

Environmental Impact Statement in Support of the Proposed Development of 3288 Greenbank Road, Nepean, Ontario

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1.0 INTRODUCTION

This report is a scoped Environmental Impact Statement (EIS) prepared by Kilgour & Associates Ltd. (KAL) on behalf of Caivan Communities in relation to their proposed development on a parcel located at 3288 Greenbank Road in Nepean (hereafter referred to as “the Site”). This report has been scoped by the City of Ottawa specifically to address the potential for the presence of three species at risk (SAR) – namely Barn Swallows, Chimney Swifts, and, generally, bats, and their habitat. The EIS will address the SAR issues raised by the City specifically and will address other natural heritage considerations only very cursorily. This EIS also includes a discussion of trees present on site and a review of potential impacts to those trees, and thereby serves as the Tree Conservation Report (TCR) for the proposed development in accordance with the City’s TCR Guidelines (City of Ottawa, 2014). This report provides basic mitigations required to protect the natural heritage features on and adjacent to the Site.

2.0 PROPERTY INFORMATION

The proposed development site is located at 3288 Greenbank Road, Nepean, ON K2J 4H7 (PIN: 045950058) and is approximately 12.6 ha in area. The parcel is zoned as DR – Development Reserve Zone (geoOttawa, 2019). After studies have been completed and approved, the parcel will be re-zoned to support the development of mixed residential dwellings and a neighbourhood park and will be a part of the South Nepean Town Centre (City of Ottawa, 2006). The adjacent lands will also be developed in support of the South Nepean Town Centre (City of Ottawa, 2006). To the east, the parcel is bordered by Greenbank Road, low density rural residential dwellings (single detached), and St. Joseph Catholic High School (geoOttawa, 2019). The portion of Greenbank Road east of the parcel is proposed to be widened and realigned as part of the City’s Transportation Master Plan (City of Ottawa, 2013). The proposed planning and construction of a new watermain on Greenbank Road from Market Place to south of the Jock River will be closely coordinated with the road widening project (Robinson Consultants, 2017). To the south are parcels intended for residential development in the form of townhouses and apartments by Claridge Homes and open lands intended for conservation uses within the floodplain of the Jock River (Novatech, 2018). The Kennedy Burnett Stormwater Management Facility is to the west (City of Ottawa, 2006). To the north is a Development Reserve Zone that will also be a part of the South Nepean Town Centre, and to the north of that is the Barrhaven Town Centre.

Figure 1. Existing site conditions

3.0 SITE AND THE NATURAL ENVIRONMENT

Colour digital aerial photographs from geoOttawa were used to initially identify natural environment features in the area through a desktop review. Additional background information in this report was obtained from a combination of studies and reports performed within the general area of the Site (cited throughout) and from a thorough site inspection by KAL Biologists, Ms. Katherine Black and Mr. Rob Hallett, performed on February 22nd, 2019.

3.1 Surface Water, Groundwater and Fish Habitat

The Site and adjacent lands lie within the Jock River subwatershed, which drains a total area of 556 km² (Rideau Valley Conservation Authority (RVCA), 2016). Within the Jock River subwatershed, the Site lies within the Barrhaven catchment which is located at the confluence of the Jock River with the Rideau River and has a drainage area of 31 km² (RVCA, 2016). The Jock River is ~205m south of the parcel of interest and runs west to east. The proposed development site is not located within the floodplain of the Jock River.

The Burnett Municipal Drain bisects the Site from north to south, leading to the Jock River. Three small tributaries connect to the drain along and near the north property line (Figure 1). Bowfin Environmental Consulting (hereafter “Bowfin”) and Muncaster Planning Inc. (hereafter “Muncaster”) performed a Headwater Drainage Feature Assessment (HDFA) of the drain in the spring and summer of 2015 (Bowfin and Muncaster, 2016). Neither the Burnett Municipal Drain nor its tributaries were found to provide direct fish habitat. The tributaries were consistently dry, and fish sampling did not yield any catch in the drain on all four of their sampling dates and was dry for most of the summer. Directly upstream of the Site, the drain is piped under a driving range for approximately 170 m, but the culvert is in poor condition (Bowfin and Muncaster, 2016). The drain is confined to a straight channel and has potential for fish to access the Site in the spring during high flows, but this opportunity would be very limited. All the tributaries are constructed water courses and most closely represent swales. Bowfin and Muncaster (2016) concluded that the drain provides no direct fish habitat but contributes to fish habitat downstream in the Jock River.

In their HDFA, Bowfin and Muncaster (2016) classified the riparian habitat of the of the Burnett Municipal Drain and Tributary 1 as “limited function” due to flow being within cropped land while Tributaries 2 and 3 were classified as “limited to contributing function” due to flow being within cropped land and the manicured grass of the driving range. Since the drain is not connected to any wetland features and the lands upstream of the driving range are heavily developed, the drain is unlikely to provide important habitat for amphibians and reptiles. A single American toad was heard calling in the Burnett Municipal Drain during one of the site visits by Bowfin and Muncaster (2016), but no other amphibians or reptiles were observed.

The limited functionality of the channels can be replaced by stormwater management infrastructure associated with broader development under the South Nepean Town Centre Community Design Plan (CDP; City of Ottawa, 2019). The CDP does not indicate the retention of these channels.

3.2 Vegetation and Land Cover

As of 2014, the Jock River-Barrhaven Catchment land cover type is primarily settlement (42%), followed by crop and pasture (20%), transportation (14%), woodland (11%), aggregate (9%), water (2%), meadow-thicket (1%), and wetland (<1%; RVCA, 2016). Considerable changes in land cover from 2008 to 2014 include a loss of crop and pasture (-250 ha) and woodland (-27 ha) and an increase in transportation (+108 ha) and settlement (+160 ha; RVCA, 2016). Recent developments nearby the Site include the large retail projects along Strandherd Drive north of the Site and the construction of St. Joseph Catholic High School on Greenbank Road east of the Site (geoOttawa, 2019).

At the time of writing this report, the Site consisted of an open agricultural field with a few clusters and hedgerows of trees. The fields had been significantly disturbed at the time by the installation of a new sewer line across the Site. Based on geoOttawa's 1976 air photo of the Site, most of the parcel was cleared of trees sometime prior to 1976 except for a hedgerow of trees bisecting the parcel in half from north to south along the Burnett Municipal Drain and a couple of clusters and a hedgerow of trees surrounding several old farm buildings in the northeast corner of the parcel. All adjacent areas were also predominantly cleared prior to 1976. Most of the existing vegetation on site is thus less than 40 years old. Since 1976, trees on site have increased in size and density in the areas that were not cleared, and more trees have established along the Burnett Municipal Drain and its three tributaries (geoOttawa, 2019). At the time of the KAL tree survey, three hedgerows of vegetation existed on the parcel: a hedgerow of predominantly grape vine and Virginia Creeper with several small Willow shrubs along an old fence line bordering the east side of the Kennedy Burnett stormwater pond (west edge of the Site), a hedgerow of mainly small Green Ash and Manitoba Maple with Red Osier Dogwood, Hawthorn, and Buckthorn as understory along the northern edge of the parcel, and a hedgerow of mainly small Manitoba Maples along the Burnett Municipal Drain. In addition to these three hedgerows, there are three clusters of mainly Manitoba Maples varying in size around the old farm buildings in the northeast corner of the Site. See below for more information about site trees.

3.2.1 Site Trees

Ms. Black and Mr. Hallett surveyed all treed areas of the Site and treed areas within 50 m of the Site. Tree survey data were recorded for trees with diameters at breast height (DBH) greater than 10 cm in support of a TCR. Tree surveys were performed with attention paid towards potential Butternut habitat (Mr. Hallett is a certified Butternut Health Assessor; BHA #546) and potential "wildlife trees", that is, trees with visible nests or cavities that may provide nesting or roosting habitat. Table 1 shows size and species information for all site trees with DBH > 10cm. Refer to Figure 3 for the location of trees numbered in Table 1.

Table 1. Results of a tree survey of the property performed on February 22nd, 2019

Tree #	Tree	Diameter at Breast Height (cm)	Additional Notes
1	Bur Oak	80	
1	Bur Oak	12	
2	Green Ash	35	Some dead crown
3	Green Ash	12	Crown die back and epicormic shoots
4	Green Ash	14	Crown die back and epicormic shoots
5	Balsam Poplar	55	
6	White Willow	10	
7	Manitoba Maple	10 to 12	5 stems (DBH is a range)
8	White Willow	20	
9	White Willow	15	
10	White Willow	10	
11	Manitoba Maple	15	
12	White Willow	20	
13	Balsam Poplar	12, 12	Two stems
14	White Willow	15	
15	White Willow	20	
16	White Willow	15	
17	White Willow	15	
18	White Willow	20	
19	White Willow	25	
20	White Willow	35	
21	Manitoba Maple	25	
22	Manitoba Maple	15, 10	Two stems
23	Manitoba Maple	15, 15, 15	Three stems
24	Manitoba Maple	30, 25, 20, 10	Four stems
25	Bur Oak	20	
26	White Oak	110	Branch dieback
27	Siberian Elm	40	
28	Manitoba Maple	15, 15	Two stems
29	Bur Oak	25	
30	Bur Oak	18	
31	Manitoba Maple	35, 35, 35, 35	Four stems
32	Manitoba Maple	11	
33	Locust sp.	30	
34	Manitoba Maple	25, 25	Cutting evidence
35	Manitoba Maple	20, 15	Cutting evidence
36	Manitoba Maple	20, 20, 15	Three stems; cutting evidence
37	Manitoba Maple	15, 15, 15, 15, 10, 10	Six stems
38	Manitoba Maple	10, 10	Two stems
39	Manitoba Maple	10, 10, 15	Three stems
40	Manitoba Maple	10	
41	Balsam Poplar	40	One fallen down stem
42	Manitoba Maple	35, 20, 15	Cavities
43	Manitoba Maple	55	Dead stems
44	Manitoba Maple	12	
45	Manitoba Maple	25, 30	
46	Manitoba Maple	22	
47	Manitoba Maple	20	
48	Manitoba Maple	35, 10	Two stems

Tree #	Tree	Diameter at Breast Height (cm)	Additional Notes
49	Manitoba Maple	20, 25	Two stems
50	Manitoba Maple	40	
51	Manitoba Maple	12	
52	Manitoba Maple	10	
53	Manitoba Maple	30	
54	Manitoba Maple	10	
55	Manitoba Maple	35	
56	Manitoba Maple	25, 30, 10	Three stems
57	Manitoba Maple	20, 10	Two stems
58	Manitoba Maple	30, 16	Two stems
59	Manitoba Maple	20	
60	Trembling Aspen	25	Broken stem
61	Manitoba Maple	15, 15	Two stems
62	Manitoba Maple	25	
63	Manitoba Maple	25	
64	Manitoba Maple	35	Fallen stem
65	Manitoba Maple	25	
66	Manitoba Maple	25	
67	Manitoba Maple	20, 30	Two stems
68	Manitoba Maple	35	
69	Manitoba Maple	18	
70	Manitoba Maple	40	
71	Manitoba Maple	45, 25, 35, 35	Four stems; dead stems
72	Manitoba Maple	25	
73	Manitoba Maple	10	
74	Manitoba Maple	25, 30	Fallen stem
75	Manitoba Maple	20	Fallen stem
76	Manitoba Maple	50, 40	Two stems
77	Manitoba Maple	50, 10, 15	Three stems, some with cavities
78	Manitoba Maple	35, 25, 35, 35, 15, 15	Six stems
79	Manitoba Maple	40	
80	Manitoba Maple	75	
81	Manitoba Maple	140	
82	Manitoba Maple	70	Dead stem
83	White Spruce	35	
84	Manitoba Maple	35, 20	Two stems
85	Manitoba Maple	35	Open root flare
86	Manitoba Maple	10, 10, 15	Three stems
87	Manitoba Maple	15, 15, 15	Three stems
88	Manitoba Maple	15	
89	Manitoba Maple	20, 10	Two stems
90	Manitoba Maple	10, 10	Two stems
91	Manitoba Maple	30	
92	Green Ash	15	
93	Green Ash	15	
94	Green Ash	20	
95	Manitoba Maple	15, 15, 10, 10	Four stems
96	Green Ash	10	
97	Green Ash	12	
98	White Willow	90, 60, 15, 20	Four stems
99	Green Ash	12, 10, 10	Three stems
100	Green Ash	10, 10	Two stems; three dead stems <10cm
101	Green Ash	10, 10	Two stems
102	Green Ash	10, 10	Two stems

Tree #	Tree	Diameter at Breast Height (cm)	Additional Notes
103	Green Ash	15, 10	Two stems
104	Green Ash	12	
105	Manitoba Maple	10, 10, 10	Three stems
106	Green Ash	10, 12	Two stems
107	Green Ash	10	
108	Manitoba Maple	20, 15	Two stems
109	Green Ash	65, 70	Two stems, both dead
110	Manitoba Maple	10	
111	Green Ash	100	
112	Green Ash	10, 10	Two stems
113	American Elm	15	In rough shape
114	Green Ash	10	Dead
115	Green Ash	10	
116	American Elm	10, 10	Two stems
117	Green Ash	80	Severe crown dieback

Tree #	Tree	Diameter at Breast Height (cm)	Additional Notes
118	Siberian Elm	10	
119	Bur Oak	12	
120	Green Ash	10	
121	Green Ash	55, 50	Two stems; severe crown dieback
122	American Elm	10	
123	Green Ash	10	Dead
124	Green Ash	10	
125	Green Ash	12, 10	Almost dead
126	Green Ash	35	
127	Green Ash	10	
128	Green Ash	115	Almost dead
129	Green Ash	10, 10	Two stems
130	Green Ash	35	Dead

No trees of special significance were found on or within 50 m of the proposed development area. No Butternuts were observed.

3.3 Species at Risk

This EIS was specifically scoped by the City to determine the potential for the presence of Barn Swallows, Chimney Swifts, and SAR bats. Habitat and/or potential for such habitat for these species was specifically sought out during the site survey on February 22nd, 2019. For full due diligence, however, this EIS also provides a desktop assessment of species listed under the federal *Species at Risk Act* and the provincial *Endangered Species Act* having some potential to occur in the broader area. The assessment looks at whether the Site would or could provide suitable habitat. The potential for SAR and their habitat was assessed based on species range information, other known records and work conducted in the area, historic land use practices, and the preferred habitat requirements of these species. This information was obtained from online sources, which included but are not limited to:

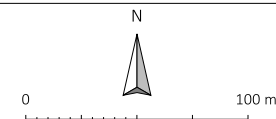
- Natural Heritage Information Centre (MNRF, 2016);
- Jock River Subwatershed Report 2016 (RVCA, 2016);
- Species at Risk Public Registry (Government of Canada, 2019);
- Ontario Species at Risk List (Ministry of the Environment, Conservation and Parks, 2019)
- Ontario Breeding Bird Atlas (Ontario Nature, 2019a)
- Reptiles and Amphibians of Ontario (Ontario Nature, 2019b);
- Bat Conservation International Species Profiles (BCI, 2016); and
- Environmental Impact Statement in Support of the Proposed Development of 3370 Greenbank Road, Ottawa, Ontario (Golder Associates, 2018).



Figure 1 Existing site conditions

Legend

-  Property Line
-  Barn Swallow Nest
-  Trees



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Table 2. Species-at-risk potential (species of conservation concern for the Site are highlighted)

Species Name	Provincial (ESA) Status	Habitat Requirement	Habitat on Site	Project Concerns Associated with Habitat on Site
Birds				
Bank Swallow (<i>Riparia riparia</i>)	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 on or adjacent to the Site.	Negligible potential for presence. Not a concern for this project.
Barn Swallow (<i>Hirundo rustica</i>)	Threatened	Terrestrial open & anthropogenic structures for nesting; near open areas for feeding. Under the ESA, nests are considered Category 1 Habitat; the area within 5 m of a nest is Category 2 Habitat. Category 3 Habitat, i.e. feeding areas, are open spaces located within 200 m of a nest.	The old farm buildings on the northeast corner of the Site have exterior overhang structures that Barn Swallows may build nests under. One remnant nest was observed under such a structure on site (fallen apart; see Figure 4). Grass still present in the mud wadding suggest the nest was likely from 2018. No other evidence of nesting was found on or in other farm buildings on site, on the walls of the high school across the street, or on any other structures within 200 m of the property. Culverts associated with the stormwater pond to the NW and crossing the Kennedy Burnett drain are more than 200 m from the property, as are bridges crossing the Jock River.	The Site supported one nest, and open areas adjacent to it provide suitable foraging habitat. Nest-supporting structures on site may be removed following a site registration with the MNRF, which will oblige the proponent to erect a compensatory structure somewhere in the general vicinity. Once the Site is so registered, the species will impose no further constraints on development.
Bobolink (<i>Dolichonyx oryzivorus</i>)	Threatened	Periodically mown, dry meadow for nesting. Habitat (meadow) should be > 10 ha, and preferably > 30 ha before Bobolink are attracted to the site. Not near tall trees.	The fallow field directly south of the Site is too small and too disturbed to provide suitability as habitat for Bobolink. The species was not previously noted in the CDP area.	Very limited potential for presence. Not a concern for this project.
Chimney Swift (<i>Chaetura pelagica</i>)	Threatened	Nests in open chimneys and, very rarely, in tree hollows (tree > 60 cm DBH). Tend to forage close to water as this is where the flying insects they eat congregate.	Chimneys on an near the site are all capped or have narrow, flue tops. As such they are not accessible to swifts. Several tree cavities in old ash trees could provide habit but would not be preferred nesting sites and will soon fall over anyway naturally.	Very limited potential for presence. Not a concern for this project.
Common Nighthawk (<i>Chordeiles minor</i>)	Special Concern	Nests in wide variety of open sites, including beaches, fields, and gravel rooftops.	If present in the area, they would most likely nest on the roof of the adjacent high school.	Negligible potential for presence. Not a concern for this project.

Species Name	Provincial (ESA) Status	Habitat Requirement	Habitat on Site	Project Concerns Associated with Habitat on Site
Eastern Meadowlark (<i>Sturnella magna</i>)	Threatened	Periodically mown, dry meadow for nesting. Habitat (meadow) should be > 10 ha, and preferably > 30 ha before meadowlark are attracted to the site. Not near tall trees.	The fallow field directly south of the Site is too small and too disturbed to provide suitability as habitat for the species. The species was not previously noted in the CDP area.	Very limited potential for presence. Not a concern for this project.
Eastern Wood-Pewee (<i>Contopus virens</i>)	Special Concern	Woodland species, often found near clearings and edges.	No suitable habitat on or adjacent to the Site.	Negligible potential for presence. Not a concern for this project.
Least Bittern (<i>Ixobrychus exilis</i>)	Threatened	Found in large, quiet marshes and usually near cattails.	No suitable habitat on or adjacent to the Site.	Negligible potential for presence. Not a concern for this project.
Wood Thrush (<i>Hylocichla mustelina</i>)	Special Concern	Deciduous or mixed woodlands.	No suitable habitat on or adjacent to the Site.	Negligible potential for presence. Not a concern for this project.
Mammals				
Little Brown Bat (<i>Myotis lucifugus</i>)	Endangered	Widespread, roosting in trees and buildings. Hibernates in caves or abandoned mines.	Several trees around the old farm buildings in the northeast corner of the Site have cavities, snags, and/or peeling bark that may be suitable for roosting habitat. The old farm buildings all have open areas (broken/open windows) that would permit bat entrance/egress for roosting habitat.	This species has moderate potential to be present due to the availability of roosting habitat in the old farm buildings. However, buildings are not considered Significant Wildlife Habitat. In addition, the Site does not contain any forest and therefore the trees are unlikely to provide habitat for maternity colonies. Tree removal, however, should only be conducted outside of roosting season.
Tri-Coloured Bat (<i>Perimyotis subflavus</i>)	Endangered	Widespread, roosting in trees and buildings. Hibernates in caves or abandoned mines.	Several trees around the old farm buildings in the northeast corner of the Site have cavities, snags, and/or peeling bark that may be suitable for roosting habitat. The old farm buildings all have open areas (broken/open windows) that would permit bat entrance/egress for roosting habitat.	This species has moderate potential to be present due to the availability of roosting habitat in the old farm buildings. However, buildings are not considered Significant Wildlife Habitat. In addition, the Site does not contain any forest and therefore the trees are unlikely to provide habitat for maternity colonies. Tree removal, however, should only be conducted outside of roosting season.
Northern Long-Eared Bat (<i>Myotis septentrionalis</i>)	Endangered	Associated with boreal forests, choosing to roost under loose bark and in the cavities of trees. Hibernates in caves or abandoned mines.	No suitable habitat on or adjacent to the Site.	Negligible potential for presence. Not a concern for this project.
Eastern Small-Footed Bat (<i>Myotis leibii</i>)	Endangered	Coniferous forest in hilly country. Hibernates in smaller caves. Subject to air movement.	No suitable habitat on or adjacent to the Site.	Negligible potential for presence. Not a concern for this project.

Species Name	Provincial (ESA) Status	Habitat Requirement	Habitat on Site	Project Concerns Associated with Habitat on Site
Vascular Plants				
Butternut (<i>Juglans cinerea</i>)	Endangered	Variable but typically on well-drained soils.	No individuals were observed within 50 m of the Site.	Negligible potential for presence. Not a concern for this project.
Arthropods				
Monarch (<i>Danaus plexippus</i>)	Special Concern	Larvae (caterpillars) feed on milkweed plants in meadows and opens areas where milkweed grows. Adult butterflies are found in farmlands, meadows, open wetlands, prairies, roadsides, city gardens, and parks where wildflowers provide nectar.	The open field that makes up most of the Site may contain host and nectar plants.	This species has a moderate probability of transient presence on Site as the parcel directly south of the Site was evaluated as containing both host and nectar plants (Golder Associates, 2018). The habitat, however, is not protected.

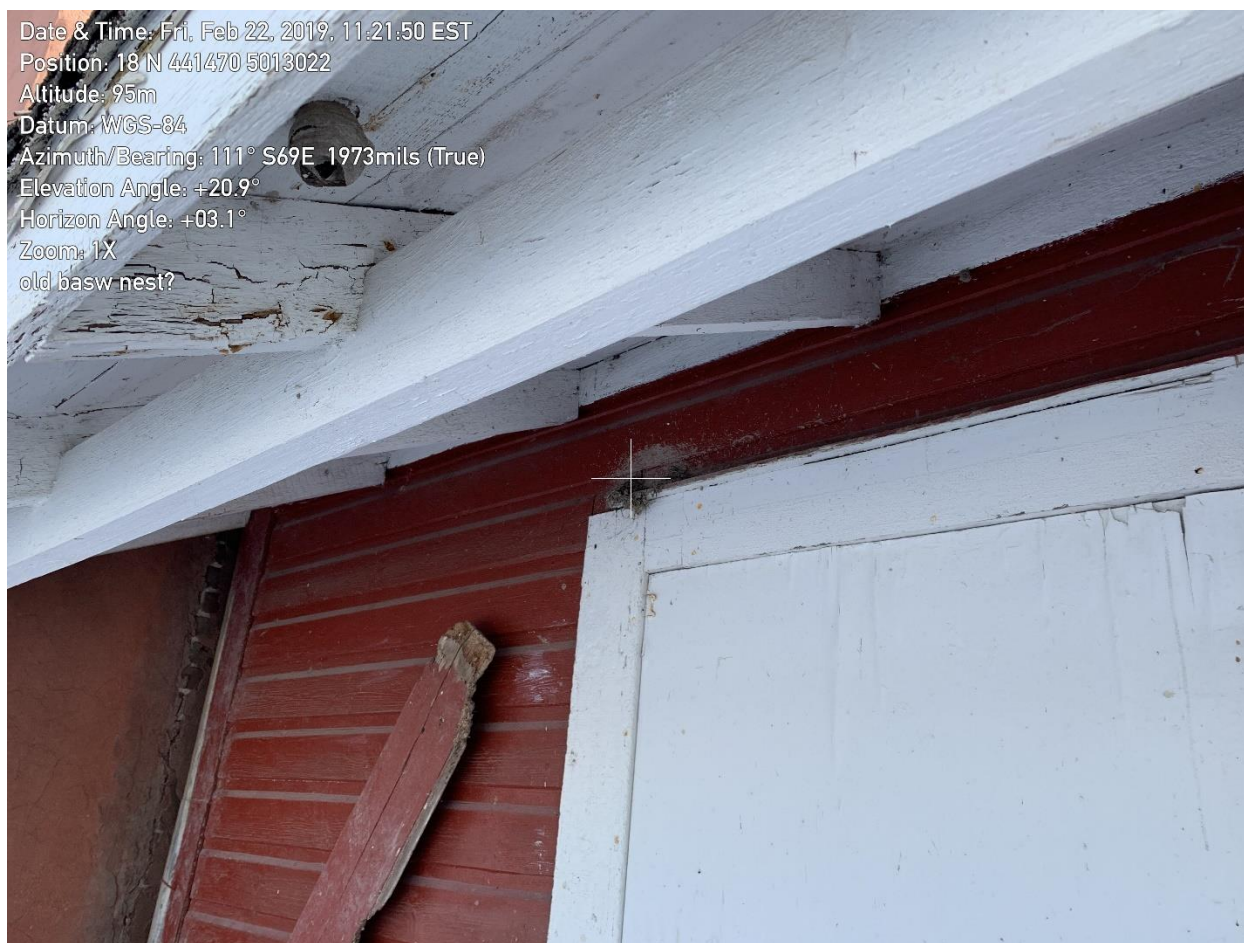


Figure 2. Photo of historic Barn Swallow nest under overhang of old farm house on the Site

The only SAR identified as present on or adjacent to the Site is Barn Swallow. Little Brown Bats, Tri-Coloured Bats, and Monarchs have some limited potential for transient presence, but no critical habitat is available on site. The old farm buildings on site could provide roosting habitat for bats but are not considered Significant Wildlife Habitat and are therefore not protected, and as such, bats are only a low concern for this project. Further, although some trees on site may provide roosting habitat, these trees do not make up the typical forest habitat that maternity roosting colonies are found in (i.e., they are not mature deciduous forest stands greater than 10 ha with a snag abundance of 10 snags/ha; MNR, 2011 and references within).

3.4 Natural Heritage System

No Natural Heritage System elements are specifically named or described on or adjacent to the Site. There are no Significant Valleylands, Significant Woodlands, or Life Science Areas of Natural and Scientific Interest located within 120m of the Site. The closest Provincially Significant Wetland, Stony Swamp, is ~6 km to the northwest.

4.0 PROJECT DESCRIPTION

The proposed development consists of six (6) blocks of development parcels, one (1) parkland block, and one (1) school site. The development parcels will consist of five (5) blocks intended for back to back townhouse and stacked townhouse dwellings, which will have a total of 602 dwelling units. The remaining parcel is proposed for two (2)-eight (8) storey mixed use apartment buildings. Building A is to house 172 dwelling units, while Building B is set to contain 139 dwelling units. Commercial units, most likely retail or service commercial type uses, are to be located on the ground floor of the apartment buildings. The identified school site is proposed to have flexible zoning that could permit residential uses should the School Board deem the lands as surplus to their needs.

The anticipated construction start date is Spring 2020 with closings starting in June 2021 and ending in November 2024.

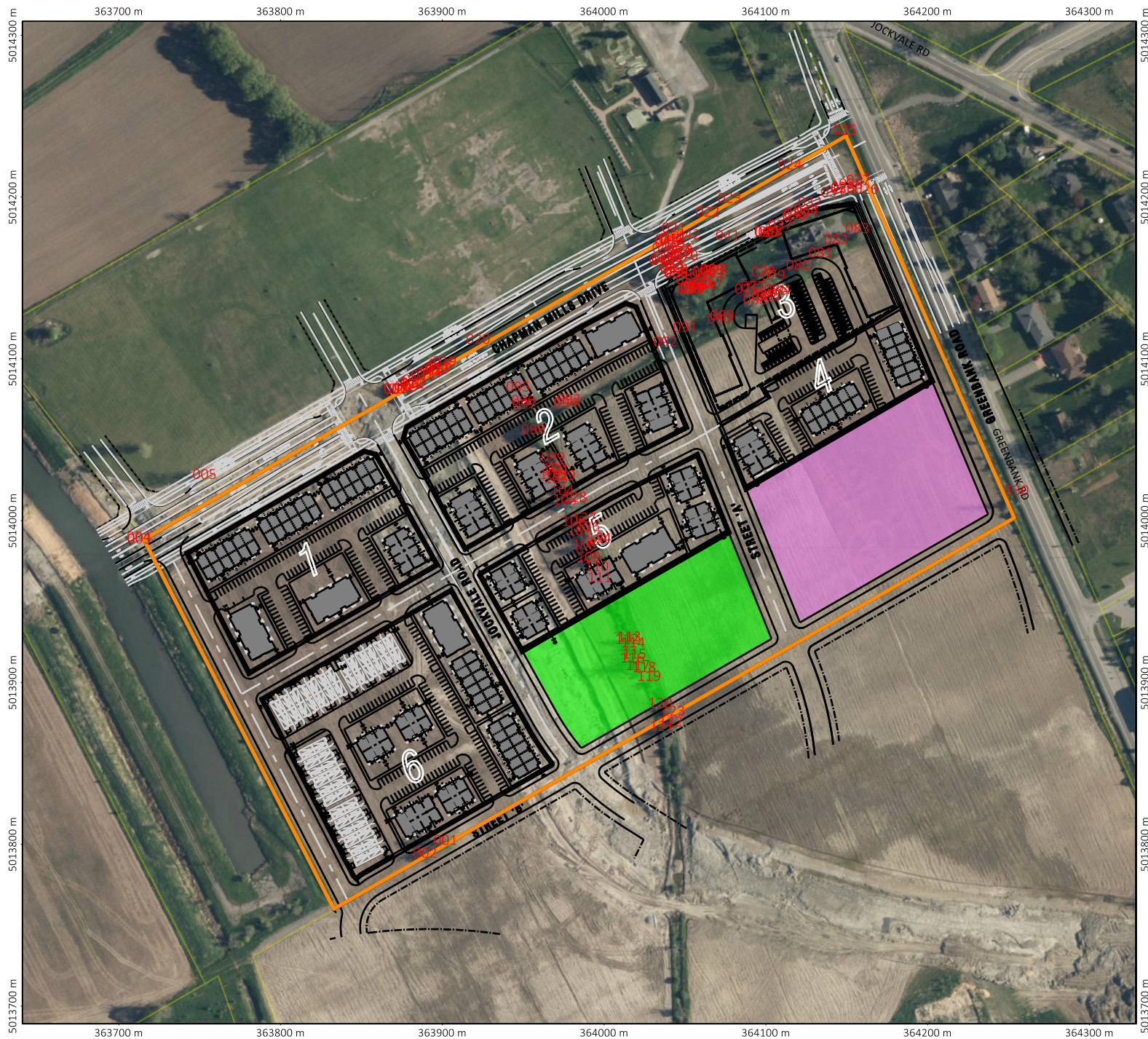






Figure 3. Proposed development

Legend

-  Property Line
- Trees
 -  Retained
 -  Removed
- Site Plan
 -  Park
 -  School

N



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5.0 IMPACT ASSESSMENT

5.1 Impacts to Surface Water and Fish Habitat

The Burnett Municipal Drain and its small tributaries will be removed from the Site. According to the HDFA by Bowfin and Muncaster (2016), the management recommendation for the drain is “Mitigation” and “No Management Required” for the tributaries. Accordingly, the functionality of the features can be replaced through the design of the stormwater management system for the broader community design. The use of bio-swales or vegetated swales, low-impact development strategies, and/or constructed wetlands is recommended as part of the overall stormwater management plan for the CDP area, but no mitigations are directly required on the Site itself.

5.2 Impacts to Site Trees

The entire site will be cleared and regraded, leading to the removal of all site trees. New lots on the Site will each include tree planting as a part of their landscape plans. Canopy coverage at maturity for the new community will be a function of the detailed landscape plan for the area, which is yet to be established. As most of the Site is currently denuded of any vegetation (current canopy cover is ~3.7%), tree planting across the Site at a density equivalent to one tree per lot, with additional plantings in the school parcel, should be anticipated to lead to a net increase in canopy cover for the area.

5.3 Impacts to Species at Risk

Following a site registration for Barn Swallow, and the implementation of mitigations obliged under that registration (consisting of the construction of a compensatory nesting structure), the MNRF will deem no negative impacts to the species. The removal of trees and site buildings and general grubbing of the Site outside of bat roosting season will prevent impacts to bats and to Monarch butterflies that could otherwise be transiently present.

5.4 Impacts to Natural Features

No significant natural features occur on site or within 120 m of the Site. Therefore, we predict no impacts to significant natural features from the proposed development.

6.0 MITIGATIONS

6.1 Mitigations for surface water features

The removal of the Burnett Municipal Drain and its tributaries can only be completed under a permit to alter a waterway issued by the Rideau Valley Conservation Authority. The proponent must implement all mitigation measures required under that permit.

To protect surface water features in the broader vicinity of the project, standard erosion and sediment control measures must be implemented on site during construction to limit the potential for sediment deposition off site by either surface water flows or by wind erosion. Details of the erosion and sediment control mitigation measures must be included in either the environmental management or servicing plan for the site.

6.2 Mitigations for Trees

To minimize impacts to trees located adjacent to the development area, the following protection measures are indicated as necessary during construction:

- Erect a fence beyond the critical root zone (CRZ, i.e. 10 x the trunk diameter at breast height) of trees. The fence should be highly visible (e.g., orange construction fence) and paired with erosion control fencing. Pruning of branches is recommended in areas of potential conflict with construction equipment;
- Do not place any material or equipment within the CRZ of trees;
- Do not attach any signs, notices or posters to any tree;
- Do not raise or lower the existing grade within the CRZ without approval;
- Tunnel or bore when digging within the CRZ of a tree;
- Do not damage the root system, trunk or branches of any tree; and
- Ensure that exhaust fumes from all equipment are NOT directed towards any tree's canopy.

The *Migratory Bird Convention Act* (Canada, 1994) protects the nests and young of migratory breeding birds in Canada. The City of Ottawa guidelines stipulate no clearing of trees or vegetation between April 1 and August 15, unless a qualified Biologist has determined that no nesting is occurring within 5 days prior to the clearing.

Trees are to be planted throughout the new community at a density equivalent to no less than one tree per lot, though the distribution of specific planting locations may be varied from necessarily planting on every lot, as may be dictated by individual lot considerations. Park and school lots will provide opportunity of additional tree planting. Specific trees to be planted on site will be identified in the landscape plan for the development. Trees species identified in this plan must be non-invasive and should be both native to the Ottawa area and tolerant of the Site's soil conditions and generally urban setting.

6.3 Mitigations for Species at Risk

As the proposed development involves demolishing the buildings that historically acted as habitat for Barn Swallows (and may currently act as habitat), the proponent must complete a site registration with the MNRF prior to the commencement of site works indicating that remnants of a single Barn Swallow nest were present. Proponent must comply with all obligations imposed by the Site registration including, but not necessarily limited to:

- Create and maintain a new nesting structure for Barn Swallows;
- Monitor the structure for three years and duly submit reports to the MNRF annually; and
- Time or conduct site works in a manner to prevent any impacts to any active nests.

The presence of SAR bats, although unlikely, cannot be dismissed completely. KAL therefore recommends the following:

- No clearing of trees on site should take place between May and August inclusive without first confirming the absence of bats. Trees should not be cleared within the month of June at all; and
- If bats are found in the old farm buildings to be demolished, they should be permanently and humanely evicted following Bat Conservation International's Guide to Safe & Humane Exclusions: <http://www.batcon.org/pdfs/education/fofug.pdf>

6.4 Mitigations for Natural Features

As no other natural features area on or adjacent to the Site, no other specific mitigations are required.

6.5 Mitigations for Wildlife

Wildlife is generally anticipated to be absent from the immediate development area if ground works begin during the winter of 2019. Some common, urban-tolerant wildlife, however, may occur within areas near the site and could, on occasion, traverse the development area. The following mitigation measures must be implemented on site during construction of the project:

- Do not harm, feed, or unnecessarily harass wildlife;
- Keep food wastes and other such garbage secured in wildlife-proof containers, and promptly remove this material from the Site (especially in warm weather);
- Drive slowly and avoid hitting wildlife;
- Avoid providing unintended wildlife shelters. Effective mitigation measures include:
 - Covering or containing piles of soil, fill, brush, rocks and other loose materials;
 - Capping ends of pipes where necessary to keep wildlife out;
 - Ensuring that trailers, bins, boxes, and vacant buildings are secured at the end of each work day to prevent access by wildlife;
- Check the work site (including previously cleared areas) for wildlife, prior to beginning work each day;
- Inspect protective fencing or other installed measures daily and after each rain event to ensure their integrity and continued function; and
- Monitor construction activities to ensure compliance with the project-specific protocol (where applicable) or any other requirements.

7.0 SUMMARY AND RECOMMENDATIONS

It is our professional opinion that no negative impacts are anticipated to listed SAR or other natural heritage features under the proposed property development if the recommended mitigations are followed.

Katherine Black, M.Sc.
Lead Biologist

Anthony Francis, PhD
Project Director

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Appendix 1
Qualifications of Report Authors

Katherine Black, MSc

Ms. Black is an ecologist with five years of comprehensive laboratory and field research experience in biology. She has worked in a variety of research settings, including technical laboratories, greenhouses, construction sites, and remote fly-in field sites. Katie's research background is predominantly in vegetation ecology; she has performed vegetation surveys in a variety of natural and disturbed environments, including wetland, tundra, and forest environments. She has also worked on projects in aquatic ecology, ecohydrology, and biostatistics. As a consulting ecologist with KAL, Ms. Black has contributed to Environmental Impact Statements and Tree Conservation Reports, SAR monitoring, and sorting and identification of aquatic macroinvertebrates.

Anthony Francis, PhD

Dr. Francis is an ecologist with over 18 years of experience in both terrestrial and aquatic projects. His doctoral thesis work on global plant diversity patterns included conducting tree surveys across North America. As a consulting ecologist he has worked on diverse ecological projects including literature reviews of forestry management and species-at-risk; environmental studies of contaminants (metals and suspended particulates); geomatic and statistical analyses for federal and provincial ministries as well as for private industry; and aquatic and terrestrial species inventories. He has contributed to Environmental Impact Statements and federal environmental screening assessments for creek realignments and other infrastructure projects across Ontario.