



Muncaster
Environmental
Planning Inc.

May 22, 2018

2447591 Ontario Inc.
c/o Mr. Andrew Finnson
Director, Land Development
Caivan Development Corporation
204-223 Colonnade Road South
Nepean, ON
K2E 7K3

Dear Mr Finnson:

RE: 2564 Tenth Line Road, Mer Bleue Urban Expansion (Area 11)
Tree Conservation Report and Environmental Impact Statement - Updated

Detached residential units, an extension of the stormwater management facility to the north, an elementary school, neighbourhood park, and parkettes are proposed for the approximately 40 hectare site at 2564 Tenth Line Road, between Mer Bleue and Tenth Line Roads, approximately 600 metres north of Wall Road. The site is in the expanded urban area of the City of Ottawa and includes the remaining upper reach of McKinnons Creek in the central-east portion. The site is described as Lot 4, Concession 11 of Cumberland Geographic Township.

For the purposes of this report Mer Bleue and Tenth Line Roads are considered to be in a north-south orientation.

Study Area Context

Land uses on and adjacent to the site include:

- Existing residences along Mer Bleue and Tenth Line Roads, with the site and lands to the south and east dominated by agricultural fields. In addition to McKinnons Creek, channels, generally in an east-west orientation, flow into McKinnons Creek. The features of tributaries are generally reflective of agricultural drains with a typical trapezoid cross-section and long straight reaches;
- Recently constructed and approved urban residential developments to the north and northeast of the site;
- A large, recently expanded to approximately 8 hectares, stormwater management pond immediately to the north of the site. The facility will be expanded further to the south as part of this proposed development. However, at this time the pond will not be expanded to include McKinnons Creek;

- The Navan Road/Page Road Woods Natural Area, identified as Area 111 in the former Region of Ottawa-Carleton's Natural Environment System Strategy (Brownell and Blaney, 1997) is to the west of the site, west of Mer Bleue Road (Map 1). The Natural Area was labelled the Notre-Dames des Champs Woods in the Urban Natural Area Environmental Evaluation Study (Muncaster and Brunton, 2005). Both studies gave the Natural Area a moderate rating. The Natural Area scored above average for two of the nine evaluation criteria (size and shape and representative flora criteria) and average for the connectivity and significant flora and fauna criteria. The 2005 site summary noted significant selective logging in the portion of the Natural Area closest to the site. The impact of invasive plants was considered moderate. The Natural Area was considered by Muncaster and Brunton (2005) as a significant groundwater recharge area and supporting a wildlife corridor function between Mer Bleue and woodlands to the north. The portion of the Natural Area closest to the site is designated *General Urban Area* on Schedule B of the City of Ottawa Official Plan. The closest portion of the Natural Area designated *Urban Natural Features* and zoned O1 (Parks and Open Space) is approximately 250 metres to the southwest of the southwest corner of the site, to the west of Mer Bleue Road and a residential development; and,
- No Provincially significant wetlands or Areas of Natural and Scientific Interest are within or adjacent to the site, with Mer Bleue to the south of the study area representing the closest representation of both features. The closest portion of Mer Bleue is approximately 1.7 kilometres to the southwest of the site. Mer Bleue is also the closest portion of the National Capital Greenbelt to the urban expansion area (NCC, 1996).

The site and lands to the south are designated *Urban Expansion Study Area* on Schedule B of the Official Plan (City of Ottawa, 2010) and zoned rural (*RU*), with *General Urban Area* lands to the west and *Developing Community (Expansion Area)* to the north and east. The floodplain along McKinnons Creek is identified on Schedules K and L1. No other components of the Natural Heritage System are in proximity to the site on the Schedule L1 Overlay of the Official Plan.

Proposed Development

This site is within the expanded Urban Area of the City of Ottawa (Area 11) and is referred to as Phases 4, 5 and 6 of Summerside West. In the range of 423 detached single residential units and 337 townhomes are proposed for the approximately 40 hectare site, along with an extension, to the northeast of McKinnons Creek, of the stormwater management facility from the north, a 2.6 hectare elementary school and a 2.1 hectare neighbourhood park in the west part of the site, and a 0.5 hectare park and a vista along the McKinnons Creek corridor in the east portion. As shown on the Concept Plan at the end of this report, Phase 4 is in the east portion of the site, with Phases 5 and 6 in the west half. The McKinnons Creek corridor will be retained with a minimum corridor width of 60 metres. The floodplain is contained within this corridor. Water quantity and quality, the latter to an enhanced level (80% total suspended sediment removal), will be treated with stormwater management facilities to the south of the site as part of the overall development of Area 11. The urban development will be on full municipal services as outlined in DSEL (2018)..

Methodology

This EIS was prepared in accordance with Section 4.7.8 of the City of Ottawa Official Plan (2010) following the EIS Guidelines and the Guidelines for City of Ottawa Tree Conservation Report, found at <http://ottawa.ca/en/city-hall/planning-and-development/official-plan-and-master-plans/official-plan/volume-1-official-0#4-7-8-environmental-impact-statement> and http://ottawa.ca/en/env_water/tlg/trees/preservation/guidelines/index.html, with guidance from the Natural Heritage Reference Manual (OMNR, 2010). This report includes the components of an Environmental Impact Statement as identified in Sections 4.7.8.11 a) through i) of the City of Ottawa Official Plan (City of Ottawa, 2010).

The major objective of this EIS is to determine the feature and functions of the on-site and adjacent natural environment conditions and to assess the anticipated impacts associated with the proposed urban residential development on these features and functions.

The following items were identified for particular attention in this EIS, recognizing that many of these issues are interrelated:

- what are the terrestrial habitat features of the proposed development site and adjacent lands and the associated sensitivities? Will significant natural heritage features such as Significant Woodlands be impacted?
- is there any aquatic habitat in the agricultural channels and what are the features of the McKinnons Creek corridor. Are any site alterations proposed within 30 metres of the normal high water mark of channels that support fish habitat and other features such as amphibians and wetlands or within 15 metres of the top of valley slope?;
- what are the recommended areas of tree retention and other mitigation measures to ensure that there are no unacceptable impacts on the significant natural heritage features? and,
- does the site support any other natural heritage features, including Species at Risk, that should be considered in the development of the site?

Colour aerial photography (1976 – 2016) was used to assess the natural environment features in the general vicinity of the site. As part of the natural environment studies for the Mer Bleue Urban Expansion Area field reviews of the site were undertaken on August 6th, September 6th and October 11th, 2013, April 28th, June 3rd and July 17th, 2014 and April 12th and August 9th, 2016 (see Muncaster (2015), PARSONS (2015) and Bowfin (2016) for more details). An additional field review was completed on February 20th, 2017 under sunny skies, an air temperature of 0 °C, and a light to moderate breeze. Snow cover was throughout the site on February 20th.

The field surveys and this report were completed by Bernie Muncaster, who has a Master's of Science in Biology and over thirty years of experience in completing natural environment assessments. The purpose of the Tree Conservation Report component is to establish which vegetation should be retained and protected on the site. The owner of the site is Mattamy Homes. Removal of the woody vegetation not identified in this report for retention is proposed for 2017, outside of the breeding bird season between April 15th and August 15th.

Existing Conditions

The topography of the site is virtually level with a very gentle slope towards the McKinnons Creek corridor. The site is dominated by poorly-drained silty clay soils. Golder (2015) summarized the subsurface conditions for the north portion of the Area 11 lands as generally consisting of a thick deposit of sensitive marine clay. The bedrock surface is expected to lie at depths in the range of 15 to 50 metres over shale of the Billings Formation. The results of the groundwater level measurements summarized by PARSONS (2015) indicate water level depths ranging between 0.7 and 2.6 metres all within the silty clay geological unit. It is anticipated that groundwater inflow rates to excavations will be limited due to the extensive low hydraulic conductivity of the extensive silty clay deposit underlying most of the site (PARSONS, 2015). PARSONS (2015) noted that the 'softer' un-weathered silty clay within the study area has very limited capacity to support additional stress, such as could be imposed by the foundation loads of buildings/houses, the weight of grade raise fill placed on the site, and the effects of groundwater level lowering. Conventional house construction is not feasible even with no grade raise filling due to the stress imparted by the relatively deeper foundations on the underlying compressible grey silty clay (PARSONS, 2015).

McKinnons Creek

McKinnons Creek is a large system whose headwaters are found to the northwest of the study area, west of Mer Bleue Road. Within the urban expansion area, the creek flows from northwest to southeast over a distance of roughly 1.5 kilometers. It then crosses Tenth Line Road approximately 80 metres north of Wall Road and continues for another 9.3 kilometres downstream until reaching Bear Brook south of Navan Road. McKinnons Creek has been altered (re-aligned and widened) through the years, including compensation works in 2006 in the vicinity of the site (Packman, 2008; DSEL, 2013). The habitat enhancement work included placement of pool/riffle complexes, creation of linear wetland habitat and spawning beds, installation of a meandering low flow channel, boulder placements, and riparian plantings (NEA, 2007; Packman, 2008).

Twenty-four fish species have been recorded in McKinnons Creek in the vicinity of the site and downstream, including common shiner, pearl dace, golden shiner, emerald shiner, spottail shiner, northern redbelly dace, rosyface shiner, mimic shiner, finescale dace, bluntnose minnow, fathead minnow, longnose dace, creek chub, white sucker, central mudminnow, trout perch, brook stickleback, rock bass, pumpkinseed, johnny darter, logperch, brown bullhead, and northern pike; bluntnose minnow, central mudminnow and brook stickleback being the most common (NEA, 2010). Well to the south of this site Packman (2006) reported 31 young-of-the-year northern pike collected downstream of Wall Road. Young-of-the-year northern pike were also recorded by City of Ottawa (Brian Bezaire, Water Environment Protection Program, City of Ottawa) in the McKinnons Creek system further downstream of the study area in the Village of Navan upstream of Smith Road in 2006 and 2007. More recently Mr. Bezaire reports City of Ottawa staff in October 2017 caught 24 northern pike in McKinnons Creek immediately downstream of the stormwater pond outlet. The pike all had a total length of approximately 250mm and were considered to be young-of-the-year. The pike were released in McKinnons Creek closer to Tenth Line Road.

For the 2013 and 2014 fieldwork, one of three stations (Station 3) created on McKinnons Creek in the urban expansion area was just north of the current site, above the current stormwater management pond outlet. At Station 3 the average channel and wetted widths were 2.3 meters and 0.9 metres, respectively. The average bankfull depth was approximately 24 cm and the average water depth was approximately 6 cm (range 1-20 cm), with three brook stickleback and four white sucker netted. The channel was dry later in the summer (Photo 1). The diversity and density of the fish community was much greater at Station 2, downstream of the current site, upstream of Tenth Line Road. Additional species at Station 2 included central mudminnow, golden shiner, fathead minnow, creek chub, brown bullhead, and pumpkinseed. In addition, the northern pike young-of-the-year observations discussed above add significantly to the fish community diversity. Glide morphological units were the dominant habitat type of McKinnons Creek at all stations in the urban expansion area, with fines the dominant substrate. At Station 3 the substrate was very soft, sinking to a depth of approximately 50 cm. Small areas of pebble, gravel and boulder provided some in-stream habitat structure diversity. The channel of McKinnons Creek in the urban expansion area was generally densely vegetated with aquatic species such as sago pondweed, wool-grass, softstem bulrush, lesser duckweed, giant bur-reed, broad-leaved cattail, narrow-leaved cattail, purple loosestrife, and reed canary grass. There is no woody vegetation or canopy cover along the McKinnons Creek corridor for the on-site reach (Photos 1 and 2).

Signs of erosion along the McKinnons Creek corridor in the vicinity of the site included failing and eroding channel. However the banks were generally well vegetated with herbaceous species, dominated by reed canary grass, wild carrot, wild parsnip, common sow-thistle, Canada anemone, tufted vetch, softstem bulrush, white sweet clover, bird's-foot trefoil, European stinging nettle, and Canada goldenrod. There was no canopy cover of note along McKinnons Creek in the vicinity of the site, with greater shrub growth and smaller trees providing limited cover further downstream (Photo 3).

In 2013, 23 frogs of two species (American toad and spring peeper) were recorded by Kilgour (2013) along the upper portion of McKinnons Creek, now removed, to the north of the site. Kilgour (2013) noted that the adjacent stormwater management pond, however, had hundreds of individuals of both species, leading Kilgour (2013) to suggest the frog habitat within McKinnons Creek was marginal at best. Spring peeper, grey tree frog, green frog, northern leopard frog, and American toad were amphibians recorded during the April, May, and June 2014 dusk amphibian surveys completed throughout the overall Mer Bleue Urban Expansion Area, but not the station closest to the site itself (on Drain 20 to the north of the site (see Muncaster (2015) and Bowfin (2016)).



*Photo 1 –Dry upstream reach of McKinnons Creek on the site
(Station 3, September 6, 2013)*



*Photo 2 –McKinnons Creek corridor looking north from the south portion of the site
(February 20, 2017)*



Photo 3 – Mid-reach of McKinnons Creek in the overall urban expansion area to the south of the current site. View looking southeast (April 28th, 2014)

Tributaries to McKinnons Creek

All of the tributaries of McKinnons Creek on the site and its peripheries are constructed drains one would typically expect to encounter within farmlands (Photos 4, 5, and 6). No fish were captured in any of the tributary channels during sampling completed in early April 2014. Due to the lack of water no sampling could be completed on September 6th, 2013 or April 28th, 2014. The substrate in the channels was generally dominated by fines. Typically the channels were choked with vegetation such as purple loosestrife, reed canary grass, broad-leaved cattail, narrow-leaved cattail, wool-grass, and European reed. Banks were generally fully vegetated with herbaceous vegetation including reed canary grass, Canada goldenrod, field sow-thistle, purple loosestrife, common ragweed and wild carrot. Scattered pussy willow and common buckthorn shrubs were along Drain 12 in the west portion of the south property line (see the blue numbers on Map 1 at the end of this report for Drain locations). A few staghorn sumac, white spruce, and Manitoba maple were along Drain 14 in the east portion of the south property line (Photo 6). There was no canopy cover over the on-site channels (Photos 4, 5, and 6).

With respect to the headwaters features assessment completed by Bowfin (2016) Drains 12 and 18 in the west portion of the site were dry in late April and September. As these channels had no riparian cover or wetlands associated with them and no fish were captured in the early spring sampling, these Drains were assigned a ‘No Management Required’ recommendation following the headwater assessment protocol (Bowfin, 2016). The other channels on site (Drains 13, 14, and 15) also had no riparian cover or wetlands associated with them and no fish were captured in the early spring sampling. However, as the Drains contained some flow in both the early and

late April sampling points, they received a management recommendation of ‘Mitigation’ (Bowfin, 2016).



Photo 4 - Drain 12 along the south property line looking upstream, west, to Mer Bleue Road (April 28, 2014)



Photo 5 – Drain 13 in the central-west portion of the site looking upstream, west, to Mer Bleue Road (April 28th, 2014)



Photo 6 Drain 14 along the east portion of the south property line looking west, west of Tenth Line Road (September 6, 2013)

Terrestrial Habitat

The site is dominated by agricultural fields which were cultivated in 2014 and each year since (Photos 7 and 8). Soybeans were planted in 2016. Based on historical aerial photography the site appears to have been cultivated fields for an extended period.

The only tree noted directly on the site, off of the site periphery, was a 12cm diameter at breast height (dbh) grey birch in the central-east portion of the site. Scattered regenerating stems less than 10cm dbh along the field edges included Manitoba maple, green ash, and white elm. Common buckthorn shrubs were common along the field edges along with pussy willow and staghorn sumac. Ground vegetation included common burdock, aster, goldenrod, wild carrot, orchard grass, reed canary grass, and wild parsnip.

Woody vegetation is present adjacent to portions of the south side boundary including:

- white spruce between 18cm and 23cm dbh and a coppice Manitoba maple south of the south site boundary between Tenth Line Road and McKinnons Creek (Photo 9);
- scattered trembling aspen, white birch, white elm, and Manitoba maple up to 18cm dbh just south of the south site boundary to the west of McKinnons Creek;
- an upland poplar deciduous forest to the south of the site just to the east of the middle point where the site boundary jogs ninety degrees to the south (Map 1). The young forest had an intermittent edge immediately to the south of the site. The largest tree in

immediate proximity to the site was a 35cm dbh trembling aspen about two metres to the south. The majority of trees were trembling aspens up to 20cm dbh (Photo 10), with crack willow up to 25cm dbh and smaller white elm, green ash, and Manitoba maple also present. The trees appeared to be in generally good condition except for some fungus and trunk damage noted on the larger poplars;

- a deciduous hedgerow immediately to the south of the site, east of Mer Bleue Road (Map 1, Photos 11 and 12). Trembling aspen is the dominant tree species, with most stems in the 20cm dbh range. A few of the poplars had extensive trunk damage. A 42cm white elm was the largest tree in the deciduous hedgerow. In the east portion of the hedgerow the trees are much more intermittent and the trunks are about a metre south of the property line (Photo 13). The largest tree is a 40cm dbh white elm. This tree appears to be in poorer condition with severely damaged branches. Trembling aspens in the east portion of the deciduous hedgerow are up to 34cm dbh. Common buckthorn is dominant in the hedgerow among the trees, with pussy willow and regenerating poplar shrubs also present along the south fence line.

No woody vegetation is adjacent to the north site boundary other than a row of white spruce in the 35cm dbh range immediately east of Mer Bleue Road in the southwest corner of 2431 Mer Bleue Road (Photo 14). The trunks of the spruce are about three metres to the north of the property line.

Wildlife noted on and adjacent to the site included black-capped chickadee, American crow, ring-billed gull, American robin, American goldfinch, and white-tailed deer and wild turkey tracks. No stick nests or other evidence of raptor use was observed on or adjacent to the site.



Photo 7 – East portion of the site looking east to Tenth Line Road from the middle of the site



Photo 8 – West portion of the site looking west to Mer Bleue Line Road from the middle-west portion of the site. The northeast portion of the Navan/Page Road Woods Natural Area is in the background, west of the site and Mer Bleue Road



Photo 9 – Manitoba maple and white spruce immediately to the south of the site west of Tenth Line Road. View looking east



Photo 10 – Northwest portion of the upland deciduous forest adjacent to the south property line in the middle of the site. View looking east towards Tenth Line Road



Photo 11 – West portion of the deciduous hedgerow on and adjacent to the south property line east of Mer Bleue Road. View looking east



Photo 12 – Central portion of the deciduous hedgerow along the south property line east of Mer Bleue Road. View looking west to Mer Bleue Road



Photo 13 – White elm adjacent to the south property line to the east of the main portion of the deciduous hedgerow. View looking west towards Mer Bleue Road



Photo 14 – A row of white spruce to the north of the north property line immediately east of Mer Bleue Road. View looking east

Significant Woodlands

There are no forests on the site. The adjacent deciduous forests are too young, small, and fragmented without forest interior habitat to meet the Significant Woodlands criteria in the Natural Heritage Reference Manual (OMNR, 2010). No other evaluation criteria present in OMNR (2010) such as linkages, woodland diversity, significant social functions, or uncommon characteristics such as rare vegetation communities were observed as part of the Area 11 Urban Expansion Area studies for this upland deciduous forest.

Significant Wildlife Habitat

The potential for significant wildlife habitat was assessed using the guidance in OMNR (2010) and MNR (2015). No flora, fauna, or ecological conditions identified in the background review or field surveys, including those completed for the Area 11 Urban Expansion Area, that would trigger a Significant Wildlife Habitat designation with respect to the ELC communities present were observed on or adjacent to the site. For example, the cultural habitats do not support waterfowl stopover or staging areas, colonial nesting bird breeding habitat or other examples of seasonal concentration areas, rare vegetation communities as noted in MNR (2015), or rare or specialized habitat including seeps or springs. No habitats for raptor wintering areas, older forests, areas of broken and fissured rock for potential use by snakes, or interior forest habitat are present on or adjacent to the site.

The potential linkage function in the general area is greatly limited by the expanding urban residential developments to the north, northeast, and northwest of the site; extensive agricultural lands to the east, south, and west; and the Village of Notre-Dame-des-Champs further to the south. Other than the Navan Road Woods to the west of Mer Bleue Road, there are no natural areas in the vicinity of the site. The lack of woody vegetation along the McKinnons Creek corridor impacts the potential linkage function along this corridor.

Species at Risk

The Ontario Ministry of the Natural Resources and Forestry's Make a Map: Natural Heritage Areas website was reviewed on February 14th, 2017 (www.giscoeapp.lrc.gov.on.ca/web/MNR/NHLUPS/NaturalHeritage/Viewer/Viewer.html). This site allows for a search of Threatened and Endangered species covered by the 2008 *Endangered Species Act*, as well as other species of interest. A search was conducted on the 1 km squares including the site and adjacent lands (18VR63-11 and -21). Twenty-one species of interest were identified for the 1 km squares, including three Species at Risk: Henslow's sparrow, bobolink, and eastern meadowlark. Henslow's sparrow utilizes unmaintained tall weedy fields (Ehrlich et al., 1988). This bird has not been reported in the overall City of Ottawa for several years. There were no observations of this bird in Ottawa during the 2001 -2005 breeding bird atlas field work and they have not been observed in the general area for over 20 years (DSEL, 2013). Bobolink and eastern meadowlark utilize larger areas of grasslands, including hay fields. The cultivated fields on the site do not represent suitable nesting habitat for these grassland Species at Risk.

The other potential species of interest are provincially rare and are predominantly found in aquatic and/or wetland habitats, including several dragonflies and damselflies (horned clubtail, eastern red damsel, forcipate emerald, brush-tipped emerald, ocellated emerald, Kennedy's emerald, delicate emerald, black meadowhawk, arrowhead spiketail, and green-striped darner), northern long sedge, long-scaled tussock sedge, cattail sedge, Greene's rush, twin-stemmed bladderwort, southern twayblade, and alder silk moss. Southern twayblade and Greene's rush are known from Mer Bleue, which at its closest point is about 1.7 kilometres to the southwest of the site. The large purple fringed-orchid is found in wetter portions of deciduous forests where sugar maple and American beech dominate.

The Breeding Bird Atlas results for the 10 km square 18VR63 were reviewed, with the threatened bobolink, eastern meadowlark, barn swallow, bank swallow, and chimney swift reported for the overall 10km square. Bobolink and eastern meadowlark are discussed above. No structures are present on the site that may be used for nesting by barn swallow (barns, garages, and other structures with access to open rafters) or chimney swift (open unlined chimneys). Bank swallow is a colonial nester; burrowing in eroding silt or sand banks and sand pit walls; habitat also not observed on or adjacent to the site.

The potential Species at Risk in the City of Ottawa was also reviewed. Many endangered and threatened species have historically been reported in the overall City, including butternut, American ginseng, eastern prairie fringed-orchid, wood turtle, spiny softshell, Blanding's turtle, Henslow's sparrow, loggerhead shrike, little brown myotis, northern long-eared bat, mottled duskywing, eastern small-footed myotis, olive hickorynut, chimney swift, eastern meadowlark, barn swallow, bank swallow, bobolink, eastern whip-poor-will, bald eagle, golden eagle, cerulean warbler, least bittern, eastern cougar, lake sturgeon, and American eel.

The habitat requirements of the above species along with those listed as special concern were reviewed. Along with correspondence from the Ministry of Natural Resources and Forestry (Appendix A), the following endangered or threatened Species at Risk are considered to have the *potential* to utilize the *overall* urban expansion area and adjacent lands: bobolink, eastern meadowlark, barn swallow, chimney swift, eastern whip-poor-will, and butternut. Bobolink, eastern meadowlark, barn swallow, and chimney swift are discussed above. The on-site habitat is not suitable for eastern whip-poor-will and none were heard during three spring 2014 targeted late evening field surveys for the overall urban expansion area. American eel is known from the Ottawa River, but has not been observed in McKinnon's Creek. The Creek will be protected and enhanced as part of the proposed development. Detailed surveys were undertaken for butternut for the overall urban expansion area in late June and early July, 2014. One 1cm dbh butternut was observed well to the south of the current site, in the southwest portion of the overall urban expansion area study area north of Wall Road.

In summary, the only threatened or endangered Species at Risk anticipated with the potential to utilize the current site is butternut. No butternuts were observed during the field surveys on or adjacent to the site.

Impact Assessment and Recommendations

The site is dominated by cultivated soybean fields and outside of the McKinnons Creek corridor contain no environment features of note. No Species at Risk are expected to have the potential to be on or adjacent to the site other than butternut which was not observed on or adjacent to the site. The aquatic habitat within McKinnons Creek and the riparian corridor will be protected with a setback of 30 metres from the normal high water mark or 15 metres from the top of slope, whichever is greater. No site alterations will occur within these setbacks other than recreational pathways at the outer edges of the setbacks.

Due to the servicing requirements of the Area 11 lands, including the need for higher on-site elevations to facilitate stormwater management on the very flat overall area, tree retention for the Area 11 lands north of Wall Road are not considered feasible. The trees along the south site periphery and the one on-site tree will not be retained. The trees immediately to the south of the site will not be removed at this time, but as they will not be retained over the long term, on-site measures to protect their critical root zones that extend onto the site are not considered necessary. The conifers in the southwest corner of 2431 Mer Bleue Road (marked on Map 2) may be temporarily retained. These white spruce are approximately three metres north of the north property line east of Mer Bleue Road. Their critical root zones will extend about 0.5 metres onto the site. It is recommended that this critical root zone be protected with sturdy construction fencing at least 1.3 metres in height.

Signs, notices, or posters are not to be attached to any tree. No grading, heavy machinery traffic, stockpiling of material, machine maintenance and refueling, or other activities that may cause soil compaction are to occur within three metres of the critical root zone of the trees to be retained and protected. The root system, trunk, and branches of the trees to be retained are to be protected from damage. If roots of retained trees are exposed during site alterations, the roots shall be immediately reburied with soil or covered with filter cloth, burlap or woodchips and kept moist until the roots can be buried permanently. A covering of plastic should be used to retain moisture during an extended period when watering may not be possible. Any roots that must be cut are to be cut cleanly to facilitate healing and as far from the tree as possible. Exhaust fumes from all equipment during construction will not be directed towards the canopy of the retained trees to the north of the site.

All of the supports and bracing for the protective fencing should be placed outside of the protected area and should be installed in such a way as to minimize root damage. Also, since the desired effect of the barrier is to prevent construction traffic from entering the tree's critical root zone, the barrier should be kept in place until all site servicing and house construction has been completed.

A generous planting of native trees and shrubs is recommended for the site landscape plans. In terms of planting sensitivities, tree and shrub species that have a high water demand are not recommended for the site due to the clay soils. These species include willows, poplars, and elm. It is important that native trees from a local seed stock be used whenever possible. Recommended species for planting include a mix of coniferous and deciduous trees such as

sugar maple, red maple, basswood, bur oak, red oak, tamarack, and white spruce, along with nannyberry, elderberry, and dogwood shrubs. Where possible, the woody vegetation should be planted in clusters to improve the wildlife benefit, such as within the open McKinnons Creek corridor.

Several options are identified by Golder (2015) and PARSONS (2015) to address the sensitive marine clays including light weight fill as backfill, limit grade raises, pre-loading, test filling and/or supporting the houses on driven steel piles.

The Navan Road/Page Road Woods Natural Area west of Mer Bleue Road is approximately 20 metres from the site at its closest point. Given that there is no hydrological connection from the site to the Natural Area and the presence of Mer Bleue Road greatly minimizes the potential for detectable indirect impacts, no impacts are anticipated on the northeast portion of the Navan Road/Page Road Woods Natural Area provided the recommended mitigation measures are properly implemented.

PARSONS (2015) anticipated that due to the site conditions the amount of on-site deep recharge is very small; likely between 0 and 10 mm/year. The amount of infiltration that flows laterally in the upper soil and discharges to the McKinnons Creek (interflow) is also interpreted to be very small due to site geology and the agricultural drainage that likely intercepts much of the shallow groundwater flow before it reaches McKinnons Creek. As the Creek was observed to be dry in the late summer most of the groundwater discharge appears to occur in the spring and fall, when the water table is closer to ground surface. The area where infiltration potentially contributes to the baseflow was estimated by PARSONS (2015) to be approximately 100 metres on both sides of the creek. The average total yearly infiltration within this area that contributes to the base flow is estimated to be approximately 0.6 mm (PARSONS, 2015). PARSONS (2015) noted that any reduction in baseflow to McKinnons Creek from the development will be more than compensated for by inputs from the expanded stormwater management pond immediately to the north of the site and to the northeast of McKinnons Creek, with the pond inputs extending over a longer period than the current inputs.

Implementation of Headwater Drainage Feature Management Recommendations

As described above and in Bowfin (2016), the agricultural drains tributary to McKinnons Creek in the east portion of the site were assigned a 'Mitigation' recommendation following the headwater features assessment guidelines. The management implications and options are that the channel may be maintained, relocated, or enhanced. No natural channel design is required and the habitat can be replaced by well-vegetated swales or constructed wetland features. Alternatively, the on-site flow can be replicated, with outlet flows at the upstream end of the system to add to downstream habitat. Outside of McKinnons Creek the on-site will not be retained in their existing alignment. The implementation of the headwater drainage features management recommendations will be achieved through the following measures:

- with the increase in flow contributions from the stormwater management pond, the flows in McKinnons Creek are anticipated to be maintained, with the base flow extended over a longer period, providing an increase in the duration of available fish habitat;

- extensive plantings of native trees and shrubs will occur along the riparian corridor of McKinnons Creek to provide woody vegetation cover. The trees and shrubs will be planted above the 1:100 year elevation but will be located to provide canopy cover for the channel as the vegetation matures and the shrubs spread. Other planted native vegetation of local stock along the corridor will provide local wildlife habitat and aesthetic functions; and,
- amphibian habitat will also be enhanced adjacent to the expanded stormwater management pond and elsewhere along the McKinnons Creek corridor. This habitat will be designed to prevent fish access to maximize amphibian populations. The constructed wetland habitat will also feature basking logs and sand berms to add to the turtle habitat.

The following additional mitigation measures are recommended:

1. Woody vegetation that must be removed is to be cut outside of the breeding bird period of April 15th to August 15th unless a breeding bird survey identifies no nesting activity within five days of the proposed vegetation removal;
2. The contractor is to be aware of potential Species at Risk in the vicinity of the study corridor including butternut and barn swallow. Appendix 1 of City of Ottawa (2015) describes these species. Appendix 1 should be modified for this construction project to include the contact information of the project biologist. Any Species at Risk sightings are to be immediately reported to the project biologist and the Ministry of the Natural Resources and Forestry and activities modified to avoid impacts until further direction by the Ministry;
3. The work areas are to be isolated with properly installed and maintained silt fencing;
4. As recommended in City of Ottawa (2015), prior to beginning work each day, wildlife is to be checked for by conducting a thorough visual inspection of the work space and immediate surroundings. See Section 2.5 of the City's Protocol for Wildlife Protection during Construction (City of Ottawa, 2015) for additional recommendations on construction site management. Any turtles and snakes in the work areas are to be relocated to the McKinnons Creek corridor to the south of the site. Animals should be moved only far enough to ensure their immediate safety. See Appendix 1 and the links in Section 4 of City of Ottawa (2015) for suggestions on how to effectively relocate turtles and snakes;
5. Proper sediment and erosion control is important for general environmental protection. Seepage barriers such as silt fencing, straw bale check dams, and other sediment and erosion control measures will be installed as required to OPSD requirements in any temporary drainage ditches and around areas disturbed during construction and stockpiles of fine material. These control measures must be properly maintained to maximize their function during construction. These measures are to be described in an erosion and sediment control plan and must be monitored and properly implemented;
6. As the water table is observed to be within 1 metre of ground surface at some locations, pumping of groundwater is likely to occur, although it is anticipated that groundwater inflow rates to excavations will be limited due to the extensive low hydraulic conductivity of the clay deposits. Any groundwater encountered during construction will

be pumped into a proper filter mechanism such as a sediment trap or filter bag prior to being released to the environment. The treated discharge will be directed away from the McKinnons Creek corridor;

7. Snow removal is never to be placed within the protected McKinnons Creek corridor;
8. Extensive plantings of native trees and shrubs of local origin, including along the open McKinnons Creek corridor, to help offset the loss of existing trees and improve the riparian habitat of the corridor;
9. Municipal by-laws and provincial regulations for noise will be followed and utilities will be located as required in the vicinity of the site prior to construction; and,
10. Waste will be managed in accordance with provincial regulations. The contractor will have a spill kit on-hand at all times in case of spills or other accidents.

Schedule of Proposed Works

It is proposed to remove the woody vegetation in 2018, outside of the breeding bird season from April 15th to August 15th. City forestry staff is to be contacted at least two business days before the start of construction to ensure the protective fencing is properly installed. A Tree Cut Permit will be required for the removal of all trees greater than 10cm dbh.

Conclusion

This site is within the expanded Urban Area of the City of Ottawa (Area 11). Detached residences, townhomes, an extension of the stormwater management facility to the northeast of McKinnons Creek, an elementary school, neighbourhood park, and parkettes are proposed for the approximately 40 hectare site. Outside of the McKinnons Creek corridor there are no significant natural heritage features on or adjacent to the site, including no Species at Risk utilization. McKinnons Creek and the associated riparian corridor will be retained within an open space corridor.

No impacts are anticipated on the northeast portion of the Navan Road/Page Road Woods Natural Area, the closest Natural Area to the site. To assist in mitigating a minor amount of tree removal on and adjacent to the south property line and removal of the vegetation along agricultural drains, plantings of native trees and shrubs will occur along the currently open McKinnons Creek corridor and elsewhere on the site.

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Please call if you have any questions regarding this Tree Conservation Report and Environmental Impact Statement.

Yours Sincerely,
MUNCASTER ENVIRONMENTAL PLANNING INC.



Bernie Muncaster, MSc.
Principal

\caivanmbtreis



Legend

-  Site
-  Navan/Page Road Woods Natural Area
-  Headwater Features
(Drain # in Blue)

Vegetation Communities

-  Agricultural field
-  Deciduous hedgerow
-  Upland poplar deciduous forest

Approx. Scale 1: 6,800



Map 1

FILE: 16-19

February 13, 2017

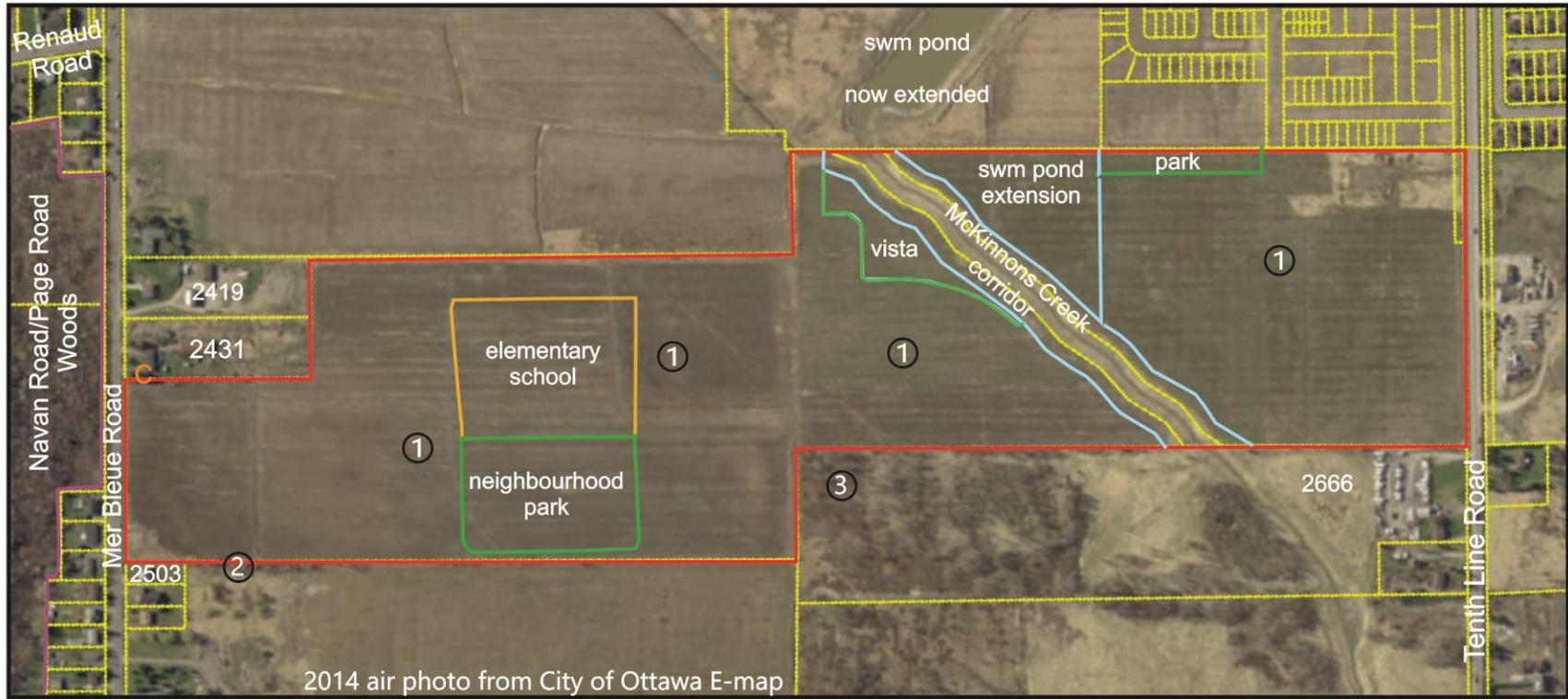
Prepared for: Caivan Communities

Prepared by:



ENVIRONMENTAL IMPACT STATEMENT

2564 Tenth Line Road
Cumberland Geographic Township, City of Ottawa



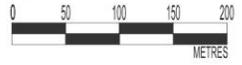
Legend

- Site
- Navan/Page Road Woods Natural Area
- Adjacent conifers to be retained at this time

Vegetation Communities

- ① Agricultural field
- ② Deciduous hedgerow
- ③ Upland poplar deciduous forest

Approx. Scale 1: 6,800



Map 2

FILE: 16-19

February 13, 2017

Prepared for: **Caivan Communities**

Prepared by: Muncaster Environmental Planning Inc.

PROPOSED CONSERVED VEGETATION
2564 Tenth Line Road
Cumberland Geographic Township, City of Ottawa

MAP 3 – CONCEPT PLAN

Summerside West

Phase 4, 5 and 6

February 26, 2018



50 Hines Road, Suite 100
 Kanata, Ontario, K2K 2M5
 Tel. (613) 831-4115
 Fax. (613) 831-9060
www.mattamyhomes.com

LOT COUNTS	PH4	PH5	PH6	TOTAL	
21' Village TH	0	0	82	82	11%
21' Widelot TH	90	0	165	255	34%
30' Single	62	115	0	177	23%
30'C Single	16	24	0	40	5%
36' Single	71	87	0	158	21%
43' Single	18	30	0	48	6%
TOTAL	257	256	247	760	

Legend	
	21' Village TH
	21' Widelot TH
	Singles
	Open Space/ Park
	Vista



APPENDIX A

**MINISTRY of NATURAL RESOURCES
CORRESPONDENCE**

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Thu. Mar 23, 2017

Bernie Muncaster
Muncaster Environmental Planning Inc
491 Buchanan Crescent
Ottawa
K1J 7V2
(613) 748-3753
bmuncaster@rogers.com

Attention: Bernie Muncaster

Subject: Information Request - Developments
Project Name: Large Scale Development - 2564 Tenth Line Rd.
Site Address: 2564 Tenth Line Rd., Orleans, ON
Our File No. 2017_CUM-3950

Natural Heritage Values

The Ministry of Natural Resources and Forestry (MNRF) Kemptville District has carried out a preliminary review of the above mentioned area in order to identify any potential natural resource and natural heritage values.

The following Natural Heritage values were identified for the general subject area:

- Fish Nursery, Muskellunge Nursery Area – **confirmed on site**
- Fish Nursery, Pumpkinseed Nursery Area (Non-Sensitive) – **confirmed on site**
- Fish Nursery, White Sucker Nursery Area (Non-Sensitive) – **confirmed on site**
- Stream, McKinnons Creek
- Wintering Area, Raptor – **confirmed on site**

Municipal Official Plans contain information related to natural heritage features. Please see the local municipal Official Plan for more information, such as specific policies and direction pertaining to activities which may impact natural heritage features. For planning advice or Official Plan interpretation, please contact the local municipality. Many municipalities require environmental impact studies and other supporting studies be carried out as part of the development application process to allow the municipality to make planning decisions which are consistent with the Provincial Policy Statement (PPS, 2014).

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The MNRF strongly encourages all proponents to contact partner agencies and appropriate municipalities early on in the planning process. This provides the proponent with early knowledge regarding agency requirements, authorizations and approval timelines; Ministry of the Environment and Climate Change (MOECC) and the local Conservation Authority may require approvals and permitting where natural values and natural hazards (e.g., floodplains) exist.

As per the Natural Heritage Reference Manual (NHRM, 2010) the MNRF strongly recommends that an ecological site assessment be carried out to determine the presence of natural heritage features and species at risk and their habitat on site. The MNRF can provide survey methodology for particular species at risk and their habitats.

The NHRM also recommends that cumulative effects of development projects on the integrity of natural heritage features and areas be given due consideration. This includes the evaluation of the past, present and possible future impacts of development in the surrounding area that may occur as a result of demand created by the presently proposed project.

In Addition, the following Fish species were identified: bluntnose minnow, brassy minnow, brook stickleback, brown bullhead, Carps and Minnows, central mudminnow, common shiner, creek chub, emerald shiner, fathead minnow, finescale dace, golden shiner, johnny darter/tesselated darter, logperch, longnose dace, mimic shiner, muskellunge, northern pike, northern redbelly dace, pearl dace, pumpkinseed, rock bass, rosyface shiner, trout-perch, white sucker.

Wildland Fire

MNRF woodland data shows that the site contains no woodlands. The lands should be assessed for the risk of wildland fire as per PPS 2014, Section 3.1.8 "*Development shall generally be directed to areas outside of lands that are unsafe for development due to the presence of hazardous forest types for wildland fire. Development may however be permitted in lands with hazardous forest types for wildland fire where the risk is mitigated in accordance with wildland fire assessment and mitigation standards*". Further discussion with the local municipality should be carried out to address how the risks associated with wildland fire will be covered for such a development proposal. Please see the Wildland Fire Risk Assessment and Mitigation Guidebook (2016) for more information.

Significant Woodlands

Section 2.1.5 b) of the PPS states: *Development and site alteration shall not be permitted in significant woodlands unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.* The 2014 PPS directs that significant woodlands must be identified following criteria established by the Ontario Ministry of Natural Resources and

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Forestry, i.e. the Natural Heritage Reference Manual (NHRM), 2010. Where the local or County Official Plan has not yet updated significant woodland mapping to reflect the 2014 PPS, all wooded areas should be reviewed on a site specific basis for significance. The MNRF Kemptville District modelled locations of significant woodlands in 2011 based on NHRM criteria. The presence of significant woodland on site or within 120 metres should trigger an assessment of the impacts to the feature and its function from the proposed development.

Significant Wildlife Habitat

Section 2.1.5 d) of the PPS states: *Development and site alteration shall not be permitted in significant wildlife habitat unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.* It is the responsibility of the approval authority to identify significant wildlife habitat or require its identification. The MNRF has several guiding documents which may be useful in identification of significant wildlife habitat and characterization of impacts and mitigation options:

- Significant Wildlife Habitat Technical Guide, 2000
- The Natural Heritage Reference Manual, 2010
- Significant Wildlife Habitat Mitigation Support Tool, 2014
- Significant Wildlife Habitat Criteria Schedule for Ecoregion 5E and 6E, 2015

The habitat of special concern species (as identified by the Species at Risk in Ontario list) and Natural Heritage Information Centre tracked species with a conservation status rank of S1, S2 and S3 may be significant wildlife habitat and should be assessed accordingly.

Water

If any in-water works are to occur, there are timing windows for which work in water should not take place (see below). Appropriate measures should be taken to minimize and mitigate impact on water quality and fish habitat, including:

- installation of sediment and erosion control measures;
- avoiding the removal, alteration, or covering of substrates used for fish spawning, feeding, over-wintering or nursery areas; and
- debris control measures to manage falling debris (e.g. spalling).

Timing windows (no in-water works) in MNRF Kemptville District*:

Warmwater and cool water	→ March 15 – June 30
St. Lawrence River & Ottawa River	→ March 15 – July 15
Coldwater	→ October 1 – May 31
Big Rideau Lake & Charleston Lake	→ October 1 – June 30

If the proposed activity is known to have an impact on the species mentioned above or any other SAR, a permit under the Endangered Species Act, 2007 (ESA) may be required. It is recommended that MNR Kemptville be contacted prior to any activities being carried out to discuss potential survey and mitigation measures to avoid contravention of the ESA.

Habitat has been identified within the project area that appears suitable for one or more species listed by SARO as Special Concern (SC). In Addition, one or more Special Concern species has been documented to occur either on the site or nearby. Species listed as Special Concern are not protected under the ESA, 2007. However, please note that some of these species may be protected under the Fish and Wildlife Conservation Act. Species of Special Concern for consideration:

- Common Nighthawk (SC)
- Milksnake (SC)
- Short-eared Owl (SC)
- Snapping Turtle (SC)

If any of these or any other species at risk are discovered throughout the course of the work, and/or should any species at risk or their habitat be potentially impacted by on site activities, MNR should be contacted immediately and operations be modified to avoid any negative impacts to species at risk or their habitat until further direction is provided by MNR.

Please note that information regarding species at risk is based on documented occurrences only and does not include an interpretation of potential habitat within or in proximity to the site in question. Although this data represents the MNR's best current available information, it is important to note that a lack of information for a site does not mean that additional features and values are not present. i.e.: Species at Risk (SAR) or their habitat could still be present at the location or in the immediate area. It is the responsibility of the proponent to ensure that species at risk are not killed, harmed, or harassed; or their habitat is not damaged or destroyed through the activities carried out on the site. The MNR continues to strongly encourage ecological site assessments to determine the potential for SAR habitat and occurrences. When a SAR or potential habitat for a SAR does occur on a site, it is recommended that the proponent contact the MNR for technical advice and to discuss what activities can occur without contravention of the Act. If an activity is proposed that will contravene the Act (such as Section 9 or 10), the proponent must contact the MNR to discuss the potential for a permit (Section 17). For specific questions regarding the Endangered Species Act (2007) or SAR, please contact a district Species at Risk Biologist at sar.kemptville@ontario.ca. For more information regarding the ESA (2007), please see attached ESA Information Sheet.

Please note: The advice in this letter may become invalid if:

- The Committee on the Status of Species at Risk in Ontario (COSSARO) re-assesses the status of the above-named species OR adds a species to the SARO List such that the section 9 and/or 10 protection provisions apply to those species.
- Additional occurrences of species are discovered.
- Habitat protection comes into force for one of the above-mentioned species through the creation of a habitat regulation (general habitat protection above).

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* Please note: Additional timing restrictions may apply as they relate to endangered and threatened species for works in both water and wetland areas.

Timing windows when in-water work is restricted – based on species presence:

	FISH SPECIES	TIMING WINDOW (No in-water works)
Spring:	Walleye	March 15 to May 31
	Northern Pike	March 15 to May 31
	Lake Sturgeon	May 1 to June 30
	Muskellunge	March 15 to May 31
	Largemouth/Smallmouth Bass	May 1 to July 15
	Rainbow Trout	March 15 to June 15
	Other /Unknown Spring Spawning Species	March 15 to July 15

	FISH SPECIES	TIMING WINDOW (No in-water works)
Fall:	Lake Trout	October 1 to May 31
	Brook Trout	October 1 to May 31
	Pacific Salmon	September 15 to May 31
	Lake Whitefish	October 15 to May 31
	Lake Herring	October 15 to May 31
	Other /Unknown Fall Spawning Species	October 1 to May 31

Additional approvals and permits may be required under the Fisheries Act. Please contact Fisheries and Oceans Canada to determine requirements and next steps. There may also be approvals required by the local Conservation Authority or Transport Canada. As the MNRF is responsible for the management of provincial fish populations, we request ongoing involvement in such discussions in order to ensure population conservation.

Species at Risk

A review of the Natural Heritage Information Centre (NHIC) and internal records and aerial photograph interpretation indicate that there is a potential for the following threatened (THR) and/or endangered (END) species on the site or in proximity to it:

- American Eel (END)
- Barn Swallow (THR)
- Blanding's Turtle (THR)
- Bobolink (THR) – confirmed on site
- Eastern Meadowlark (THR) – confirmed on site

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- Henslow's Sparrow (END) – high potential on site
- Sensitive Species (END)

All endangered and threatened species receive individual protection under section 9 of the ESA and receive general habitat protection under Section 10 of the ESA, 2007. Thus any potential works should consider disturbance to the individuals as well as their habitat (e.g. nesting sites). General habitat protection applies to all threatened and endangered species. Note some species in Kemptville District receive regulated habitat protection. The habitat of these listed species is protected from damage and destruction and certain activities may require authorization(s) under the ESA. For more on how species at risk and their habitat is protected, please see: <https://www.ontario.ca/page/how-species-risk-are-protected>.

If the proposed activity is known to have an impact on any endangered or threatened species at risk (SAR), or their habitat, an authorization under the ESA may be required. It is recommended that MNRF Kemptville be contacted prior to any activities being carried out to discuss potential survey protocols to follow during the early planning stages of a project, as well as mitigation measures to avoid contravention of the ESA. Where there is potential for species at risk or their habitat on the property, an Information Gathering Form should be submitted to Kemptville MNRF at sar.kemptville@ontario.ca.

The Information Gathering Form may be found here:
<http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/FormDetail?OpenForm&ACT=RDR&TAB=PROFILE&ENV=WWE&NO=018-0180E>

For more information on the ESA authorization process, please see:
<https://www.ontario.ca/page/how-get-endangered-species-act-permit-or-authorization>

Habitat has been identified within the project area that appears suitable for one or more species listed by SARO as Special Concern (SC). One or more special concern species has been documented to occur either on the site or nearby. Species listed as special concern are not protected under the ESA, 2007. However, please note that some of these species may be protected under the Fish and Wildlife Conservation Act and/or Migratory Birds Convention Act. Again, the habitat of special concern species may be significant wildlife habitat and should be assessed accordingly. Species of special concern for consideration:

- Monarch (SC) – high potential on site
- Snapping Turtle (SC) – confirmed on site

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If any of these or any other species at risk are discovered throughout the course of the work, and/or should any species at risk or their habitat be potentially impacted by on site activities, MNRF should be contacted and operations be modified to avoid any negative impacts to species at risk or their habitat until further direction is provided by MNRF.

Please note that information regarding species at risk is based largely on documented occurrences and does not necessarily include an interpretation of potential habitat within or in proximity to the site in question. Although this data represents the MNRF's best current available information, it is important to note that a lack of information for a site does not mean that additional features and values are not present. It is the responsibility of the proponent to ensure that species at risk are not killed, harmed, or harassed, and that their habitat is not damaged or destroyed through the activities carried out on the site.

The MNRF continues to strongly encourage ecological site assessments to determine the potential for SAR habitat and occurrences. When a SAR or potential habitat for a SAR does occur on a site, it is recommended that the proponent contact the MNRF for technical advice and to discuss what activities can occur without contravention of the Act. For specific questions regarding the Endangered Species Act (2007) or SAR, please contact MNRF Kemptville District at sar.kemptville@ontario.ca.

The approvals processes for a number of activities that have the potential to impact SAR or their habitat have recently changed. For information regarding regulatory exemptions and associated online registration of certain activities, please refer to the following website: <https://www.ontario.ca/page/how-get-endangered-species-act-permit-or-authorization>.

Please note: The advice in this letter may become invalid if:

- The Committee on the Status of Species at Risk in Ontario (COSSARO) re-assesses the status of the above-named species OR adds a species to the SARO List such that the section 9 and/or 10 protection provisions apply to those species; or
- Additional occurrences of species are discovered on or in proximity to the site.

This letter is valid until: Fri. Mar 23, 2018

The MNRF would like to request that we continue to be circulated on information with regards to this project. If you have any questions or require clarification please do not hesitate to contact me.

Sincerely,

**Ministry of Natural
Resources and Forestry**

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Joffre Côté
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Encl.\
-ESA Infosheet
-NHIC/LIO Infosheet