# Species at Risk Assessment for the Historic Buildings Block of the Booth Street Complex

**Draft Report**
**June 30, 2017**

**Submitted To:**

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# 1.0 INTRODUCTION

Kilgour & Associates Ltd. (KAL) was retained by the Canada Lands Company to develop three separate reports related to the protection of natural heritage elements present or potentially present within a one-block area of the Booth Street Complex in Ottawa, prior to any redevelopment of that area. This report is a species-at-risk assessment of that property. The purpose of this report is to identify the potential for presence of any listed/protected species-at-risk (SAR) on or adjacent to the one block area and, if present, how any such species could be affected by and/or protected during the future redevelopment of the area.

This report presents the results of our SAR surveys of the site, which demonstrated the absence of any SAR and/or habitat there.

# 2.0 PROPERTY INFORMATION

The subject property (Figure 1) is a 2.6 ha city block bounded by Orangeville Street and Highway 417 to the north, Booth Street to the east, Norman Street to the south, and Rochester Street to the west. For most of the 20th Century, research, testing, and development of fuels, minerals, and metals were undertaken on this site in support of industrial growth and innovation in geology, metallurgy, and ceramics across Canada. Five of the seven buildings on this block have recognized heritage status through the Federal Heritage Buildings Review Office.

The subject block within the Booth Street complex is a highly developed, highly disturbed industrial area. Vegetation on the site is limited to small, ornamental trees planted within gravel beds or planters, a few small shrubs along building edges, and some very narrow fringes of mowed lawn around three edges of the block. None of the grassed areas are more than 2 m in width and they are bounded on both sides by paved sidewalks and roadways, or industrial buildings. As such, natural habitat on the site is virtually non-existent. The potential for SAR, or wildlife generally, occurring on the site is limited.

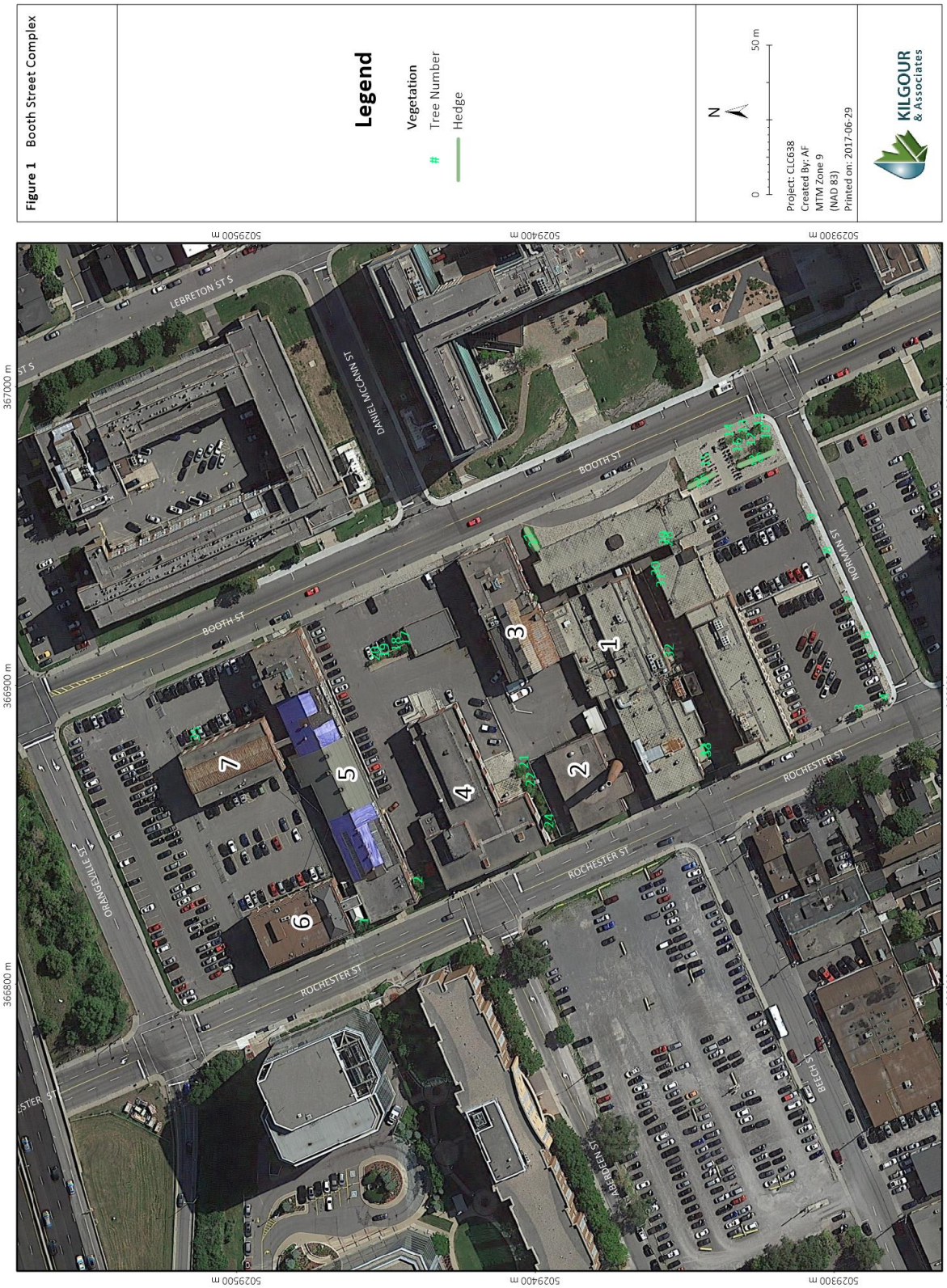
Figure 1 Booth Street Complex
Legend
Vegetation
# Tree Number
Hedge
N
0
50 m
Project: CLC638
Created By: AF
MTM Zone 9
(NAD 83)
Printed on: 2017-06-29
KILGOUR & Associates
502950.0 m
502940.0 m
502930.0 m
367000 m
366900 m
366800 m
LEBRETON ST S
DANIEL MCCANN ST
BOOTH ST
NORMAN ST
ROCHESTER ST
ARGENTEUIL ST
BECH ST
1
2
3
4
5
6
7

# 3.0 SITE SAR REVIEW

## 3.1 Ottawa Area Species at Risk

Table 1 provides a list of species protected under the federal *Species at Risk Act* (*SARA*) and/or under Ontario's *Endangered Species Act* (*ESA*) that are known to occur in the Ottawa area. The list is based on the most recent (June 13, 2017) compilation of SAR records for the area as assembled by the City of Ottawa's Natural Systems group. The list specifically excludes aquatic species (i.e. fish, mussels, amphibians and/or turtles) as no aquatic habitat is present within >350 m of the site; all other species not listed as extirpated or as migrants only (i.e. with no nesting records) are included. An information request was filed with the Ontario Ministry of Natural Resources and Forestry (MNRF) to provide details of observation records of SAR from within the vicinity of project site to potentially better target the full list of species. The MNRF however, is currently backlogged in replying to such requests, with responses requiring over twelve weeks to turn around. They have, as of yet, not yet responded to the request. Regardless, the City-based list provides as complete an inventory of potential SAR presence as possible.

As a federally owned property, only *SARA* is currently applicable to this project. It is import however, to consider species as listed under both acts. Any lands transferred to private developers, will automatically become subject to the *ESA*. Moreover, while most at-risk species are listed under both acts, those that are only listed under one act, should be considered as highly likely to be listed under the other act in the near future. Considering both lists thus ensures due diligence for the review.

**Table 1: Species at Risk with the potential to occur on or within the vicinity of the property.**

| Species Name | Status | Habitat / Presence in Ottawa | Habitat Suitability / Potential Presence on Site |
|---|---|---|---|
| **Birds** | | | |
| Bald Eagle (*Haliaeetus leucocephalus*) | *SARA*: Not at Risk<br>*ESA*: Special Concern | Bald eagles are most often reported during spring and fall migration. Nest in mature forests near open water. One confirmed nest at Shirley's Bay. | No suitable habitat. Negligible probability of presence. |
| Bank Swallow (*Riparia riparia*) | *SARA*: Not scheduled (but listed as Threatened by COSEWIC)<br>*ESA*: Threatened | Nest in banks or earthen walls cut by meandering streams and rivers, but artificial banks created by mining may also be used. Foraging occurs over fields, streams, wetlands, farmlands, and still water. | No suitable habitat. Negligible probability of presence. |
| Barn Swallow (*Hirundo rustica*) | *SARA*: Not scheduled (but listed as Threatened by COSEWIC)<br>*ESA*: Threatened | Nests on barns, bridges and other structures; forages in open areas for flying insects especially, but not necessarily, near water. Common around Ottawa | Suitable nesting structures on site, but very limited potential for foraging. Limited potential for occurrence. |
| Black Tern *(Chlidonias niger)* | *SARA*: Not at Risk<br>*ESA*: Special Concern | Builds floating nests in shallow marshes, especially in cattails. Limited occurrences along the Ottawa River. | No suitable habitat. Negligible probability of presence. |
| Bobolink (*Dolichonyx oryzivorus*) | *SARA*: Not scheduled (but listed as Threatened by COSEWIC)<br>*ESA*: Threatened | Open meadows and tallgrass prairie. Build nests on ground in dense grasses. Common around Ottawa | No suitable habitat. Negligible probability of presence. |

| Species Name | Status | Habitat / Presence in Ottawa | Habitat Suitability / Potential Presence on Site |
|---|---|---|---|
| Canada Warbler (*Cardellina canadensis*) | *SARA*: Threatened<br>*ESA*: Threatened | Prefers wet forests with dense shrub layers. Limited presence in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Cerulean Warbler (*Setophaga cerulea*) | *SARA*: Special Concern (but listed as Endangered by COSEWIC)<br>*ESA*: Threatened | Prefers mature deciduous forests. No current records from Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Chimney Swift (*Chaetura pelagica*) | *SARA*: Threatened<br>*ESA*: Threatened | Nests in open chimneys and rarely in tree hollows (tree > 60 cm dbh). Present in small numbers around Ottawa. | The main chimney on site (currently unused) provides high nesting potential if unlined. Nesting potential is lower if the structure is metal-lined.<br>Potential for presence on site. |
| Common Nighthawk (*Chordeiles minor*) | *SARA*: Threatened<br>*ESA*: Special Concern | Nests in wide variety of open sites, including beaches, fields and gravel rooftops. Can thrive in urban areas. Some presence in Ottawa. | Flat rooftops provide potential nesting space nesting.<br>Potential for presence on site. |
| Eastern Meadowlark (*Sturnella magna*) | *SARA*: Not scheduled (but listed as Threatened by COSEWIC)<br>*ESA*: Threatened | Open meadows and tallgrass prairie. Build nests on ground in dense grasses. Some presence in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Eastern Whip-poor-will (*Caprimulgus vociferus*) | *SARA*: Threatened<br>*ESA*: Threatened | Nests on the ground in open deciduous or mixed woodlands with little underbrush. | No suitable habitat.<br>Negligible probability of presence. |
| Eastern Wood-pewee (*Contopus virens*) | *SARA*: Not scheduled (but listed as Special Concern by COSEWIC)<br>*ESA*: Special Concern | Woodland species, often found near clearings and edges. Common in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Golden-winged Warbler (*Vermivora chrysoptera*) | *SARA*: Threatened<br>*ESA*: Special Concern | Tangled, shrubby habitats such as regenerating clearcuts, wet thickets, tamarack bogs, and aspen or willow stands. Very limited presence in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Grasshopper Sparrow (*Ammodramus savannarum*) | *SARA*: Special Concern<br>*ESA*: Special Concern | Open grasslands and prairies with patches of bare ground. Limited presence in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Henslow's Sparrow (*Ammodramus henslowi*) | *SARA*: Endangered<br>*ESA*: Endangered | Expansive, fallow, tall grass/forb fields with ground mat formation and perches. Moist sites preferred. Not currently known in the Ottawa area. | No suitable habitat.<br>Negligible probability of presence. |
| Least Bittern (*Ixobrychus exilis*) | *SARA*: Threatened<br>*ESA*: Threatened | Found in large quiet marshes and, usually near cattails. Limited presence in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Loggerhead Shrike *(Lanius ludovicianus)* | *SARA*: Endangered<br>*ESA*: Endangered | Prefers pastures or grasslands with scattered low trees and shrubs. Builds nests in small trees or shrubs. Very limited presence in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Olive-sided Flycatcher (*Contopus cooperi*) | *SARA*: Threatened<br>*ESA*: Special Concern | Forest edge species; forages in open areas from high vantage points in trees. Limited presence in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Peregrine falcon (*Falco peregrinis*) | *SARA*: Special Concern<br>*ESA*: Special Concern | Nest in tall, steep cliff edges close to large bodies of water and on ledges of tall buildings. Two confirmed nests in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |

| Species Name | Status | Habitat / Presence in Ottawa | Habitat Suitability / Potential Presence on Site |
|---|---|---|---|
| Rusty Blackbird (*Euphagus carolinus*) | *SARA*: Special Concern<br>*ESA*: Not at Risk | Wintering grounds (Eastern Ontario) are associated with wetlands, flooded forests, scrub along the edges of lakes, rivers and streams and beaver ponds. Not currently known to nest in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Short-eared Owl (*Asio flammeus*) | *SARA*: Special Concern<br>*ESA*: Special Concern | Ground-nester; prefers open habitats such as fields and marshes. Limited presence in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Wood Thrush (*Hylocichla mustelina*) | *SARA*: Not scheduled (but listed as Threatened by COSEWIC)<br>*ESA*: Special Concern | Deciduous or mixed woodlands; susceptible to habitat fragmentation and nest parasitism by cowbirds. Uncommon in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Yellow Rail (*Coturnicops noveboracensis*) | *SARA*: Special Concern<br>*ESA*: Special Concern | Nests in sedge meadows and marshes. Very limited presence in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| **Insects** | | | |
| Bogbean Buckmoth *(Hemileuca sp.)* | *SARA*: Endangered<br>*ESA*: Endangered | Open, chalky, low shrub fens containing large amounts of bogbean. Very limited presence in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Monarch butterfly (*Danaus plexippus*) | *SARA*: Special Concern<br>*ESA*: Special Concern | In Ontario, old meadows with Milkweed. Widespread in Ottawa | No suitable habitat.<br>Potential for transient occurrence, but no resident populations. |
| Mottled Duskywing (*Erynnis martialis*) | *SARA*: Not scheduled (but listed as Endangered by COSEWIC)<br>*ESA*: Endangered | Larval food plant (New Jersey Tea) found in sandy areas, alvars. Limited presence in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Nine-spotted Lady Beetle (*Coccinella novemnotata*) | *SARA*: Not scheduled (but listed as Endangered by COSEWIC)<br>*ESA*: Endangered | Historically common throughout southern Canada but has declined severely in recent decades and is now rarely found. | No suitable habitat.<br>Negligible probability of presence. |
| Rapids Clubtail (*Gomphus quadricolor*) | *SARA*: Endangered<br>*ESA*: Endangered | Riverbanks. Occurs just east west of Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Rusty-patched Bumble Bee (*Bombus affinis*) | *SARA*: Endangered<br>*ESA*: Endangered | Found in open habitat such as mixed farmland, urban settings, savannah, open woods, and sand dunes. Usually nests underground. | No suitable habitat.<br>Negligible probability of presence. |
| West Virginia White butterfly (*Pieris virginiensis*) | *SARA*: Not listed<br>*ESA*: Special Concern | Mature moist deciduous woods with larval host plant toothwort. Occurrence in Ottawa unknown. | No suitable habitat.<br>Negligible probability of presence. |
| Yellow-banded Bumble Bee (*Bombus terricola*) | *SARA*: Not scheduled (but listed as Special Concern by COSEWIC)<br>*ESA*: Special Concern | Mixed woodlands, particularly for nesting and overwintering, as well as a variety of open habitat such as native grasslands, farmlands and urban areas. Nest sites are generally underground or in decomposing logs. | No suitable habitat.<br>Negligible probability of presence. |
| **Mammals** | | | |
| Algonquin Wolf (*Canis* sp.) | *SARA*: Not scheduled (but listed as Endangered by COSEWIC)<br>*ESA*: Endangered | Forested areas through Renfrew County. Occasional reports from Ottawa, though these are likely of, mistakenly, large coyotes. | No suitable habitat.<br>Negligible probability of presence. |
| Eastern Cougar (*Puma concolor*) | *SARA*: Not scheduled - data deficient<br>*ESA*: Endangered | Forested areas. Occasional reports from Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Eastern Small-footed Bat (*Myotis leibii*) | *SARA*: Not scheduled<br>*ESA*: Endangered | Coniferous forest in hilly country. Hibernates in smaller caves subject to air movement. No current records from Ottawa. | No suitable habitat.<br>Negligible probability of presence. |

| Species Name | Status | Habitat / Presence in Ottawa | Habitat Suitability / Potential Presence on Site |
|---|---|---|---|
| Gray Fox (*Urocyon cinereoargenteus*) | *SARA*: Threatened<br>*ESA*: Threatened | Wide variety of habitats but prefers areas of brush or forest. Very limited presence in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Little Brown Bat (*Myotis lucifuga*) | *SARA*: Endangered<br>*ESA*: Endangered | Widespread, roosting in buildings and trees with radial-longitudinal splits. Hibernate in caves or abandoned mines. Until recently, was reasonably common in central and western parts of Ottawa. No crucial hibernacula identified in the city. | Building on site provide high habitat potential.<br>Potential for presence on site. |
| Northern Long-eared Bat (*Myotis septentrionalis*) | *SARA*: Endangered<br>*ESA*: Endangered | Associated with boreal forests, choosing to roost under loose bark and in the cavities of trees. Hibernate in caves or abandoned mines. Historical records for eastern end of Ottawa. No crucial hibernacula identified in the city. | No suitable habitat.<br>Negligible probability of presence. |
| Tri-colored Bat (*Perimyotis subflavus*) | *SARA*: Endangered<br>*ESA*: Endangered | Forage over water courses or open fields with large trees nearby. They never forage in deep woods. Hibernate in caves or abandoned mines. Historical records west of Ottawa. No crucial hibernacula identified in the city. | No suitable habitat.<br>Negligible probability of presence. |
| **Reptiles** | | | |
| Eastern Ribbonsnake *(Thamnophis sauritus)* | *SARA*: Special Concern<br>*ESA*: Special Concern | Found close to water, especially in marshes, where it hunts small fish. Limited occurrence in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Milksnake (*Lampropeltis triangulum*) | *SARA*: Special Concern<br>*ESA*: Not at Risk | Found in variety of open, scrubby or edge habitats, including pastures. Uncommon in Ottawa | No suitable habitat.<br>Negligible probability of presence. |
| **Vascular Plants and Lichens** | | | |
| American Chestnut (*Castanea dentata*) | *SARA*: Endangered<br>*ESA*: Endangered | Endangered due to fungal disease. One population reported along Dolman Ridge Road that may now be extirpated. | Potentially suitable habitat but negligible probability of presence. |
| American Ginseng (*Panax quinquefolius*) | *SARA*: Endangered<br>*ESA*: Endangered | Mature deciduous forests. Several sites reported previously but some have disappeared (likely due to illegal harvesting). | No suitable habitat.<br>Negligible probability of presence. |
| Butternut (*Juglans cinerea*) | *SARA*: Endangered<br>*ESA*: Endangered | Variable but typically on well-drained soils. | Limited habitat suitability.<br>Limited potential for occurrence. |
| Eastern prairie fringed-orchid *(Platanthera leucophaea)* | *SARA*: Endangered<br>*ESA*: Endangered | Grows in wetlands, fens, swamps, and tall grass prairie. One location in Ottawa. | No suitable habitat.<br>Negligible probability of presence. |
| Flooded Jellyskin (*Leptogium rivulare*) | *SARA*: Threatened<br>*ESA*: Not at Risk | Seasonally flooded woodland areas, deciduous swamps. Limited locations in Ottawa south. | No suitable habitat.<br>Negligible probability of presence. |

= SAR presence is considered possible but very unlikely.
= SAR presence is considered possible.

In our initial review of the site for our proposal that was based on searching publicly available provincial SAR records (NHIC data), examining street view photos of the area, and conducting a walk around the perimeter of the facility on April 5, 2017, we had considered three SAR as possible, albeit highly unlikely, residents: Butternut, Little Brown Myotis and Chimney Swift. After completing the more thorough review above, we expanded the list of potential SAR to five, adding Barn Swallows and Night Hawks. As with the

original three species, these additional species were considered unlikely to be present. Surveys for those species however, were easily fitted into the initially established survey schedule.

## 3.2 Trees and other Vegetation

Vegetation on the site is limited to small, ornamental trees planted within gravel beds or planters, small saplings along building edges, and some very narrow fringes of mowed lawn around three edges of the block. None of the grassed areas are more than 2 m width and they are bounded on both sides by paved sidewalks and roadways, or industrial buildings.

The tree inventory/vegetation survey was performed on June 15, 2017. The plant list is provided in Table 2. A total of 31 trees and 3 short deciduous hedges were found on site. A small wood fern had also managed to take root along one edge of a building. Most (i.e. 23) of the trees were under 10 cm DBH. No trees were greater than 15 cm DBH. None of the plants are rare or listed-species and none of the trees should be considered as distinctive (i.e. requiring protection based on their size or contribution to the ecological functioning of the site or broader area). All of the trees on site appeared to be generally healthy except for four Norway Maples located along Norman Ave. These trees showed very high levels of epicormic sprouting, indicating exposure to some stressor.

Importantly, no Butternuts were observed anywhere on, or within 50 m of the site. Trees on neighbouring properties are all separated from the subject site by paved roadways of sufficient width (minimum 13 m), such that no impacts should be anticipated to them under any future site development.

During the vegetation survey, the eaves of all of the buildings were also viewed, searching for evidence of Barn Swallow nests. No such nests were observed.

## Table 2. Tree/Plant Inventory

| Location | Species | DBH (cm) | Condition |
|---|---|---|---|
| 1 | Siberian Elm | 12 | Good |
| 2 | Siberian Elm | 15 | Good |
| 3 | Norway Maple | 10 | Extreme level of epicormic sprouting |
| 4 | Red Oak | 6 | Good |
| 5 | Norway Maple | 6 | Extreme level of epicormic sprouting |
| 6 | Mountain Ash | 6 | Good |
| 7 | Mountain Ash | 6 | Good |
| 8 | Norway Maple | 6 | Extreme level of epicormic sprouting |
| 9 | Norway Maple | 6 | Extreme level of epicormic sprouting |
| 10 | Locust Sp. | 8 | Good |
| 11 | Locust Sp. | 8 | Good |
| 12 | Locust Sp. | 8 | Good |
| 13 | Locust Sp. | 8 | Good |
| 14 | Locust Sp. | 8 | Good |
| 15 | Locust Sp. | 8 | Good |
| 16 | Locust Sp. | 8 | Good |
| 17 | Scots Pine | 14 | Good |
| 18 | Siberian Elm | 8 | Good |
| 19 | Viburnum Sp. | 6 | Good |
| 20 | Siberian Elm | 8 | Good |
| 21 | Siberian Elm | 15 | Good |
| 22 | Siberian Elm | 10 | Good |
| 23 | Siberian Elm | 12 | Good |
| 24 | Siberian Elm | 15 | Good |
| 25 | Lilac Hedge | N/A | Good |
| 26 | Lilac Hedge | N/A | Good |
| 27 | Eastern Wahoo | N/A | Good |
| 28 | Green Ash | 1 | Good |
| 29 | Siberian Elm | 3 | Good |
| 30 | Siberian Elm | 1 | Good |
| 31 | Wood Fern | NA | Good |
| 32 | Norway Maple | 1 | Good |
| 33 | Norway Maple | 1 | Good |
| 34 | Manitoba Maple | 1 | Good |
| 35 | Siberian Elm | 1 | Good |

## 3.3 Site Fauna

### 3.3.1 Morning Surveys

Three rounds of morning bird surveys were completed on site in June 2017. The surveys were conducted on calm weather days with no precipitation beginning one half hour before sunrise on June 13th, 15th and 19th. The morning surveys were each focused initially on Chimney Swifts. For each survey, KAL biologist Rob Hallett stationed himself at the north edge of the north-most parking lot on site, looking southward towards the main chimney. This vantage provided an excellent view of the main chimney as well as of other, smaller stacks located on the roofs of the north end buildings. None of the buildings along the south half of the site have chimney-type structures suitable for supporting Chimney Swifts. Mr. Hallett observed from there until 15 minutes after sunrise to determine whether any Chimney Swifts emerged, as well as noting any other species present. No Chimney Swifts were observed.

Following the Chimney Swift watch, Mr. Hallett noted all other birds present on or over the remainder of the site. Table 3 indicates all birds observed on site.

**Table 3: Bird species observed on site during site bird surveys in June and July, 2016.**

| Common Name | *Species* | Behaviour |
|---|---|---|
| American Crow | *Corvus branchyrhynchos* | Transiently present in the area but no nests apparent on site |
| American Robin | *Turdus migratorus* | Transiently present in the area but no nests apparent on site |
| European Starling | *Sturnus vulgaris* | Transiently present in the area but no nests apparent on site |
| House Sparrow | *Passer domesticus* | Transiently present in the area but no nests apparent on site |
| Mallard | *Anas platyrhynchos* | Fly over |
| Rock Pigeon | *Columba livia* | In the area but no nests directly observed on site. Nesting may be possible in Building 5 |
| Ring-billed Gull | *Larus delawarensis* | Fly over |
| Song Sparrow | *Melospiza melodia* | Transiently present in the area but no nests apparent on site |

### 3.3.2 Night Surveys

Night surveys were conducted by KAL biologist Anthony Francis. On ten nights in June 2017, Dr. Francis visited the site to look for bats, Chimney Swifts and Common Nighthawks. The first six surveys (June 7, 8, 9, 11, 11, 12 and 13) each lasted half an hour to forty-five minutes. They were conducted at varying times, starting as early as sunset and as late as 02:00. During the surveys, Dr. Francis would slowly walk around the perimeter of the site several times, listening for and recording bat calls using an Echo Touch ultrasonic bat microphone. On three occasions, he recorded Big Brown Bats, always along Rochester St. (once at the north end, once at the south end, and once along the middle of the block). These bat observations were all made during surveys conducted after 11:30 pm, i.e. long after the bats would have emerged from their roosting locations. In each instance, the calls were only recorded over a very brief period (less than one minute) and suggested only a single bat was present.

The Echo Touch software frequently auto-identified Hoary bats at the south end of the site. A review of the sonograms for those recordings however, found these identifications to be incorrect. Hoary bats

generally produce long chirps at about 18 khz with a only a small tonal fall relative to other bats. The sounds recorded at the south end were at 18 khz but had very steady tones (no fall at all) and were very much longer than any natural bat call. They could only have been due to some unidentified mechanical noise in the area, and were thus discarded.

The final four surveys (June 14, 16, 18 ,19) were conducted starting at sunset. During these surveys, Dr. Francis station himself near the locations where the Big Brown Bats had been recorded (one each night, with the last survey station along the east side of the site). During the surveys, he watched the buildings there, sweeping them with a spotlight, to note any emerging bats. One hour after sunset, he circled the entire block twice, again listening and watching for bats. No bats were ever observed emerging from any building or were recorded at any time during these surveys.

The bat survey results suggest that the Big Brown Bats observed on site were not resident in any of the site buildings. Those observed were considered to be transients, roosting in other locations within the broader vicinity. Importantly, all four bat species listed as at-risk in the Ottawa area are smaller bats that chirp above 45 khz. No bat calls in this range were ever noted on site. No at-risk bats are thus considered to be present on site.

During the bat surveys, additional bird studies were also conducted. The surveys of June 14$^{th}$ and 19$^{th}$ provided ideal vantage points to watch the main chimney. During these surveys, no Chimney Swifts were observed, further demonstrating that the chimney is not providing habitat for the species.

During all ten bat surveys, Dr. Francis also listened for calls from Common Nighthawks. None were ever heard.

### 3.4 Species at Risk on Site

Five listed, at-risk species were identified as having some, albeit limited, potential to occur on site: Butternut, Little Brown Myotis and Chimney Swift, Barn Swallow and Common Nighthawk. None of these species however were found to occur there.

## 4.0 PROPOSED MITIGATIONS

No SAR or active SAR habitats have been observed on or adjacent to, or are deemed likely to exist near the property. No SAR impacts therefore are anticipated to from any future projects on the site. Moreover, the likelihood of any of the at-risk species considered specifically in this report taking up residence on site is considered to be negligible, with the exception of Chimney Swift.

Conditions for tree growth on site are very restrictive. Other than those individuals specifically planted there as ornamentals, the only tree species present are those that can thrive in marginal, disturbed urban conditions. Butternut is not such a plant and, with no other individuals noted nearby to serve as a seed source, it is not expected to occur on site in the foreseeable future. No special mitigations are required.

Little Brown Bat has recently become very nearly extirpated from the downtown area (and from most of Ottawa). We have not observed any individuals of that species over the past two years in numerous studies across the region. Big Brown Bat (not currently a listed species) is still reasonably common but

Little Brown Bat, is not expected to occur on site in the foreseeable future. No special mitigations are required.

Barn Swallows are still very common in the Ottawa area. The paved landscape surrounding the subject site however, does not provide effective feeding grounds for the species. Dow's lake to the south does provide a reasonable-quality feeding ground, but there are numerous suitable nest-supporting structures available much closer to the lake than those on the subject site. Barn Swallow generally nest within 200 m of their feeding area. With Dows Lake being more than 375 m to the south, Barn Swallow is not expected to occur on site in the foreseeable future. No special mitigations are required.

Common Nighthawks may sometimes nest on the gravelled roofs of buildings in downtown areas like those of the subject property. As with Barn Swallows however, the lack of open but natural cover in surrounding area severely limits the potential for feeding areas nearby. Nighthawk is therefore not expected to occur on site in the foreseeable future. No special mitigations are required.

Chimney Swifts are known to occur around downtown Ottawa. While none of these birds were found to be using the subject site, the main chimney of the central heating plant offers an ideal nesting site, especially if it is not metal-lined. We were unable to determine whether the chimney was lined during the course of this study. With no swifts currently present, the chimney can be expected to remain free of nesting birds for this year. If, however, it is found to be unlined, it is highly recommended that the chimney be re-evaluated for Chimney Swift presence prior to any alteration of the structure, if such work were to take place beyond April 2018.

If Chimney Swifts were found to have taken up residence in the chimney at some point in the future, no alteration of or work on the chimney could be commenced or conducted during nesting season between April 15 and August 15. The chimney could be altered or removed after nesting season however, with construction of alternate nesting habitat (e.g. a new chimney-type structure) within 2 km of the site.

# 5.0 CLOSURE

This report was prepared for the Canada Lands Company prior to the potential redevelopment of a one-block area of the Booth Street complex. It is our professional opinion that no SAR or active SAR habitats exist on the site. Multiple field surveys were completed of the property in June 2017, and background information research was completed, all of which indicated the absence of SAR. Therefore, we have determined that future projects on site are not expected to have any impacts on SAR on site or in the area.

Respectfully submitted,
**KILGOUR & ASSOCIATES LTD.**

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Anthony Francis, PhD
Project Manager