CITY

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J.F. Markell Homes
37 Cumberland Street
Cornwall, ON K6J 4G8

March 9, 2021

Re.: Natural Heritage Assessment – 304 Baldwin Street, Cornwall

Dear Mr. Markell:

Bowfin Environmental Consulting Inc. (Bowfin) was retained by Markell Homes to prepare a Natural Heritage Assessment for 304 Baldwin Street, in Cornwall. The property is situated in part of Lot 7, Concession 1, in the City of Cornwall. It is roughly 0.4 ha in size and was previously used as a retail site. All building structures were removed in 2018 but the paved parking lot remains. It is understood that Markell Homes would like to develop the site into residential units and that the site is fully serviced. The original field work undertaken on this site in 2019, focused primarily on the identification of the trees. This has now been supplemented with a search of the available background data on potential for natural heritage features and visits in 2020 to confirm the presence/absence of potential habitat for species at risk (SAR) or other natural heritage features.

The tree inventory was completed by Cody Fontaine who has his Fisheries and Wildlife advanced diploma and has 10 years experience completing field work. Mr. Fontaine is also a certified Butternut Health Assessor (#723). This data was utilised by Michelle Lavictoire to prepare the following letter report. Ms. Lavictoire has a Master of Science in Natural Resource Sciences and over 24 years of experience in completing natural environment assessments. In the paragraphs below, we have outlined the background and project description, field methodology and findings and recommendations.

METHODOLOGY

Background Review

A review of available information from on-line sources (Natural Heritage Information Centre Database, iNaturalist, Atlas of Breeding Birds of Ontario, Land Information Ontario, Department of Fisheries and Oceans Species at Risk Mapping, and the City's Official Plan and Schedules) was performed.

Vegetation and Tree Inventory

A quick description of the vegetation was completed to provide information on the suitability of the area to provide natural heritage functions. Detailed information was collected on the trees:

- Their location (GPS coordinates, NAD83);
- Identified to species for native specimens;
- Diameter at breast height (DBH);
- Presence/absence of cavities; and
- Health.

Nomenclature used in this report follows the Southern Ontario Plant List (Bradley, 2007) for both common and scientific names which are based on Newmaster *et al.* (1998). Authorities for scientific names are given in Newmaster *et al.* (1998).

RESULTS

Background Review

A review of the City of Cornwall's Official Plan (OP) found that there are no identified natural heritage features in or within 120 m of the site (Figure 2).

Table 1: Summary of Available Background Information on the Identified Natural Features

Natural Heritage Feature	Present within Area to be Developed	Present within 120 m of Area to be Developed	Additional Notes
Provincially Significant Wetlands (PSW)	No		Nearest is Summerstown Swamp roughly 2 km to the north
Areas of Natural and Scientific Interest (ANSIs)	No		None
Habitats or species designated by ESA (Provincial)	No documented occurrences		Potential is discussed below

Natural Heritage Feature	Present within Area to be Developed	Present within 120 m of Area to be Developed	Additional Notes
Significant Woodlands	No		Wooded areas are identified 0.7 km to the east and southwest
Significant Valleylands	No		None
Significant Wildlife Habitat (SWH)	No		None
Fish Habitat	No		St. Lawrence River is about 1.0 km to the south

Sources of background information: OP (City of Cornwall), Google Satellite Imaging, Make-a-Map

Figure 1: Location of Site

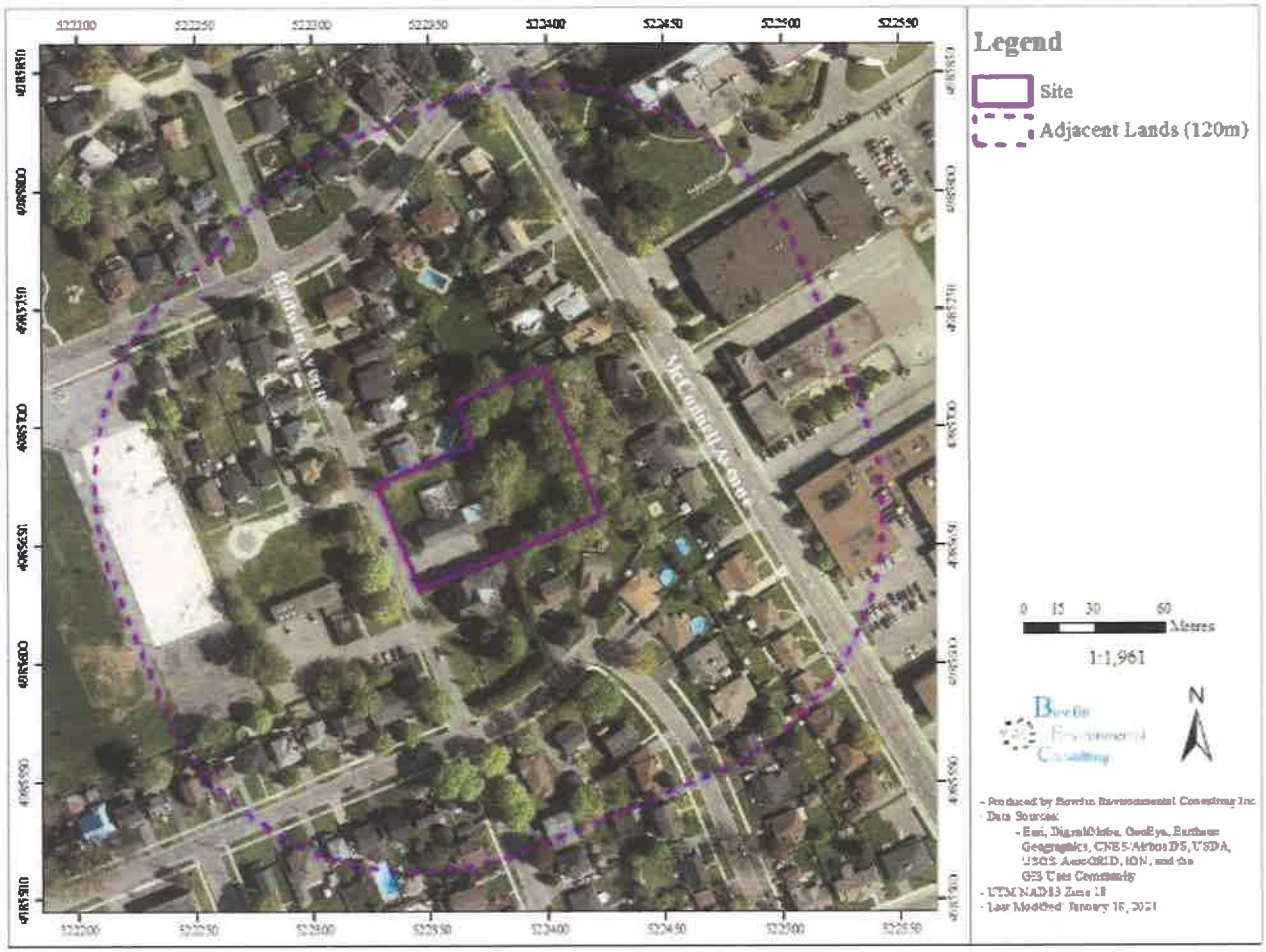
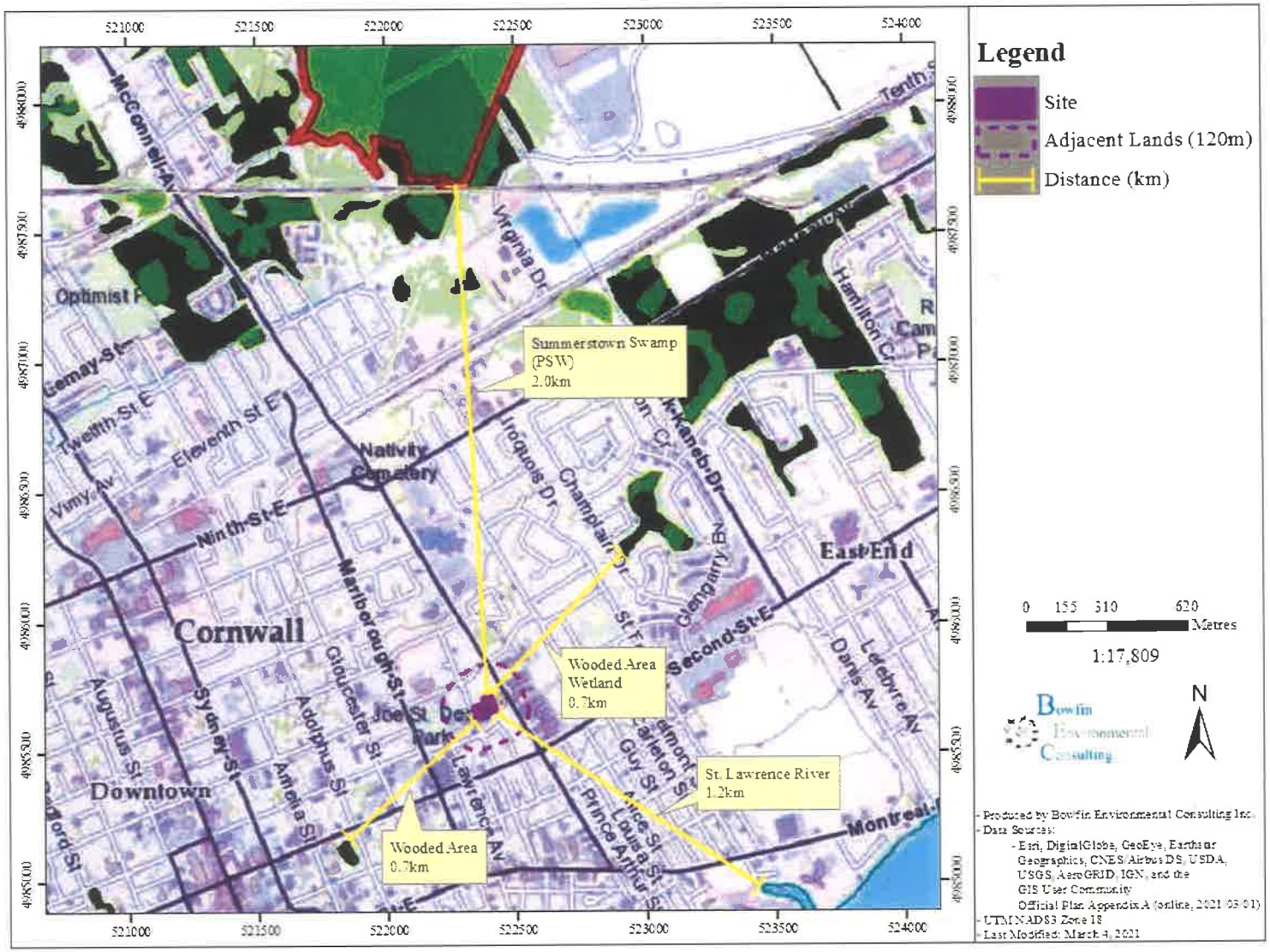


Figure 2: Official Plan Schedule (online)



Site Investigations

The site visit undertaken on October 22, 2019 by Cody Fontaine. The weather conditions consisted of overcast skies, light air with an air temperature of 9°C. The potential for additional natural functions was reviewed on January 15, 2021. The weather conditions consisted of clear skies, with an air temperature of -4°C.

Vegetation Communities and Tree Inventory Results

The property consisted of mowed areas, fence rows, and groupings of trees. The parking lot from the previous use remains and was paved. The site was flat and was surrounded by residential and office buildings. The following were not present on site:

- Surface water features (i.e. wetlands or watercourses)
- Steep slopes (i.e. valleys or escarpments)
- Valued woodlots
- Greenspace linkages
- Rare communities or unique ecological features
- Butternuts

Photo 1: Looking west towards Baldwin Avenue at the cedar hedge (October 22, 2019)

Photo 2: Looking east along the south fence row (October 22, 2019)

Photo 3: Looking at the treed areas on the north side (October 22, 2019)

Photo 4: Looking northwest at the white birch trees (October 22, 2019)

The majority of the trees were located along the perimeter (fence line). There were a total of 87 identified of which 59 individuals were at least 10 cm in diameter (Figure 4). The most common species were: Manitoba maple, sugar maple, Norway maple and eastern white cedar. Other species encountered were: silver maple, red maple, bur oak, red pine, white birch and green ash (Table 1). Apart from a few dead or individuals in poor conditions, the trees were healthy (Table 2). Of the trees inventoried, four had cavities: one Norway maple and three maples. The Norway maple had a diameter of 35 cm, but the three other maples were over 50 cm. This size is potentially important to note. These larger trees are depicted on Figure 5 and are discussed under the species at risk paragraphs below.

Table 2: Summary of Individual Trees On-site

Species	Count	Size Range (DBH in cm)	No. Live	No. Unhealthy	No. Dead
Bur Oak	1	<1	1	0	0
Eastern White Cedar	(hedge)	2-21	All	0	0
Green Ash	4	6-26	2	0	2
Manitoba Maple	45	2-82	39	6	0
Norway Maple	18	1-38	18	0	0
Red Maple	1	33	1	0	0
Red Pine	1	29	0	1	0
Silver Maple	4	7-150	4	0	0

Species	Count	Size Range (DBH in cm)	No. Live	No. Unhealthy	No. Dead
Sugar Maple	9	1-43	8	1	0
Unknown Maple	1	8	0	1	0
White Birch	2	25-27	2	0	0
Total	**87 (plus cedars)**	**n/a**	**76**	**9**	**2**

Figure 3: Individual Trees

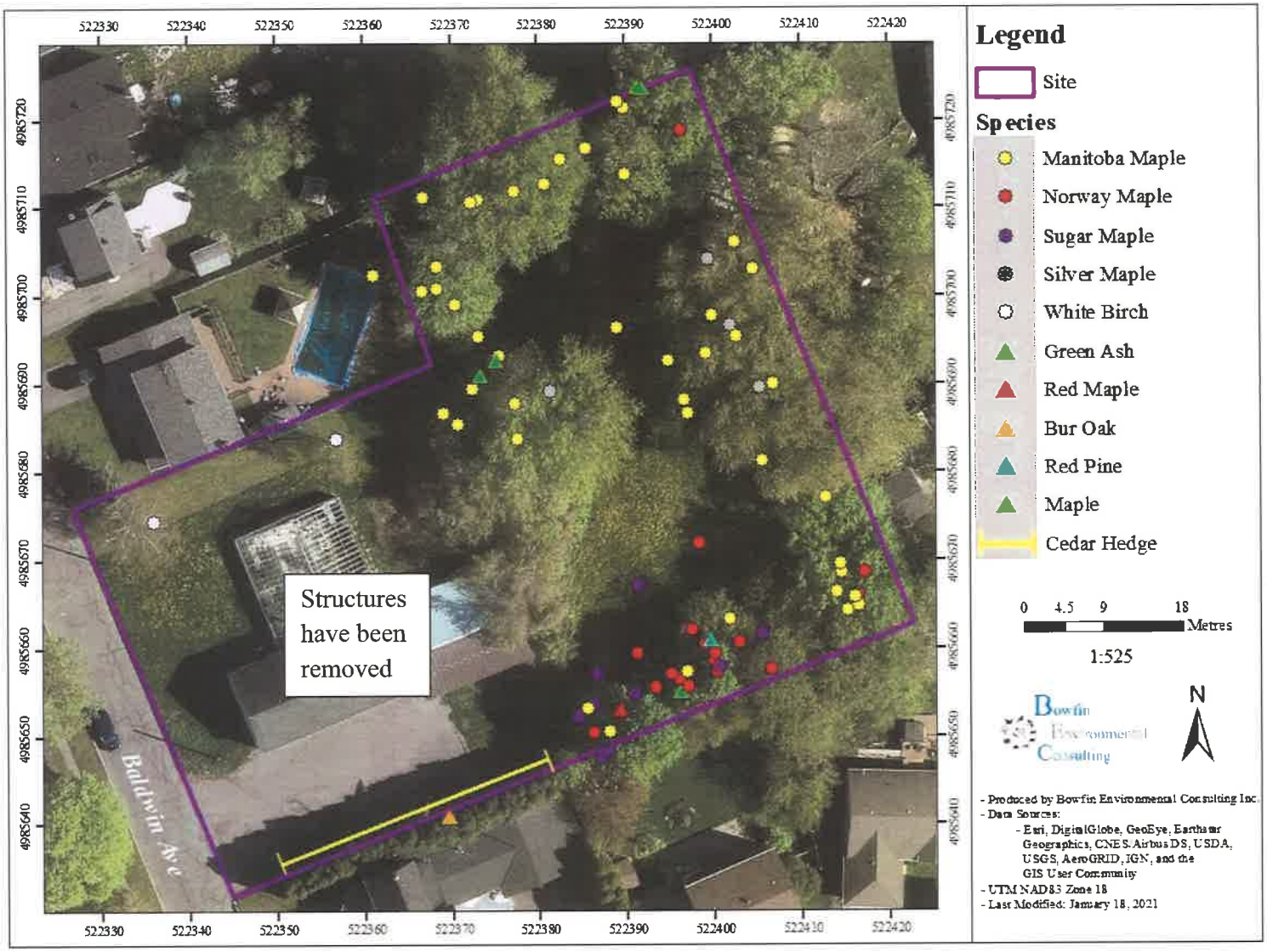
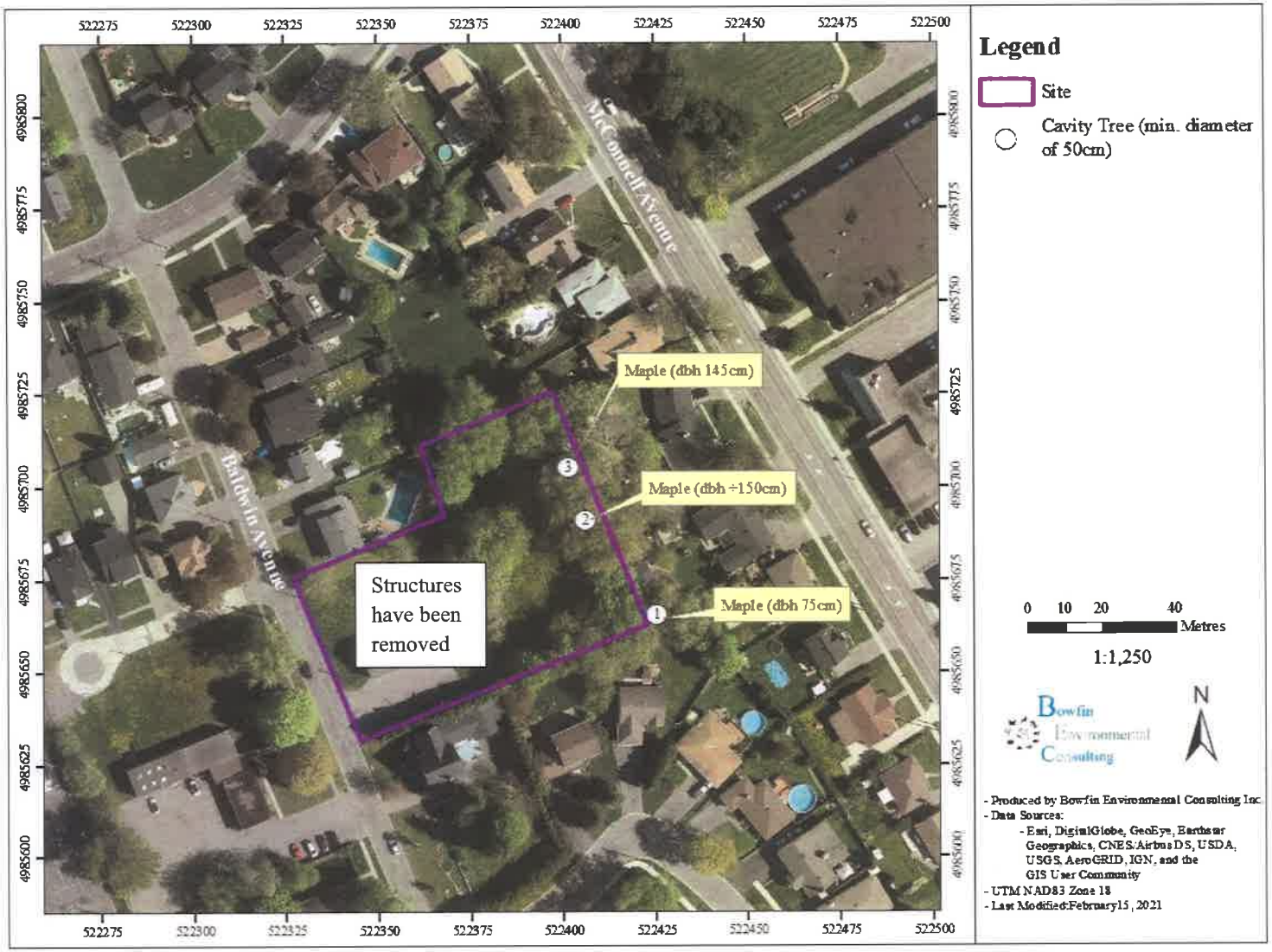


Figure 4: Location of Large Trees with Cavities



POTENTIAL FOR SIGNIFICANT NATURAL FEATURES

Following the site investigations there were no changes to the initial findings of the background review. To clarify, there are **no significant** (provincially or locally) wetlands, woodlands, valleylands, significant wildlife habitat, ANSIs or fish habitat in or within 120 m of the site. The potential to provide habitat for the species at risk typically found in the area is further reviewed here.

Endangered and Threatened Species at Risk (SAR) are protected under provincial *Endangered Species Act*. The NHIC database provides information available to the public on those SAR documented as occurring within the general area. It should be noted that not all information for all species is available to the public. Furthermore, the absence of a recording does not necessarily indicate that the species is absent from the area. The purpose of the NHIC database is to serve as a guide to help determine the potential species which may occur within the project area. The background review also included looking at the list of birds observed as part of the Atlas of Breeding Birds of Ontario (18WQ28) and any endangered or threatened species listed on these lists were considered as potentially occurring within the study areas. Added to this list were species that based on personal experience, often occur within the general area.

The final list included twelve species: one reptile (Blanding's turtle), six birds (eastern whip-poor-will, chimney swift, bank swallow, barn swallow, bobolink, and eastern meadowlark), 4 mammals (all bats – little brown myotis, northern myotis, eastern small-footed myotis and tri-colored bat), and 1 plant (butternut) (Table 3).

A review of these species and their habitat requirements, and protection levels finds that the only likely species are: chimney swift, barn swallow, little brown myotis and butternuts. The field investigations confirmed the lack of butternuts and found that there were no potential nesting areas for barn swallows (on-site; potential exists in nearby houses). This leaves only chimney swift (a bird) and potential for little brown bats to be discussed below.

Chimney Swift (Chaetura pelagica)

The chimney swift can often be found in developed areas and prefers to utilize structures such as large (>50 cm diameter) trees or man-made structures such as chimneys for its nesting habitat (COSEWIC, 2007). The use of large trees is now considered a rare event and the documented occurrences have all be in trees that were <1 km from a waterbody (large enough to be shown on 1:50,000 topographical maps) (COSEWIC, 2007).

Category 1 chimney swift habitat is the nesting structure (tree or chimney) and 90 m surrounding the structure (COSEWIC, 2007). There are no chimney's on-site. There are the three larger cavity trees as shown on Figure 5 and the site is just over 1 km from the St. Lawrence River.

Chimney swifts have been documented along Baldwin Avenue. For this reason, it is recommended that the three trees identified on Figure 5 be inspected for use during the breeding bird season. Chimney swifts are an active and noisy species that is easily observed when present.

Discussion on Bats

While there are four bat species listed, only little brown myotis is considered as potentially breeding in the area as the others all need natural habitat that is not present. The little brown myotis is one of the few bat species that can use anthropogenic structures as maternity sites. Potential suitable structures can include buildings, bridges, barns, and bat boxes. The little brown myotis can also use tall, large cavity trees that are in the early to mid-stages of decay as maternity roosts, as well as loose/raised tree bark, and/or crevices in cliffs (ECCC, 2018). This bat species occurs in higher densities in mature deciduous and/or mixed forests due to increased opportunities for large snags. However it does not exclusively require mature forest stands in order to find appropriate maternity roosts (COSEWIC, 2013a). There were several houses near the subject lands, however, these will not be impacted by the potential project. There remains potential for bats to use the cavity trees or other larger diameter trees (>10 cm) for day-roosting or as maternity trees. MECP now has avoidance guidelines that can be applied to this site to prevent potential for contravening the *Endangered Species Act* for this species. This is listed further below.

Table 3: List of Potential Species at Risk in the General Area

Common Name	Scientific Name	Preferred Habitat	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Reference
REPTILES						
Blanding's Turtle	*Emydoidea blandingii*	Shallow water, large marshes, shallow lakes or similar such water bodies.	S3	THR	THR	COSEWIC, 2016
BIRDS						
Eastern Whip-poor-will	*Antrostomus vociferus*	Rock or sand barrens with scattered trees, savannahs, old burns or other disturbed sites in a state of early to mid-forest succession, or open conifer plantations.	S4B	THR	THR	COSEWIC, 2009
Chimney Swift	*Chaetura pelagica*	Cities, towns, villages, rural, and wooded areas.	S4B, S4N	THR	THR	COSEWIC, 2007
Bank Swallow	*Riparia riparia*	Variety of forest types, most common in wet, mixed deciduous-coniferous forest with a well-developed shrub layer. It is often found in shrub marshes, red maple stands, cedar stands, conifer swamps dominated by black spruce and larch and riparian woodlands along rivers and lakes. It is also associated with ravines and steep brushy slopes near these habitats.	S4B	THR	THR	COSEWIC, 2013b
Barn Swallow	*Hirundo rustica*	Open or semi-open lands: farms, field, marshes.	S4B	THR	THR	COSEWIC, 2011a; Peterson, 1980
Bobolink	*Dolichonyx oryzivorus*	Primarily in forage crops, and grassland habitat.	S4B	THR	THR	COSEWIC, 2010

Common Name	Scientific Name	Preferred Habitat	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Reference
Eastern Meadowlark	*Sturnella magna*	Fields, meadows and prairies.	S4B	THR	THR	COSEWIC, 2011b; Peterson 1980
MAMMALS						
Little Brown Myotis	*Myotis lucifugus*	Buildings, attics, roof crevices and loose bark on trees or under bridges. Always roost near waterbodies.	S4	END	END	Eder, 2002
Northern Myotis	*Myotis septentrionalis*	Older (late successional or primary forests) with large interior habitat.	S3	END	END	COSEWIC, 2013a; Menzel et al. 2002, Broders et al. 2006, SWH 6E Ecoregion Criterion Schedule
Eastern Small-footed Myotis	*Myotis leibii*	Found within deciduous or coniferous forests in hilly areas.	S2S3	END	none	Eder, 2002
Tri-colored Bat	*Perimyotis subflavus*	Prefers shrub habitat or open woodland near water.	S3?	END	END	Eder, 2002
PLANTS						
Butternut	*Juglans cinerea*	Variety of sites, grows best on well-drained fertile soils in shallow valleys and on gradual slopes	S2?	END	END	COSEWIC, 2003

Status updated April 1, 2019

SRANK DEFINITIONS

S2 Imperiled, imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

S3 Vulnerable, Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S#S# Range Rank, A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
? Inexact Numeric Rank—Denotes inexact numeric rank
S#B Breeding
S#N Non-Breeding

SARO STATUS DEFINITIONS
END Endangered: A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's ESA.
THR Threatened: A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.

SARA STATUS DEFINITIONS
END Endangered, a wildlife species facing imminent extirpation or extinction.
THR Threatened, a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

RECOMMENDED AVOIDANCE AND MITIGATION MEASURES

As discussed above, this site offers very little in terms of potential for natural heritage functions. There remains a small potential for chimney swifts which will be investigated and a potential for use of the trees by little brown myotis (bat). Barn swallows could be present in the adjacent buildings but there is no suitable habitat on-site. Below is a list of recommended avoidance and mitigation measures; beginning with general measures that apply to all SAR and followed by measures more species to chimney swift and bats. A list of avoidance and mitigation measures and/or best management practices for wildlife in general is also included.

General Species at Risk Measures:

- Endangered and Threatened species are protected and cannot be harmed, harassed or killed and in some cases their habitats are also protected. These individuals will only be handled by qualified person and only if the individual is in imminent threat of harm. An authorization under the ESA 2007 would be required to handle individuals that are not in imminent threat of harm.
- If a SAR enters the work area during the construction period, any work that may harm the individual is to stop immediately and the supervisor will be contacted. No work will continue until the individual has left the area.
- Should an individual be harmed or killed then work will stop and the Ministry of Environment, Conservation and Parks (MECP) will be contacted immediately.

List of Measures for Chimney Swift

- Leave the three larger (>50 cm diameter) trees identified on Figure 5 until they can be inspected during the breeding bird season. Note that the removal of branches that are dead and may cause damage to the neighbour's can be removed prior to April 1.
- The monitoring of these larger specimens during the breeding bird period will confirm the presence / absence of Chimney Swifts nests in those trees. It will also determine if there are Chimney Swifts nesting in the nearby building (within 90 m) from the Site. Until that time, it will be assumed that there is a potential for Chimney Swifts and these additional mitigation measures implemented. If the survey finds that there are none, then these measures can be removed.
    - Educate workers to inform them that Chimney Swifts nests are protected and cannot be removed.
    - Work that might cause noise, vibration or light disturbances to the birds nesting in the adjacent chimney during their nesting period (June 4-August 25 – dates for Ottawa on the Bird Studies Canada website for this species) should be avoided. When uncertain, the work could be monitored by a biologist to look for signs of disturbances.
- Providing education to works to increase their awareness of what is protected will help minimize accidental harm to SAR (and other species).

- No impacts to federal SAR bird nests, or their eggs is permitted under the federal *Species at Risk Act*. If a federally listed bird species at risk nest is encountered, then work must stop, and the Environment Canada must be notified immediately for guidance.
- No impacts to provincial SAR bird nests or their eggs is permitted under the provincial *Endangered Species Act*. If a provincially listed bird species at risk is encountered, then work must stop and the Ministry of Environment, Conservation and Parks (MECP) contacted.
- Should a nest be discovered, stop all work that may disturb the birds (i.e. that cause the adults to fly off the nest) and contact a biologist or MECP or Environment Canada, as appropriate for the species.

List of Measures for Bats

- Educate contractors by informing them that most bats in Ontario are protected.
- When possible, remove trees that are >10 cm between October 1 and March 30. If this is not possible, conduct exit survey prior to cutting them down.

General Wildlife Measures:

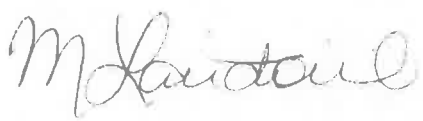
- Reptiles are protected under the *Fish and Wildlife Conservation Act*. As such the measures below apply to any snake or turtle.
  - If an individual is observed, then all work that may harm the individual must stop and allow the individual to leave the area.
  - If an individual is observed on-site, the worker should notify their supervisor.
  - Try to take a photograph but do not chase the individual in order to do so.

- Most birds in Ontario are also protected by the *Migratory Bird Convention Act* and/or the *Fish and Wildlife Conservation Act* (FWCA) – as such, no clearing of vegetation between April 1st and August 15th unless the area to be cleared has been walked by a biologist within 2 days prior to the planned clearing and no active nests are present.

Should you have any questions or comments, please contact the undersigned.

If you have any questions or comments please do not hesitate to contact me at 613.935.6139.

Sincerely,



Michelle Lavictoire - Principal/Senior Biologist

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