



McKINLEY
ENVIRONMENTAL
SOLUTIONS

Combined Environmental Impact Statement &
Tree Conservation Report
762 March Road and 335 Sandhill Road Development



December 2018
Prepared for Minto Communities

McKINLEY ENVIRONMENTAL SOLUTIONS
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EXECUTIVE SUMMARY

McKinley Environmental Solutions (MES) was retained by Minto Communities (Minto) to prepare a Combined Environmental Impact Statement (EIS) and Tree Conservation Report (TCR) for the proposed development of the 762 March Road and 335 Sandhill Road properties (the Site) (PIN 045171989, 045171994 and 045171993). The Site includes two (2) parcels which are located on either side of Shirley's Brook, which runs in an approximately north to south direction through the middle of the Study Area. The western parcel includes frontage on March Road and is located at the municipal address 762 March Road. The eastern parcel includes frontage on Sandhill Road and is located at the municipal address 335 Sandhill Road. The two (2) parcels are proposed to be developed concurrently by Minto, and hence are addressed together in this Combined EIS and TCR. The western parcel is approximately 0.76 ha in size, whereas the eastern parcel is approximately 1.42 ha in size. Shirley's Brook runs through an open space corridor that is owned by the City of Ottawa. The open space corridor varies between approximately 40 m and 60 m wide. The Study Area addressed by this Combined EIS and TCR includes the western parcel, the eastern parcel, and the open space corridor surrounding Shirley's Brook, which collectively are approximately 2.95 ha in size. The current zoning is Residential Fourth Density (R4).

The Study Area exists within the developed portion of Kanata (Ottawa) and is predominantly surrounded by existing developed properties. The Study Area is bounded to the west by March Road, beyond which are existing subdivisions. An existing medium density residential development is located south of the western parcel, whereas the area south of the eastern parcel includes an existing grave site and church. The Study Area is bounded by Sandhill Road to the east, beyond which is a school. The properties directly north of the eastern parcel are developed as single family homes and an existing church. The property north of the western parcel has recently been proposed for development by an adjacent owner (788 March Road). Therefore, the Study Area is surrounded by existing and/or planned development on all sides, and the only significant natural heritage feature found in the vicinity is Shirley's Brook and its open space corridor. The Study Area itself is dominated by highly disturbed Cultural Meadow. Several hedgerows and small tree stands are also present within the Study Area.

The development of the western parcel will be submitted to the City of Ottawa as a Site Plan Application, whereas the development to the eastern parcel will be submitted as a separate Draft Plan of Subdivision Application. The western parcel will be developed to include five (5) multi-level terrace residential buildings with a total of approximately 60 units. The western parcel will also include two (2) entrances from March Road, an amenity space/snow storage, and approximately 78 surface parking spaces. The eastern parcel will be developed to include approximately 60 executive



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townhomes. The eastern parcel will include one (1) entrance from Sandhill Road. The Site Plan/Draft Plan of Subdivision includes a 30 m setback from the normal high-water mark of Shirley's Brook on both sides of the open space corridor. Currently the open space corridor surrounding Shirley's Brook varies in width between approximately 40 m and 60 m. The setbacks included as part of the proposed development will expand the current corridor width so that it is a minimum of 60 m wide throughout the Study Area.

Stormwater from the western parcel will be directed to the existing March Road storm sewer, which outlets to the existing SWMP Pond No.1 - West. The existing SWMP Pond No.1 - West was sized to provide quantity and quality control for the western parcel. Stormwater from the eastern parcel will be directed to the existing Sandhill Road storm sewer, which outlets to the existing SWMF Pond No.2. The Shirley's Brook East SWMF Pond No.2 was sized to provide quantity and quality control for the eastern parcel. Both parcels will receive municipal sewer and water. All services were shown to connect to the western and eastern parcels from March Road and Sandhill Road (respectively), and no overland or buried connections are required to cross Shirley's Brook.

Previous studies have demonstrated that Shirley's Brook provides Category 2 habitat for Blanding's Turtle. Category 2 habitat includes the watercourse itself and the surrounding 30 m of terrestrial habitat. The proposed 30 m vegetated setback from the normal high-water mark of Shirley's Brook (on both sides) will avoid all areas of Category 2 habitat. The development area falls within the definition of Category 3 habitat for Blanding's Turtle, which is designated primarily to provide a potential corridor for Blanding's Turtle movement. However, the Category 3 habitat found within the Study Area has little functional habitat value, due to the fact that all surrounding areas are developed. The loss of non-functional Category 3 habitat is not considered significant. Any potential impacts to Blanding's Turtles will be mitigated by the installation of a new Blanding's Turtle exclusion system along the outer edges of the Shirley's Brook setbacks. The exclusion system will provide a benefit to the species by helping to mitigate the existing risk of road mortality on March Road and Sandhill Road. No other significant Species at Risk issues were noted for the Study Area.

The proposed 30 m setback from the normal high-water mark of Shirley's Brook (on both sides) will protect the existing riparian habitat surrounding the watercourse. As such, the development is not anticipated to infringe on the area regulated by the Mississippi Valley Conservation Authority. Therefore, a permit for development from the Mississippi Valley Conservation Authority under Ontario Regulation 153/06 is not anticipated to be required.

Shirley's Brook and the associated Blanding's Turtle habitat are the only significant natural heritage features found to exist within or adjacent to the Study Area. Pending that the regulatory, mitigation, and avoidance measures outlined in this report are implemented appropriately, the development of

the 762 March Road and 335 Sandhill Road properties is not anticipated to have a significant negative effect on the natural features and functions.



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1.0 INTRODUCTION

1.1 Reading the Integrated Tree Conservation Report (TCR)

This report is presented as a Combined Environmental Impact Statement (EIS) and Tree Conservation Report (TCR). Readers who are principally interested in the TCR may choose to read only those portions of the report where the section headings are marked **(TCR)**. This includes Sections 1.3, 1.4, 1.6, 2.0.1, 3.2, 3.3, and 4.1. Readers who are interested in the EIS should read the entire report, as information included in the TCR sections is not reiterated.

1.2 Scoping the Environmental Impact Statement

This EIS was undertaken following the City of Ottawa's Environmental Impact Statement Guidelines. Following the City guidelines, the Environmental Impact Statement (EIS) includes the following:

- Documentation of existing natural features on and around the Study Area;
- Identification of potential environmental impacts of the project;
- Recommendations for ways to avoid and reduce any negative impacts; and
- Proposal of ways to enhance natural features and functions.

This EIS was prepared with guidance from the *Natural Heritage Reference Manual* (OMNRF 2005). The major objective of this EIS is to demonstrate that the proposed project will not negatively affect the significant features and functions of the Study Area, and that impacts will be minimized through mitigation measures.

1.3 Site Overview and Background (TCR)

The Site includes two (2) parcels that are located at 762 March Road and 335 Sandhill Road, Ottawa, ON (PIN 045171989, 045171994 and 045171993) (Figure 1). The two (2) parcels are located on either side of Shirley's Brook, which runs in an approximately north to south direction through the Study Area. The western parcel includes frontage on March Road and is located at the municipal address 762 March Road. The eastern parcel includes frontage on Sandhill Road and is located at the municipal address 335 Sandhill Road. The two (2) parcels are proposed to be developed concurrently by Minto, and hence are addressed together in this Combined EIS and TCR. The western parcel is approximately 0.76 ha in size, whereas the eastern parcel is approximately 1.42 ha in size. Shirley's Brook runs through an open space corridor that is owned by the City of Ottawa. The open space corridor varies between approximately 40 m and 60 m wide. The **Study Area** addressed by this Combined EIS and TCR includes the western parcel, the eastern parcel, and the open space

corridor surrounding Shirley's Brook, which collectively are approximately 2.95 ha in size. **The Site** refers to the two (2) development parcels. The current zoning is Residential Fourth Density (R4).

The Study Area exists within the developed portion of Kanata (Ottawa) and is predominantly surrounded by existing developed properties. The Study Area is bounded to the west by March Road, beyond which are existing subdivisions. An existing medium density residential development is located south of the western parcel, whereas the area south of the eastern parcel includes an existing grave site and church. The Study Area is bounded by Sandhill Road to the east, beyond which is a school. The properties directly north of the eastern parcel are developed as single family homes and an existing church. The property north of the western parcel has recently been proposed for development by an adjacent owner (788 March Road). Therefore, the Study Area is surrounded by existing and/or planned development on all sides, and the only significant natural heritage feature found in the vicinity is Shirley's Brook and its open space corridor. The Study Area itself is dominated by highly disturbed Cultural Meadow. Several hedgerows and small tree stands are also present within the Study Area. As discussed in the following sections, Shirley's Brook and the associated Blanding's Turtle habitat are the only significant natural heritage features found to exist within or adjacent to the Study Area.

FIGURE 1: STUDY AREA OVERVIEW

762 March Road and 335 Sandhill Road Development
Combined Environmental Impact Statement & Tree Conservation Report



 - Study Area

Please Note:
This is not a
legal land
survey. All
dimensions
and locations
are shown as
approximate.

1.4 Description of Undertaking (TCR)

The proposed Site Plan/Draft Plan of Subdivision is included below. The western parcel will be submitted to the City of Ottawa as a Site Plan Application, whereas the eastern parcel will be submitted as a separate Draft Plan of Subdivision Application. The western parcel will be developed to include five (5) multi-level terrace residential buildings with a total of approximately 60 units. The western parcel will also include two (2) entrances from March Road, an amenity space/snow storage, and approximately 78 surface parking spaces. The eastern parcel will be developed to include approximately 60 executive townhomes. The eastern parcel will include one (1) entrance from Sandhill Road. The Site Plan/Draft Plan of Subdivision includes a 30 m setback from the normal high-water mark of Shirley's Brook on both sides of the open space corridor. Currently the open space corridor surrounding Shirley's Brook varies in width between approximately 40 m and 60 m. The setbacks included as part of the proposed development will expand the current corridor width so that it is a minimum of 60 m wide throughout the Study Area.

Stormwater from the western parcel will be directed to the existing March Road storm sewer, which outlets to the existing SWMP Pond No.1 - West (JL Richards 2011). The existing SWMP Pond No.1 - West was sized to provide quantity and quality control for the western parcel. Stormwater from the eastern parcel will be directed to the existing Sandhill Road storm sewer, which outlets to the existing SWMF Pond No.2 (JL Richards 2011). The Shirley's Brook East SWMF Pond No.2 was sized to provide quantity and quality control for the eastern parcel. Both parcels will receive municipal sewer and water. All services were shown to connect to the western and eastern parcels from March Road and Sandhill Road (respectively), and no overland or buried connections are required to cross Shirley's Brook (JL Richards 2011).



Morgan's Creek - Stage 1
 60 Condominium Units

Parking Allocation
 Tenant: 60 units x 1.1 = 66
 Visitor: 60 units x 0.2 = 12
 Required Parking: 66 + 12 = 78
 Provided Parking: 78

Zoning
 Front yard = 3.0 m
 Interior yard (north) = 1.8 m
 Interior yard (south) = 3.0 m (first 18 m). 7.5 m thereafter.
 Rear yard = 7.5 m

REGISTERED PLAN 4M-777

Morgan's Creek - Stage 2
 60 Executive Townhomes

Zoning
 Front yard setback = 6.0 m from road
 Interior side yard setback = 1.2 m from road
 Exterior side yard setback = 1.2 m
 Rear yard setback = 3.0 m

1.5 Agency Consultation

The proponent has discussed the current development proposal with the City of Ottawa, and the Mississippi Valley Conservation Authority (MVCA) will be circulated as part of the development application review. An Information and Records Request Response was received from the Ontario Ministry of Natural Resources and Forestry (OMNRF) Kemptville District (Appendix B). As noted below, the OMNRF Kemptville District has completed a review of the project under the Ontario Endangered Species Act (ESA).

1.6 Regulatory Requirements (TCR)

The following is a summary of the anticipated natural heritage regulatory requirements:

- **Ontario Endangered Species Act (ESA):** As discussed below in Section 3.7, previous studies have demonstrated that Shirley's Brook provides Category 2 habitat for Blanding's Turtle. Category 2 habitat includes the watercourse itself and the surrounding 30 m of terrestrial habitat. The proposed 30 m vegetated setback from the normal high-water mark of Shirley's Brook (on both sides) will avoid all areas of Category 2 habitat. Category 3 habitat extends an additional 220 m beyond the limit of Category 2 habitat. The development area falls within the definition of Category 3 habitat. However, the Category 3 habitat found within the Study Area has little functional habitat value, due to the fact that all surrounding areas are developed. The proposed Site Plan/Draft Plan of Subdivision will protect all areas of Category 2 habitat, while removing non-functional areas of Category 3 habitat. The project has been submitted to the OMNRF Kemptville District through submission of the Ontario Endangered Species Act Information Gathering Form (IGF). The OMNRF has completed their review of these materials and has confirmed that significant impacts to Blanding's Turtle and their habitat are anticipated to be avoided, pending that the mitigation measures outlined in the IGF are implemented appropriately. The mitigation measures described in the IGF are the same as those included in this Combined EIS and TCR. Therefore, an Overall Benefit Permit under the Ontario Endangered Species Act is not required. An email from the OMNRF confirming this determination is included in Appendix C. Other than the habitat of Blanding's Turtle, no other significant Species at Risk (SAR) issues were noted for the Site.
- **Ontario Regulation 153/06:** Ontario Regulation 153/06 regulates activities that would alter shorelines, watercourses, and wetlands. As noted above, the Site Plan/Draft Plan of Subdivision includes a 30 m vegetated setback from the normal high-water mark of Shirley's Brook (on both sides). However, a permit under O.Reg 153/06 is anticipated to be required to allow development, as the development falls within the Mississippi Valley Conservation Authority (MVCA) regulatory limits.

- **Fisheries Act:** As noted above, no alteration to Shirley's Brook is proposed. As such, a review under the Fisheries Act should not be required.
- **Tree Removal Permit:** The City of Ottawa will require obtainment of a Tree Removal Permit under the Urban Tree Conservation By-law No. 2009-200 prior to the commencement of tree clearing. The Tree Removal Permit is typically issued following acceptance of the TCR.

2.0 METHODOLOGY

2.0.1 Vegetation Survey and Tree Inventory Methodology (TCR)

A site visit to inventory plants and measure tree sizes was completed by Dr. McKinley on September 14th, 2018. Weather conditions during the site visit included sunny conditions and a temperature of 20 °C.

The following terms are used throughout this report:

- Diameter at Breast Height (dbh) means the measurement of the trunk of a tree at a height of 120 cm above grade for trees 15 cm diameter or greater, and at a height of 30 cm above grade for trees less than 15 cm diameter.
- The Critical Root Zone (CRZ) is 10 centimeters from the trunk of the tree for every centimeter of trunk dbh. The CRZ is calculated as $dbh \times 10 \text{ cm}$.

Vegetation communities within the Study Area were classified following the Ecological Land Classification (ELC) methodology (OMNRF 1998; Lee 2008). No forested habitats exist within the Study Area, and therefore tree measurement plots were not required. Hedgerows are too narrow to sample using plots. Instead, transects were employed to sample the Deciduous Hedgerows. Each transect was 20 m long and every tree with 10 cm dbh or greater along the transect was measured. Trees within each transect that were 10 cm dbh or greater were measured with the use of a D-tape, which is a calibrated dbh tape.

2.0.2 EIS Methodology

The presence of natural heritage features was assessed by completing the following:

- Site surveys to describe vegetation communities and inventory trees (see above);
- Site surveys to assess the potential for habitat of Species at Risk (SAR), wetlands, fish habitat, Significant Wildlife Habitat (SWH) features, and other significant habitat features to be present;
- Review of the Kanata North Urban Expansion Area (KNUEA) Existing Conditions Report (MEP 2016), the KNUEA Community Design Plan (CDP) (Novatech 2016a), and the KNUEA Environmental Management Plan (EMP) (Novatech 2016b), as well as associated background environmental reports;
- Examination of aerial imagery to evaluate landscape features;
- Natural Heritage Information Center (NHIC) database review;
- Obtainment of an Information and Records Request Response from the OMNRF (Appendix B);
- Review of the Site Servicing Brief (JL Richards 2011);
- Review of the background geotechnical report (Paterson Group 2011); and
- Review of Official Plan designations.

During the plant survey the Study Area was searched for endangered Butternut Trees, although none were found. The extent of Blanding's Turtle habitat was defined based on known occurrences of the species in the region, as documented by MEP (2016). Due to the fact that Blanding's Turtles have previously been documented in Shirley's Brook within 2 km of the Study Area (in 2014 and 2017), Shirley's Brook within the vicinity of the Study Area is automatically designated as Blanding's Turtle habitat (OMNRF 2014b) (discussed below in Section 3.7). It was therefore not necessary to complete an updated survey for the species within the vicinity of the Study Area, as Shirley's Brook would continue to be considered habitat for the species, regardless of the outcome of an updated survey.

3.0 EXISTING CONDITIONS

3.1 Geological Conditions

The Study Area elevation is approximately 78 m ASL at March Road and 76 m ASL at Sandhill Road, with both parcels sloping gradually downwards towards Shirley's Brook (the middle of the Study Area). Shirley's Brook occurs at an elevation of approximately 72 m ASL. Both the western and eastern parcel are well drained, with no surface water noted. Paterson Group (2011) note that the soil profile underlying the Study Area consists of topsoil underlain by a thin silty sand layer, followed by a stiff silty clay deposit and/or glacial till layer. Bedrock is shown to consist of interbedded sandstone and dolomite of the March formation, with an overburden thickness of between 5 m and 15 m (Paterson Group 2011).

3.2 Site History (TCR)

Air photos from 1976, 1991, 2005 and 2014 are included below (Photos from City of Ottawa 2018). Recent air photos are included in the report figures. The oldest available historic air photo (from 1976), shows that the Study Area was open habitat which was likely predominantly either farmed, pasture or open meadow at that time. In 1976, tree cover appears to be limited to a few mature trees and the hedgerows found along the northern and southern Study Area boundaries. The condition of the Study Area is broadly similar in 1991, 2005, and 2014, with the majority of the Study Area predominantly open meadow. By 2005, very few mature trees are visible within the Study Area, and tree cover appears limited to the hedgerows that are present along the northern and southern property boundaries. A depression is visible in the eastern parcel in the historic air photos. The depression is visible in 1976 and 2005, and appears flooded and/or a pond in 1991. The depression is visible in later air photos until 2011, after which time the depression appears to have been removed. Air photos from 2014 onwards do not show any evidence of the depression within the eastern parcel, and no standing water nor any wetland vegetation was observed in the area in 2018. The depression and any associated surface flooding and/or ponding appears to no longer exist within the Study Area from 2014 onwards.



Historic Air Photograph 1: Historic Air Photo from 1976 (Study Area limits shown in red). Note the Study Area appears to either be farmed or open meadow/pasture. Tree cover appears to be limited to a few mature trees and hedgerows along the northern and southern Study Area boundaries in 1976. A depression is visible in the eastern parcel in 1976 (Photos from City of Ottawa 2018).



Historic Air Photograph 2: Historic Air Photo from 1991 (Study Area limits shown in red). Note the Study Area appears to be predominantly open meadow and tree cover appears to be limited to the hedgerows along the northern and southern Study Area boundaries in 1991. The depression that is visible in the eastern parcel appears as an open pond and/or flooded area in 1991 (Photos from City of Ottawa 2018).



Historic Air Photograph 3: Historic Air Photo from 2005 (Study Area limits shown in red). Note the Study Area appears to be predominantly open meadow and tree cover appears to be limited to the hedgerows along the northern and southern Study Area boundaries in 2005. In 2005, very few mature trees are visible within the Study Area. The depression that is visible in the eastern parcel appears to be partially flooded in 2005 (Photos from City of Ottawa 2018).



Historic Air Photograph 4: Historic Air Photo from 2014 (Study Area limits shown in red). Note the Study Area appears to be predominantly open meadow and tree cover appears to be limited to the hedgerows along the northern and southern Study Area boundaries in 2014. In 2014, very few mature trees are visible within the Study Area. The depression that was previously visible in the eastern parcel appears to have been filled and/or graded by 2014, and is no longer present (Photos from City of Ottawa 2018).

3.3 Vegetation Communities (TCR)

Vegetation communities found within the Study Area are shown in Figures 2 and 3. Refer to Appendix A for a list of plants found within the Study Area. The Study Area includes the following terrestrial vegetation communities:

- **Previously Developed Areas (Gravel Parking):** Two (2) gravel parking areas are present within the Study Area adjacent to the entrances from March Road and Sandhill Road. The gravel parking areas consist of compacted gravel with negligible vegetation.
- **Cultural Meadow:** The majority of the Study Area is occupied by a disturbed Cultural Meadow, which is forb dominated in most areas. The Cultural Meadow is dominated by Canada Goldenrod with Common Tansy, New England Aster, Philadelphia Fleabane, Brome Grass, and Meadow Grass highly represented. Canada Thistle, Bull Thistle, Curled Dock, Queen Anne's Lace, Common Burdock, Tufted Vetch, Common Milkweed, Dandelion, Lamb's Quarters Pigweed, Prickly Lettuce, Ox-eye Daisy, Chickory, Common Ragweed, and Sow Thistle are also common. Tree cover includes a few small dead White Ash stems, and young Manitoba Maple and American Elm stems. Shrub cover includes Wild Red Raspberry, Virginia Creeper, Riverbank Grape, Common Buckthorn, Staghorn Sumac, and Hawthorn.
- **Deciduous Hedgerow (Feature A):** A sparse Deciduous Hedgerow (Feature A) is present along the northern property line in the western parcel. The Deciduous Hedgerow includes Manitoba Maple, Bur Oak, and American Elm up to 25 cm dbh in size. However, the majority of the hedgerow is shrub dominated and is overgrown by Hawthorn, Common Buckthorn and Riverbank Grape.
- **Tree Stand (Feature B):** A Tree Stand (Feature B) is present at the north end of Shirley's Brook. The Tree Stand includes a few Crack Willow, Manitoba Maple, and American Elm between 10 cm and 40 cm dbh in size. Groundcover is similar to the adjacent Cultural Meadow. A few shrub sized Domesticated Apple trees are present.
- **Deciduous Hedgerow (Feature C):** A sparse Deciduous Hedgerow (Feature C) is present along the northern property line in the eastern parcel. The Deciduous Hedgerow includes Trembling Aspen and Manitoba Maple between 10 cm and 30 cm dbh in size.
- **Coniferous Hedgerow (Feature D):** Feature D includes White Cedar hedges that are present along the northern and southern property lines in the eastern parcel.
- **Tree Stand (Feature E):** A Tree Stand (Feature E) is present at the south end of Shirley's Brook. The Tree Stand includes a few young Crack Willow, Manitoba Maple, and White/Green Ash (<15 cm dbh), as well as Slender Willow and Red Osier Dogwood shrubs.

- **Deciduous Hedgerow (Feature F):** A sparse and very young Deciduous Hedgerow (Feature F) is present along the southern property line in the western parcel. The Deciduous Hedgerow includes Manitoba Maple and White Ash stems < 10 cm dbh in size.



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FIGURE 2: CULTURAL MEADOW

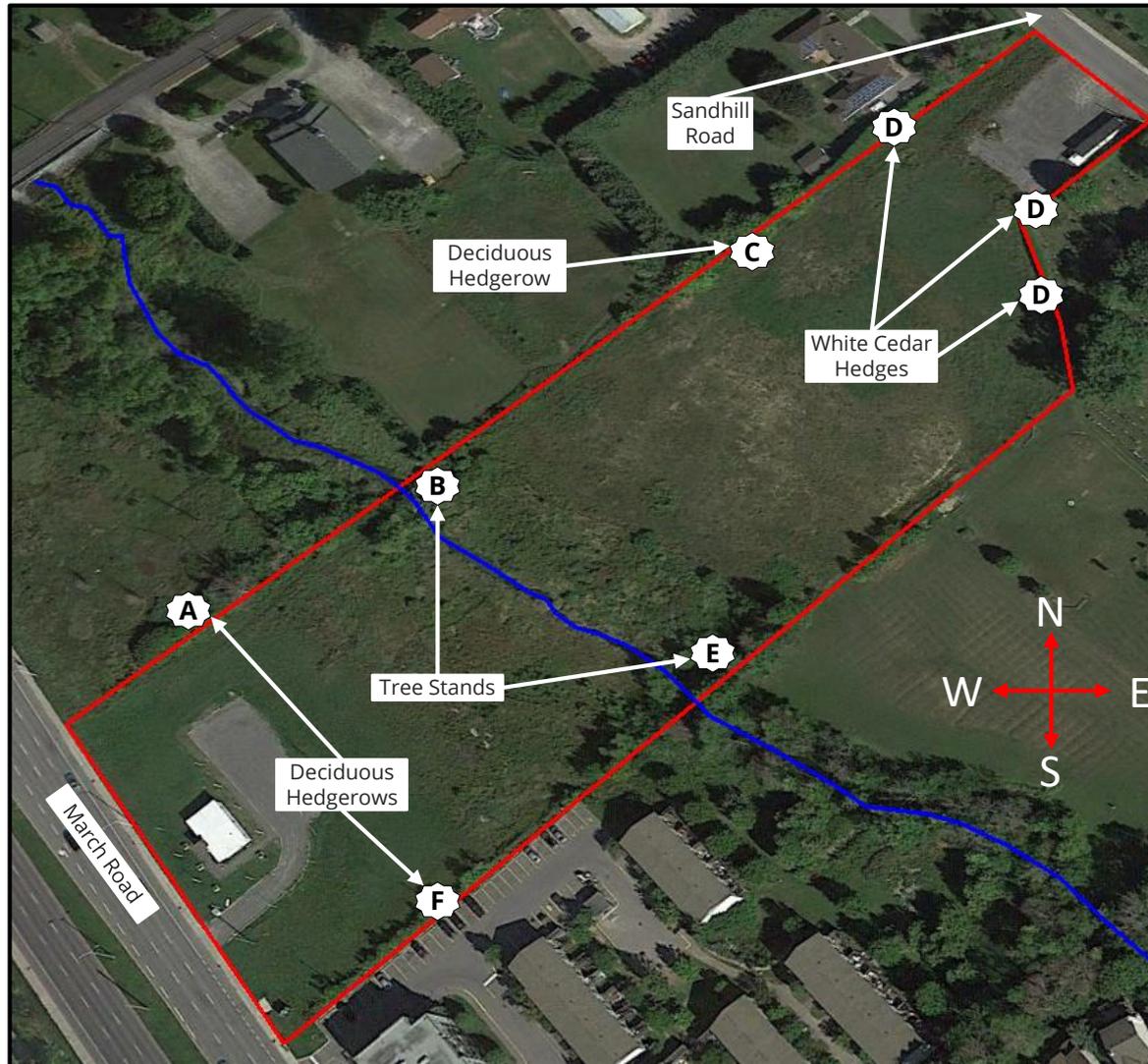
762 March Road and 335 Sandhill Road Development
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Please Note:
This is not a
legal land
survey. All
dimensions
and locations
are shown as
approximate.

FIGURE 3: TREE STANDS & HEDGEROWS

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— - Study Area **A** - Vegetation Feature Number

Please Note:
This is not a
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dimensions
and locations
are shown as
approximate.



Photograph 1: Looking south at the Gravel Parking Area in the western parcel. March Road is visible at the right (September 14th, 2018).



Photograph 2: Looking south at the forb dominated Cultural Meadow in the western parcel (September 14th, 2018).



Photograph 3: Looking north at the forb dominated Cultural Meadow in the eastern parcel (September 14th, 2018).



Photograph 4: Looking north at the Deciduous Hedgerow (Feature A) (September 14th, 2018).



Photograph 5: Looking north at the Tree Stand (Feature B) (September 14th, 2018).



Photograph 6: Looking north at the Deciduous Hedgerow (Feature C) (September 14th, 2018).



Photograph 7: Looking south from the Gravel Parking Area at the Coniferous Hedgerow (White Cedar Hedge) (Feature D) (September 14th, 2018).



Photograph 8: Looking south at the Tree Stand (Feature E) (September 14th, 2018).



Photograph 9: Looking south at the Deciduous Hedgerow (Feature F) (September 14th, 2018).

3.4 Wetlands and Watercourses

Both the western and eastern parcel are well drained, and there are no wetlands and/or watercourses within the Study Area, other than Shirley's Brook. A tributary of Shirley's Brook and its associated riparian corridor flows through the middle of the Study Area in an approximately north to south direction. Shirley's Brook within the Study Area has a wetted width of 2 m to 4 m with water depth from 10 cm to 20 cm (in September 2018). At the time of the site visit (September 2018), the watercourse was well hydrated but mostly stagnant, although it likely experiences flow during precipitation events. A large box culvert is present at the northern property line. The culvert is old and has several large cracks in the concrete, however, it is large enough to allow movement of Blanding's Turtle and other wildlife. Shirley's Brook in the vicinity of the Study Area is sufficiently hydrated that it is likely to provide year-round habitat for fish, turtles, and other aquatic wildlife.

Shirley's Brook has a silt substrate in the northern part of the Study Area, transitioning to a sandy substrate with boulders in the southern part of the Study Area. Throughout the Study Area aquatic vegetation is present within the channel. Aquatic plants found within Shirley's Brook include Common Duckweed, Common Cattail, Tall Ironweed, and Purple Loosestrife. Plants found within the riparian corridor adjacent to the watercourse included Tall Ironweed, Reed Canary Grass, Spotted Joe Pye Weed, Spotted Touch Me Not, Purple Loosestrife, Common Cattail, Common Stinging Nettle, Boneset, and Blue Vervain. The majority of the length of the watercourse through the Study Area has little tree or shrub cover, however, tree stands are present at the northern and southern Study Area boundaries (described above). The proposed 30 m vegetated setback will maintain the existing tree cover surrounding the watercourse, including the majority of older trees found within the Study Area.



Photograph 10: Looking north at the Box Culvert at the northern edge of the Study Area (September 14th, 2018).



Photograph 11: Looking southeast at Shirley's Brook in the northern part of the Study Area (September 14th, 2018).



Photograph 12: Looking northwest at Shirley's Brook in the southern part of the Study Area (September 14th, 2018).

3.5 Adjacent Lands and Significant Features

The Study Area exists within the developed portion of Kanata (Ottawa) and is predominantly surrounded by existing developed properties. The Study Area is bounded to the west by March Road, beyond which are existing subdivisions. An existing medium density residential development is located south of the western parcel, whereas the area south of the eastern parcel includes an existing grave site and church. The Study Area is bounded by Sandhill Road to the east, beyond which is a school. The properties directly north of the eastern parcel are developed as single family homes and an existing church. The property north of the western parcel has recently been proposed for development by an adjacent owner (788 March Road). Therefore, the Study Area is surrounded by existing and/or planned development on all sides, and the only significant natural heritage feature found in the vicinity is Shirley's Brook and its open space corridor (discussed above).

3.6 Wildlife and Significant Wildlife Habitat

The Study Area is located between March Road and Sandhill Road, and hence is continuously disturbed by human activity and a high volume of vehicle traffic. Comparatively few wildlife species were observed within the Study Area including Ring Billed Gull, American Crow, American Robin, American Goldfinch, Great Blue Heron, Song Sparrow, European Starling, and Eastern Grey Squirrel. Each of these are comparatively common species found in suburban areas. Green Frogs were also observed within Shirley's Brook.

Shirley's Brook may provide amphibian breeding habitat, fish habitat, and habitat for threatened Blanding's Turtle (discussed below). As such, Shirley's Brook can be considered Significant Wildlife Habitat (SWH). No stick nests, migratory bird stopover points, heron rookeries, reptile hibernacula, caves, bedrock fissures, wetlands, or any other features which may qualify as SWH were noted within the Study Area (OMNRF 2014a).

3.7 Species at Risk

3.7.1 Blanding's Turtle

Ontario Ministry of Natural Resources and Forestry (OMNRF) policy dictates that potentially suitable habitat that occurs within 2 km of a documented Blanding's Turtle sighting is automatically considered habitat for the species (OMNRF 2014b). Sightings of Blanding's Turtle along the tributaries of Shirley's Brook have previously been documented during field surveying completed to support the design and approval of the Kanata North Urban Expansion Area (MEP 2016). This included documented sightings of the species approximately 950 m (documented in 2017) and 1,700 m (documented in 2014) northwest of the Study Area. Although these sightings were not in close proximity to the Study Area, they occurred along Shirley's Brook within 2 km, which automatically designates Shirley's Brook as habitat for the species.

The General Habitat Description for Blanding's Turtle (OMNRF 2014b) recognizes three (3) types of habitat:

- **Category 1 Habitat:** Category 1 habitat includes areas where Blanding's Turtle overwinter and nesting areas. Blanding's Turtle typically overwinter in wetlands (as opposed to flowing watercourses) (OMNRF 2014b). There are no wetlands or ponds within the Study Area or in the immediate vicinity. Nesting habitat includes areas of loose sandy fill or gravel where turtles can dig into the substrate to lay their eggs (OMNRF 2014b). There are no natural sand or gravel areas and no artificial stockpiles within the Study Area. The majority of the ground surface within the Study Area is occupied by dense vegetation (the Cultural Meadow). Therefore, it is unlikely that Category 1 habitat exists within the Study Area.
- **Category 2 Habitat:** Category 2 habitat includes suitable wetlands and watercourses within 2 km of known Blanding's Turtle occurrences. Category 2 habitat includes the watercourse/wetlands themselves, as well as adjacent terrestrial areas up to 30 m from the water's edge (OMNRF 2014b). The main function of Category 2 habitat is to provide core foraging, basking and living areas that are utilized throughout the majority of the active season (OMNRF 2014b). Shirley's Brook and the surrounding area within 30 m of the watercourse are considered Category 2 habitat. The proposed setback of 30 m from the normal high-water mark of Shirley's Brook (on both sides) will avoid all areas that fall within the definition of Category 2 habitat.
- **Category 3 Habitat:** Category 3 habitat includes terrestrial areas extending up to 250 m from the edge of wetlands and watercourses (e.g. an additional 220 m from the edge of the Category 2 habitat, which includes a 30 m buffer from the normal high-water mark). The main function of Category 3 habitat is to provide corridors that allow Blanding's Turtles to move overland between adjacent Category 1 and 2 habitat features (OMNRF 2014b). The Study Area is less than

250 m wide on both sides of Shirley's Brook, and therefore the entire development area falls within the definition of Category 3 habitat. However, the Category 3 habitat that overlaps the development area is unlikely to provide any significant habitat function, as the Study Area is surrounded by developed areas on all sides. The Category 3 habitat within the Study Area is unlikely to provide significant benefit to Blanding's Turtles, as it does not provide a corridor that connects to any adjacent wetland or watercourse habitat features. The only aquatic habitat feature in the area is Shirley's Brook, and turtles will continue to be able to enter/exit the portion of the watercourse that exists within the Study Area, regardless of whether the Category 3 habitat within the Study Area is developed. As such, although the majority of the Study Area falls within the definition of Category 3 habitat, the Category 3 habitat provides little functional habitat value.

The loss of non-functional Category 3 habitat is not considered significant. It should be noted that under existing conditions, no fencing is in place that would prevent Blanding's Turtles (and other wildlife) from leaving Shirley's Brook to access March Road and Sandhill Road. By providing an avenue of movement to the existing roadways, the Category 3 habitat that is present within the Study Area exposes Blanding's Turtles (and other wildlife) to significant road mortality risk. Road mortality is considered one of the primary causes of the decline of Blanding's Turtles in Ontario (SARO 2018). As discussed below, although development of the Study Area will remove areas of non-functional Category 3 habitat, any potential impact to Blanding's Turtles will be mitigated by the construction of a new Blanding's Turtle exclusion system along the edges of the Shirley's Brook setbacks. The exclusion system will provide a benefit to the species by helping to mitigate the existing risk of road mortality on March Road and Sandhill Road.

As discussed above in Section 1.6, the OMNRF has reviewed the project and has confirmed that significant impacts to Blanding's Turtle and their habitat are anticipated to be avoided, pending that the mitigation measures outlined in the Information Gathering Form (IGF) are implemented appropriately. The mitigation measures described in the IGF are the same as those included in this Combined EIS and TCR. Therefore, an Overall Benefit Permit under the Ontario Endangered Species Act is not required. An email from the OMNRF confirming this determination is included in Appendix C. As discussed below, no other significant Species at Risk (SAR) issues were noted for the Site.

3.7.2 Additional Species at Risk

The Natural History Information Center (NHIC) records for the nine (9) grids that include and surround the Study Area were reviewed. This included an area 3 km x 3 km in size and all published Species at Risk (SAR) records were noted. An Information and Records Request Response was received from the OMNRF (Appendix B). In addition to Blanding's Turtle (discussed above), the following is a list of SAR which were identified as having the potential to be found in the vicinity of the Study Area:

- Barn Swallow - Threatened
- Chimney Swift - Threatened
- Bobolink – Threatened
- Eastern Meadowlark – Threatened
- Little Brown Bat – Endangered
- Northern Long Eared Bat – Endangered
- Black Tern – Special Concern
- Common Nighthawk – Special Concern
- Northern Map Turtle – Special Concern
- Snapping Turtle – Special Concern
- Butternut Trees – Endangered

The following is a summary of the potential for these species to occur within the Study Area:

- **Barn Swallow:** Barn Swallows may be found nesting in many anthropogenic structures including old barns and sheds, culverts, and under bridges (SARO 2018). There are no buildings found within the Study Area at the current time, and therefore Barn Swallows are not likely to be a significant concern for future development. The box culvert that is present at the north end of Shirley's Brook was examined, and no evidence of Barn Swallow nesting was noted.
- **Chimney Swift:** Chimney Swift nest in open chimneys with rough interior surfaces made from brick and/or stone (SARO 2018). There are no chimneys found within the Study Area, and therefore Chimney Swifts are unlikely to be a significant concern for future development.
- **Bobolink and Eastern Meadowlark:** Eastern Meadowlark and Bobolink are associated with grasslands, old pastures, hayfields, and meadows (SARO 2018). Although the Cultural Meadow found within the Study Area represents a potentially suitable form of habitat, the majority of the area is forb dominated, and both Eastern Meadowlark and Bobolink are predominantly found nesting in meadows that are graminoid dominated (e.g. grass dominated) (OMNRF 2014c; OMNRF 2014d). The fact that most of the Cultural Meadow is overgrown with forbs and herbaceous species serves to discourage nesting by grassland birds. In addition, the Cultural Meadow is present close to existing development and roads, and hence the area is continuously

disturbed. This also serves to discourage nesting by grassland birds. Lastly, the Cultural Meadow is likely too small to provide habitat for Bobolink and Eastern Meadowlark. Eastern Meadowlark and Bobolink are known to be area sensitive species, and generally they require continuous areas of suitable habitat that are a minimum of 5 ha in size (OMNRF 2014c; OMNRF 2014d). The western parcel is approximately 0.76 ha in size, whereas the eastern parcel is approximately 1.42 ha in size. Therefore, the Cultural Meadow habitat that is found on either side of the Shirley's Brook corridor is likely too small to support nesting by Eastern Meadowlark and Bobolink. Surveying for these species is not typically undertaken in areas of suitable habitat <2 ha in size. Surveying for Bobolink and Eastern Meadowlark was not recommended, as the Study Area is likely too forb dominated, too degraded, too close to existing development, and too small to support either species. Therefore, Eastern Meadowlark and Bobolink are not likely to be a significant concern for future development.

- **Little Brown Bat and Northern Long Eared Bat:** No caves, bedrock fissures, mining shafts, abandoned buildings, or other features which may function as bat hibernacula habitat were noted within the Study Area. The OMNRF (2011) guidelines for bat surveying are outlined in the *Bats and Bat Habitats: Guidelines for Wind Power Projects*. These guidelines state that deciduous and mixed forest habitats have the potential to provide maternity roosting sites. As described above in Section 3.3, there are no forested habitats within the Study Area. Therefore, Little Brown Bat and Northern Long Eared Bat are not likely to be a significant concern for future development.
- **Black Tern:** Black Terns build their nests in shallow marshes (SARO 2018). As discussed above, there are no large wetland habitats found within the vicinity of the Study Area. The wetland vegetation found along Shirley's Brook is much too small for Black Terns to nest. Therefore, Black Terns are unlikely to be a significant concern for the proposed development.
- **Common Nighthawk:** Common Nighthawk are a species of special concern, and therefore their habitat is not regulated under the Ontario Endangered Species Act (ESA). Common Nighthawk habitat consists of open areas with little or no ground vegetation including rock barrens, lakeshores, mining areas, and recent burns (SARO 2018). As described above, the majority of the Study Area is vegetated with Cultural Meadow. Therefore, Common Nighthawk are unlikely to be a significant concern for the proposed development.
- **Northern Map Turtle:** Northern Map Turtle are a species of special concern, and therefore their habitat is not regulated under the Ontario ESA. They are also primarily a riverine species, and typically they would not be found within a small flowing watercourse such as Shirley's Brook (SARO 2018). Most sightings of Northern Map Turtle in the region are associated with the Ottawa River (SARO 2018). Therefore, Northern Map Turtle are unlikely to be a significant concern for the proposed development.

- **Snapping Turtle:** Snapping Turtle are a species of special concern, and therefore their habitat is not regulated under the Ontario ESA. Snapping Turtle are generally common in many aquatic habitat areas, and they are likely found within Shirley's Brook within the Study Area (SARO 2018). Due to their similar ecology and habitat, the habitat protection and mitigation measures discussed below in relation to Blanding's Turtle would apply equally to Snapping Turtle.
- **Butternut Trees:** Butternut Trees are found in many treed areas throughout the Ottawa Region. However, no Butternut Trees were noted within the Study Area during the site visit.

In summary, the presence of the habitat of threatened Blanding's Turtle was the only significant Species at Risk (SAR) concern identified for the Study Area.

3.8 Linkages

The Study Area is bordered by existing development on all sides. Shirley's Brook is the only significant natural heritage feature in the vicinity. The Study Area itself is not located between any two (2) adjacent natural heritage features, and as such, it is unlikely to provide a habitat linkage function. Shirley's Brook may provide a corridor for wildlife movement. The potential for Shirley's Brook to provide a corridor for wildlife movement will be preserved by the proposed 30 m vegetated setbacks from the normal high-water mark.

4.0 DESCRIPTION OF ENVIRONMENTAL IMPACTS AND MITIGATION

4.1 Terrestrial Habitat and Tree Removal (TCR)

Trees will be retained throughout the 30 m vegetated setback from the normal high-water mark of Shirley's Brook (on both sides). The 30 m setbacks will preserve Tree Stands B and E, which include the majority of mature trees found within the Study Area.

Deciduous Hedgerows A and F are sparse features that consist primarily of very young trees and shrubs. These features occur along the property line and are not considered ecological significant. Deciduous Hedgerow A occurs between the western parcel and the planned development to the north, and Deciduous Hedgerow F occurs between the western parcel and the existing development to the south. As such, it is unlikely that either feature can be preserved during the Site development.

Deciduous Hedgerow C and the northern White Cedar Hedge (Feature D) occur at the property line along the northern edge of the eastern parcel. No setback from the property line is shown along the northern edge of the eastern parcel, and therefore trees occurring in that area are unlikely to be retained. Where feasible, any trees occurring along the eastern parcel's northern property line should be preserved, in order to provide a visual buffer for the adjacent single detached homes and church.

The southern White Cedar Hedges (Feature D) occur within the 6 m wide heritage buffer surrounding the adjacent grave site and church. As such, the southern White Cedar Hedges (Feature D) should be preserved within the heritage buffer (wherever feasible).

As noted above, the majority of the Study Area consists of open habitats that are largely devoid of mature tree cover. The trees that do occur are found around the margins of the Study Area, and most consist of recent regrowth stems with comparatively little ecological value. Therefore, the loss of tree cover within the development area is not anticipated to be ecologically significant.

4.1.1 Tree Preservation Measures

The following tree mitigation measures should be implemented to help protect and preserve retained trees:

- Mark the edge of the tree clearing area to ensure only designated trees are removed. Protect the critical root zone (CRZ) of retained trees, where the CRZ is established as being 10 cm from the trunk of a tree for every centimeter of trunk dbh. The CRZ is calculated as $\text{dbh} \times 10 \text{ cm}$;
- Ensure that existing trees are not removed from within the Shirley's Brook setback;
- Wherever feasible, ensure that existing trees are not removed from within the 6 m heritage buffer;
- When trees to be removed overlap with the CRZ of trees to be retained, cut roots at the edge of the CRZ and grind down stumps after tree removal. Do not pull out stumps. Ensure there is not root pulling or disturbance of the ground within the CRZ;
- If roots must be cut, roots 20 mm or larger should be cut at right angles with clean, sharp horticultural tools without tearing, crushing, or pulling;
- Do not place any material or equipment within the CRZ of any tree;
- Do not attach any signs, notices, or posters to any tree;
- Do not damage the root system, trunk, or branches of any tree; and
- Ensure that exhaust fumes from all equipment are directed away from any tree canopy.

4.1.2 Replanting

Trees that are planted within the development Site will occur in close proximity to the 30 m vegetated setbacks surrounding Shirley's Brook. As such, plantings should emphasize the use of native trees and shrubs, which may include those identified in Appendix A. Planting of Ash trees should be avoided due to the high likelihood that any planted Ash trees will become infested with Emerald Ash Borer. The planting locations and specific planting requirements will be confirmed by a detailed Landscaping Plan.

4.2 Watercourses

4.2.1 Shirley's Brook Setback

As noted above, the Site Plan/Draft Plan of Subdivision includes a minimum 30 m wide vegetated setback from the normal high-water mark of Shirley's Brook (on both sides). Currently, the open space corridor owned by the City of Ottawa that surrounds Shirley's Brook varies in width between approximately 40 m and 60 m. The setbacks included as part of the proposed development will expand the current corridor width so that it is a minimum of 60 m wide throughout the Study Area.

Existing vegetation within the setbacks will be preserved. The purpose of the 30 m setbacks is to provide a buffer which will help to slow, filter and absorb overland stormwater flow, while also providing habitat for wildlife and wildlife movement. Trees growing within the setbacks help to protect the watercourse from edge effects including noise, pollution, and other forms of human disturbance. Trees provide shade which helps to cool surface water temperatures, while they also help to prevent erosion, stabilize banks, and enhance absorption and filtration of overland stormwater flow.

As specified in Section 4.7.3 of the City of Ottawa Official Plan, current policy recommends that setbacks from watercourses should be the greater of either 15 m from the top of slope or 30 m from the normal high-water mark of the watercourse. For the Site, the 30 m setback from the normal high-water mark is the greater of the two setbacks. Therefore, the proposed setback conforms to Section 4.7.3 of the City of Ottawa Official Plan. As described above in Section 3.7.1, the 30 m setbacks also serve to preserve all areas of Category 2 Blanding's Turtle habitat.

4.2.2 Servicing and Stormwater Management

Stormwater from the western parcel will be directed to the existing March Road storm sewer, which outlets to the existing SWMP Pond No.1 - West. The existing SWMP Pond No.1 - West was sized to provide quantity and quality control for the western parcel. Stormwater from the eastern parcel will be directed to the existing Sandhill Road storm sewer, which outlets to the existing SWMF Pond No.2. The Shirley's Brook East SWMF Pond No.2 was sized to provide quantity and quality control for the eastern parcel. Both parcels will receive municipal sewer and water. All services were shown to connect to the western and eastern parcels from March Road and Sandhill Road (respectively), and no overland or buried connections are required to cross Shirley's Brook.

4.2.3 Sediment and Erosion Controls

As discussed below in Section 4.4.1, Blanding's Turtle temporary exclusion fencing (re-enforced silt fencing) will be required during construction. In addition to protecting Blanding's Turtle (and other wildlife), this fencing will also serve to mitigate potential sediment and erosion impacts on Shirley's Brook. During construction, existing conveyance systems can be exposed to significant sediment loadings. Although construction is only a temporary situation, a Sediment and Erosion Control Plan will be required to ensure the existing conveyance systems are not negatively impacted by sediment and erosion. The Sediment and Erosion Control Plan will include the following:

- Groundwater in trenches (if present) will be pumped into a filter mechanism, such as a trap made up of geotextile filters and straw, prior to release to the environment;
- Bulkhead barriers will be installed at the nearest downstream manhole in each sewer which connects to an existing downstream sewer (e.g. existing sewers along March Road and Sandhill Road, if required). These bulkheads will trap any sediment carrying flows, thus preventing any construction-related contamination of existing sewers;
- Seepage barriers will be constructed in any temporary drainage ditches;
- Construction vehicles will leave the Site at designated locations. Exits will consist of a bed of granular material, in order to minimize the tracking of mud off-site;
- Any stockpiled material will be properly managed to prevent those materials from entering the sewer systems; and
- Until landscaped areas are sodded or until streets are asphalted and curbed, all catch basins and manholes will be constructed with a geotextile filter sock located between the structure frame and cover.

4.3 Adjacent Lands and Significant Features

As discussed previously, the Study Area is surrounded by existing and/or planned development on all sides, and the only significant natural heritage feature found in the vicinity is Shirley's Brook and its open space corridor. Shirley's Brook and the associated Blanding's Turtle habitat are addressed by the mitigation measures outlined in Sections 4.2 and 4.4. Mitigation measures to protect trees on adjacent properties are discussed above in Section 4.1.



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4.4 Wildlife and Species at Risk

4.4.1 Blanding's Turtle Mitigation – Setbacks and Exclusion System

As discussed above, the 30 m vegetated setback from the normal high-water mark on both sides of Shirley's Brook will preserve all areas of Category 2 habitat. Therefore, no loss of Category 2 habitat is anticipated to result from the proposed development. As discussed in Section 3.7.1, the entire development area falls within the definition of Category 3 habitat. However, the Category 3 habitat that overlaps the development area is unlikely to provide any significant habitat function, as the Study Area is surrounded by developed areas on all sides. The Category 3 habitat within the Study Area is unlikely to provide significant benefit to Blanding's Turtles, as it does not provide a corridor that connects to any adjacent habitat features. The only aquatic habitat feature in the area is Shirley's Brook, and turtles will continue to be able to enter/exit the portion of the watercourse that exists within the Study Area, regardless of whether the Category 3 habitat within the Study Area is developed. As such, although the majority of the Study Area falls within the definition of Category 3 habitat, the Category 3 habitat provides little functional habitat value.

The loss of non-functional Category 3 habitat is not considered significant. It should be noted that under existing conditions, no fencing is in place that would prevent Blanding's Turtles (and other wildlife) from leaving Shirley's Brook to access March Road and Sandhill Road. By providing an avenue of movement to the existing roadways, the Category 3 habitat that is present within the Study Area exposes Blanding's Turtles (and other wildlife) to significant road mortality risk. Road mortality is considered one of the primary causes of the decline of Blanding's Turtles in Ontario (SARO 2018). Although development of the Study Area will remove areas of non-functional Category 3 habitat, any potential impacts to Blanding's Turtles will be mitigated by the installation of a new Blanding's Turtle exclusion system along the edges of the Shirley's Brook setbacks. The exclusion system will provide a benefit to the species, by helping to mitigate the existing risk of road mortality on March Road and Sandhill Road.

General mitigation for wildlife during construction, including timing requirements for Blanding's Turtle, are outlined below in Section 4.4.3. In addition to the requirements listed in Section 4.4.3, an exclusion system along the edges of the Shirley's Brook setbacks will be required to prevent Blanding's Turtle from entering the development area (both during construction and post-development). This will include both temporary fencing (at the construction stage) and a permanent exclusion system. The exclusion system should be placed between the development edge and the edge of the 30 m setback from the normal high-water mark of Shirley's Brook (on both sides). Where feasible, the exclusion system should be tied into any existing or future fencing within adjacent properties along the Shirley's Brook corridor, in order to form a continuous barrier that will prevent

Blanding's Turtle (and other wildlife) from reaching the roads. In particular, the adjacent development at 788 March Road (located north of the western parcel) will likely be required to install a Blanding's Turtle exclusion system. The exclusion system within 762 March Road and 788 March Road should be connected to form a continuous barrier, once both have been installed.

Temporary fencing installed at the construction stage typically consists of wire re-enforced silt fencing that is buried at the bottom. The permanent exclusion system may consist of several different configurations, as described by OMNRF guidance documents (Gunson et al. 2016). Generally, the permanent Blanding's Turtle exclusion system must consist of a barrier a minimum of 60 cm tall that is buried into the ground and which is impassable to Blanding's Turtle of all sizes. The exclusion system materials are typically required to be durable with little maintenance for a minimum of fifteen (15) years. Products typically used may include some combination of stone retaining walls or gabion baskets 60 cm tall, chain link fencing with plastic inserts, and/or purpose-built Blanding's Turtle exclusion fencing constructed from plastic sheeting or wire mesh. The specific requirements for the permanent exclusion system will be outlined at the detailed design stage.

As discussed above in Section 1.6, the OMNRF has reviewed the project and has confirmed that significant impacts to Blanding's Turtle and their habitat are anticipated to be avoided, pending that the mitigation measures outlined in the Information Gathering Form (IGF) are implemented appropriately. The mitigation measures described in the IGF are the same as those included in this Combined EIS and TCR. Therefore, an Overall Benefit Permit under the Ontario Endangered Species Act is not required. An email from the OMNRF confirming this determination is included in Appendix C.

4.4.2 Blanding's Turtle Impacts – Pathway Connection

At the request of the City of Ottawa, a previous development concept approved in 2012 included a pathway connection along the northern side of Shirley's Brook. Conceptually, the pathway would serve to connect the western and eastern parcels, while also providing pedestrian access between March Road and Sandhill Road. In order to facilitate the pedestrian connection, a concrete bridge would be required to cross Shirley's Brook. The pathway's location was identified prior to the identification of Blanding's Turtle habitat in the area, which was first documented in 2014 (discussed above in Section 3.7.1). While a pathway may have benefits with regards to pedestrian access and connectivity, a pathway also has the potential to disrupt the habitat of Blanding's Turtle. Encouraging residents to enter the area of Blanding's Turtle Category 2 habitat may lead to degradation of the habitat in the vicinity of the pathway, while it may also increase the risk of residents (and their pets) interfering directly with Blanding's Turtles. During the review of previous development applications, the Ontario Ministry of Natural Resources and Forestry (OMNRF) have generally stated that they view the extension of pathway connections through areas of Category 2 habitat as an impact to the habitat. Installing a pathway across the north side of the Shirley's Brook corridor would result in a direct loss of Category 2 habitat equal to the pathway's footprint, while it may also degrade the functionality of the surrounding areas of Category 2 habitat and increase risks to individual Blanding's Turtle. Due to the potential impacts to Blanding's Turtle and their habitat, installation of the pathway may require obtainment of an Overall Benefit Permit under Clause 17(2)(c) of the Ontario Endangered Species Act. As such, a pathway connection between the western and eastern parcels is neither recommended nor provided by the proposed development concept.

4.4.3 General Wildlife Mitigation

Potential impacts to Blanding's Turtle and other wildlife at the construction stage may include the following:

- Removal of habitat features and displacement of wildlife from existing habitat areas;
- Potential injury or mortality of adults in terrestrial habitats due to vehicle impacts, during excavations, or during land clearing; and
- Interruption of movement to essential foraging, breeding, or overwintering areas due to site hoarding or sediment and erosion control fencing.

Mitigation for wildlife during tree clearing and construction is summarized here. These recommendations include provisions from the City of Ottawa (2015) *Protocol for Wildlife Protection During Construction*, as well as requirements specific to Blanding's Turtle:

- **Pre-Stressing:** Prior to tree removal, the area should be pre-stressed by traversing the Site with a loud noise such as an excavator horn. This will encourage wildlife to leave the area;
- **Tree Clearing Direction:** Tree clearing should be undertaken in the direction of Shirley's Brook, in order to direct wildlife towards the retained habitat areas surrounding the watercourse;
- **Temporary Exclusion Fencing:** The temporary Blanding's Turtle exclusion fencing (re-enforced silt fencing) will also serve to mitigate potential erosion and siltation impacts (see above);
- **Inspections:** Temporary Blanding's Turtle exclusion fencing should be inspected by a designated staff member prior to commencement of work to ensure that the arrangement will reduce the likelihood of wildlife entering the work area. Any wildlife or significant wildlife habitat features that are encountered will be identified and marked;
- **Sweeps:** Prior to vegetation clearing, preconstruction sweeps of vegetated areas will be undertaken to ensure wildlife are not present. Construction staff will be required to review the mitigation measures included in this report. A designated staff member will be required to conduct daily sweeps each morning prior to the commencement of work to ensure wildlife have not entered the work area. The designated staff member will also periodically inspect the temporary exclusion fencing to ensure there are no gaps or holes in the fence;
- **SAR Encounters:** If SAR are encountered in the work area, construction in the vicinity must be stopped immediately and measures must be taken to ensure the SAR is not harmed. The project biologist and the OMNRF must be contacted to discuss how to proceed prior to recommencement of work;
- **General Provisions:** General provisions for Site management include the following:
 - Do not harm, feed, or unnecessarily harass wildlife;
 - Drive slowly and avoid hitting wildlife;

- Keep Site tidy and free of garbage and food wastes. Secure all garbage in appropriate sealed containers;
- Ensure proper Site drainage so that standing water does not accumulate on Site. This will reduce the likelihood that turtles and other wildlife may enter the Site;
- Any stockpiles should be properly secured with silt fencing to prevent wildlife from accessing areas of loose fill; and
- **Timing Windows:**
 - The core migratory bird breeding season is April 15th to August 15th each year;
 - The Blanding's Turtle active season is defined by OMNRF as April 15th to October 15th each year. The temporary exclusion fencing must be installed prior to work that would occur during the Blanding's Turtle active season; and
 - Therefore, initial site clearing, stripping, and installation of temporary exclusion fencing should be undertaken between October 16th and April 15th.

5.0 CUMULATIVE EFFECTS

Cumulative effects were considered in the design of the mitigation measures outlined in Section 4.0, particularly in the creation of species at risk (SAR) mitigation measures. The majority of the Study Area is degraded, and therefore the proposed development will not significantly contribute to the cumulative loss of wetlands or forest habitat.

6.0 MONITORING

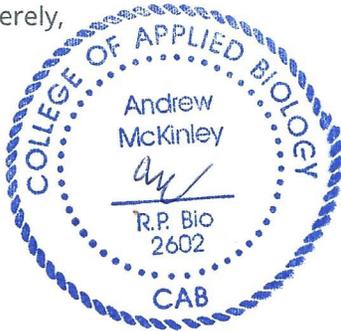
Construction stage monitoring requirements are outlined in Section 4.4.3 (above). Monitoring will include pre-construction sweeps to inspect fencing and vegetation prior to clearing, and daily sweeps by construction staff. No post-construction monitoring requirements have been identified.



7.0 CLOSURE

We trust that the above information is sufficient; should you have any questions or require further information, please do not hesitate to contact the undersigned, at your convenience.

Sincerely,



Dr. Andrew McKinley, EP, RP Bio.

Senior Biologist, McKinley Environmental Solutions



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APPENDIX A

Master Plant List



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TABLE A: VEGETATION

Common Name	Scientific Name	Provincial S rank	Brunton Significance Ranking for the City of Ottawa (Brunton, 2005)	Vegetation Type
Common Duckweed	Lemna minor	S5	Common	Aquatic
Common Cattail	Typha latifolia	S5	Common	Aquatic
Tall Ironweed	Vernonia gigantea	S1	n/a	Aquatic
Brome Grass	Bromus sp.		n/a	Grass
Reed Canary Grass	Phalaris arundinacea	SE5	Common (locally abundant introduction)	Grass
Meadow grass sp.	Poa sp.		Common	Grass
Common Ragweed	Ambrosia artemisiifolia	S5	Common	Herbaceous
Common Burdock	Arctium minus	SNA	Common	Herbaceous
Common Milkweed	Asclepias syriaca	S5	Common	Herbaceous
Lamb's Quarters Pigweed	Chenopodium album	SNA	Common	Herbaceous
Chickory	Cichorium intybus	S5	Common	Herbaceous
Canada Thistle	Cirsium arvense	S5	Common	Herbaceous
Bull Thistle	Cirsium vulgare	SNA	Common	Herbaceous
Queen Anne's Lace	Daucus carota	SNA	Common	Herbaceous
Daisy Fleabane	Erigeron annuus	S5	Common	Herbaceous
Philadelphia Fleabane	Erigeron philadelphicus	S5	Common	Herbaceous
Boneset	Eupatorium perfoliatum	S5	Common	Herbaceous
Spotted Joe Pye Weed	Eutrochium maculatum	S5	Common	Herbaceous
Prickly Lettuce	Lactuca scariola	SNA	Common	Herbaceous
Ox-eye Daisy	Leucanthemum vulgare	SNA	Common	Herbaceous
Bird's-foot Trefoil	Lotus corniculatus	SNA	Common	Herbaceous
Purple Loosestrife	Lythrum salicaria	SNA	Common (invasive)	Herbaceous
Curled Dock	Rumex crispus	SNA	Common	Herbaceous
Canada Goldenrod	Solidago canadensis	S5	Common	Herbaceous
Sow Thistle	Sonchus arvensis	SNA	Common	Herbaceous
Tall White Aster	Symphyotrichum lanceolatum	SNR	Common	Herbaceous
New England Aster	Symphyotrichum novae-angliae	S5	Common	Herbaceous
Common Tansy	Tanacetum vulgare	SNA	Uncommon	Herbaceous
Dandelion	Taraxacum officinale	SNA	Common	Herbaceous

Red Clover	<i>Trifolium pratense</i>	SNA	Common	Herbaceous
White Clover	<i>Trifolium repens</i>	SNA	Common	Herbaceous
Common Stinging Nettle	<i>Urtica dioica</i>	SNA	Common	Herbaceous
Blue Vervain	<i>Verbena hasta</i>	S5	Common	Herbaceous
Tufted Vetch	<i>Vicia Cracca</i>	SNA	Common	Herbaceous
Red Osier Dogwood	<i>Cornus sericea (stolonifesa)</i>	S5	Common	Shrub
Hawthorn	<i>Crataegus chrysoarpa</i>	S5	Common	Shrub
Common Buckthorn	<i>Rhamnus cathartica</i>	SNA	Common (aggressive invasive)	Shrub
Wild Red Raspberry	<i>Rubus idaeus</i>	S5	Common	Shrub
Slender Willow	<i>Salix petiolaris</i>	S5	Common	Shrub
Manitoba Maple	<i>Acer negundo</i>	S5	Common	Tree
White Ash	<i>Fraxinus americana</i>	S5	Common	Tree
Green Ash	<i>Fraxinus pennsylvanica</i>	S5	Common	Tree
Domestic Apple	<i>Malus sylvestris</i>	n/a	Common	Tree
Trembling Aspen	<i>Populus tremuloides</i>	S5	Common	Tree
Bur Oak	<i>Quercus macrocarpa</i>	S5	Common	Tree
Staghorn Sumac	<i>Rhus hirta</i>	S5	Common	Tree
Crack Willow	<i>Salix fragilis</i>	SNA	Common (invasive)	Tree
White Cedar	<i>Thuja occidentalis</i>	S5	Common	Tree
American or White Elm	<i>Ulmus americana</i>	S5	Common	Tree
Virginia Creeper	<i>Parthenocissus vitacea</i>	S5	Common	Vine
Riverbank Grape	<i>Vitis riparia</i>	S5	Common	Vine

Provincial ranks (assigned by NHIC)

S5 = Very common within the province with > 1000 occurrences, populations or records

S4 = Common within the province with 21 - 1000 occurrences, populations or records

S3 = Rare within the province with 6 - 20 occurrences, populations or records

SNA = Ranking not available

SE5 = Very common exotic with > 1000 occurrences, populations or records within the province

S? = Unranked, or if followed by a ranking, temporarily assigned (eg. S4?)

APPENDIX B

OMNRF Information Request Response



McKINLEY ENVIRONMENTAL SOLUTIONS

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Kemptville District

District de Kemptville

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10, promenade Campus
Case postale, 2002
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Wed. Oct 18, 2017

Andrew McKinley
McKinley Environmental Solutions
PO Box 45505, 3151 Strandherd Dr.
Ottawa, Ontario
K2J 5N1
(613) 620-2255
mckinleyenvironmental@gmail.com

Attention: Andrew McKinley

Subject: Information Request - Consent-Variance-Zoning
Project Name: 788 March Road EIS
Site Address: 788 March Road, Ottawa, Ontario
Our File No. 2017_MAR-4243

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:

- Lake (Non-Sensitive)
- Unevaluated Wetland (Not evaluated per OWES)

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).

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: American eel, blacknose shiner, bluntnose minnow, brook stickleback, central mudminnow, creek chub, *Etheostoma* sp., fathead minnow, finescale dace, largemouth bass, logperch, mottled sculpin, northern pike, northern redbelly dace, *Notropis* sp., pearl dace, pumpkinseed, *Rhinichthys* sp., rock bass, smallmouth bass, Sticklebacks, white sucker.

Wildland Fire

MNRF woodland data shows that the site contains 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 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

* 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 indicate that there is a potential for the following threatened (THR) and/or endangered (END) species on the site or in proximity to it:

- Barn Swallow (THR)
- Blanding's Turtle (THR)
- Bobolink (THR)
- Butternut (END)
- Chimney Swift (THR)
- Eastern Meadowlark (THR)
- Little Brown Bat (END)
- Northern Long-eared Bat (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>

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:

- Black Tern (SC)
- Common Nighthawk (SC)
- Northern Map Turtle (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, 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: Thu. Oct 18, 2018

Please be advised that the creation of a new lot under the *Planning Act* would not require an authorization under the ESA. However, any development activities that would be permitted through

the creation of a new lot (e.g. single detached dwelling or site alteration) may require an authorization from the Ministry if it would contravene Sections 9 or 10 of the Act.

Sincerely,

Jane Devlin
Management Biologist
jane.devlin@ontario.ca

Encl.\
-ESA Infosheet
-NHIC/LIO Infosheet

APPENDIX C

OMNRF Confirmation of Project Review



McKINLEY ENVIRONMENTAL SOLUTIONS

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Andrew McKinley <mckinleyenvironmental@gmail.com>

760 March Road IGF Submission Part 1 of 2

Foss, Aaron (MNRF) <Aaron.Foss@ontario.ca>
To: McKinley Environmental <mckinleyenvironmental@gmail.com>

Wed, Dec 5, 2018 at 1:19 PM

Good afternoon Andrew,

After review, MNRF agrees with your assessment that impacts to Blanding's turtle, and contravention to the ESA should be avoided if avoidance and mitigation measures are implemented as described.

If any details of the project change, I recommend that you contact our office for a follow up review.

Any questions, feel free to contact me.

Cheers

Aaron Foss

Sr. Fish and Wildlife Technical Specialist
Ministry of Natural Resources and Forestry
Kemptville District
10-1 Campus Drive
Kemptville, ON K0G 1J0
Ph: 613-258-8386

From: McKinley Environmental <mckinleyenvironmental@gmail.com>
Sent: November 8, 2018 1:48 PM
To: Foss, Aaron (MNRF) <Aaron.Foss@ontario.ca>
Cc: Kevin A. Harper <KHarper@minto.com>; Susan Murphy <SMurphy@minto.com>
Subject: 760 March Road IGF Submission Part 1 of 2

Hi Aaron,

Minto are currently submitting a Site Plan/Draft Plan of Subdivision application to develop the properties at [760 March Road](#) and [329 Sandhill Road](#). For reference, the [760 March Road](#) parcel is located directly south of the [788 March Road](#) project, which was recently reviewed by the OMNRF.

The Minto project includes development of two parcels (both owned by Minto) on either side of Shirley's Brook. Both parcels are relatively small (about 2.2. ha total) and are surrounded by existing development on all sides. The two parcels are being developed concurrently by Minto, and so are addressed together.

The proposal for this project is similar to the adjacent [788 March Road](#) property. In this case, Minto proposes to maintain a full 60 m wide corridor surrounding [Shirley's Brook](#) (30 m setback from the normal high-water mark on both sides) in order to preserve Category 2 Blanding's Turtle habitat. A comparatively small area of Category 3 Blanding's Turtle habitat will be removed by the development. However, as with the adjacent [788 March Road](#) development, the Category 3 habitat is highly degraded and surrounded by existing development on all sides, and hence is unlikely to provide any significant habitat function. Minto are also proposing to provide fencing on both sides of the 60 m wide corridor, in order to mitigate any potential impacts to Blanding's Turtle. The fencing is anticipated to address the existing risk of road mortality on March Road and Sandhill Road, thereby offsetting any potential impacts associated with the removal of the non-functional Category 3 habitat.

Overall, the arrangement and habitat conditions are very similar to the recently reviewed [788 March Road](#) project (which is located immediately to the north).

As with the adjacent project, we believe the proposed mitigation is sufficient that there will be no significant negative impacts to Blanding's Turtle or their habitat, and therefore that an Overall Benefit Permit should not be required.

In order to facilitate the OMNRF review, I have prepared the Information Gathering Form (attached). I am also sending a copy of the Combined Environmental Impact Statement and Tree Conservation Report, and Figures (separate email).

As discussed with other recent applications, I have summarized the surveying in Table 2 of the IGF. As recently discussed, I haven't included a description of the mitigation measures (which will be included in the AAF). Once the OMNRF has confirmed acceptance of the IGF, I will submit the Alternatives Assessment Form.

We are looking forward to receiving your comments.

Thanks,

Andrew

--

Andrew McKinley, PhD, MA, BA (Hons), EP, RP Bio

Senior Biologist | McKinley Environmental Solutions

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