# Environmental Impact Statement
# Minto Arcadia Phases 3, 4 and Surrounding Areas

**Updated Report October 23, 2018**

**Submitted To**:
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# TABLE OF CONTENTS

## List of Figures



## List of Tables



## List of Appendices

# 1.0 INTRODUCTION

This report is an updated Environmental Impact Statement prepared by Kilgour & Associates Ltd. (KAL) on behalf of Minto in support of their ongoing development within their broader Arcadia residential project in Kanata, in Ottawa's west end. The report specifically addresses the Phase 3 & 4 Areas as well as surrounding lands subject ongoing site preparation for both Minto's next phase of commercial development and stormwater management area, each to be located along the southern edge of the Arcadia site. The report also updates various setback lines associated with Feedmill Creek.

This report documents natural environment information within the subject property and in adjacent areas based on existing land cover data and a single site survey of vegetation. It then examines the potential for impacts to Natural Heritage System elements. Most of the property had been stripped of topsoil and re-graded in preparation for development by 2007. There has been some subsequent regrowth of common weedy forbs on the site, though this limited vegetation has been continuously re-disturbed over the past few years as adjacent areas have been developed. No trees are present within the Phase 3 or 4 areas, though several remain along the edges of other areas. Several species at risk (SAR) had previously been found to occur in the broader area, though negotiations with the Ontario Ministry of Natural Resources and Forestry (MNRF) to manage SAR and their habitats have been completed through earlier stages of development. This EIS will discuss those species.

# 2.0 PROPERTY INFORMATION

The Phases 3 & 4 and adjacent areas to be developed are parcels of a larger property on Huntmar Drive (CON 1 N PT LOT 3 RP5R14184; PART 5; PIN: 045100344) wholly owned by Minto. The property is currently zoned as a development reserve (DR) within the City of Ottawa Zoning Bylaw.

# 3.0 SITE AND THE NATURAL ENVIRONMENT

## 3.1 Methodology and Area of Detailed Assessment

Colour digital aerial photographs from geoOttawa (Ottawa, 2017a) and Google Earth were used to review and identify natural environment features on the broader property. KAL biologist Catherine Proulx visited the site on November 28, 2016 to review its condition at the time. KAL biologist Anthony Francis revisited the site on October 19, 2018 to update the site land cover descriptions and to identify trees along the periphery of the development area.

## 3.2 Landform, Soils and Geology

Most of the site has been stripped, filled and graded. No original soil structures or layers exist on the surface in these areas. The eastern edge of the site however, still includes its original silty clay riparian soils. That area has long been cleared all the way to the Carp River with agricultural plowing evident in 1976 air photos, despite that fringe area appearing to have been a wetland. No rocky outcrops or other geological features capable of supporting cave structures are present on site. The site is not located within a wellhead protection area.

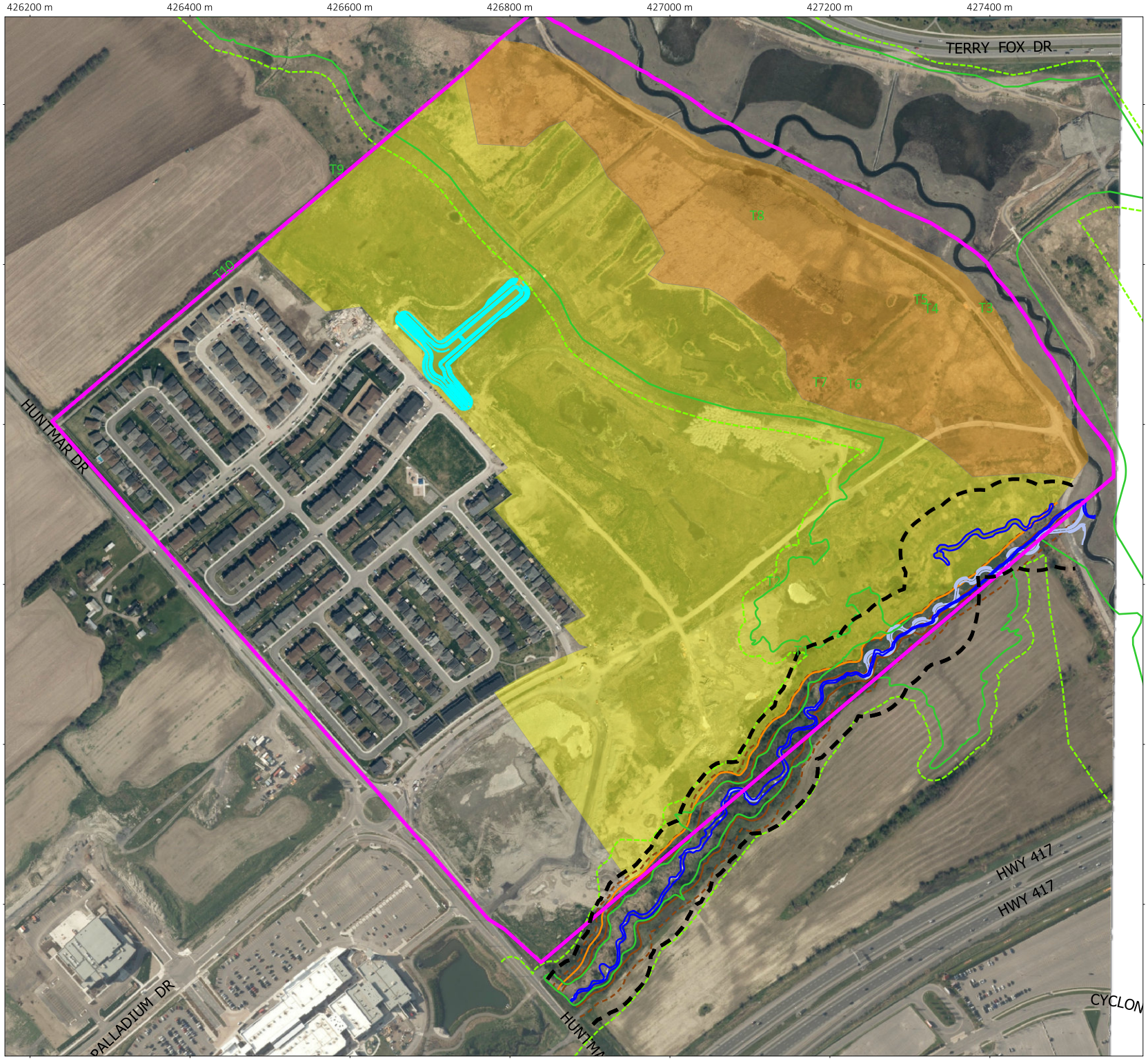


Figure 1: Current vegetation and natural heritage

## Legend

**Temp SWM Pond**

Feedmill Creek
- existing
- realignment

Key Setback Lines
- Floodplain (MVC current)
- Regulation Limit (MVC)
- Top of Slope
- Top of Slope (13m offset)
- Limit of Hazard Lands
- Feemill Creek Corridor Limits

**ELC**
- CUM
- MAM

**T#** **Tree/Tree Group**

N

0 150 m

Project:Arcadia Phase 3v4
Created By: AF
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Universal Transverse Mercator - Zone 18 (N)
Printed on: 2018-10-23

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## 3.3 Surface Water, Groundwater and Fish Habitat

The site and adjacent lands lie within the Carp River Watershed, which is managed by the Mississippi Valley Conservation Authority. No natural surface water features or wetlands are present directly on site, though channels do exist along the north and south edges of the Arcadia site.

An unnamed watercourse that was originally located within Phase 2, was rerouted within a ditch, constructed adjacent the north side of the development, out-letting at the Carp River. That feature is located within a City owned corridor and is set back >15 m from the north edge of Phase 1 as per the Carp River Subwatershed Study recommendation for Category 3 fish habitat and/or intermittent channels. The downstream portion of this channel, i.e. from Riverchase Dr. (the current eastern edge of the proposed development) to Jock River, is to be realigned roughly along its current course flowing principals of natural channel design to provide a more sinuous permanent stream. This realignment was called for as part of the initial rerouting for Phase 2 and will now be completed as this phase is developed. This feature will also be situated within a 15 m setback.

Feedmill Creek runs eastward to the Carp River along the south side of the site. The original base mapping survey file (60226195-base-plan) was used to establish existing edge of the creek. The corridor for Feedmill Creek has set based on the maximum of the following setbacks identified within the Kanata West Implementation Plan (Appendix 3):

- The floodplain;
    - Using updated mapping from MVCA (Floodplain and Regulation Limit), which delineates the 1:100 year flood plain boundary for the watercourse as well as related erosion hazard limits.
- The meander belt;
    - The greater of a) 100m per the Implementation Plan b) 70m width per the watershed Study
- A 30m Setback from Natural High Water Mark (NHWM);
- A 13m Setback from the Top of Slope; and
- The Hazard Limit.
    - Based on files “PG2472-1 to -4 and PG2472-5” from Paterson.

Additionally, the 2010 Kanata West Implementation Plan requires a minimum “preservation” along this section of Feedmill Creek. The total cross section of the preserved riparian corridor must extend to a width of at least 100m (Reach 1) and 80m (Reach 2), regardless of whether maximum combination of the above setbacks allow for a narrower span. Following these guidelines, the corridor (see Figure 1) has been set conservatively so as to accommodate both the ancestral (northern) and manmade farm channel (southern)

There is a temporary drainage corridor within the Arcadia Development that serves as the dedicated outlet to the Carp River for the interim pond servicing existing Arcadia Stages 1 and 2 and Commercial Stage 1, as well as for the western portion of the Campeau Drive ROW. The construction of Pond 1 (the planned future principal stormwater management pond for the broader area) could not proceed until the Carp River restoration works were completed so the interim wet pond facility was constructed to allow the development of those areas to proceed (JL Richards, 2017).

The interim pond is located to the east of Stage 2 and is equipped with two separate inlets and forebays. It had been intended that this interim pond would be decommissioned once the Carp River restoration works were completed and the permanent Pond 1 was constructed (JL Richards, 2017). This pond and its future will be discussed further in Section 3.2. As a temporary stormwater management facility however, this feature does not constitute aquatic habitat.

The Carp River is located 300 m to the east of the site. The adjacent Carp River floodplain has recently been reconstructed as part of the on-going Carp River Restoration Project, and now begins >250 m eastward from the site. The Carp River Corridor is being revegetated as part of the work but currently provides no natural habitat. The Carp River Restoration Project was designed and conducted so as to pulled the 100-year floodplain back to the eastern edge of the Minto's property. The officially-registered floodplain mapping however, will not reflect this change until such time as Minto completes the grading of their lands in accordance with Carp River Restoration Project plan. Thus, while the proposed development will occur within the floodplain as per the its currently registered extent (Figure 2), the actual flood plain will be continually adjusted and moved eastward as development proceeds in that direction.

## 3.4 Vegetation and Land Cover

The Phase 3 & 4 areas, as well as much of the adjacent land, have been graded and prepared for development (Figure 1). This expanse of cultural meadow (CUM) has limited vegetative cover and provides no natural habitat, as it subject to ongoing (re)disturbance. Vegetative covering includes asters, burdock, clover, thistle, cow vetch and grasses. Occasional patches of Bebb's Willow can be found across the area and are especially prominent in north east corner of the site. These bushes, while proving broad patches of low canopy, do not constitute trees per City guidelines as DBH is always less than 10 cm. The proposed new commercial area has been cleared and area set to be pre-graded. Most of the new SWM area has been preloaded, though the eastern edge of the site is still a meadow marsh (MAM) covered with cattail, grasses and, near the north east corner, Bebb's Willow.

The vegetation within the west end of the Feedmill Creek corridor is quite dense and mature, composed of a mix of willow, ash (mostly dead or dying of EAB) , Manitoba Maple and America Elm, though it thins and reduces to MAM at the bottom end. There are some colonies of sumac on the south facing slopes and a variety of understory shrubs. Trees and vegetation here is within the 100+ m wide setback corridor protecting the creek and its riparian edges. Land outside of this corridor as already been almost entirely cleared, except for several trees as indicated below in Table 1.

**Table 1. Results of the tree inventory survey of the property in November, 2016.**

| Location | Tree Species | Quantity | DBH (range - cm) | Notes |
|---|---|---|---|---|
| T1 | Trembling Aspen<br>Manitoba Maple | 2<br>21 | 15 - 45 | Small patch of trees crossing the boundary of the retained Feelmill Creek corridor. Generally healthy.<br>North half of the patch will be removed (Trembling Aspen and several Manitoba Maples) |
| T2 | Trembling Aspen<br>Manitoba Maple<br>Cottonwood<br>Crack Willow | ~25 | 10 - 25 | Generally heathy but scrappy. A preserved row surrounded by scrapped earth.<br>Will be removed. |
| T3 | Crack Willow | 1 | Multi-stemmed average 50 cm | Generally heathy. Adjacent to walking path.<br>Will be retained. |
| T4 | Crack Willow | 1 | 120 | Generally heathy.<br>Will be removed to allow for grading. |
| T5 | Crack Willow | 1 | Multi-stemmed average 50 cm | Generally heathy.<br>Will be removed to allow for grading. |
| T6 | Crack Willow | 1 | Multi-stemmed average 35 cm | Generally heathy.<br>Will be removed to allow for grading. |
| T7 | Crack Willow | 1 | Multi-stemmed average 35 cm | Generally heathy.<br>Will be removed to allow for grading. |
| T8 | Balsam Poplar | 4 | 25 - 45 | Healthy.<br>Will be removed to allow for grading. |
| T9 | Crack Willow | 4 | Multi-stemmed 30-50 cm | Healthy. Located in the corner of the adjacent farm field next to the north side channel.<br>Will be retained. |
| T10 | Crack Willow<br>Manitoba Maple | Long hedge row | 10 - 30 | Healthy. The end of a long hedgerow running along the far side of the north-side channel.<br>Will be retained. |

## 3.5 Wildlife

The majority of the site does not represent quality wildlife habitat and none of it is likely to used even transiently by local fauna during the winter. During the summer, there is some limited potential for transient access by common species including snakes in portions where construction has not yet commenced. Birds are likely to be common in MAM ecosite during the summer but are absent in the winter. The MAM ecosite was completely dry in the fall of 2018 and thus cannot support any overwinter herpetiles. The tree portions of the Feedmill Creek corridor (mostly occurring beside already developed areas to the west) will be retained and left undisturbed during this phase of development.

## 3.6 Species at Risk

A natural heritage information request was originally submitted to the Kemptville MNRF office to determine SAR, SAR habitat, and natural heritage features potentially present on and adjacent to the site in 2011, prior to the start of development of the broader area. At the time, the MNRF indicated the possible presence of Butternut, Loggerhead Shrike and Henslow's Sparrow (Endangered), plus Bobolink, Blanding's Turtle and Eastern Musk Turtle (Threatened) (Appendix 4). Milksnake, Eastern Ribbonsnake, and Snapping Turtle (Special Concern) were also identified as possibly present though they were not protected under the *ESA*. Eastern Musk Turtle has since been downgraded to Special Concern. As such, it is also no longer subject to the *ESA*. Milksnake has now been completely delisted. It is still prohibited however, to directly harm any of these species under the Ontario Fish and Wildlife Conservation Act. These species do not have legal habitat protection.

Our background information review of the site identified 12 species listed under the *Endangered Species Act* (Ontario, 2007) and *Species At Risk Act* (Canada, 2002) to occur on or in proximity to the property (Bank Swallow [*Riparia riparia*], Barn Swallow [*Hirundo rustica*], Bobolink [*Dolichonyx oryzivorus*], Eastern Meadowlark [*Sturnella magna*], Eastern Wood-pewee [*Contopus virens*], Wood Thrush [*Hylocichla mustelina*], Monarch [*Danaus plexippus*], Little Brown Myotis [*Myotis lucifuga*], Northern Long-eared Myotis [*Myotis septentrionalis*], Eastern Small-footed Myotis [*Myotis leibii*], Tri-colored Bat [*Pipistrellus subflavus*], Butternut [*Juglans cinerea*]).

For full due diligence, Table 2 indicates the habitat requirements of protected SAR potentially present within the broader area and whether the property may provide significant habitat. The list also includes additional entries for species under consideration for listing within the next two years.

**Table 2. Species-at-risk potential for the site.**

| Species Name | Provincial (ESA) Status | Habitat Requirement | Habitat on Site | Project Concerns Associated with Habitat on Site |
|---|---|---|---|---|
| **Birds** | | | | |
| Bank Swallow (*Riparia riparia*) | Threatened | Colonial nester; burrows in eroding silt or sand banks, sand pit walls, and other similar habitats | No nesting habitat observed on or adjacent to site, but could forage in open habitats nearby. | Negligible potential for presence. Not a concern for this project. |
| Barn Swallow (*Hirundo rustica*) | Threatened | Species prefers to nest on manmade structures such and bridges, barns, and buildings near open terrestrial and aquatic habitats where it forages. | No nesting habitat observed on or adjacent to site, but could forage in open habitats nearby. | Negligible potential for presence. Not a concern for this project. |
| Bobolink (*Dolichonyx oryzivorus*) | Threatened | Periodically mown, dry meadow for nesting. Habitat (meadow) should be > 10 ha, and preferably > 30 ha before bobolink are attracted to the site. Not near tall trees | No suitable habitat remains on site. The area previously supported the species but was cleared under an agreement with the MNFR in 2012. | Negligible potential for presence. Not a concern for this project. |
| Eastern Meadowlark (*Sturnella magna*) | Threatened | Prefers grasslands and pastures >5 ha in area with moderately tall grasses (25 to 50 cm) and abundant litter cover. High proportion of grasses to forbs and shrubs (<35% forbs and shrubs). | No suitable habitat on site. | Negligible potential for presence. Not a concern for this project. |
| Eastern Wood-pewee (Contopus virens) | Special Concern | Prefers mature and intermediate-aged deciduous and mixed forest with an open understory. Often nests and forages near open areas and forest edges. | No suitable habitat on site. No woodlands exist on site. | Negligible potential for presence. Not a concern for this project. |
| Wood Thrush (*Hylocichla mustelina*) | Special Concern | Moist deciduous hardwood or mixed forests with trees >16 m in height, a closed canopy (>70%), moderate sub-canopy and shrub layer, fairly open forest floor, and moist soil. | No suitable habitat on site. No woodlands exist on site. | Negligible potential for presence. Not a concern for this project. |

| Species Name | Provincial (ESA) Status | Habitat Requirement | Habitat on Site | Project Concerns Associated with Habitat on Site |
|---|---|---|---|---|
| **Butterflies** | | | | |
| Monarch (*Danaus plexippus*) | Special Concern | Caterpillars require Milkweed species and are confined to meadow and open areas where it grows, while adults feed on nectar ins a variety of habitats. | No suitable habitat on site. | Transient presence is possible in the summer but the species is not currently protected under the *ESA.* Not a concern for this project. |
| **Mammals** | | | | |
| Little Brown Myotis (*Myotis lucifuga*) | Endangered | Widespread, roosting in trees and buildings. Hibernate in caves or abandoned mines. | No suitable roosting or maternity habitat available on site. No potential bat hibernacula on site. | Negligible potential for presence. Not a concern for this project. |
| Northern Long-eared Myotis (*Myotis septentrionalis*) | Endangered | Associated with boreal forests, choosing to roost under loose bark and in the cavities of trees. Hibernate in caves or abandoned mines. | No suitable roosting or maternity habitat available on site. No potential bat hibernacula on site. | Negligible potential for presence. Not a concern for this project. |
| Eastern Small-footed Myotis (*Myotis leibii*) | Endangered | Species roosts in a range of habitats including under rocks, rocky outcroppings, buildings, under bridges, caves, mines, and hollow trees. Hibernate in smaller caves subject to air movement. | No suitable roosting or maternity habitat available on site. No potential bat hibernacula on site. | Negligible potential for presence. Not a concern for this project. |
| Tri-colored Bat (*Pipistrellus subflavus*) | Endangered | Prefers to roost in trees in old forests but sometimes uses buildings. Forage over water courses or open fields with large trees nearby. They never forage in deep woods. Hibernate in caves or abandoned mines. | No suitable roosting or maternity habitat available on site. No potential bat hibernacula on site. | Negligible potential for presence. Not a concern for this project. |
| **Turtles** | | | | |
| Blanding's Turtle (*Emydoidea blandingii*) | Threatened | Species prefers shallow water usually in large wetlands or shallow lakes with high abundance of emergent vegetation. | Habitat areas are limited to Carp River corridor as per the agreements with the MNRF regarding the Carp River Restoration project. Transient presence is possible, but is considered extremely unlikely given | Negligible potential for presence. Interactions can be mitigated Not a concern for this project. |

| Species Name | Provincial (ESA) Status | Habitat Requirement | Habitat on Site | Project Concerns Associated with Habitat on Site |
|---|---|---|---|---|
| | | | the highly disturbed conditions over of the site. | |
| Eastern Musk Turtle (*Sternotherus odoratus*) | Special Concern | Ponds, lakes, marshes and rivers that are generally slow-moving have abundant emergent vegetation and muddy bottoms | Species could use the channels beside the site for travel and nesting, though no such activity has been observed in studies of the area since 2011. No such usage would occur during the winter. | The species is not currently protected under the ESA.<br>Not a concern for this project. |
| Snapping Turtle (*Chelydra serpentina*) | Special Concern | Freshwater habitat characterized by slow-moving water with a soft mud bottom and dense aquatic vegetation. | Species could use the channels beside the site for travel and nesting, though no such activity has been observed in studies of the area (including within the Feedmill Creek corridor) since 2011. Regardless, no such usage could occur during the winter.<br>The current temporary SWM pond is very narrow and small. As such it is unlikely to be useful to Snapping Turtles. The larger, planned SWM will likely be used as summer habitat once it is completed. | The species is not currently protected under the ESA.<br>Not a concern for this project. |
| **Vascular Plants** | | | | |
| Butternut (*Juglans cinerea*) | Endangered | Variable but typically on well-drained soils. | Habitat suitability is extremely low. No individuals are present on site. | Negligible potential for presence.<br>Not a concern for this project. |

Bobolink were found to be using the property in 2012. Minto however, developed a compensation plan for the species (Kilgour 2012) prior to commencing construction on adjacent phases of the community. The property no longer provides suitable habitat for grassland birds and further Bobolink presence is extremely unlikely.

As part of the studies supporting the Carp River Restoration Project, Blanding's Turtle habitat was found to occur along the Carp River Corridor (Kilgour 2014) though to the east of the Phase 3 area. The Carp River Restoration was designed in part to improve turtle habitat within the new floodplain, while redeveloping areas outside of the floodplain (e.g. the Phase 3 & 4 areas) as non-turtle habitat. This has taken place. The property no longer provides suitable turtle habitat and further Blanding's Turtle presence is extremely unlikely.

### 3.7 Other Natural Heritage Features

There are no provincially significant wetlands, wetlands found in association with significant woodlands, significant valleylands, or Life Science Areas of Natural and Scientific Interest on or adjacent to the site. With no Special Concern species observed on site, and no previous observations of larger groupings of other taxa, no Significant Wildlife Habitat is present.

## 4.0 PROJECT DESCRIPTION

The Phase 3 development (Figure 2) will include approximately 196 single homes, 36 townhomes and 46 back to back towns. The Phase 4 development will include approximately 117 single homes.
Construction is anticipated to begin in early 2018 with first occupancy by homeowners by early 2019.
Site preparation within the new commercial block (i.e. "Commercial 2" in Figure 2) and SWM area adjacent to it will occur only outside of the creek corridor as defined following the setbacks identified in Section 3.3. In addition to these setbacks, the corridor was expanded to accommodate the 13m wide walkway in the event that it would not fit within the corridor and was outside of the hazard limit. This only occurs in a few locations where the corridor was slightly modified so that the walkway was outside this hazard.

Associated with the development of the new final SWM pond in the north east corner of the site, the north side channel will be fully built out as per the channel design approved with Phase 1. This feature will have a 15 m setback.

The Arcadia development as currently proposed does not include any new crossing of Feedmill Creek. Lands along the south side of Feedmill Creek belong to, and will be developed by Broccolini. Their future community will have frontage along Huntmar and would thus not specifically require additional access routes crossing the creek from the Arcadia community. Should a future CDP for the Broccolini site however, eventually desire such a crossing, any associated environmental assessment or planning would have to be completed at that time. Consideration of such a crossing now would be hypothetical with no details on sizing or location possible, and is beyond the possible scope of this report.

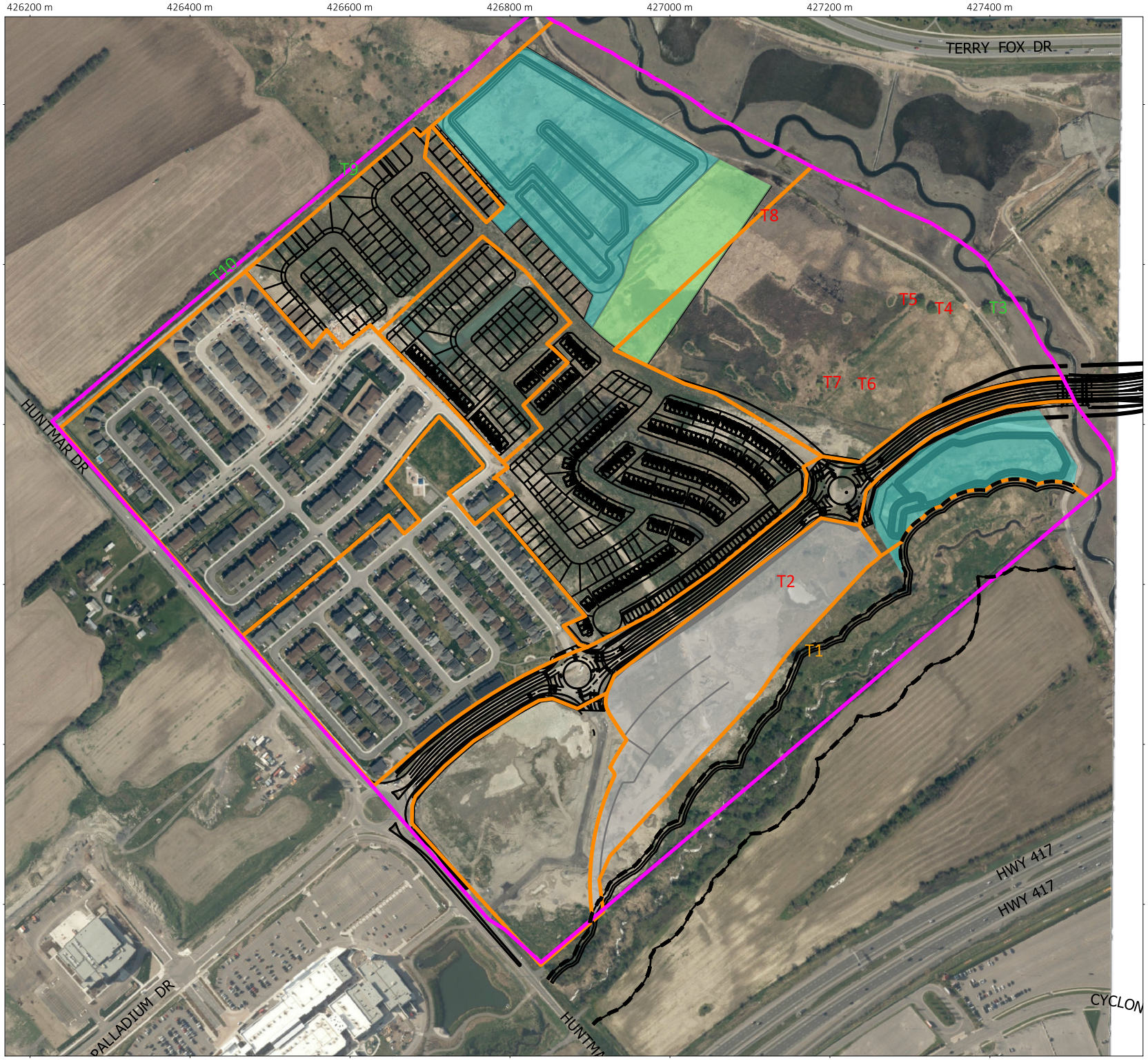


Figure 2: Proposed development

## Legend

Arcadia Community Plan

- Commercial
- Park Land
- Storm Water Management
- Feemill Creek
- Corridor Limits

Tree/Tree Group

- T# Retained
- T# Partially Retained
- T# Removed

N

0 150 m

Project:Arcadia Phase 3v4
Created By: AF
Checked By: AF
Universal Transverse Mercator - Zone 18 (N)
Printed on: 2018-10-23

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# 5.0 IMPACT ASSESSMENT

## 5.1 Impacts to Trees and Site Vegetation

There are very few trees located within the development area. All existing tree and vegetative cover within the 100 + m wide Feedmill Creek corridor will be fully preserved. No impacts are anticipated to trees here. Trees and vegetation outside of this corridor will be fully removed.

## 5.2 Impacts to Species at Risk

There are no SAR or their habitats on or adjacent to the site. No impacts anticipated to SAR.

## 5.3 Impacts to Wildlife

The potential for wildlife presence within the highly disturbed lands of the development area is very low. All additional land clearing and filling within the MAM ecosite along the eastern edge of the site will be completed in the winter of 2018/2019. The MAM area at that time is completely dry and will not support any overwintering turtles or frogs. Standard construction mitigations are anticipated to prevent impacts to any wildlife that does occur on the site; therefore, no impacts to wildlife are predicted from the project.

All existing tree and vegetative cover within the 100 + m wide Feedmill Creek corridor will be fully preserved, thus retaining any current (though likely limited) use of this area by wildlife.

## 5.4 Impacts to Area Surface Water

The MAM ecosite along the eastern edge of site has been approved by the MVC for filling and development as a part of the Carp River Restoration Project (Appendix 4). This wetland area will be removed in accordance with that plan during the winter of 2018/2019.

The unnamed north channel of the existing development is currently protected by a 15 m setback. This channel currently peters out within the MAM ecosite and has no direct, recognizable connection to the Carp River. This portion of the channel will be completed to the Carp River (Appendix 5) as per the requirements of the original realignment of the feature begun during the development of Phase 1. It too will be protected by a 15 m setback as discussed in Section 3.3.

Feedmill Creek will be protected within a 100+ m corridor discussed in Section 3.3. No negative impacts are thus anticipated to this feature.

All existing site runoff is currently managed and controlled through a temporary stormwater management pond located between the Phase 3 and 4 areas. The pond will be replaced with the new SWM pond.

# 6.0 MITIGATIONS

## 6.1 Mitigations for Trees

Several small areas of trees occur adjacent to the site. For these trees, and for trees that may planted on completed residential lots adjacent to the site prior to the completion of construction within the site, the following protection measures would be required:

- Erect a fence beyond the critical root zone (CRZ, i.e., 10 x the trunk diameter) of trees for which the CRZ extends onto the site. The fence should be highly visible (e.g., orange construction fence) and paired with erosion control fencing. Pruning of branches is recommended in areas of potential conflict with construction equipment;
- Do not place any material or equipment within the CRZ of the tree;
- Do not attach any signs, notices or posters to any tree;
- Do not raise or lower the existing grade within the CRZ without approval;
- Tunnel or bore when digging within the CRZ of a tree;
- Do not damage the root system, trunk or branches of any tree; and
- Ensure that exhaust fumes from all equipment are NOT directed towards any tree's canopy.
- The *Migratory Bird Convention Act* protects the nests and young of migratory breeding birds in Canada. The City of Ottawa guidelines require no clearing of trees or vegetation between April 1 and August 15, unless a qualified biologist has determined that no nesting is occurring within 5 days prior to the clearing.

Specific trees to be planted on site will be identified in the landscape plan for the development. Tree species identified in this plan however must be non-invasive and should be native to the Ottawa area. Recommended tree species to consider in the landscaping plan include Red Maple, White Spruce, White Pine and Black Cherry all of which currently occur near the site. Other local tree species however may also be considered. Trees are to be planted throughout the new community at a density equivalent to no less than one tree per lot, though the distribution of specific planting locations may be varied from necessarily planting on every lot, as may be dictated by individual lot considerations. Addition tree planting should also be included on other open areas such as SWM lands, parks and within the eastern end of the Feedmill Creek corridor, where such plantings may be feasible.

## 6.2 Mitigation for Species at Risk

No SAR or potential SAR habitats were observed on site therefore no SAR specific mitigations are required. Standard wildlife protection measures however, must be followed.

## 6.3 Mitigations for Wildlife

Common wildlife species were observed on site during the field visits. The following mitigation measures shall be implemented during construction of the project on site:

General measures to protect wildlife must be implemented. Contractors must:

- Have a Biologist inspect all sites prior to clearing to identify any new wildlife issues (e.g., hibernating animals or nursing mothers and their young, etc.) and to inform or adjust mitigation plans as needed;
- Tree clearing will will occur between April 1 and August 15, without first determining the absence of nesting species prior to clearing. This restriction also applies to mammals and ground nesting birds. All nest searches must be conducted by a qualified Biologist within 4 days of site clearing;
- Areas to be cleared must be pre-stressed prior to encourage wildlife to move away from a site prior to the onset of construction. Methods of pre-stressing include having one or more people walk the site while talking loudly or playing loud music, or placing pieces of cloth or other objects that carry a strong human scent into animal dens. Common pre-construction activities, such as surveying, or installing protective fencing, can contribute to pre-stressing. The final set of pre-stressing measures will be confirmed as part of the Biologists pre-clearing inspection.
- Site clearing activities should begin at the west side of the property and proceed toward the wetland. The goal is to ensure that any wildlife within the work space can retreat into the retained natural area without having to cross cleared lands;
    - Conduct vegetation clearing and ground works such that existing connections to adjacent areas of habitat are maintained until the final stage of clearing so that wildlife can use these connections to leave the site;
    - Ensure that perimeter fencing does not prevent wildlife from leaving the site during vegetation clearing. Once the work area has been cleared, it can be securely fenced to keep wildlife from returning. Silt fencing may be useful to keep small animals such as reptiles and amphibians out of the work area;
- Contractors and other on-site workers should be briefed on appropriate measures to reduce human-wildlife conflict during the work (e.g., waste management, no feeding wildlife, no deliberate harm to wildlife, safe relocation techniques to get wildlife to leave the site). Provide contact numbers for large animal removal, rehabilitation of injured or orphaned wildlife, and species at risk reporting.

## 6.4 Mitigations to Protect Area Surface Water

Development of the property will require standard erosion and sediment control mitigation measures to in place to protect adjacent lands and nearby waters from sediment laden runoff.

- Adopt a multi-barrier approach to provide erosion and sediment control;
- Retain existing vegetation and stabilize exposed soils with vegetation where possible;
- Limit the duration of soil exposure and phase construction when possible;

- Limit the size of disturbed areas by minimizing nonessential clearing and grading;
- Minimize slope length and gradient of disturbed areas; and
- Control overland sheet flow and to avoid concentrated flows.

# 7.0 SUMMARY AND RECOMMENDATIONS

It is my professional opinion that no negative impacts are anticipated to natural heritage features on or near this property under the proposed project. Mitigation measure shall be implemented to prevent impacts to trees and wildlife species in the area during project development.

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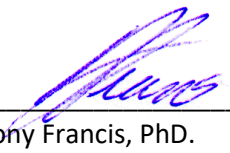

Anthony Francis, PhD.
Senior Ecologist

**Appendix 1**
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**Appendix 2**
**Qualifications of Report Author**

**Anthony Francis, PhD**

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

**Appendix 3**
**Carp River, Poole Creek and Feedmill Creek**
**Corridor Width Limits Rationale**

**Appendix 4**
**Government Communications and Records**

**B04/18/12-4**

**MOVED BY: J. Karau**
**SECONDED BY: P. Sweetnam**
**Resolved, That subject to the review and acceptance of the Office Building Committee, the Chairman and General Manager be authorized to enter into an agreement with Argue Construction Management Ltd., for the provision of Part 2 Contract Services (tendering and construction) to an upset limit of $5,123,000; and further**
**Resolved, That a revised upset limit for the MVC New Office Project be set at $6,500,000.**

**"CARRIED"**

5. Carp River Restoration Plan

Mr. Lehman commented on Staff Report #2675/12 outlining the background on the Carp River, Poole Creek and Feedmill Creek Restoration Plan. The staff report also outlined existing conditions on the Carp River, the Kanata West Development Area and its history, the Carp River Model Calibration Validation Exercise Final Report, and the Notice of Application for Official Plan and Zoning Bylaw Amendment. It was noted that staff have reviewed the proposed Official Plan and Zoning Bylaw Amendment and is of the opinion that the proposed amendments are consistent with the Carp River Watershed/Sub-watershed Study, the Implementation Plan for the Kanata West Development Area and reflect the hydraulic analysis completed as part of the Carp River Model Calibration Validation Exercise Final Report – July 2011.

With completion of the Carp River Model Calibration Validation Exercise Report, adherence to the Kanata West Implementation Plan, on-going monitoring commitments and staff's review of the Notice of Application for Official Plan and Zoning Bylaw Amendment, Mr. Lehman recommended that the Board of Directors endorse the proposed Carp River, Poole Creek, Feedmill Creek Restoration Plan and Carp River Restoration Policy Area and implementing Zoning Bylaw.

In response to questions, Mr. Lehman commented on the degrading state of the Carp River. He noted that the Restoration Plan is a significant project that will see the Carp River restored.

**B04/18/12-5**

**MOVED BY: P. Sweetnam**
**SECONDED BY: J. Karau**
**Resolved, That the Staff Report # 2675/12 regarding the proposed Carp River, Poole Creek, Feedmill Creek Restoration Plan be received; and further,**
**Resolved, That the Mississippi Valley Conservation Authority supports, in principle, the proposed Carp River Restoration Policy Area and implementing Zoning Bylaw.**

**"CARRIED"**

**Ministry of Natural Resources**

Kemtpville District
P.O. Box 2002
10 Campus Drive
Kemtpvile, ON K0G 1J0

Tel.: (613) 258-8470
Fax.: (613) 258-3920

**Ministère des Richesses naturelles**

District de Kemptville
CP 2002
10 Campus Drive
Kemptville, ON K0G 1J0

Tél.: (613) 258-8470
Téléc.: (613) 258-3920

April 29, 2011

Rick McCulloch
Kilgour Associates
1500 Bank St., Unit 427
Ottawa, Ontario K1H 1B8
613-260-5555 ext. 228

Attention: Mr. McCulloch

**Subject: Information Request – Proposed Housing Development, Lot 4, Concession 1; Geographic Township of March**
**Our File No. 2011_MAR_1296**

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

Following a review of natural heritage values and data, there are no Provincially Significant Wetlands, Areas of Natural and Scientific Interest (ANSI), or woodlands within the area; however the Carp River and a small tributary are located on the property. The Carp River has been documented to contain a large number of fish species, including minnows of the *Notropis* Genus which may be present in the on-site stream also. The minnow species captured in the photograph provided in your information request is likely one of a number of *Notropis* species that are difficult to identify. MNR recommends that if a sample of this species was collected during netting that it be sent to the Royal Ontario Museum for identification as it may be a species at risk. MNR would also appreciate being notified should the species be identified as *at risk* in order to discuss and arrange appropriate mitigation measures. There also appears to be a wet meadow on-site that may provide habitat for a diversity of species, including species at risk.

If any in-water works are to occur in relation to the project, there is a timing restriction period for which work in water can take place. In addition, where at all possible, the bed of waterbodies should not be disturbed so as not to alter the existing rock material. Proper sediment and erosion controls are required to be employed during this project.

If there is to be work in water and/or disturbance of the river or stream bed, additional and more detailed plans are requested by the MNR for review. A work permit from the Ministry of Natural Resources may be required pending further details regarding the proposed works. Furthermore, the local Conservation Authority should be contacted regarding possible permitting required for these particular works at the site in question.

With the new Endangered Species Act (ESA, 2007) in effect, it is important to understand which species and habitats exist in the area and the implications of the legislation. A review of the Natural Heritage Information Centre (NHIC) and internal records indicate that there is a potential for Butternut (Endangered Species-END) on-site where trees are present and Bobolink (Threatened-THR), Loggerhead Shrike (END), Blanding's Turtle (THR), and Milksnake (Special Concern-SC) in proximity to the area. Aerial photographs also suggest the presence of potential habitat for Henslow's Sparrow (END), Eastern Musk Turtle (THR), Eastern Ribbonsnake (SC), and Snapping Turtle (SC) within or in proximity to the proposed site. Care should be taken during the proposed work to ensure mitigation measures are in place to ensure no impact on these species occurs. Given the proximity and scale of the proposed work, these species may be directly affected, therefore due diligence should be taken during the work to ensure no impact on these species occurs. If the proposed activity is known to have an impact on the species mentioned above or any other SAR, an ESA permit is required. Species listed as Special Concern on the SARO list are not protected under the Endangered Species Act, 2007. However, please note that some of these species may be protected under the Fish and Wildlife Conservation Act. Suggested search and mitigation measures for the aforementioned species are listed below:

> Turtles: A thorough sweep of the aquatic area should take place before any in water work occurs. A sweep of the area will encourage any turtles possibly utilizing the site to move away before any equipment or work which could impact the species occurs. Furthermore, extra care and precaution should be taken during the snapping turtle species nesting season in June and early July. Turtles may utilize the embankment to come up and nest during this time. If the proposed work will occur during this timeline, Ministry of Natural Resources (MNR) recommends fencing off the site in early spring to prevent the turtles from nesting there and to visually inspect the embankment and surrounding area to ensure that no turtles are present before proceeding with any work. In addition, caution should be taken from October 16th to March 15th as turtles could be hibernating. Turtles could use the area to burrow in for the winter. If the proposed work will occur during this timeline, Ministry of Natural Resources (MNR) recommends fencing off the site in early fall to prevent the turtles from hibernating there.
>
> Snakes: A thorough search of the area should take place before terrestrial activity and work is being conducted. Temperature and weather conditions will drive their behaviour and they are much more visible on warm summer days when basking or moving more frequently. Extra precaution should be taken in spring emergence

conditions when snakes are in concentrated areas. Vegetation at this time is undeveloped increasing visibility, and outside of spring they are more active. Snakes may use open areas to bask, but avoid these areas when it is too hot. Searches could include trees, logs, ground, stumps, rock outcrops and ledges. Skin sheds can be a good indication of presence. Oviposition sites of egg laying snakes may be identified by young snakes in the fall and are usually in old trees, stumps, logs, manure piles or other decaying materials. If hibernacula and ovipostion sites are suspected or known they must not be destroyed if encountered and MNR recommends fencing off the areas before proceeding with any work.

Butternut: If any of the proposed work will require harming or killing of Butternut trees, a Butternut Health Assessor will have to be contacted to assess the health of the tree before proceeding with potential permit application (prior to proposed activity). If a Butternut tree will be impacted during the work proposed, please contact your local MNR office to enquire further about the process dealing with Butternut trees.

Fish: Proper mitigation and care should be taken to mitigate impact on water quality and fish habitat, including the installation of sediment and erosion control measures, avoiding removal, alteration or covering of substrates used for fish spawning, feeding, over-wintering or nursery areas including selecting locations with sand, silt or clay substrates and where aquatic vegetation is scarce or absent.

A rigorous check/survey should be completed each day prior to activities commencing to ensure all species are outside the project area to avoid harming the species. 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.

Bobolink, Henslow's Sparrow, and Loggerhead Shrike receive general habitat protection and thus any potential works should consider disturbance of possible important habitat. None of the other species listed above currently receive habitat protection, however the listed Endangered and Threatened species all receive species protection under Section 9 of the Endangered Species Act, 2007 (ESA).

Although no other threatened or endangered species or their habitat have been documented in the area, these features may be present and this list should not be considered complete.

**Endangered Species Act, 2007, and Species at Risk in Ontario Background**

The ESA 2007 (http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statues-07e06_e.htm) protects both species and habitat. Section 9 of the ESA "prohibits killing,

harming, harassing, capturing, possessing, collecting, buying, selling, trading, leasing or transporting species that are listed as threatened, endangered or extirpated". Section 10 of the ESA, 2007 prohibits damaging or destroying habitat of endangered or threatened species. Protected habitat is either based on general definition in the Act or prescribed through a regulation. The ESA 2007 defines general habitat as an area on which the species depends, directly or indirectly, to carry on its life processes, including reproduction, rearing, hibernation, migration or feeding.

It is important to be aware that changes may occur in both species and habitat protection. The ESA applies to listed species on the Species at Risk in Ontario List (SARO) (www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/246809.html). The Committee on the Status of Species in Ontario (COSSARO) meets regularly to evaluate species for listing and/or re-evaluate species already listed. As a result, species' designations may change that could in turn change the level of protection they receive under the ESA 2007. Also, habitat protection provisions for a species may change e.g. if a species-specific habitat regulation comes into effect. The regulation would establish the area that is protected as habitat for the species.

Information with respect to SAR can be found in the online database at the Natural Heritage Information Centre (NHIC) (http://nhic.mnr.gov.on.ca/nhic.cfm). The NHIC compiles, maintains and distributes information on species at risk and updates its information on a regular basis. We encourage you to routinely check the NHIC database to obtain the most up to date SAR information for proposed work locations. However, while the NHIC database is the best available source of data, even when there are no known occurrences documented at a site, there is a possibility that SAR may occur at a proposed work location.

> **Please note:** The advice in this letter is valid until **April 29, 2012** and may become invalid if:
>
> 1. 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.
> 2. Additional occurrences of species are discovered.
> 3. Habitat protection comes into force for one of the above-mentioned species through the creation of a habitat regulation.

This letter has been prepared to provide preliminary information to support compliance with the ESA 2007 and does not address other requirements under other federal or provincial laws and regulations.

Although this data represents the MNR's best current available information, it is important to note that a lack of occurrence at a site does not mean that there are no Species at Risk (SAR) at the location. The MNR continues to encourage ecological site assessments to determine the potential for other SAR occurrences. When a SAR does occur on a proposed 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 application of certain permits (Section 17) or agreement (Regulation 242/08). For specific questions regarding the Endangered Species Act (2007) or species at risk, please contact a district Species at Risk Biologist at sar.kemptville@ontario.ca.

Sincerely,

Laura Melvin
Resource Management Planner
laura.melvin@ontario.ca

**Appendix 5**
**North Channel Realignment Plan**

# Mississippi Valley Conservation

File: D07-16-06-0028

February 11, 2013

Peter Spal
IBI Group
333 Preston St, Suite 400
Ottawa, ON K1S 5N4

Dear Mr. Spal:

**RE: Application Made Under Ontario Regulation 153/06 to realign a segment of a tributary to the Carp River, install a culvert and enhance the outlet to the Carp River. Arcadia Subdivision, 370 Huntmar Drive, Ottawa.**
**IBI file number: 3775-5.3.1.5**

Mississippi Valley Conservation (MVC) has reviewed the proposal of realigning the channel of a tributary to the Carp River for the purpose of developing the site as a subdivision. As part of this realignment a culvert will be installed and the portion of the tributary downstream of the culvert will become enhanced fish habitat with connection to the Carp River as shown in drawings titled "Arcadia Fish Habitat Enhancement" numbered 700-706. The Carp River is currently undergoing an enhancement project and this tributary work must align with and connect to the work being done as part of the Carp project.

A formal permit (File No. D07-16-06-0028) under Ontario Regulation 153/06, the Development, Interference with Wetlands and Alteration to Shorelines and Watercourses Regulation, will be issued by MVC for the work connecting the tributary to the Carp River which will commence once the review of the subdivision is complete.

As detailed in our Level II agreement with the Department of Fisheries and Oceans (DFO), MVC is responsible for the evaluation of the impact of proposed works on fish habitat within our watershed.

The harmful alteration, disruption or destruction of fish habitat is prohibited unless authorized by DFO pursuant to Section 35(2) of the *Fisheries Act*. In keeping with DFO's "Policy for the Management of Fish Habitat", no such authorizations are issued unless acceptable measures for habitat loss are developed and implemented by the proponent.

Often physical impacts on fish habitat can, for the most part, be mitigated by specific modifications or actions incorporated into the project design and construction procedures. In addition to the measures and construction methods set out in the project proposal, the following mitigative measures, if incorporated into the project, are intended to alleviate any potential harmful impacts to fish and fish habitat:

- No in-water work should occur from March 15 to June 30 to protect local fish populations during their spawning and nursery periods.
- All materials and equipment used for the purposes of site preparation and project completion should be operated and stored in a manner that prevents any deleterious substances (e.g. petroleum products, silt, debris, etc.) from entering the water.

- A suitable geotextile (erosion control cloth or equivalent) should be placed between the rock and the back-fill material to contain sediments and help prevent undermining.
- Only clean material free of fine particulates should be placed in the water and the new channel.
- No machinery should enter the water except the clean arm and bucket of the machinery.
- Any part of machinery that enters or comes in contact with the water should be clean of all grease, oil, dirt or debris.
- Natural structures such as logjams and in-stream woody cover should not be removed unless they represent a barrier to flows or fish movement.
- All in stream work should be completed *in the dry* by de-watering the work area and diverting and/or pumping flows around cofferdams placed at the limits of the work area.
- Switching the flow from the old channel to the new should be conducted during low flow conditions.
- Sediment and erosion control measures should be implemented prior to work, and maintained during the work phase, to prevent entry of sediment into the water or the movement of re-suspended sediment.
- Sediment and erosion control measures should be left in place until all disturbed areas have been stabilized.
- Dredged material should be disposed on land outside of the floodpain of the Carp and be suitably contained/stabilized to prevent the dredged material from re-entering the water. Note: It is the responsibility of the proponent to determine if sediments are contaminated, and if so contact MOE.
- The culvert should be embedded at least 10% of the culvert diameter below the upstream and downstream channel invert.
- Where appropriate, culverts should be backfilled with imported substrate material matching the existing upstream and downstream bottom type and gradient.
- All disturbed areas should be stabilized and re-vegetated as required upon completion of work and restored to a pre-disturbed state or better.
- Deep-rooted native vegetation should be planted along the stabilized shoreline to strengthen the structure and prevent erosion.

If the work is carried out as per the above mitigative measures as well as our understanding of the project, it will not be considered as contravening Section 35(1) of the *Fisheries Act* which reads:

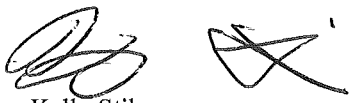
"No person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat."

**If the proposed construction method is modified MVC should be contacted before the start of work to obtain any further/additional advice regarding the potential impact and mitigative measures with respect to fish habitat.**

Please note that this letter of advice does not release the proponent of the responsibility of obtaining any other permits that may be required under federal, provincial or municipal legislation.

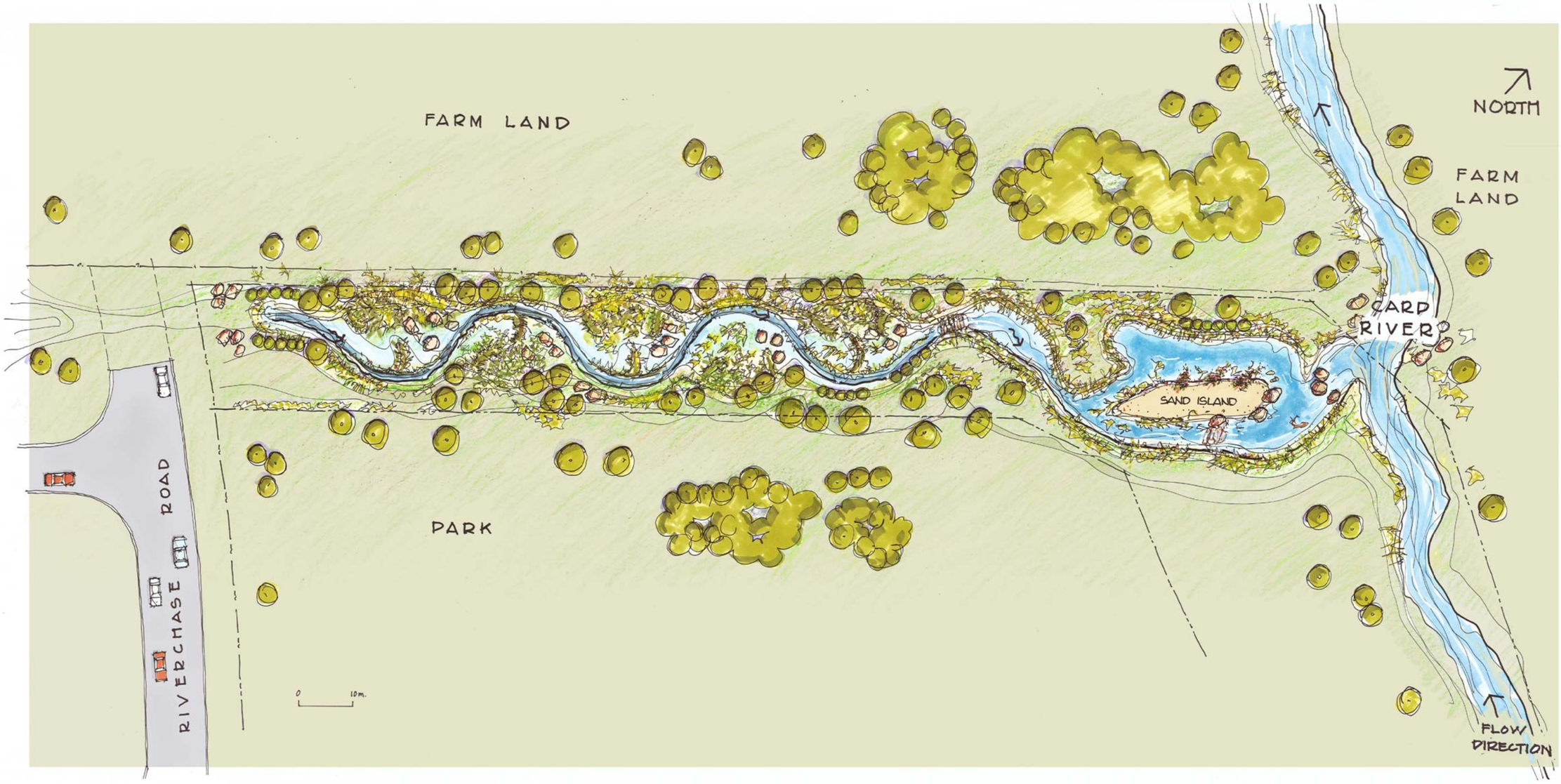
If you have any other questions, please contact the undersigned.

Yours truly,



Kelly Stiles
Aquatic Biologist

cc. Bruce Kilgour of Kilgour & Associates Inc.

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IBI GROUP

Scale

Project Title

ARCADIA FISH
HABITAT ENHANCEMENT

Drawing Title

LANDSCAPE PLAN VIEW

Sheet No.

FIGURE 12