Inc., an Environmental Impact Study (EIS) was completed to assess the environmental impacts of the proposed development of a 3 story mill, warehouse, parking and loading areas (Appendix D) within the property located at 4361 Appleton Side Road, Part Lot 6, Concession 10, Township of Mississippi Mills, County of Lanark (Figure 1).

1.1. Site Context

The entire property parcel is approximately 41.67 ha in size and the legal land description is Part Lot 6, Concession 10, Township of Mississippi Mills, County of Lanark. The proponent wishes to develop a 3 story mill, warehouse, parking and loading areas (Appendix D; Figure 1 & 2). This area is the focus of this study and will be referred to as the subject lands. The subject lands are 0.45ha in size.

Through communication with Inverness Homes, the municipality has scoped the project to consider only wetlands. In addition to wetlands, this EIS also examines the potential for species at risk to utilise the subject and adjacent lands.

The subject lands are within one of the Mississippi Valley Conservation Authorities regulated areas. Additional permits may be required from the Conservation Authority.

The Provincial Policy Statement (PPS) states that site development and alteration shall not be permitted in provincially significant wetlands in Ecoregion 6E.

2.0. Methodology

This report is prepared in accordance with the Official Plan for the Lanark County (2012) and the Official Plan of the Township of Mississippi Mills (2019) with guidance from the Natural Heritage Reference Manual (OMNR, 2010). This EIS includes an assessment of the potential impacts on wetland and the potential for Species at Risk utilising the subject lands and adjacent lands.

This EIS will provide the methodology to mitigate, as required, negative impacts on the wetland and potential species at risk. Potential Species at Risk in the general area were identified from the Ministry of Natural Resources and Forestry databases, the Department of Fisheries and Ocean databases, the Ontario Breeding Bird Atlas, Ontario Reptile and Amphibian Atlas, iNaturalist and the Global Biodiversity Information Facility.

Colour aerial photography was used to assess the natural environment features in the general vicinity of the proposed building.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

A field survey of the subject and adjacent lands was completed by BCH Environmental (S.St.Pierre) on May 5, 2024 from 0830h to 01030h (air temperature was 13°C, with light air and clear skies). Staff qualifications are available in Appendix B.

The area was extensively walked and surveyed for potential species at risk and their associated habitat.

Upland vegetation communities were described utilising the Ecological Land Classification Southern Manual (Lee et al. 2008), while wetland communities if present were described utilising the Ontario Wetland Evaluation System Southern Manual (MNRF 2022).

A snag/cavity survey for bat habitat was completed. This survey followed the methods present in the 'Maternity Roost Surveys' protocol submitted to BCH by MECP on September 19, 2023. The protocol suggest walking transects and identifying suitable snags/cavities. As per the protocol if the snag/cavity density is calculated to be ≥10 snags/cavity per hectare then this the ELC polygon should be considered high quality potential maternity roost habitat. If maternity roost habitat is identified using ELC, acoustic monitoring is recommended to determine if little brown myotis, eastern small-footed myotis, tri-colored and/or northern myotis are recorded in the area.

Observed plants were recorded for each individual community, the plants utilized in the descriptions are the most abundant specimens observed. A complete observed species list is provided in Appendix A. Plants that could not be identified in the field were collected for a more detailed examination. Nomenclature used in this report follows the Southern Ontario Vascular Plant List (Bradley, 2013) which aligns with the Integrated Taxonomic Information System (ITIS).

3.0. Field Surveys

As part of the fieldwork, bat snag/cavity survey, a butternut survey and black ash survey was completed by systematically moving through the subject lands (discussed in section 4.4 and 4.5). Vegetation communities are described in section 3.1.

3.1. Existing Conditions

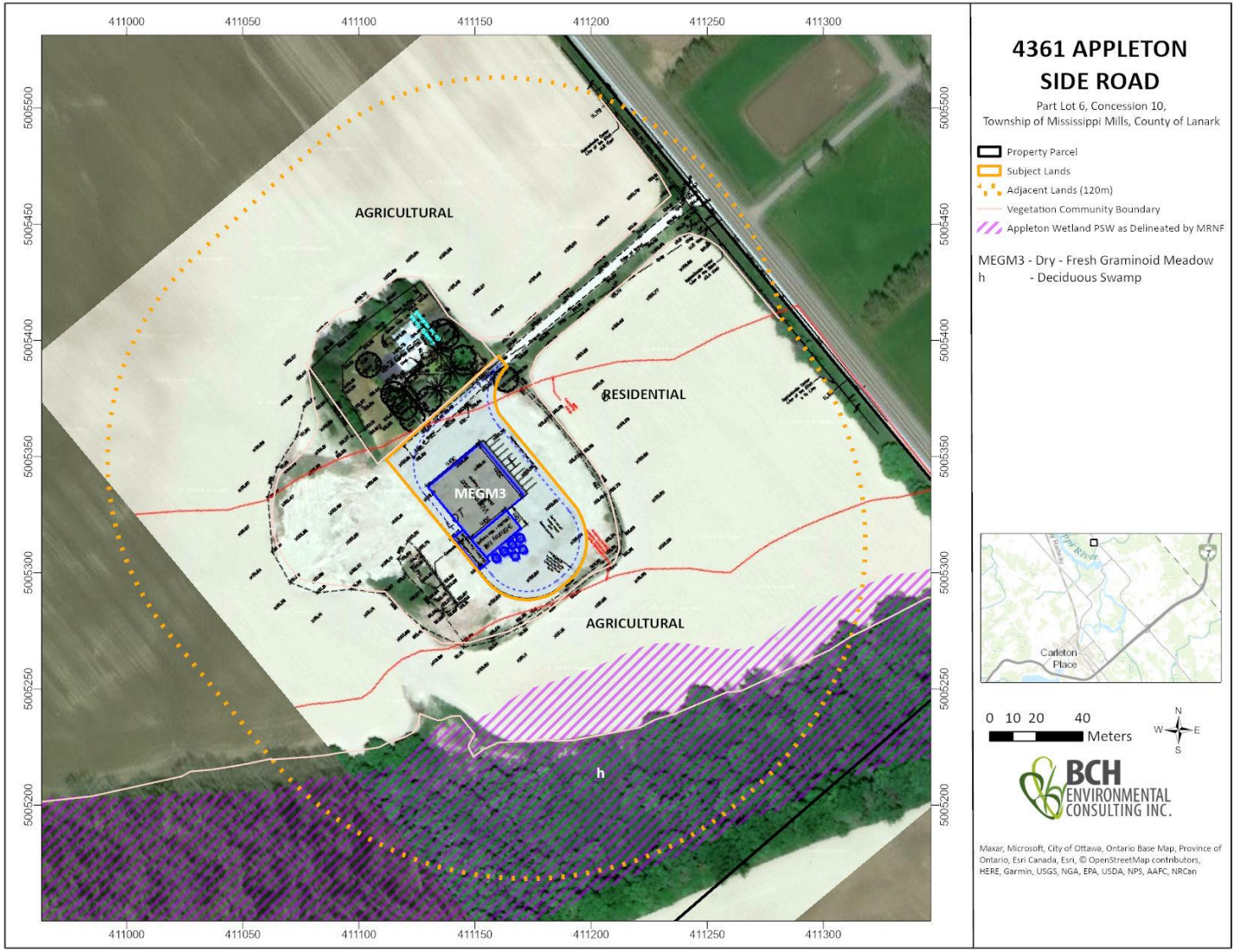
The subject lands consisted solely of meadow habitat while the adjacent lands consisted of residential area, agricultural fields and wetland (Appleton Wetland PSW). No watercourses were located within the subject lands. The Appleton Wetland within the adjacent lands is a watercourse and represents fish, turtle and amphibian habitat. The subject lands consisted of a site which previously had a barn (now demolished), a single cement wall remains. All development will occur within the Snedden soils series which is characterised by moderately deep, moderately well drained, slowly permeable silty clay loam that formed in residuum from calcareous, clayey, gray shales and thin interbedded limestone (MAFRA 2024).

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

FIGURE 1: SUBJECT LANDS

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

FIGURE 2: SUBJECT LANDS WITH PLANS



20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

3.1.1. Dry - Fresh Graminoid Meadow (MEGM3)

This community makes up the entirety of the subject lands and portions of the adjacent lands, it is present along the both sides of the access road and along Appleton Side Road. Within the subject lands and immediate adjacent lands only a single balsam poplar was noted (15cm DBH). Along Appleton Side Road there is the occasional Manitoba maple, red maple, green ash, common buckthorn and Tatarian honeysuckle. Ground cover (100% cover) was dominated by grasses followed by clovers (white clover, red clover and black medic) and wild carrot. This community is the site of a previous barn which no longer exists, there is a single cement wall remaining within the subject lands. Remnant rocks, gravel and pieces of cement are present throughout. A small depression was noted, this was a 5m x 2m area containing on average 5cm of water (probably due to recent rain), this area did not represent amphibian, fish or turtle habitat.

Photo 1: Dry - Fresh Graminoid Meadow (May 6, 2024)

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

Photo 2: Dry - Fresh Graminoid Meadow Wet Depression (May 6, 2024)

Photo 3: Dry - Fresh Graminoid Meadow along Appleton Side Road (May 6, 2024)

3.1.2. Residential Area

This area is immediately north of the subject lands within the adjacent lands, and consisted of a residence with mowed/manicured lawn. The area was bordered to the north and west with a row of white cedar with the occasional maple and ash. An assortment of trees (10-40cm DBH) were dispersed throughout the yard (white ash, red pine, sugar maple, white spruce, red cedar, apple and tamarack).

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

Photo 4: Residential Area (May 6, 2024)

3.1.3. Agricultural Fields

These fields make up the majority of the adjacent lands, through communication with the proponent they have indicated that either corn or soy is planted within these fields.

Photo 5: Agricultural Fields (May 6, 2024)

3.1.4. Deciduous Swamp (h)

This swamp is present within the southern adjacent lands and forms part of the Appleton Wetland PSW. This wetland presented four forms: deciduous tree (silver maple, red maple, American elm and green

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

ash), tall shrub (red-osier dogwood and white meadowsweet), robust emergent (broad-leaved cattail) and narrow-leaved emergent (grasses and sedges). A lot of water was present within this wetland and it does represent turtle, fish and amphibian habitat. MNRF delineation of this PSW wasn't exact, during the field visit it was delineated to its correct boundary (see figure 1 and 4).

Photo 6: Deciduous Swamp (May 6, 2024)

4.0. Potential Species at Risk

The Make a Map: Natural Heritage online database (OMNRF) was reviewed on May 3, 2024. This database provides sightings of provincially tracked species including Threatened and Endangered species covered by the 2008 Endangered Species Act in 1 km squares across most of Ontario. A search was conducted on the site and adjacent lands (18VR1005, 18VR1004, 18VR1105, and 18VR1104). The following species were identified for these squares:

- American Eel (Endangered)
- Eastern Musk Turtle (Special Concern)
- Snapping Turtle (Special Concern)
- Least Bittern (Threatened)
- Bobolink (Threatened)

The Ontario Breeding Bird Atlas provides a searchable database in the form of a 10km square grid. A query revealed the following Species at Risk and species of special concern identified within the 10km square that encompasses the site and adjacent lands (18VR10):

- Eastern Wood-Pewee (Special Concern)
- Barn Swallow (Special Concern)
- Wood Thrush (Special Concern)

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

- Grasshopper Sparrow (Special Concern)
- Bobolink (Threatened)
- Eastern Meadowlark (Threatened)

Similar to the Ontario Breeding Bird Atlas, the Ontario Reptile and Amphibian Atlas provides a searchable database in the form of a 10km square grid. A query revealed the following species of special concern was identified within the 10km square that encompasses the subject lands and adjacent lands (18VR10):

- Blanding's Turtle (Threatened)
- Eastern Musk Turtle (Special Concern)
- Snapping Turtle (Special Concern)

iNaturalist and the Global Biodiversity Information Facility provides a searchable database. A query revealed the following results.

- Snapping Turtle (Special Concern)

The Department of Fisheries and Oceans provide species at risk sightings via their online map tool. A query found no results in the vicinity of the site.

In addition to the above potential Species at Risk, other endangered and threatened species may potentially occur in the general area:

- Little Brown Myotis (Endangered)
- Northern Myotis (Endangered)
- Eastern Small-footed Myotis (Endangered)
- Tri-coloured Bat (Endangered)
- Black Ash (Endangered)
- Butternut (Endangered)

4.1. Fish

American Eel are designated as endangered under the Ontario Endangered Species Act (ESA). In fresh water, preferred habitat can be found in lakes and rivers including all waters extending from the high-water mark down to at least 10 m depth. Growing eels are primarily benthic, using substrate (rock, sand, mud), woody debris, and submerged vegetation for protection and cover. American Eels commonly overwinter in mud bottoms in both bay and estuary habitats. Eelgrass and interstitial spaces are important to American Eel as cover, particularly during daylight hours (COSEWIC 2012c).

No direct impacts to any fish (including species at risk), or fish nursery areas are anticipated during construction. No in water works are to be completed, construction will be at a minimum of 30m from the high-water mark (965m from Eel habitat). Any indirect impacts from the proposed works can be mitigated providing all mitigation measures in this report are properly implemented.

BCH ENVIRONMENTAL CONSULTING INC.
20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

4.2. Turtles and Reptiles

Eastern musk turtle and snapping turtle are designated as special concern under the Ontario Endangered Species Act (ESA). The habitat of species of special concern is not regulated under the Ontario ESA. Blanding's turtles have been designated as threatened and their habitat is provincially regulated.

Blanding's turtles are often observed within clear water eutrophic wetlands and have a strong site fidelity but may use several connected water bodies during the active season (COSEWIC 2016a). Blanding's turtles were identified as occurring within the 10km search area (Amphibian Atlas).

The Ontario Ministry of Natural Resources developed the general habitat description for the Blanding's Turtle (habitat provincially regulated), dividing habitat into three categories:

- **Category 1:** the nest and the area within 30 m or overwintering sites and the area within 30 m. Suitable nesting habitat occurs in sun-exposed areas with low vegetation cover and loose soils. They may overwinter in permanent or temporary waterbodies (young are also known to hibernate terrestrially), with the reported water depth varying from 0 to >100 cm and often show a high site fidelity. No evidence of this habitat was noted, and so Category 1 habitat is not considered to be present on or adjacent to the subject lands.
- **Category 2:** the wetland complex that extends up to 2 km from an occurrence, and the area within 30 m around those suitable wetlands or waterbodies. For the purpose of this report the Appleton Wetland PSW in the general vicinity of the subject lands will be considered Category 2 Blanding's turtle habitat. No turtle surveys were completed. All development will be outside of Category 2 habitat.
- **Category 3:** Category 3 habitat provides essential movement corridors of up to 500m between wetlands, a function which is essential for carrying out life processes associated with the Category 1 and 2 habitats. Category 3 habitat is the area between 30m and 250m around suitable wetlands or waterbodies identified in Category 2, within 2 km of an occurrence. No turtle habitat will be negatively affected by the proposed development. Development will occur within category 3 habitat, but it is unlikely turtles will be utilising this area as it does not connect with watercourses and wetlands.

Mitigation measures present within this report are deemed sufficient by MECP to mitigate any negative effects on Blanding's Turtles within the Category 3 habitat.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

FIGURE 3: BLANDING'S TURTLE HABITAT

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

4.3. Birds

Eastern wood-pewee, wood thrush, barn swallow and grasshopper sparrow are designated special concern under the Ontario Endangered Species Act (ESA). The habitat of species of special concern is not regulated under the Ontario ESA. The eastern wood-pewee is mostly associated with the mid-canopy layer of forest clearings and edges of deciduous and mixed forests (COSEWIC 2012a). The on-site forests did not contain this forest type. The wood thrush nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers (COSEWIC 2012b). The on-site forests did not contain this forest type. Barn swallow nest sites are commonly found along the interior or exterior of building structures, under bridges and wharves, and in road culverts (Heagy et al. 2014.). No barn swallow or barn swallow nests were observed. Grasshopper sparrow typically breeds in large human created grasslands (≥ 5 ha), such as pastures and hayfields, and natural prairies, such as alvars, characterized by well-drained, often poor soil dominated by relatively low, sparse perennial herbaceous vegetation (COSEWIC 2013a). The meadow present with a total size of approximately 1.5 ha is less than the minimum five hectares of suitable meadow habitat required by the Grasshopper sparrow.

Least bittern, bobolink, and eastern meadowlark are designated as threatened under the Ontario Endangered Species Act (ESA). Least bittern require emergent marshes (usually cattail) with stable water levels and interspersed areas of open water for breeding (COSEWIC 2009a). This habitat wasn't present within the subject lands or adjacent lands. Bobolink and eastern meadowlark are associated with native and non-native larger grassland habitats such as hayfields (COSEWIC 2010, and COSEWIC 2011). The meadow present with a total size of approximately 1.5 ha is less than the minimum five hectares of suitable meadow habitat identified for successful bobolink or eastern meadowlark nesting in the general habitat descriptions.

No direct impacts on birds are anticipated, indirect impacts on these species as a result of the proposed development can be mitigated provided the mitigation measures in this report are properly implemented.

Further to this, nesting migratory birds are protected under the Migratory Birds Convention Act (MBCA). No work is permitted that would result in the destruction of active nests (nests with eggs or young birds) or the wounding or killing of bird species protected under the MBCA and/or associated regulations.

4.4. Mammals

Little brown Myotis, northern Myotis, Eastern Small-footed Myotis, and tri-coloured bat are designated endangered under the Ontario Endangered Species Act (ESA). All four bats may forage in open areas on-site and may roost in trees or buildings on or adjacent to the Site. The Atlas of Mammals of Ontario (Dobbyn, 1994) suggests that the tri-colored bat is not present within this part of Ontario however, the NatureServe mapping in the COSSARO (2015) includes all of southeastern Ontario. Based on this information, this species is considered to have a very low potential of occurring. To prevent impacts to bats, no clearing of trees greater than 10cm on-site should take place between March 15 and November 30 (inclusive) without a qualified biologist first confirming the absence of bats (i.e., open work timing window from December 1 to March 14). If tree clearing is conducted between December 1 and March 15, no interactions with bats are anticipated, and therefore, significant negative impacts to SAR bats would be avoided.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

Maternity colonies are established by females in the summer, often in buildings, or large-diameter trees with suitable cavities (COSEWIC 2013b). No caves, bedrock fissures, mining shafts, abandoned buildings, or other features which may function as bat hibernacula habitat were noted within the subject lands.

A snag/cavity survey for bat habitat was completed. This survey followed the methods present in the 'Maternity Roost Surveys (Forests/Woodlands)' protocol submitted to BCH by MECP on September 19, 2023. The protocol suggest walking transects and identifying suitable snags/cavities. As per the protocol if the snag/cavity density is calculated to be ≥10 snags/cavities per hectare then this the ELC polygon should be considered high quality potential maternity roost habitat. If maternity roost habitat is identified using ELC, acoustic monitoring is recommended to determine if little brown myotis, eastern small-footed myotis, tri-colored and/or northern myotis are recorded in the area.

No suitable snag/cavity trees that may be used by bats were observed within the subject lands. As per MECP directives this site is not considered a maternal roost habitat, therefore no further action/surveys are required.

4.5. Vegetation

Butternut (designated as endangered by the ESA) tends to reach greatest abundance in rich well-drained mesic loams in floodplains, streambanks, terraces and ravine slopes, but can occur in a wide range of other situations (COSEWIC 2017). No butternut were located within the subject lands and adjacent lands.

Black ash (designated as endangered by the ESA) occurs most frequently in floodplain forests, basin, seepage and lacustrine swamp forests, shoreline forest margins, and fens (COSEWIC 2018a). No black ash were located within the subject lands and adjacent lands.

4.6. Species at Risk Summary

In summary, based on the field surveys and habitat present within the subject lands the most likely species utilising these lands include bats and turtles. No species at risk will be negatively impacted, as demonstrated throughout section 4.0.

5.0. Wetlands (Appleton Wetland PSW)

The wetland, has been taken into account while establishing the building envelopes and a 30m setback has been established. Potential impacts to the wetland during construction include sedimentation and changes to water quality. The features will not be negatively impacted as the proposed building envelopes is at a minimum 57m from these features and mitigation measures present limit the potential for negative impacts.

MNRF delineation of this PSW wasn't exact, during the field visit it was delineated to its correct boundary (see figure 1 and 4). An updated delineation of the Appleton Wetland PSW was sent to the municipality and MRNF on May 7, 2024.

6.0. Development Constraints and Cumulative Impacts

As mentioned this EIS was scoped by the municipality to only consider wetland. Development will be limited to the subject lands (Figure 1, 2, 4 and Appendix D).

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

The wetland (Appleton Wetland PSW): Have been taken into account while establishing the development area, the design incorporates a 30m wetland setback.

Species at Risk: Constraints regarding potential species at risk is examined in depth within section 4.0.

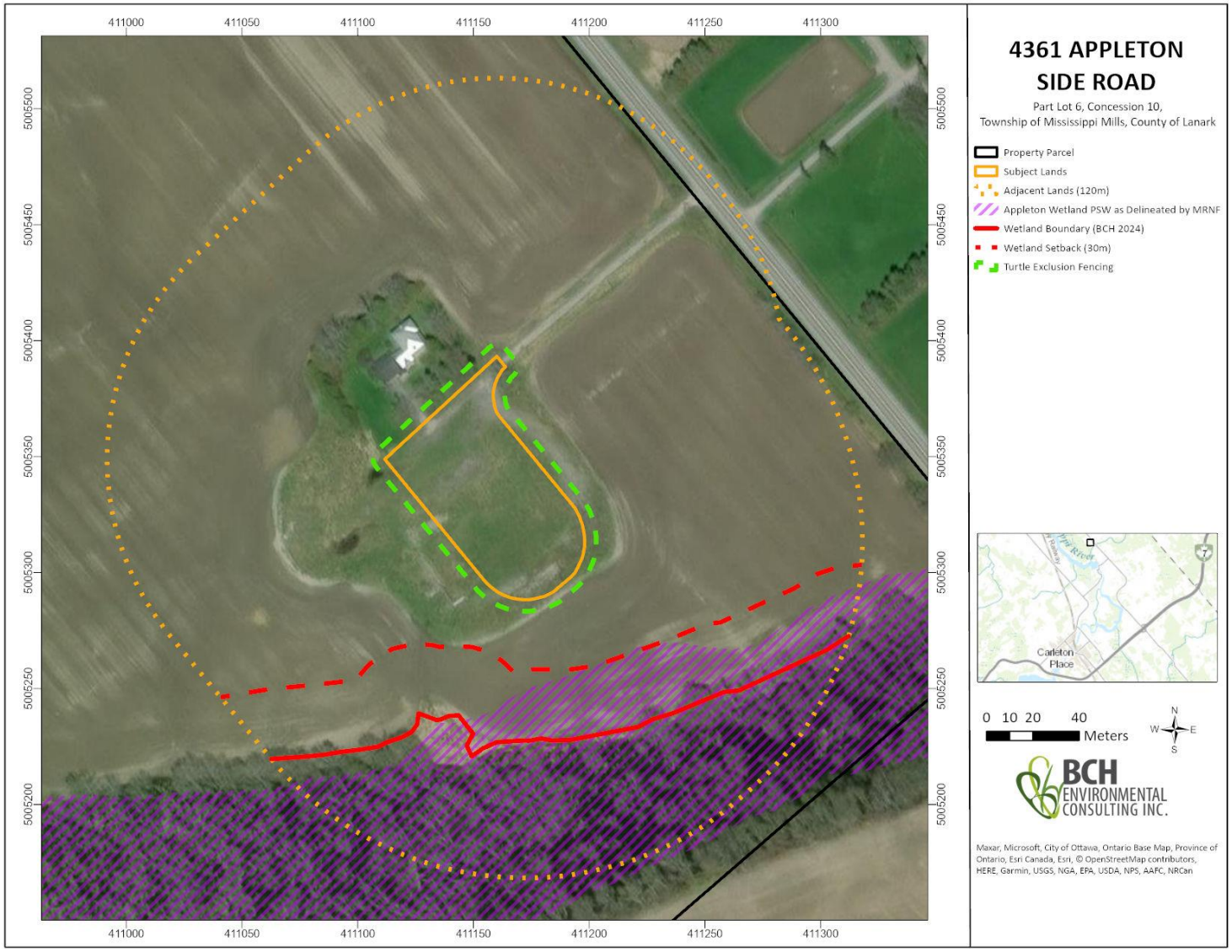
The Canadian Environmental Assessment Agency (CEAA) defines cumulative effects as…"the effects on the environment caused by an action in combination with other past, present, and future human actions…" They occur when two or more project-related environmental effects, or two or more independent projects, combine to produce an augmented effect. These cumulative effects may be positive or negative.

Given the small nature of this proposal there and its location (on the site of a previous barn which was burnt down) there is very little impacts to the natural landscape, but continual development within the surrounding area could result in a slow chipping away at the natural landscape. The EIS limits development within 30m of the wetland aiding in protecting this natural heritage feature.

With proper implementation of the mitigation measures described in this report it is anticipated that the potential construction of the proposed works will not increase the potential for cumulative effects in the general landscape.

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

FIGURE 4: CONSTRAINT



20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

7.0. Recommendations and Conclusion

This study's recommendations are intended to mitigate potential negative impacts due to the proposed development and this should be implemented through a development agreement between the owners and the municipality in order to control development of the site.

7.1. Mitigation for the Species at Risk and Migratory Birds Convention Act

1- To protect breeding birds, no tree or shrub removal should occur between April 15th to August 30th, unless a breeding bird survey is completed by a qualified biologist within five days of the woody vegetation removal and identifies no nesting activity.

2- To prevent impacts to bats, no clearing of trees greater than 10cm on-site should take place between March 15 and November 30 (inclusive) without a qualified biologist first confirming the absence of bats (i.e., open work timing window from December 1 to March 14). If tree clearing is conducted between December and March 14, no interactions with bats are anticipated, and therefore, significant negative impacts to SAR bats would be avoided

3- With regard to turtles, clearing of vegetation should be undertaken between October 15th and April 15th, which is outside of the more active season for turtles. Additionally, exclusion fencing should be installed around the perimeter of the development during construction to prevent turtles from entering work areas (example of exclusion fencing is present in Appendix C). Daily checks for turtles within the work area should be completed.

4- Construction staff is to be made aware of the characteristics of species at risk and in the event that any Species at Risk (SAR) are encountered during site clearing, work in the area will be stopped immediately. Measures will be undertaken to ensure the animal is not harmed and the project biologist and the Ministry of the Environment, Conservation and Parks contacted to discuss how to proceed.

7.2. Recommendation and Mitigation for Wetland

1- All development and associated services will occur more than 30 m from the edge of the wetland.

2- The hydrology and quality of the wetland should not be impacted and maintained. To ensure its not impacted no work will occur until the appropriate sediment and erosion control measures have been designed and implemented prior to any work. At a minimum these will include:

   a. Provide regular maintenance to the sediment and erosion control measures during construction. Contractor shall be responsible for ensuring that the sediment and erosion control measures are maintained. No turbid water is permitted to leave the work area.
   b. Additional materials (i.e. rip rap, filter cloth and silt fencing) will be readily available in case they are needed promptly for erosion and/or sediment control.
   c. Any stock piles of soil or fill material will be protected by silt fencing.
   d. Sediment fencing will be installed at the edge of the work area, and kept in good working condition. The sediment fencing will not be removed until the area has stabilized

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

7.3. Additional Mitigation Measures

1- The extent of any vegetation removal is to be minimized were possible.
2- All rules governing septic systems and wells must be followed and be kept in good operational order.
3- There will be no use of herbicides in clearing of vegetation.
4- Municipal by-laws and provincial regulations for noise will be followed.
5- To discourage wildlife from entering the work areas during construction, the site should be kept clear of food wastes and other garbage. Proper drainage should be provided to avoid accumulation of standing water, which could attract amphibians, birds, and other wildlife to the work areas.

To conclude this EIS, mitigation measures present will limit the impact of the proposed development on any wetland present, or any habitat of species at risk.

Thank you for the opportunity to work with you. If you have any questions or comments please do not hesitate to contact our office.

Shaun St.Pierre, B.Sc. Biology

Cody Fontaine, Wildlife Technologist

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

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20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

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20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

APPENDIX A: OBSERVED SPECIES LIST

COMMON NAME	SCIENTIFIC NAME	SRANK	SARA STATUS	SARO STATUS	COEFF. CONSERVATISM
Field Horsetail	*Equisetum arvense*	S5			0
Tamarack	*Larix laricina*	S5			7
White Spruce	*Picea glauca*	S5			6
Red Pine	*Pinus resinosa*	S5			8
Eastern White Cedar	*Thuja occidentalis*	S5			4
Eastern Red Cedar	*Juniperus virginiana var. virginiana*	S5			4
Broad-leaved Cattail	*Typha latifolia*	S5			1
Common Timothy	*Phleum pratense*	SNA			
Lesser Duckweed	*Lemna minor*	S5?			5
Pickerel Weed	*Pontederia cordata*	S5			7
Balsam Poplar	*Populus balsamifera*	S5			4
Black Walnut	*Juglans nigra*	S4?			5
American Elm	*Ulmus americana*	S5			3
European Stinging Nettle	*Urtica dioica*	SNA			
Curly Dock	*Rumex crispus*	SNA			
Canada Anemone	*Anemonastrum canadense*	S5			3
Common Apple	*Malus pumila*	SNA			
Black Raspberry	*Rubus occidentalis*	S5			2
Wild Red Raspberry	*Rubus idaeus ssp. strigosus*	S5			2
Black Medic	*Medicago lupulina*	SNA			
Red Clover	*Trifolium pratense*	SNA			
White Clover	*Trifolium repens*	SNA			
Cow Vetch	*Vicia cracca*	SNA			
Manitoba Maple	*Acer negundo*	S5			0
Red Maple	*Acer rubrum*	S5			4
Silver Maple	*Acer saccharinum*	S5			5
Sugar Maple	*Acer saccharum*	S5			4
Common Buckthorn	*Rhamnus cathartica*	SNA			
Wild Carrot	*Daucus carota*	SNA			
Wild Parsnip	*Pastinaca sativa*	SNA			
Red-osier Dogwood	*Cornus sericea*	S5			2
White Ash	*Fraxinus americana*	S4			4
Green Ash	*Fraxinus pennsylvanica*	S4			3
Field Bindweed	*Convolvulus arvensis*	SNA			
Common Mullein	*Verbascum thapsus*	SNA			
Common Plantain	*Plantago major*	SNA			

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20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

COMMON NAME	SCIENTIFIC NAME	SRANK	SARA STATUS	SARO STATUS	COEFF. CONSERVATISM
Tatarian Honeysuckle	*Lonicera tatarica*	SNA			
Common Ragweed	*Ambrosia artemisiifolia*	S5			0
Common Burdock	*Arctium minus*	SNA			
Canada Thistle	*Cirsium arvense*	SNA			
Common Sow-thistle	*Sonchus oleraceus*	SNA			
Common Dandelion	*Taraxacum officinale*	SNA			
Sedges					
Reed Canary Grass	*Phalaris arundinacea var. arundinacea*	S5			0
White Meadowsweet	*Spiraea alba var. alba*	S5			3
Grasses					
Northern Leopard Frog	*Rana pipiens*	S5			
Wood Duck	*Aix sponsa*	S5			
Mallard	*Anas platyrhynchos*	S5			
Red-tailed Hawk	*Buteo jamaicensis*	S5			
Mourning Dove	*Zenaida macroura*	S5			
Downy Woodpecker	*Picoides pubescens*	S5			
American Robin	*Turdus migratorius*	S5B			
Song Sparrow	*Melospiza melodia*	S5B			
Swamp Sparrow	*Melospiza georgiana*	S5B			
Red-winged Blackbird	*Agelaius phoeniceus*	S4			
Common Grackle	*Quiscalus quiscula*	S5B			
Eastern Chipmunk	*Tamias striatus*	S5			
Beaver	*Castor canadensis*	S5			
Muskrat	*Ondatra zibethicus*	S5			

20373 Bethune Street
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shaun@bchenviro.ca

APPENDIX B: QUALIFICATIONS

SHAUN M. ST.PIERRE, B.Sc. Biology

EDUCATION

B.Sc. Biology, Trent University 2007
Fisheries and Wildlife Technology, Frost Campus, Sir Sandford Fleming College, 2005
Fisheries and Wildlife Technician, Frost Campus, Sir Sandford Fleming College, 2004

LANGUAGES

Fluent in French and English

POSITIONS HELD

2018 - :	BCH Environmental Consulting Inc., Biologist / Owner
2006-2017:	Bowfin Environmental Consulting Inc., Biologist / GIS Specialist / Environmental Site Inspector
2005:	St. Lawrence River Institute of Environmental Sciences, Field Research Assistant
2004:	MNR Kawartha Lakes, Field Research Assistant
2003:	DFO- Experimental Lake Area, Field Research Assistant
2001:	Resource Stewardship S, D &G, Stewardship Ranger

CERTIFICATIONS / PROFESSIONAL AFFILIATIONS

MTO/DFO/OMNR Fisheries Protocol, Ecological Land Classification, Certified in Inventory and Identification Methods for Ontario's Reptiles and Amphibians, North American Benthological Society (NABS) Certified Family Level Taxonomist, Ontario Benthos Biomonitoring Network (OBBN), Ontario Stream Assessment Protocol (OSAP), Certified Ontario Wetland Evaluator (OWES), Butternut Health Assessor (BHA), first aid, CPR, Pleasure Craft Operator Card, Marine Radio Operator, WHMIS, WHSA, Hazard Identification, Assessment and Control, All Terrain Vehicle Riders Course (issued by the Manitoba Safety Council), Water Safety Training (Bronze Cross), Possession / Acquisition Firearms Licence, Ontario Hunter Education Course Certificate, Ontario Trapper Education Course Certificate, Wildlife Chemical Immobilization, Vaccination, and Euthanasia- Certificate of Knowledge, South Lancaster Fish and Game Club (SLFGC; president 2012 and 2013; executive member 2014-2018), Ontario class G driver's license, and Snowmobile License.

EXPERIENCE

Experience in environmental impact assessments, environmental monitoring, environmental assessments, terrestrial habitat assessment, species at risk surveys, amphibian surveys, avian surveys, freshwater habitat assessment, collection and identification of plants, collection and identification of aquatic invertebrate, collection and identification of fish, fish salvage, fish behavioral studies, winter bat hibernaculum inventories and fisheries inventories including habitat mapping, electroshocking, FWIN and RIN. Other experience include GIS mapping.

Environmental and Fisheries Inspections

- Provided environmental and fisheries inspections for the construction of the Cataraqui Crossing HWY 401-MTO (Kingston, ON).
- Provided environmental and fisheries inspections for the construction of the Three Nations Bridge including surveys for nesting species at risk (Cornwall, ON).
- Provided environmental and fisheries inspections for construction (Ottawa, ON).
- Conducted nest surveys (Kemptville, ON.; Stittsville, ON.; Cornwall, ON.)
- Conducted environmental inspections for the construction of the Clarkson WWTP outfall, Lake Ontario.
- Conducted environmental inspections for the construction of a new bridge crossing Bearbrook Creek along the 417.

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613.571.8883
shaun@bchenviro.ca

- Provided environmental and fisheries inspections for the blasting and drilling operation for the Burloak Water Purification Tunnel project (Burlington, ON).
- Provided environmental and fisheries inspections for the construction of the Poole Creek Re-alignment/Huntmar Drive Crossing.

Species at Risk Inventories / Monitoring

- Butternut survey and assessment for proposed developments (Brockville, Carleton Place, Carp, Clarence-Rockland, Cornwall, Munster, Hawkesbury, Kemptville, Ottawa, South Lancaster, Smith Falls, Stittsville, Prospect, Vars, Moose Creek, Prescott, Westminster, Renfrew, Battersea, Jones Falls, and Millbrook).
- American Eel surveys using the boat electrofisher on the Mississippi River (Almonte, ON), South Nation River (Casselman, ON) and Ottawa River (Renfrew, ON; Ottawa, ON: Shawville, QC)
- American Eel collection on the St. Lawrence River for the St. Lawrence River Institute (Cornwall, ON)
- American Ginseng survey for proposed development (Kanata, South Lancaster and Renfrew).
- Whip-poor-will survey for proposed development (Navan, ON; Kemptville, ON; Stittsville, ON; Prescott, ON; Alexandria, ON) and quarries (Avonmore, Moosecreek, Prospect, Stittsville, Kanata, Ottawa)
- Assisted in a Least Bittern survey (Avonmore, ON)
- Conducted turtle surveys: Blanding's turtle, Eastern musk turtle (Carleton Place, ON; Ottawa, ON; Stittsville, ON; Kanata, ON, Prospect, ON)
- Conducted rapid clubtail surveys (Almonte, ON)
- Bat maternal nesting site surveys (Prescott, ON; Battersea, ON; Prescott, ON; Hawkesbury, ON; Russell, ON)

Aquatic Inventories

- Boat electrofishing along the shoreline of the Ottawa River (Chat Falls, ON) along the shoreline of the Cataraqui River (Kingston, ON), downstream of the Carillion Dam (Pointe-Fortune, QC), Lake St. Francis (South Lancaster, ON), South Nation River (Casselman, ON), Raisin River (Lancaster, ON), and the St. Lawrence River (Cornwall, ON)
- Collecting and data entry for benthic macroinvetebrate community surveys on several watercourses within Ontario including: Bonnechere River (Renfrew, ON), Montreal River (Latchford, ON), Jock River (Ottawa, ON), tributaries of the Bonnechere River (Renfrew, ON), tributaries to Feedmill Creek (Ottawa, ON), tributary to Chippewa Creek (North Bay, On) and tributary to the Beaudette River (Alexandria, ON).
- Collecting and data entry for several fish community surveys including: Black Creek (Westminster, ON), Bonnechere River (Renfrew and Douglas, ON), Butler's Creek (Brockville, ON), East Branch of Little Cataraqui Creek (Kingston, ON), Kehoe Ditch (Greely, ON), Lac Opemisca (Ouje-Bougoumou, QC), Marshall Seguin Municipal Drain (Vars, ON), Montreal River (Latchford, ON), tributaries of Lavalle Creek (Carleton Place), tributaries to Feedmill Creek (Ottawa, ON), tributaries to Lafontaine Creek (Clarence-Rockland), tributaries to Shirley's Brook (Kanata, ON), tributaries to the Beaudette River (Alexandria, ON), tributaries to the Bonnechere River (Renfrew, ON), tributaries to the Ottawa River (Carp, ON; Ottawa, ON; Wendover, ON; Clarence-Rockland, ON), tributaries to the South Nation River (Casselman, ON), tributaries to the South Nation River (Jessup Falls, ON), tributary to Hawkesbury Creek (Hawkesbury, ON), Hawkesbury Creek (Hawkesbury , ON), tributary to the St.Lawrence River (Prescott, ON) and tributary to the North Castor River (Greely, ON).
- Mapped fish habitat in many watercourses including: Black Creek (Westminster, ON), Bonnechere River (Renfrew and Douglas, ON), Butler's Creek (Brockville, ON), Kehoe Ditch (Greely, ON), Lac Opemisca/Lac Barlow Bypass channel (Ouje-Bougoumou, QC), Marshall Seguin Municipal Drain (Vars, ON), McKinnons Creek (Navan, ON), Montreal River (Latchford, ON), tributaries of Lavalle Creek (Carleton Place), tributaries of the Bonnechere River (Renfrew, ON), tributaries to Lafontaine Creek (Clarence-Rockland), tributaries to McKinnons Creek (Navan, ON), tributaries to Shirley's Brook (Kanata, ON), tributaries to the North Castor River (Greely, ON), tributaries to the Ottawa River (Ottawa, ON; Wendover, ON), tributaries to the South Nation River (Casselman, ON), tributaries to the South Nation River (Jessup Falls, ON), tributary to the St.Lawrence River (Prescott, ON) and tributary to Hawkesbury Creek (Hawkesbury, ON).
- Assisted in YOY sampling on the Raisin River (Lancaster, ON).
- Conducted riverine index netting on the Bonnechere River (Renfrew, ON).

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K0C 2C0
613.571.8883
shaun@bchenviro.ca

- Assisted in gill netting on Bonnechere River (Renfrew, ON), Lac Barlow (Ouje-Bougoumou, QC), Lac Opemisca (Ouje-Bougoumou, QC), Montreal River (Latchford, ON), and Raisin River (Lancaster, ON).
- Assisted in conducting larvae surveys on Bonnechere River, Hoople Creek, Montreal River and Raisin River,
- Collected walleye eggs from the spawning grounds on the Bonnechere River, Montreal River, Raisin River and Hoople Creek.
- Assisted in the monitoring of a new wetland channel created in the Little Cataraqui River.
- Marsh monitoring program breeding amphibian survey at Stittsville, ON; Cornwall, ON; Kanata, ON; Hoople Creek and the Bonnechere River.
- Assisted in conducting fall walleye index netting for the MNR in Kawartha Lakes
- Conducted turtle surveys (Carleton Place, ON; Ottawa, ON)
- Conducted headwater waters assessment (Kanata, ON; Navan, ON, Ottawa, ON)

Terrestrial Inventories

- Multiple Environmental Impact Assessments across Ontario
- Tree Inventory for construction of the light rail (LRT; Ottawa, ON)
- Winter white-tailed deer survey (Edwardsburgh, ON)
- Plant community inventories for proposed developments, quarries, sand pits and road extensions (Brockville, Carleton Place, Carp, Casselman, Elgin, Griffith, Hamilton, Jessup Falls, Navan, Ottawa, Stittsville, Rockland, Simcoe, Cornwall, Kemptville, Hawkesbury, Smith Falls, Wendover, Moosecreek, Westminster, Prescott, Renfrew, Jones Falls, Michipicoten Island and in Ouje-Bougoumou in QC)

Aquatic Habitat Mapping for Municipal, City Roads and Provincial Highways

- Conducted MTO habitat assessments at Galetta Side Road, Torbolton Road, Kinburn Side Road (Ottawa, ON)
- Conducted MTO habitat assessments at Prince of Wales, Fernbank Road, Fallowfield Road, HWY 115, Arbuckle drain, the Carp river, tributaries to the Carp river and tributaries to Mud creek (Ottawa, ON)
- Conducted MTO habitat assessments at Innes Road, Ottawa, ON.
- Conducted MTO habitat assessments at MacLaren Side Road, Ottawa, ON.

Other

- Fish salvage: Mississippi River (Almonte, ON), Monaghan Drain (Ottawa, ON), tributary to the Rideau Canal (Kemptville, ON), and tributary to Feedmill Creek (Ottawa ON), Bonnechere River (Renfrew, ON)
- Assisted in conducting a winter bat hibernaculum inventory (Plantagenet, ON)
- Field research assistant for the Metalicuus study and EDC study (Experimental Lakes Area, ON)
- Captured, pit tagged, telemetry tagged and tracked Northern Pike (Experimental Lakes Area, ON)
- Construction and maintenance of nature trail (the Cornwall Outdoor Recreational Area, ON)
- Conducted frog deformities surveys (Glengarry, ON)
- Organized youth fishing derbies through SLFGC (2011-2013; South Lancaster)
- Organized the St.Francis Walleye Tournament through SLFGC (2012-2013; South Lancaster)

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

CODY J.C FONTAINE, Fisheries and Wildlife Technologist

EDUCATION
Fisheries and Wildlife Technology, Frost Campus, Sir Sandford Fleming College, 2012
Fisheries and Wildlife Technician, Frost Campus, Sir Sandford Fleming College, 2011

LANGUAGES
Fluent in English

POSITIONS HELD
2022: BCH Environmental Consulting Inc., Fisheries and Wildlife Technologist
2014: Bowfin Environmental Consulting Inc., Fisheries and Wildlife Technologist
2009: Raisin Region Conservation Authority, Field Research Assistant

CERTIFICATIONS / PROFESSIONAL AFFILIATIONS
MTO/DFO/OMNR Fisheries Protocol, Environmental Monitoring For Construction Projects Practitioner (EMCPP), Ontario Stream Assessment Protocol (OSAP), Class 2 Electroshocking, first aid, CPR, Pleasure Craft Operator Card, WHMIS, WHSA, Hazard Identification, Assessment and Control, Ice Safety Training, Possession / Acquisition Firearms License, Fish Identification Certificate, Radio Telemetry Certificate, Fish Hatchery Operations Certificate, Ontario Hunter Education Course Certificate, Ontario trapper Education Course Certificate, Ontario class G driver's license.

EXPERIENCE
Experience in environmental monitoring, environmental assessments, terrestrial habitat assessment, species at risk surveys, amphibian surveys, freshwater habitat assessment, collection and identification of plants, collection and identification of fish, fish salvage, bat hibernaculum inventories and fisheries inventories including netting and electroshocking. Other experiences include GIS mapping.

Aquatic Inventories
- Assisted with boat electrofishing along the shoreline of the Ottawa River (Chat Falls and Ottawa, ON), Lake St. Francis (South Lancaster, ON), Bonnechere (Renfrew, ON), Raisin River (Lancaster, ON), Buckhorn Lake (Peterborough, ON) and the St. Lawrence River (Cornwall, ON)
- Assisted in collecting and data entry for several fish community surveys including: Bonnechere River (Renfrew, ON), tributaries to Feedmill Creek (Ottawa, ON), tributaries to Shirley's Brook (Kanata, ON), tributaries to the Ottawa River (Ottawa, ON), tributaries to the Rideau River (Manotick, ON), tributaries to the Castor River (Vars, ON), tributaries to the Otonabee River (Lakefield, ON), tributary to the Madawaska River (Arnprior, ON), tributaries to Kemptville Creek (Kemptville, ON), tributary to Blairs Creek (Clarence Creek, ON), tributaries to South Indian Creek River (Russell, ON) tributaries to the South Nation River (Casselman, ON), tributaries to Fraser Clarke Drain (Nepean, ON), tributaries to the Raisin River (Long Sault, ON), Oliver-Magee drain (South Glengarry, ON) and tributary to Hawkesbury Creek (Hawkesbury, ON).
- Assisted in collecting walleye eggs from the spawning grounds on the Raisin River.
- Marsh monitoring program breeding amphibian surveys (Stittsville, Lakefield, Cornwall, Long Sault, South Glengarry, Bourget, Manotick and Kanata, ON).
- Conducted turtle surveys (Carleton Place, Ottawa, Cornwall and Lancaster, ON)
- Conducted Headwater Assessments (Ottawa, Stittsville and Manotick, ON)
- Invasive Species Survey (Ottawa, ON)

Species at Risk Inventories / Monitoring

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

- Assisted in butternut surveys, inventories and assessments for proposed developments (Carleton Place, Casselman, Cornwall, South Glengarry, Long Sault, Kemptville, Smiths Falls, Ottawa, Stittsville, Peterborough, Lakefield, Brockville, Alfred, Orleans, Kanata and Prescott, ON).
- American Eel surveys using the boat electrofisher on the Ottawa River (Ottawa, ON)
- American Eel collection on the St. Lawrence River for the St. Lawrence River Institute (Cornwall, ON)
- Conducted tailrace surveys for hydro facilities regarding American eel and lake sturgeon fatalities (Almonte, Renfrew, Ottawa and Fitzroy Harbour, ON)
- Whip-poor-will survey for proposed development (Ottawa, Kemptville, Bourget, Stittsville, Alfred, South Glengarry and Alexandria, ON) and quarries (Ottawa and Cornwall, ON)
- Surveyor for Little Brown bat, Eastern Small Footed Bat and Northern Long Eared Bat surveys at Ernestown Windpark (Ernestown, ON)
- Gray Ratsnake Survey (Smiths Falls and Lakefield, ON)
- Bat Cavity Survey (Lakefield, Smiths Falls, Bourget, Clarence Creek, Casselman, Orleans, Kanata, South Glengarry and Embrun, ON)
- Conducted Least Bittern surveys (Prospect, Alexandria, and Lancaster, ON)
- Conducted Black Tern nest surveys (Alexandria, and Cornwall, ON)
- Conducted turtle surveys: Blanding's turtle, Musk turtle and Northern Map turtle, Painted turtle and Snapping turtle (Carleton Place, Ottawa, Stittsville, Kanata, Rockland, Cornwall, Lakefield, Alfred, Clarence Creek and Lancaster, ON)
- Conducted American Ginseng Survey (Alfred, ON)
- Conducted rapid clubtail surveys (Almonte, ON)
- Conducted Osprey nest surveys (Cornwall, ON)

Terrestrial Inventories

- Assisted plant community inventories for proposed developments (Ottawa, Cornwall and Prescott, ON)
- Assisted in ELC inventories (Ottawa, Lakefield, Alfred, Kanata, Long Sault, South Glengarry and Peterborough ON)
- Nesting Bird Survey (Stittsville and Brockville ON)
- Large Tree Survey (Carp, Kanata and Orleans, ON)
- Deer and Moose Overwintering Survey (Alfred, ON)

Environmental and Fisheries Inspections

- Assisted in providing environmental and fisheries inspections for construction (Ottawa, ON)
- Assisted in turtle salvage during construction at the Cavanagh Snow Dump (Kanata, ON)

Fish Salvage

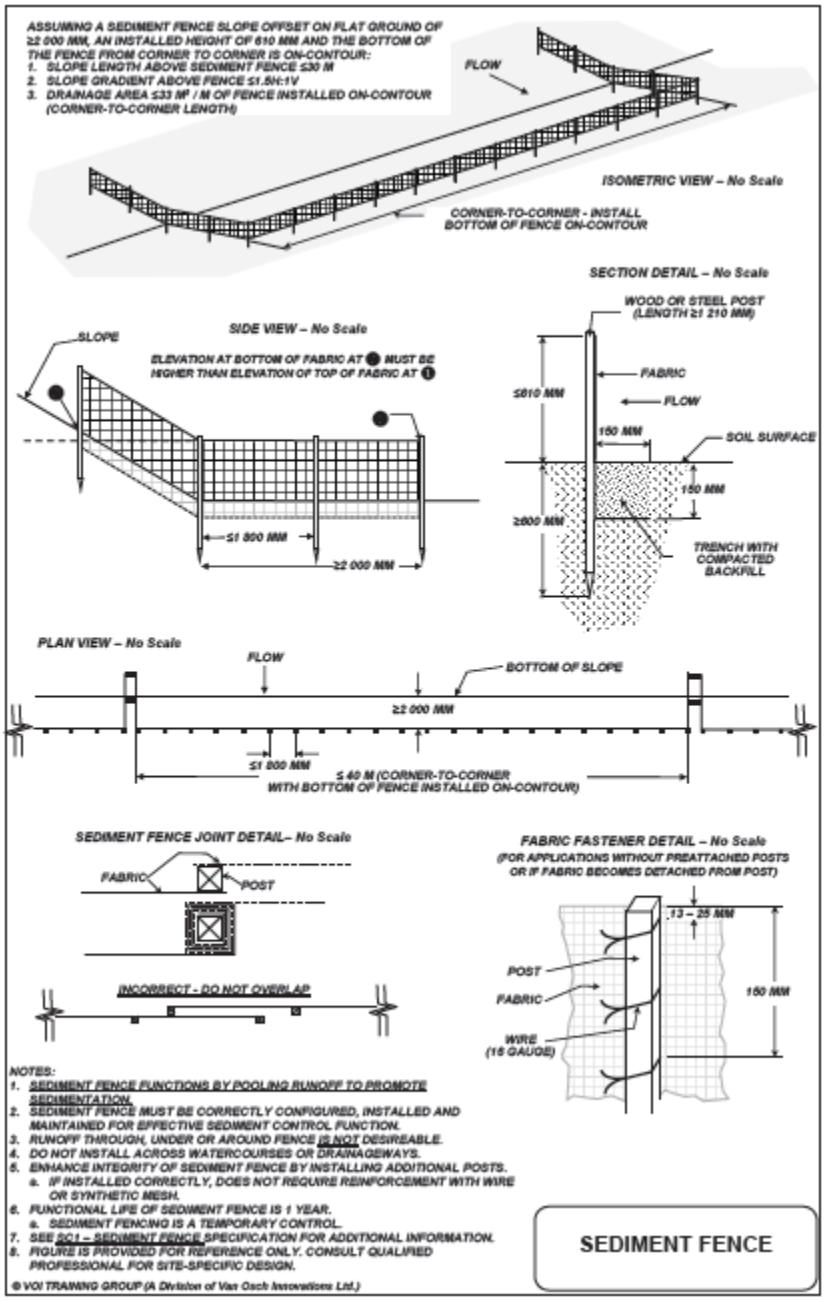
- Highway 401 Fish Salvage – Brockville, ON and Prescott, ON (Cruikshank, MTO Contract)
- Other fish salvages: Cardinal Creek (Ottawa, ON), Monaghan Drain (Ottawa, ON), tributary to the Rideau Canal (Kemptville, ON), tributary to Feedmill Creek (Ottawa ON), Bonnechere River (Renfrew, ON), Mississippi River (Almonte, ON), Ottawa River (Ottawa, ON), Tributary to Fraser Clarke Drain (Nepean, ON), tributary to St.Lawrence River (Newington, ON), Davidson Pond (Ottawa, ON),. Hazeldean tributary (Ottawa, ON), tributary to Jock River (Richmond, ON), culvert on Thunder Road (Gloucester, ON), culvert on Dunning Road (Cumberland, ON)

Other

- Organized fishing derby through RRCA (2008-2012; Cornwall, ON)
- Conducted environmental education presentations to many school groups (Cornwall, and Lancaster, ON)
- Tree Planting (2008-2012; Cornwall, ON)

20373 Bethune Street
South Lancaster, On
K0C 2C0
613.571.8883
shaun@bchenviro.ca

APPENDIX C: EXCLUSION FENCING INSTALATION



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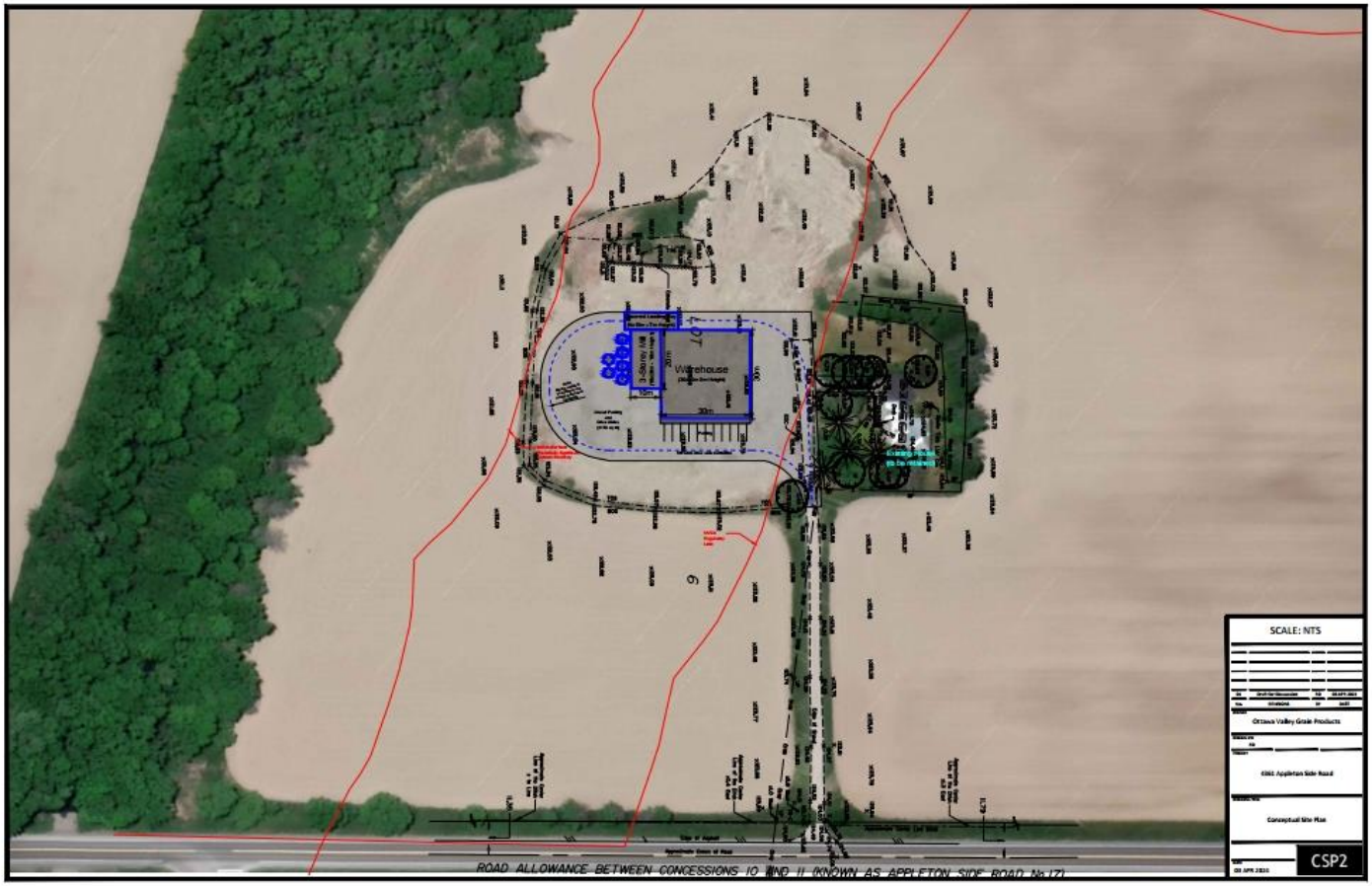
K0C 2C0
613.571.8883
shaun@bchenviro.ca

APPENDIX D: PLANS



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613.571.8883
shaun@bchenviro.ca