Species at Risk Assessment

Villages Long-term Care - Canadore College

Cedar Heights and College Drive

City of North Bay

24-018

FRICORP
ECOLOGICAL SERVICES

Table of Contents

Introduction

FRi Ecological Services was retained by Canadore College to conduct a Species at Risk Assessment for the proposed development of a long-term care facility located at the northwest corner of the existing college campus. The development location can be accessed from Cedar Heights Road or College Drive to the interior campus North Access Road (**Figure 1**).

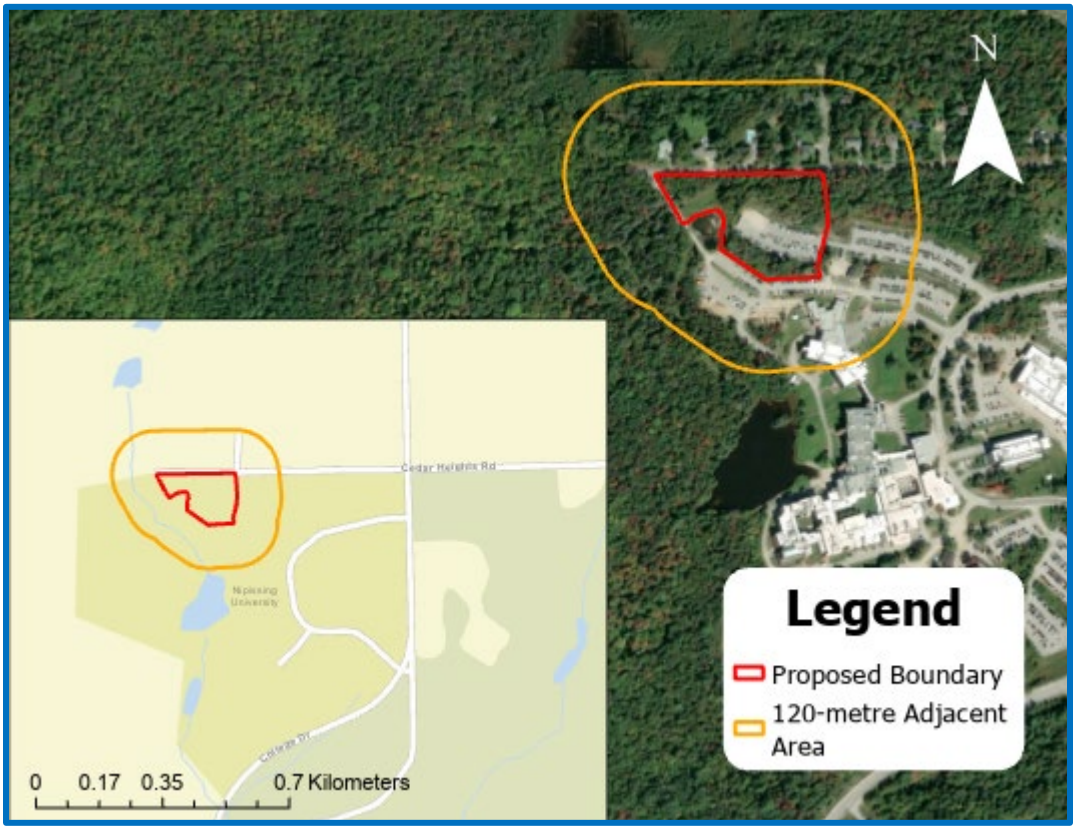


Figure 1: Overview of proposed development location for the Long-term Care Facility.

Existing Conditions

The existing conditions of the proposed development area is largely made up of anthropogenic structures and parking lots. The location chosen for the development is in close proximity to the existing Canadore College Campus. Foot-traffic from students, pedestrians using Cedar Heights Road, and vehicle traffic for maintenance is high overlapping the study area. There is a stormwater management pond which collects surface runoff adjacent to the west side of the proposed development envelope (**Figure 2, 3 & 4**).

Figure 2 & Figure 3: Overview of recreational areas for students (left) and existing drainage pond (right).

Figure 4: Representative air photo of the existing anthropogenic activity at the proposed development location.

Proposed Development

The proposed development area includes a proposed building, formalized access from Cedar Heights Road and two interior roads. The preliminary sketch of the proposed development provided by EXP is appended to this report (**Appendix 1**).

Background Information

A desktop review of available data reflecting natural heritage information, specifically species at risk information, was conducted. Information was gathered from various publicly available data sources including the Natural Heritage Information Centre's Database for known natural heritage values. Relevant background information was used to supplement in-person field investigations and reporting. The following resources were also consulted:

- Make-a-Map, MNRF (Ministry of Natural Resources and Forestry) Natural Heritage Values;
- Ontario Breeding Bird Atlas (OBBA data summaries)[1];
- iNaturalist[2];
- Natural Heritage Information Centre (NHIC) Database;
- SAR Ontario;
- Ontario Reptile and Amphibian Atlas (ORAA)[3]; and
- e-Bird[4]

Approach

FRi undertook a habitat-based approach to outline potentially present suitable habitat features or species at risk uses present on the subject property. The proposed development location is surrounded by private homes to the north and existing College infrastructure to the east, south and west. Adjacent lands were assessed based on available mapping and visual interpretation from the subject property to avoid trespassing. In-person field investigations supplemented with background research from publicly available resources were consolidated to determine potentially present and/or suitable habitat overlapping the subject property.

The purpose of this report is to assess for the presence/absence of species at risk habitat on the subject property and recommend measures to avoid or mitigate impacts to SAR species or their

[1] Atlas of the Breeding Birds of Ontario. 2001 – 2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature. Editors: Michael D. Cadman, Donald A. Sutherland, Gregor G. Beck, Denis Lepage, and Andrew R. Couturier. 728 pages
[2] https://www.inaturalist.org/
[3] Ontario Reptile and Amphibian Atlas. http://www.ontarionature.org/protect/species/herpetofaunal_atlas.php
[4] http://ebird.org/content/ebird

habitat, and to comply with the *Endangered Species Act* (2007), the City of North Bay's Official Plan (2023), and the Provincial Policy Statement (2020).

Ecological Setting

The subject property is located within the Ontario Shield Zone, Ecoregion 5E (Georgian Bay Ecoregion). This ecoregion is typically dominated by mixedwood forests with some areas consisting of deciduous forests, coniferous forests, and sparse forests.[5]

The subject property is more specifically within the North Bay Eco-District (5E-5) The climate in this ecoregion is cool temperate and humid, with mean annual temperatures ranging from 2.8 to 6.2°C with a growing season between 183 to 219 days. Mean precipitation ranges between 771 and 1134 mm annually.

Ecological Land Classification

Ecological land classification or ecosites are determined by assessing the soil and vegetation characteristics of a site. To assess the presence of potential habitat features for species at risk, the ecosites on the property were determined during the field investigations.

There are ten (10) representative ecosites overlapping the subject property or located within the 120-metre adjacent area (**Figure 5 & 6**). The five (5) anthropogenic ecosites and five (5) 'natural ecosites' include:

- G019Tt – Very Shallow, Dry to Fresh: Mixedwood
- G048Tt – Dry to Fresh, Coarse: Red Pine – White Pine Conifer
- G058Tt – Dry to Fresh, Coarse: Maple Hardwood
- G066Tt – Moist, Coarse: Hemlock – Cedar Conifer
- G142N – Mineral Meadow Marsh
- G153X/N – Constructed Water Collections
- G193X – Coarse, clean fill
- G197X – Constructed, impervious, compact, water shedding materials
- G198X – Constructed, very coarse and compact materials
- G199X – Constructed, coarse and compact materials

[5] Wester, M.C., B.L. Henson, W.J. Crins, P.W.C. Uhlig and P.A. Gray. 2018. The Ecosystems of Ontario, Part 2: Ecodistricts. Ontario Ministry of Natural Resources and Forestry, Science and Research Branch, Peterborough, ON. Science and Research Technical Report TR-26. 474 p. + appendices

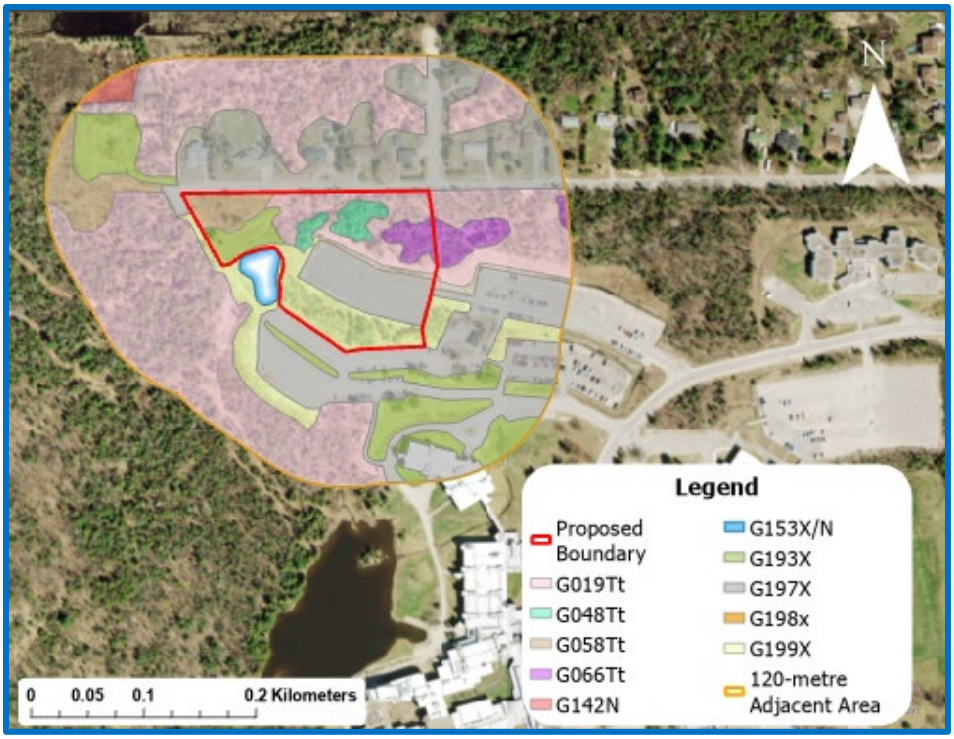


Figure 5: Overview of the ecosites overlapping the subject property and within the 120-metre adjacent area.

Figure 6: Overview of the total area of anthropogenic ecosites pre-existing at the proposed development location.

G019Tt – Very Shallow, Dry to Fresh: Mixedwood

The G019 tall treed mixedwood ecosite contains shallow mineral soils, less than 15 cm deep, with a moisture regime of dry to fresh. There are spots of bedrock at the surface in some locations.

The canopy layer contains a variety of different species including white birch (*Betula papyrifera*), red maple (*Acer rubrum*), white pine (*Pinus Strobus*), trembling aspen (*Populus tremuloides*). some Eastern white cedar (Thuja *occidentalis*), and some white spruce (*Picea glauca*). The understory contains red maple, balsam fir (*Abies balsamea*), and white birch). The shrub and herb layer contain species such as beaked hazel (*Corylus cornuta*), pin cherry (*Prunus pensylvanica*), fly honeysuckle (*Lonicera canadensis*), yellow trout lily (*Erythronium americanum*), bracken fern (*Pteridium aquilinum),* starflower (*Trientalis borealis*), spinulose wood fern (*Dryopteris carthusiana*), various species of grasses, mosses on the bedrock at the surface, deciduous leaf litter, and some coniferous litter.

Figure 7 & Figure 8: Representative photos of the canopy layer (left) and ground cover (right) present within the G019Tt ecosite.

G048Tt – Dry to Fresh, Coarse: Red Pine – White Pine Conifer

The G048 pine conifer stand contains dry to fresh mineral materials that are mostly greater than 15 cm deep. There are still pockets of shallow soils where bedrock is exposed, but deeper soils are also present. Although this ecosite is small on the subject property, it was included to account for pockets of deeper soils and different wildlife habitat the soils may offer.

The canopy contains species such as Eastern white pine, white spruce, red maple white birch, and some Eastern white cedar. The understory contains white spruce, Eastern white cedar, and some red maple. The shrub and herb layer are not abundant and are comprised of mostly coniferous and deciduous leaf litter, Canada bunchberry (*Cornus canadensis*), bracken fern, and grasses.

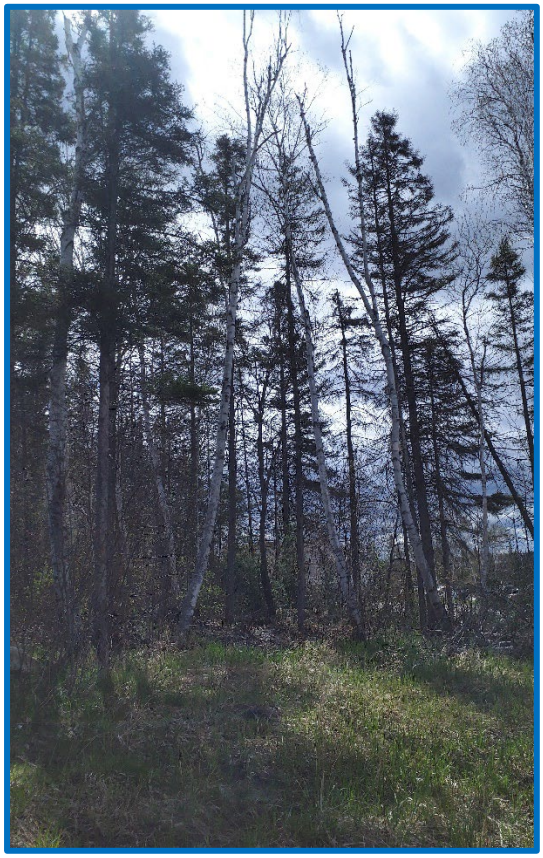


Figure 9 & Figure 10: Representative photo of the G048 canopy cover (left) and groundcover (right) present within the proposed development area.

G058Tt – Dry to Fresh, Coarse: Maple Hardwood

The G058 maple hardwood ecosite is composed of mineral soils that are mostly deeper than 15 cm. The moisture regime is dry to fresh and the mineral materials are sandy to coarse loamy. This ecosite is located between Cedar Heights Road and the cleared outdoor recreation area for college students which influences the edge habitat causing unusual species to grow.

The canopy layer is dominated by maple species, specifically red maple and sugar maple (*Acer saccharum*). Other species minimally present within the canopy include white birch, balsam fir, and white spruce. The understory contains the same species as the canopy layer. The shrub and herb layer include species such as beaked hazel, wild raisin (*Viburnum nudum*), pin cherry, red-berried elderberry (*Sambucus racemosa*), starflower, mayflower (*Maianthemum canadense*), red trillium (*Trillium erectum*), bracken fern, wild red raspberry (*Rubus idaeus*), and lots of deciduous leaf litter.

Figure 11 & Figure 12: Overview of mineral soils (top), and vegetation community (bottom) present within the maple ecosite.

G066Tt – Moist, Coarse: Hemlock – Cedar Conifer

This ecosite contains mineral soils deeper than 15cm which are moister than the other ecosites present within the proposed development area. The moister soils allow different vegetation communities to establish.

The canopy layer is mostly composed of Eastern white cedar but also contains species such as balsam fir, white birch, white spruce, trembling aspen, red maple, and some yellow birch (*Betula alleghaniensis*). The shrub layer is relatively absent while the herb layer is minimally present but contains species such as spinulose wood fern, mayflower, and twinflower (*Linnaea borealis*). There is a thick layer of deciduous and coniferous litter as well.

Figure 13 & Figure 14: Overview of the canopy (left) and understory species (right) present in the G066 ecosite.

G142N – Mineral Meadow Marsh

The mineral meadow marsh is located solely within the 120-metre adjacent area on other private property. Therefore, this ecosite was not assessed in-person as it could not be accessed without trespassing and was rather assessed using digitally available resources. The meadow marsh is approximately 92.2-metres from the developed area at the closest point.

The soils in the meadow marsh are mineral and deeper than 15cm. The soil is very moist or saturated. Meadow marshes do not have a definitive canopy cover and are rather comprised of shrubs and herbs. Minimal tree coverage can occur with species such as Eastern tamarack (*Larix laricina*), red maple, black spruce (*Picea mariana*), white birch, or green ash (*Fraxinus pennsylvanica*). Understory or shrub species can include pussy willow (*Salix discolor*), red-osier dogwood (*Cornus stolonifera*), white meadowsweet (*Spiraea alba*), or alder species (*Alnus ssp*).

Figure 15: Overview of proximity of development area to meadow marsh.

G153X/N – Constructed Water Collections

This ecosite is anthropogenic and is a human constructed water catchment area with engineered permanent substrates. There is a rapid transition to adjacent terrestrial environments through constructed slopes covered in riprap materials or other mineral substrates. There is a drainage culvert along the west bank of the catchment area. The water depth generally does not exceed 2-metres and has a rock bottom. There are some emergent and floating aquatic plants present in the drainage area including cattails (*Typha spp*.),

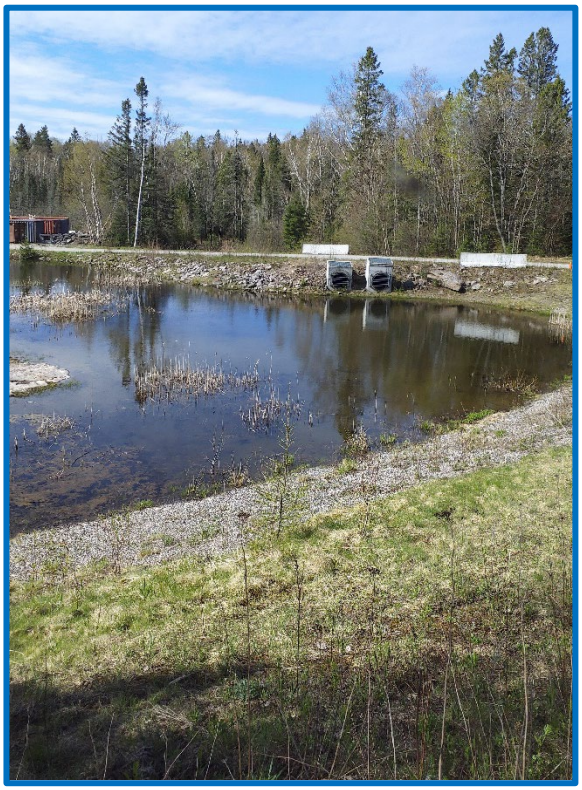



Figure 16 & Figure 17: Overview of the catchment area (left) from the north end looking south, and the drainage culverts (right).

G193X – Coarse, Clean Fill

The course clean fill ecosite is an anthropogenic ecosite. On the proposed development area, the G193X ecosite includes the existing manicured lawn used as an outdoor recreation area for Canadore College and Nipissing University students.

Figure 18: Representative photo of the cleared path/recreational area for students.

G197X – Constructed, Impervious, Compact, Water Shedding Materials

The G197X ecosite is also anthropogenic and includes compact water shedding materials such as paved parking lots, building roofs, cement areas, etc. Within the proposed development area, these constructed water shedding areas include the existing parking lots and Canadore College buildings.

Figure 19: Representative photo of one of the asphalt existing parking lots.

G198X – Constructed, Very Coarse and Compact Materials

This ecosite is anthropogenic and includes the areas that contain rocky fill. The edge of the existing parking lot has riprap fill to line the ditches and maintain the integrity of the parking lot. These areas are anthropogenically influenced and filled with rock.

Figure 20: Representative photo of the rock fill placed along the edges of the parking lot.

G199X – Constructed, Coarse and Compact Materials

This ecosite is anthropogenic and includes the areas that contain coarse fill but finer than the substrates used in G198X conditions. The edge of the engineered catchment area contains sandy/gravel fill as well as the edge of the roadways and parking lot.

Figure 21: Representative photo of the fine fill surrounding existing parking lot.

Species at Risk

In the absence of species-specific surveys, a habitat-based approach was undertaken to assess the potential for species at risk or their habitat within the proposed development area. Background information was consulted to confirm observations and element occurrences of species at risk on or adjacent to the proposed development location. Using confirmed observations as well as an assessment of the ecosites present, potentially suitable habitat was assessed.

Black Ash (*Fraxinus nigra*)

Black ash is a medium-sized, shade intolerant tree species that was recently listed (January 2022) as endangered on Ontario's species at risk list. Ash trees are common in Northern Ontario, in fact, they are typically present in wetlands including hardwood swamps and along

marsh habitats. The Emerald Ash Borer is an invasive species responsible for the species decline and subsequent listing of black ash.

Potential for Black Ash

Black ash were not observed within the proposed development area or the 120-metre adjacent area that was assessed in person.

The current ESA regulations (2024) for black ash include a list of municipalities or geographic areas where black ash are protected. Currently, North Bay is not included within the protected area for black ash.

Black ash are absent within the proposed development footprint and adjacent 120 metre information area. No impacts are expected.

Blanding's Turtle (Emydoidea blandingii)

The Blanding's turtle is a mostly aquatic turtle found in a variety of habitats, including lakes, ponds, marshes, ditches, creeks, rivers, and bogs. Within these habitats, the species generally prefers shallow water, organic substrates and dense submergent and/or emergent vegetation. Basking sites are a critical component of suitable habitat. These are characteristically floating vegetation mats, hummocks, partially submerged logs, rocks, bog mats, or suitable shoreline areas with access to full sunlight.

Blanding's turtles hibernate from October through April, usually in permanent bodies of water, often the same wetlands they utilize during the active season. Recent studies confirm seasonally isolated wet areas, ditches for example, are used for hibernacula in some years.

Blanding's turtles will travel up to six (6) km or more to nesting sites that are usually within 250m from the shore of some waterbody. Nesting activities generally occur at the end of June through the beginning of July. Nest sites are chosen in areas that offer suitable substrate for digging (e.g., loose soil), well-drained, open locations which increases the incubation temperatures because of sunlight exposure. This in turn increases nest success.

Upland areas adjacent wetlands can be used for nesting, basking, and travel between summer activity areas. Turtles regularly move up to 1 km between wetlands and will chose a 'wetted' corridor, rather than a direct route.[6] [7] [8] [9] [10]

[6] COSEWIC 2005. COSEWIC assessment and update status report on the Blanding's Turtle *Emydoidea blandingii* in Canada.
Committee on the Status of Endangered Wildlife in Canada. Ottawa. viii + 40 pp. (www.sararegistry.gc.ca/status/status_e.cfm)
[7] Edge, C. B. 2008. Multiple Scale Habitat Selection by Blanding's Turtles (*Emydoidea blandingii*). Master's Thesis. School of Graduate Studies, Laurentian University.
[8] Ontario Ministry of Natural Resources. 2012. Survey Protocol: Blanding's Turtle (*Emydoidea blandingii*). Policy Division, Species at Risk Branch. 15pp.
[9] Seburn, D. C. 2007. Recovery Strategy for Species at Risk Turtles in Ontario. Ontario Multi-Species Turtles at Risk Recovery Team. 83pp.
[10] Ontario Ministry of Natural Resources. 2013. General Habitat Description for the Blanding's turtle (*Emydoidea blandingii*).

Potential for Blanding's Turtle

Note that this assessment is habitat-based; surveys to assess use by individuals of the species were not completed. Blanding's turtles have general habitat protection under the Endangered Species Act. This means that for a habitat to be protected, individuals must rely on it either directly or indirectly to carry out their life processes.

NHIC's database for species occurrences was consulted. There are no known occurrences of Blanding's turtles within the 1km grid squares overlapping the proposed development area or the 120-metre adjacent lands.

Following the guidelines outlined in the General Habitat Description (GHD) for Blanding's Turtles (MECP, 2021), the proposed development and the adjacent areas were mapped as one of the three categories of Blanding's turtle habitat.

Category 1 habitats include both nesting and overwintering sites. Nesting sites are found in sandy uplands areas with well-drained soils and sometimes in soil pockets on rock barrens. Overwintering or hibernation sites are found in areas with permanent wetlands and other habitat with unfrozen shallow water. These habitats have the lowest tolerance to alteration.

Category 2 habitats include suitable wetlands and waterbodies and the area within 30 metres of these. Suitable wetlands and waterbodies are those with eutrophic environments, shallow water and abundant aquatic vegetation. They will use a variety of wetland habitats, including artificial channels and ditches; however, only those natural analogues are considered Category 2 habitat for the purpose of the GHD. Blanding's turtles prefer all wetland types over faster moving water found in streams and rivers.

Blanding's turtles use Category 2 habitats for basking, foraging and mating. Basking individuals often float on the surface of the water; they also use beaver lodges, stumps, hummocks, rocks, bog mats, submerged logs and root masses for basking. Basking locations are usually within a wetland or along it's edges where individuals can escape to deeper open water if startled. The author has observed Blanding's turtles basking in the early spring in small wetland pools beside larger wetland complexes, presumably because these areas become ice-free sooner in the spring and warm up faster.

Foraging occurs in the same open water marsh wetland habitat that basking and overwintering take place. Adult turtles are mostly carnivorous and eat frogs, fish and invertebrates including eggs and larvae of these species as well. Juveniles forage in areas of thick aquatic vegetation; where foraging opportunities are high and there are areas to avoid /escape predation.

Category 2 habitats are stated to have a moderate tolerance to alteration before their function and usefulness for Blanding's turtles is compromised.

Category 3 habitat is described as the areas between 30 and 250 metres around suitable Category 2 wetlands and waterbodies. Turtles depend on these areas to move between suitable

wetlands. Areas for movement can include unsuitable wetlands (not Category 2) and upland areas; defined by their proximity to the defined Category 2 wetlands and waterbodies. Based on a 3-year telemetry study of a small number of individuals in the City of North Bay and surrounding municipalities (East Ferris, Callander), most often turtles follow a wetted corridor when moving through Category 3 habitat e.g. a ditch, small stream or other non-Category 2 wetland[11]. These same individuals also seemed to take a more direct route between wetlands rather than wandering aimlessly. According to the GHD, Category 3 habitat has the highest stated tolerance to alteration before it's function is compromised.

Potential for Category 1 Habitat

There are no waterbodies or wetlands on the subject property or within the 120-metre adjacent area that contains water that does not freeze over. The existing catchment area does not have permanent flow and will likely freeze to the bottom due to its shallow depths. The mineral meadow marsh located in the adjacent area likely does not offer suitable category 1 habitat. This wetland was formed after agricultural practices in the area ceased leaving thick vegetation with moist soils present. Regardless, the mineral meadow marsh is location approximately 92.2-metres away from the proposed development area. Therefore, a 30-metre setback surrounding this wetland and avoidance of disturbance can be achieved and avoidance.

Blanding's turtles use sandy substrates for nesting. The G199X contains sandy/gravel fill that could be used as a nesting substrate for turtles. However, the Federal Recovery Strategy for the Blanding's Turtle (Emydoidea blandingii), Great Lakes/St. Lawrence population in Canada document (2018), which was adopted by the Province of Ontario, states that active roads and shoulders or active sand and gravel pits are not considered suitable habitat for Blanding's turtles as they do not meet the biophysical attributes of suitable habitat. For a road, trail, shoulder, etc., to offer suitable terrestrial habitat for turtles, the structure must be abandoned and not longer used by humans[12]. The entire proposed development envelope for the long-term care facility is actively being used by humans and maintained by college staff.

Therefore, suitable category 1 habitat for Blanding's turtle is absent from the proposed development area. No impacts are anticipated.

Potential for Category 2 Habitat

The existing conditions of the proposed development location are largely anthropogenic and have undergone human influence in the past. For example, the existing engineered drainage catchment area does contain a permanent water supply with aquatic vegetation present. However, the Recovery Strategy (2018) states that humans can create large physical barriers to Blanding's turtles which limits their use of habitat. Specifically large urbanized areas and busy

[11] Personal communication. K. Schankula & R. Geauvreau. July 2024.
[12] Environment and Climate Change Canada. 2018. Recovery Strategy for the Blanding's Turtle (Emydoidea blandingii), Great Lakes / St. Lawrence population, in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. viii + 59 pp.

roads or highways can limit access to habitat. Canadore College buildings are immediately south of the proposed development area with parking lots along the east edge. Cedar Heights Road and existing residential dwellings are to the north of the development area. The existing anthropogenic areas and development limit individual turtle access to the catchment area.

The only suitable access areas are from the west side of the development area and engineered catchment area. FRi observed two painted turtles (*Chrysemys picta*) using the catchment area as spring/summer basking and thermoregulation habitat, but no Blanding's turtles were observed.

Figure 22: Photo of painted turtle using catchment area.

Because the catchment area is artificial, water levels will fluctuate with stormwater needs and is close to existing development, it is FRi's opinion that it acts as a biological sink rather than suitable habitat. There is no suitable Category 2 habitat present as the water collecting is drainage from existing human structures. Encouraging or facilitating the use the catchment area for turtles is contrary to protection and long-term species persistence objectives.

To eliminate the risk of turtles moving southeast towards existing developments and the new long-term care facility, the proponent may wish to consider the installation of a permanent physical barrier to keep turtles from entering the development area while maintaining the function of the catchment area. A sheet-pile breakwall is one example of this type of installation and is depicted in the images below.

Figure 23 & Figure 24: Example photos of a suitable permanent exclusion system to prevent reptile movement west of the engineered catchment pond.

General construction mitigation measures such as sediment fencing and required exclusion systems for human passage will also act as a barrier for turtles. These required construction mitigation measures will protect and exclude any none-species at risk turtles, like the painted turtles observed, from the construction area.

The assessment confirms the absence of suitable Category 2 habitat for Blanding's turtles within the proposed development footprint and the immediate adjacent area. If the recommendations for a permanent barrier (e.g. breakwall exclusion) and appropriate construction mitigation measures are implemented, there are no impacts anticipated to individual turtles.

Potential for Category 3

There is a small watercourse present within the 120-metre adjacent area located west of the proposed development area. This watercourse could offer movement within the adjacent lands. This watercourse does not provide access to any suitable habitat within or east of the proposed development area and instead runs parallel to the west edge of the proposed area. As the watercourse does not impede on the development area, a 30-metre setback from this watercourse will protect its integrity and ability to continue to offer movement for turtles within the adjacent lands (**Figure 25**). There is an existing barrier to the movement of turtles where the stream meets the catchment area as the culver is grated. This section of the stream was dry for

most of the active season for turtles. Therefore, this section of channel offers the same potential for movement as upland terrestrial habitat and is not favourable by the species. The channel will be maintained for drainage purposes in the development design, setback is required. The existing barrier in the watercourse also prevents turtles from moving eastward towards the property.

Figure 25: Overview of the watercourse and recommended 30-metre setback in adjacent lands.

As previously stated, there are multiple barriers to turtle movement including the existing development of the college and residential dwellings. There is a high likelihood of road mortality for turtles moving in the vicinity of the existing college due to vehicle traffic. The recommendation to implement the break-wall along the catchment area will also reduce the likelihood of turtles moving across the Canadore campus and getting hurt or killed on the interior road network.

Suitable category 3 Blanding's turtle habitat is absent from the proposed development area. There is potentially suitable movement (Category 3) in the watercourse to the west of the proposed development. A recommended 30-metre setback will protect the watercourse in the adjacent area and its ability to offer movement for turtles.

Chimney Swift

Chimney Swifts are relatively small birds that are a sooty brown colour with slender wings and a lighter-coloured throat. Chimney Swifts are often distinguished by their erratic flight patterns and unique habitat. They spend most of their time in flight, usually foraging for flying insects and catching them mid-flight.[13]

Before European settlement, Chimney Swifts mainly nested on cave walls and in hollow trees or tree cavities in old growth forests. As logging activities increase, these large hollow trees become increasingly rare. Today, Chimney Swifts are mainly associated with urban and rural areas, using chimneys or similar structures are available. The COSEWIC Status Report (2018) highlights a trend in recent and historic records, indicating that Chimney Swifts use trees that had a DBH (diametre at breast height) greater than 50 cm. While not common, Pileated Woodpecker (*Dryocopus pileatus*) cavities are sometimes used for nesting and roosting. Communities supporting trees greater than 50 cm DBH and Pileated Woodpecker cavities are typical of old growth forests. Suitable nesting habitat continues to decline as the use of chimneys decreases as well as available old growth forest stands. These reductions in nesting and roosting sites are threatening Chimney Swift populations.[14]

Potential for Chimney Swifts

A review of NHIC's database did not reveal any records of Chimney Swifts within the 1km squares overlapping the proposed development area or the 120-metre adjacent area. The Ontario Breeding Bird Atlas (OBBA) has an observation of a Chimney Swift visiting a probable nest site in the nesting season within the 10km grid square overlapping the subject property.

The proposed development area does not directly overlap any suitable anthropogenic structures or large cavity trees that could offer suitable nesting habitat for Chimney Swifts. However, the adjacent area and specifically Canadore College/Nipissing University could include structural features that a Chimney Swift may use.

To confirm absence of Chimney Swift habitat, FRi deployed a passive acoustic and ultrasonic recorder from May 21st through June 20th, 2024. The recorder was deployed in a location to maximize the detection of a variety of different birds along forest edge habitat, as well as internal forest areas. The recorder was programmed to record the first 20 minutes of every hour between 21:00 to 6:00 the following morning. See *Appendix 2* for a comprehensive list of bird species heard or seen during in-person field investigation or heard calling on passive recordings.

[13] https://www.ontario.ca/page/chimney-swift

[14] COSEWIC. 2018. COSEWIC assessment and status report on the Chimney Swift Chaetura pelagica in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xii + 63 pp. (http://www.registrelep-sararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1)

There were no Chimney Swifts observed during any in-person field investigations or heard calling on any of the passive acoustic monitoring days. The OBBA observation of a nesting Chimney Swift likely occurred elsewhere in the 10km grid square. No mitigation is necessary.

Eastern Hog-nosed Snakes (*Heterodon platirhinos*)

Eastern hog-nosed snake populations are typically associated with a variety of open vegetation cover types (woodland, forest edge and sand barrens) underlain by sandy, well-drained surface soils. Beaches and dry sandy forests are preferred as egg-laying and hibernation sites. These sites must be close to wetlands since American toads (*Bufo americanus*), which require wetlands for breeding, comprise greater than 50% of diet. The Eastern Hog-nosed Snake specializes in hunting and eating toads, and this occurs where toads can be found. This species will often use burrows in sandy or rocky soils constructed by other animals.

Eastern hog-nosed snakes are highly mobile and have large home ranges. This makes it especially challenging to define a particular habitat as important. Features which are required by hog-nosed snakes are widespread and in relatively abundant supply at the northern edge of the species' range.[15] [16] [17]

As outlined in the Recovery Strategy for the Eastern Hog-nosed Snake in Canada states the five physical features that are used to describe preferred habitat. They include well-drained loose or sandy soil, open vegetative cover such as open woods, brush land or forest edge, proximity to water and climatic conditions typical of the eastern deciduous forest biome.[15]

Females lay eggs beginning in late June in sandy soils, sometimes under rocks and driftwood and tend to use the same general area for nesting in subsequent years. Hibernation sites are also found in sandy soils; and unlike other snakes, the Eastern hog-nosed usually hibernates alone. Hibernation takes place from October through April. The hibernacula sites have been documented in upland intolerant forests below the frost line.

Potential for Eastern Hog-nosed Snakes

NHIC's database for species observations was consulted and there were no recorded observations of Eastern hog-nosed snakes overlapping the proposed development area.

Eastern hog-nosed snakes require a variety of habitat conditions to support their life processes. As stated above, hog-nosed snakes require dry sandy forests or beaches for egg laying and hibernation sites. The proposed development area does not offer any well-drained sandy soils that are not actively used or disturbed. The G199X infilled areas undergo active disturbances

[15] Kraus, T. 2011. Recovery Strategy for the Eastern Hog-nosed Snake (Heterodon platirhinos) in Ontario. Ontario Recovery Strategy Series. Prepared for the Ontario Ministry of Natural Resources, Peterborough, Ontario. i + 6 pp + Appendix vi + 24 pp. Adoption of the Recovery Strategy for the Eastern Hog-nosed Snake (Heterodon platirhinos) in Canada Seburn, 2009).

[16] COSEWIC. 2021. COSEWIC assessment and status report on the Eastern Hog-nosed Snake Heterodon platirhinos in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xi + 45 pp. (https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html).

[17] http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/MNR_SAR_ESTRN_HG_NSD_SNK_EN.html

and would not support suitable nesting habitat for snakes. Similar to Blanding's turtles, any potentially suitable nesting features near the existing development are considered a biological sink and increase the risk of mortality.

There are no suitable wetlands to offer American toad breeding habitat within the proposed development area. Toads are a vital food source for hog-nosed snakes. In their absence of toads, the snakes are unlikely to persist in a location.

Finally, there is edge habitat or open vegetation areas. Forested ecosites only offer general movement habitat for snakes as they do not have the required features for critical life processes such as reproduction or hibernacula. The wooded areas within the proposed development area is located between Canadore College/Nipissing University and Cedar Heights Road. These areas are barriers to snakes due to human foot traffic as well as vehicular traffic. Additionally, the G019, G048, and G058 ecosites all have dense canopy coverage limiting open areas and access to sunlight for basking.

The Recovery Strategy for Eastern Hog-nosed Snake defines areas of contiguous natural habitat as key to the recommended area for habitat regulation and protection. It does not include developed areas, roads, highways or similar unnatural or disconnected habitat fragments. The recovery strategy notes that roads and areas of high human use are considered barriers and define the limits or boundary of habitat for snakes.

According to MECP's most recent advice, habitat is considered suitable when there is evidence or information (i.e. nearby occurrences, suitable habitat, etc.,) that indicates that the species depends on the habitat for survival. The subject property does not contain suitable habitat for critical life processes, nor is there any evidence of the species relying on the property for survival.

It is FRi's opinion that the subject property represents unnatural and disconnected habitat fragments. It is not, therefore, considered a suitable habitat for the purpose of the *Endangered Species Act,* and the associated general habitat protection provisions afforded the species.

The exclusion systems associated with construction activities will serve as an added layer of protection for excluding reptiles or amphibians.

Eastern Whip-poor-will

Whip-poor-will breeding habitat is not dependent upon species composition, but rather on forest structure, although common tree associations in both summer and winter are pine and oak. The species shuns both wide-open spaces and dense forest. It prefers to nest in semi-open forests or patchy forests with clearings, such as barrens or forests that are regenerating following major disturbances. Other necessary breeding habitat elements are thought to involve ground-level vegetation and woodland size. Individuals will often feed in nearby shrubby pastures or wetlands with perches. Areas with decreased light levels where forest canopies are

closed are generally not occupied, perhaps because of reduced forage success for this aerial-feeding insectivore.[18]

Potential for Eastern Whip-poor-will

NHIC's database for known species observations were consulted and there were no records of Eastern Whip-poor-will within the 1km grid squares overlapping the proposed development area. Additionally, OBBA does not have any observations or records of Eastern Whip-poor-will within the 10km grid square overlapping the proposed development area.

Eastern Whip-poor-will require open forest or rock barren habitat for breeding as they nest on the ground. The development area does not contain any suitable habitat for Whip-poor-will breeding activity.

As mentioned, passive monitoring was also conducted from May through June. During this period, FRi captured Whip-poor-will's calling at multiple other project locations indicating suitable environmental conditions for surveying. However, there were no Eastern Whip-poor-will detected at the proposed long-term care facility location.

Therefore, Eastern Whip-poor-will are absent from the subject property. No mitigation is required.

There are four endangered species of bats found in Ontario whose range generally overlaps the subject property; little brown myotis, Northern myotis, Tricoloured bats, and Eastern small-footed bats. Only little brown myotis were observed calling on passive monitors, therefore the other three (3) species are not addressed as they are not using the development area.

Little brown myotis (*Myotis lucifugus*) were 'emergency' listed on Ontario's Species at Risk list in January 2013. A disease called white nose syndrome poses a very serious threat to bat populations in North America, threatening to extirpate the species in many locations.

During the active season, bats feed on insects at night and roost during the day. The roost either individually (males) or in groups (females with pups), usually in warm, elevated spaces. Bats often choose human-created roosts such as attics and abandoned buildings as they offer optimum habitat for summer roosts, usually close to water and open areas for foraging. Natural roosts include large hollow trees and spaces behind loose bark. Little brown myotis hibernate in caves and abandoned mines in October through April where temperatures remain above freezing and humidity levels are high.[19] [20]

[18] Government of Canada. Species at Risk Public Registry (www.sararegistry.gc.ca).

[19] Dobbyn, S. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists. 120 pp.

[20] Ontario Ministry of Natural Resources. 2000. Significant Wildlife Habitat Technical Guide. Toronto: Queen's Printer for Ontario. 151pp.

For Litle Brown Myotis, the *Species at Risk (SAR) Bats Technical Note21* lists the following ecosites which could have maternity roosts: G015 – G019, G023 – G028, G039 – G043, G054 – G059, G069 – G076 and G087 – G092. Maternity colonies for Litle Brown Myotis are found in large cavity trees in an early state of decay. These are usually situated in contiguous mature forest, typically deciduous trees; ecosites G016- G019, G028, G040-G043, G055-G059, G070-G076, G088-G092, G103- G108, and G118-G125 are listed as suitable forested ecosites.[21]

According to the Significant Wildlife Habitat Technical Guide, Appendix G4, Table G4, little brown myotis use caves, quarries, tunnels, hollow trees, or buildings for roosting. Maternity colonies are most often found in warm dark areas, like barns, attics, and old buildings. They overwinter in caves and mine adits (horizontal mine shafts) in Ontario. This species forages mainly over open areas including wetlands and near forest edges where insect densities are greater.[22]

Potential for Active Season Roosts

Little brown myotis were confirmed on or near the proposed development location using passive ultrasonic monitoring equipment. However, the relative number of passes captured on the passive recorder is quite low; only three passes were captured over a twenty-eight (28) day survey period, or approximately 0.12 passes per night. The relatively low number of passes per night suggests the general presence of little brown bats, but not in a concentration large enough to indicate a maternity roost. Forested ecosites can provide general day or night roost as well as maternity roost, or the open areas above the parking lots and catchment pond could offer general feeding habitat.

General Approach – Passive Ultrasonic Monitoring

FRi biologists have a combined 16+ years of experience monitoring for bats. Staff have completed instructional courses – Bat Acoustics Training and Bat Acoustics Training Analysis – under the direction of Dr. Cori Lausen, Wildlife Conservation Society of Canada, a North American bat expert.

Following the ecosite delineation and understanding of potential habitat on and adjacent the property, FRi completed a passive acoustic and ultrasonic monitoring programme to maximize the chances of detecting all four at risk bats within the property.

The recorder was strategically placed to capture birds and bats using multiple habitat features. The location chosen captured both interior forest habitat as well as the open parking/catchment

[21] Ontario Ministry of Natural Resources. 2012. Draft Significant Wildlife Habitat Ecoregion 5E Criterion Schedule. 46 pp.
[22] Forbes, G. 2012. COSEWIC. Technical Summary and Supporting Information for an Emergency Assessment of the Litle Brown Myotis, *Myotis lucifugus*. 25pp.

pond corridors to capture foraging behaviour. Bats are known to follow linear features and openings/edges on the landscape. The recorder deployment location captures these features.

In addition, bats require calm water, free of vegetation and algae to drink. Lactating female bats require significant amounts of water to feed their pups. Open water within the drainage pond is not free of vegetation or the potential of algae growth and therefore provides a poor water supply for lactating females.

Passive Monitoring Results

The Wildlife Acoustics passive recorders were deployed from May to June 2024. The ultrasonic microphone was programmed to the triggered recording setting, from sunset to sunrise, with an internal clock set with GPS to ensure locational and civil accuracy. A minimum trigger frequency of 14kHz was chosen to include the full range of all eight (8) echolocating bats of Ontario.

When the ultrasonic recorder is triggered by a sound with the appropriate frequency and duration, a recording is saved. Each recording is a series of pulses which represent the bat echolocating. The pulse series is called a bat pass. The bat passes provide valuable information with respect to which species are present, and the relative abundance over time or compared to other sites. It does not, however, give any indication of the actual number of individuals of a species.

The recordings were analyzed with Wildlife Acoustics Kaleidoscope Pro software and verified by an experienced biologist. A summary of the species detected, and number of passes are included in the table below.

Species	Species at Risk	Detected?	Total # of Passes
Hoary	No	Yes	961
Big Brown/Silver-haired	No	Yes	106
Eastern Red Bat	No	Yes	3
Little Brown Myotis	Yes	Yes	3
Tricolored Bat	Yes	No	0
Northern Myotis	Yes	No	0
Eastern Small-footed Myotis	Yes	No	0

* Note that silver-haired and big brown passes are reported as an aggregate as it is difficult to distinguish the two; it is hypothesized that clear calls showing 2nd and 3rd harmonics may be used to distinguish the two species. Regardless, neither species is considered a species at risk.

The passive monitor successfully detected multiple species of bats that are not considered at risk as well as little brown myotis. This indicates that the equipment was working in good order and the relatively low number of little brown myotis passes or other SAR species is not due to faulty equipment and is rather related to the absence of habitat or species on the property.

Hibernacula

Little brown myotis hibernate or overwinter in underground caves and mines. The Canadian Shield does not typically have natural caves or other suitable openings in rock for hibernating bats unlike the limestone dominated bedrock to the south. Hibernation sites in the shield are often found in mines, mine infrastructure, and similar underground cavities. These are typically human-created spaces, and the locations are documented in the Ministry of Northern Development and Mines database.

A review of this database confirms the absence of suitable natural and created hibernaculum on or near the subject property. The nearest potentially suitable overwintering site is unknown; however, a search of the AMIS (Abandoned Mine Information System) reveals no suitable adit or other horizontal underground features for overwintering within at least 5 km of the subject property. There are no suitable overwintering habitat for bats on the subject property; therefore, no impacts to bat hibernacula are expected.

Impact Assessment Summary for Bats

In summary, little brown myotis are occasionally present within the proposed development area or adjacent lands. The very low number of bat passes per unit effort of monitoring confirms that these species are forgoing or day roosting on the property, but there are no maternity roosts.

Tree and/or vegetation removal is recommended to occur outside of the active season for bats to protect individuals. This approach is consistent with recent advice given by MECP for selective clearing where maternity roosts and hibernacula are absent. Tree and vegetation removal or clearing should be avoided between April 1st and September 30th. Tree and vegetation clearing can occur From October 1st, through March 31st. Additionally, MECP advises that small scale clearing activities meet the intent of the ESA.

If the recommended dates for tree and vegetation clearing are followed, no impact is expected to occur to individual bats or their habitat.

Summary

This species at risk review was intended to ensure the proposed development of the long-term care facility at Canadore College is consistent with the *Endangered Species Act* (2007), and its associated regulations. The following summarizes the recommendations to minimize or avoid impacts to species at risk and their habitat for the subject property.

Species	Individuals/Habitat Present	Impacts?	Recommendations
Black Ash	Absent	None	N/A
Blanding's Turtles	• General movement	None anticipated, movement not	• Best management practices for sediment and erosion

	habitat in adjacent stream • no confirmed observations of species in the area. • No suitable habitat overlapping the subject property.	impaired or eliminated by development – stream runs parallel to development envelope	control will also exclude reptiles during construction. • The potential implementation of a permanent barrier to turtle passage.
Chimney Swift	Absent; suitable roost trees and anthropogenic features absent from the proposed development area. No swifts were heard on passive monitors.	None	N/A
Eastern Hog-nosed Snake	Absent; habitat features critical for life processes are absent, multiple human barriers also present.	None	• Best management practices for erosion and sediment control as well as human exclusion will also exclude all reptiles from development area during construction
Eastern Whip-poor-will	Absent; suitable open forest or rock barren absent from subject property. Individual birds were not heard on passive monitors despite suitable conditions.	None	N/A
Little Brown Myotis	Maternity roost – absent General foraging locations or day roost – potentially present	Small scale clearing of treed area – small scale clearing is supported by MECP	• Vegetation and tree removal occur between October 1st through March 31st of any given year to avoid active season for bats.

If the above noted recommendations are appropriately implemented, it is in our opinion that the proposed development has satisfied its requirements under the *Endangered Species Act* (2007).

Respectfully submitted,

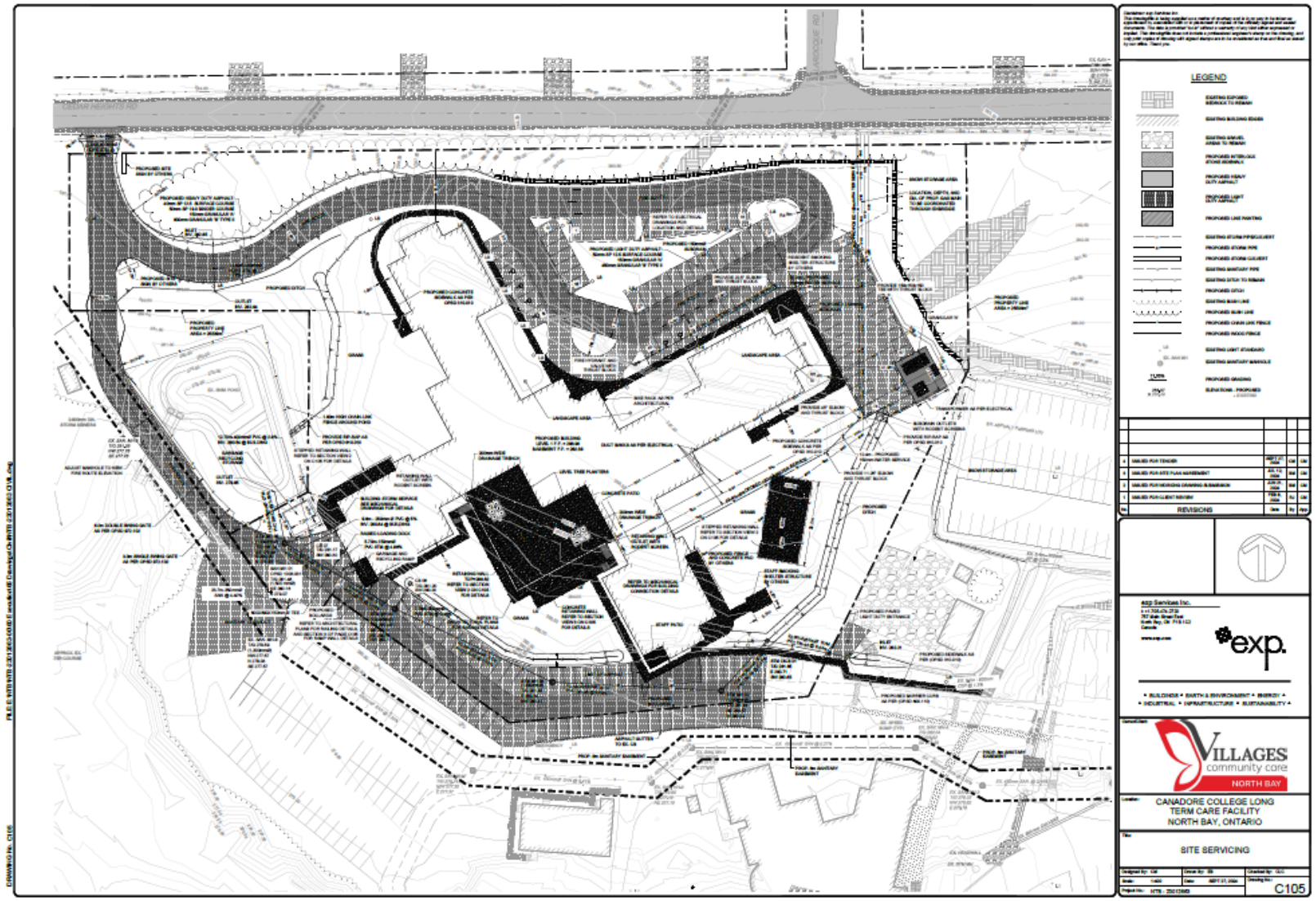
Katie Schankula

Field Biologist

Rebecca Geauvreau

Species at Risk Biologist

Appendix 1 – Preliminary Concept Design



Appendix 2 – Bird Identifications

Common Name	Latin Name	Saro Status	COSEWIC Status
American Crow	*Corvus brachyrhynchos*	N/A	N/A
American Robin	*Turdus migratorius*	N/A	N/A
American Robin	*Turdus migratorius*	N/A	N/A
Black and White Warbler	*Mniotilta varia*	N/A	N/A
Blackburnian Warbler	*Setophaga fusca*	N/A	N/A
Black-capped Chickadee	*Poecile antricapillus*	N/A	N/A
Blue -headed Vireo	*Vireo solitarius*	N/A	N/A
Blue Jay	*Cyanocitta cristata*	N/A	N/A
Brown Creeper	*Certhia americana*	N/A	N/A
Canada Warbler	*Cardellina canadensis*	Special Concern	Special Concern
Chestnut-sided Warbler	*Setophaga pensylvanica*	N/A	N/A
Chipping Sparrow	*Spizella passerina*	N/A	N/A
Common Yellowthroat	*Geothylpis trichas*	N/A	N/A
Dark-eyed Junco	*Junco hyemalis*	N/A	N/A
Nashville Warbler	*Leiothlypis ruficapilla*	N/A	N/A

Northern Flicker	*Colaptes auratus*	N/A	N/A
Ovenbird	*Seiurus aurocapilla*	N/A	N/A
Pine Siskin	*Spinus pinus*	N/A	N/A
Red-eyed Vireo	*Vireo olivaceus*	N/A	N/A
Red-Winged Blackbird	*Agelaius phoeniceus*	N/A	N/A
Rose-Breasted Grosbeak	*Pheucticus ludovicianus*	N/A	N/A
Song Sparrow	*Melospiza melodia*	N/A	N/A
White-crowned Sparrow	*Zonotrichia leucophrys*	N/A	N/A
White-throated Sparrow	*Zonotrichia albicollis*	N/A	N/A
Yellow Warbler	*Setophaga petechia*	N/A	N/A