Environmental Impact Statement
Minto Arcadia Phases 5 and 6
Surrounding Areas

Updated Report

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Submitted To:
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1.0 INTRODUCTION

This report is an Environmental Impact Statement prepared by Kilgour & Associates Ltd. (KAL, Appendix 1) 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 5 and 6 areas of the development. These areas were cleared and regraded in conjunction with community development in the adjacent Phase 3 and 4 areas. That preparatory work was reviewed as part of the EIS for the Phase 3 and 4 areas (KAL, 2018). As the regrading within the Phase 5 and 6 areas is now complete and they are currently almost entirely devoid of natural cover, the focus of the EIS will be to review:

1) the proposed development in relation to previous considerations of species at risk (SAR) habitat on the site; and

2) the required setbacks for the community to both Feedmill Creek and the Carp River.

2.0 PROPERTY INFORMATION

The Phase 5 and 6 areas to be developed were 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

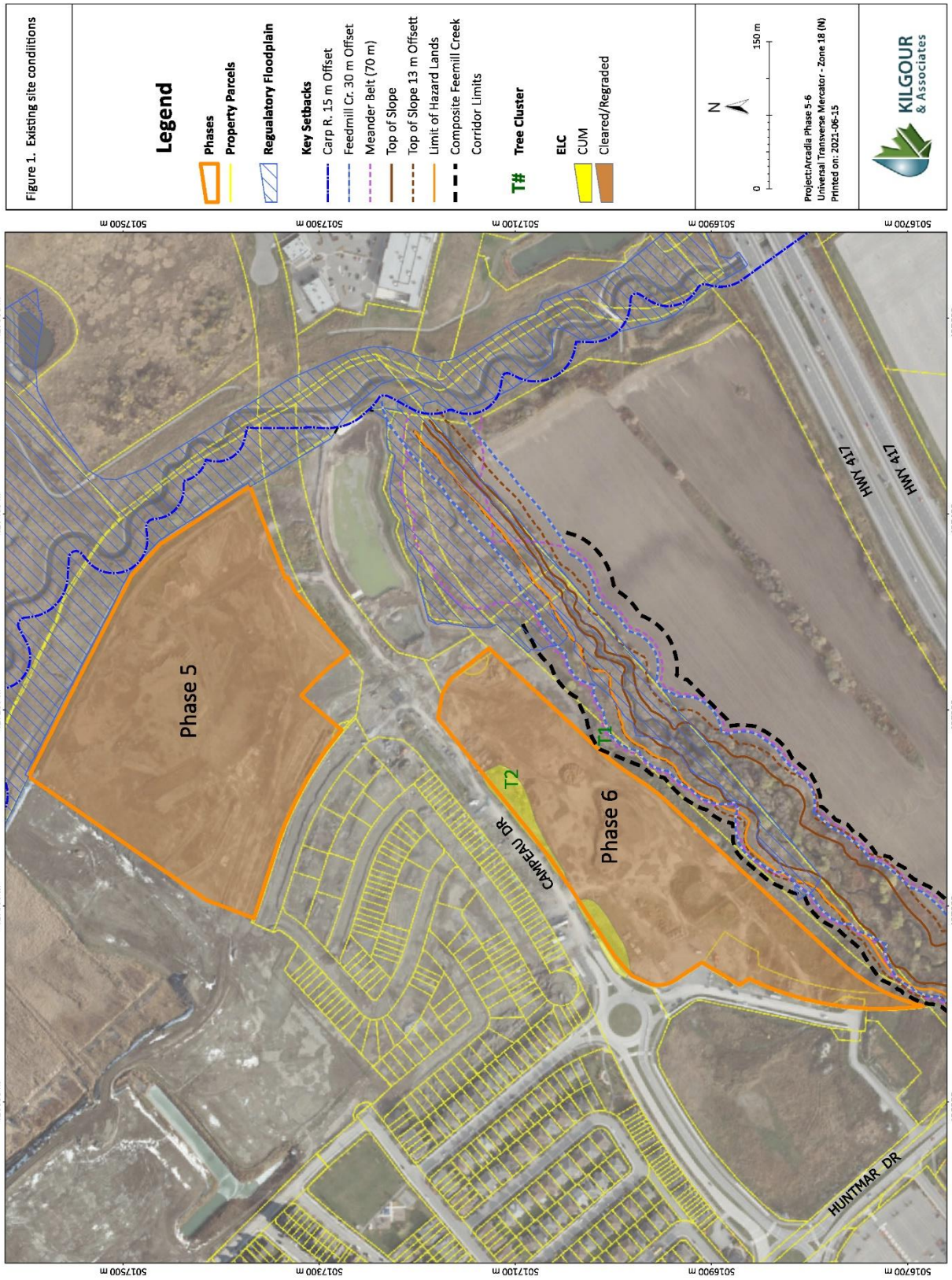
3.1 Methodology and Area of Detailed Assessment

Colour digital aerial photographs from geoOttawa (Ottawa, 2021a) and Google Earth were used to review and identify natural environment features on the broader property. KAL biologist Catherine Proulx visited the site on May 21, 2021, to review its condition at the time.

3.2 Landform, Soils and Geology

The entire Phase 5 area has been stripped, filled, and graded. No original soil structures or layers exist on the surface in these areas. The Phase 6 area has been similarly razed except for a narrow, vegetated strip along its northern edge adjacent to Campeau Drive (Figure 1).

Figure 1. Existing site conditions



3.3 Surface Water

The site and adjacent lands lie within the Carp River Watershed, which is managed by the Mississippi Valley Conservation Authority (MVCA). No natural surface water features or wetlands are present directly on site.

Feedmill Creek runs eastward to the Carp River to the south of Phase 6. It is separated from the creek corridor by a parcel of land reserved for the future transit corridor. The corridor for Feedmill Creek has set based on the maximum of the following setbacks identified within the Kanata West Implementation Plan (Appendix 2):

- 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 the maximum combination of the above setbacks allows 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)

A portion of the Phase 6 area also extends to within the MVCA Regulation limit of Feedmill Creek. Any development (which includes construction, site grading and the placement or removal of fill) within the regulated area requires written permission from the Conservation Authority to ensure that the the watercourse and its riparian corridor are adequately protected. Both of the the watercourse and its riparian corridor is will be protected in accordance with to setback provision established by previous studies as indicated above.

The Carp River is located to the east of the site. Setbacks to the Carp River were originally defined within the *Carp River Watershed/Subwatershed Study* (Robinson Consultants, 2004). All reaches of the Carp River upstream of Richardson Side Road were defined as a tolerant warm-water fish community (Type 3) with a required setback of 15 m.

Both the Carp River adjacent to Phase 5 and its associated corridor were significantly reconstructed as part of the Carp River Restoration Project per the *Carp River, Poole Creek and Feedmill Creek Restoration Update and Amendment* (Delcan, 2010). Work on Carp River was completed in 2017. The Carp River Restoration Project was designed and conducted so as to pull the 100-year floodplain back to the eastern edge of the Minto’s property, where it is currently situated. The filled area on Minto’s property

now serves as a developable area. At its closest point, the top-of-bank of the realigned Carp River is located 20 m from the eastern boundary of the Phase 5 area.

3.4 Vegetation and Land Cover

The Phase 5 area, having recently been subject to final grading, is devoid of any vegetation.

Most of the Phase 6 area has also been recently cleared and regraded. The northern-most edge of Phase 6 adjacent to Campeau Drive, however, includes a narrow (~10 m wide) band of cultural meadow (CUM) with a sparse scattering of asters, burdock, clover, thistle, cow vetch and grasses. A small cluster of trees (Tree Cluster 2, Table 1) occurs within the is strip. A second small cluster of trees is located off the south edge of Phase 6 within the rapid transit ROW.

Table 1. Trees on site.

Location	Tree Species	Quantity	DBH (range - cm)	Notes
T1	Trembling Aspen Manitoba Maple	2 21	15 - 45	Small patch of trees crossing the boundary of the retained Feedmill Creek corridor. Generally healthy.
T2	Trembling Aspen Manitoba Maple Cottonwood Crack Willow	~25	10 - 25	Generally healthy but scrappy. A preserved row surrounded by bare earth.

3.5 Wildlife

With both phases currently under active construction, neither area can provide wildlife habitat. During the summer, however, there is some limited potential for transient access by common species.

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 3). 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*]).

Table 2 indicates the habitat requirements of protected SAR potentially present within the broader area and whether the property may provide significant habitat.

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 sandbanks, sandpit walls, and other similar habitats	No nesting habitat is present on or adjacent to the site. As barren areas undergoing active groundworks, Phases 5 and 6 are unlikely to provide suitable feeding grounds despite being open areas. The adjacent river corridor could provide suitable foraging grounds and would continue to do so after development within Phases 5 and 6.	Negligible potential for presence within development areas. 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 is present on or adjacent to the site. As barren areas undergoing active groundworks, Phases 5 and 6 are unlikely to provide suitable feeding grounds despite being open areas. The adjacent river corridor could provide suitable foraging grounds and would continue to do so after development within Phases 5 and 6.	Negligible potential for presence within development areas. 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.	The Phase 5 and 6 areas are no longer protected as habitat (i.e. following the 2012 agreement. Groundworks in the area would be prohibited from commencing while the birds were present but regrading within Phase 5 and 6 has been ongoing since 2018. No suitable habitat remains and there is negligible potential for presence. Not a concern for this project.
Eastern Meadowlark	Threatened	Prefers grasslands and pastures >5	No suitable habitat on site.	Negligible potential for presence.

Species Name	Provincial (ESA) Status	Habitat Requirement	Habitat on Site	Project Concerns Associated with Habitat on Site
(*Sturnella magna*)		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).		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.
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 is 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 is 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	No suitable roosting or maternity habitat is available on site. No potential bat hibernacula 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
		trees. Hibernate in smaller caves subject to air movement.		
Tri-coloured Bat (*Pipistrellus subflavus*)	Endangered	Prefers to roost in trees in old forests but sometimes uses buildings. Forage over watercourses 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 is 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 a high abundance of emergent vegetation.	Habitat areas are limited to the 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 the highly disturbed conditions over of the site.	Negligible potential for presence. Potential interactions with the species can be prevented through the use of silt fencing installed around the perimeter of the development areas while under construction. Limited concern for this project.
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 Carp River 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. Negligible potential for presence. Potential interactions with the species can be prevented through the use of silt fencing installed around the perimeter of the development areas while under construction. 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 Carp River and/or Feedmill Creek corridors for travel and nesting, though no such activity has been observed in studies of the area since 2011.	The species is not currently protected under the ESA. Negligible potential for presence. Potential interactions with the species can be prevented through the use of silt fencing installed around the perimeter of the development areas while under construction. Not a concern for this project.

Species Name	Provincial (ESA) Status	Habitat Requirement	Habitat on Site	Project Concerns Associated with Habitat on Site
Vascular Plants				
Butternut (*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. 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, which was accepted by the MNR in 2014 (Appendix 3), thereby exempting the site from protection under the ESA as habitat. 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, Category 2 Blanding's Turtle habitat was found to occur along the former channel of the Carp River and the in wetland areas immediately adjacent to the river (Kilgour, 2014). Areas within 250 of the western edge of the river (i.e. most of Phase 5) were considered to constitute Category 3 habitat, based on standard definitions within the Blanding's Turtle General Habitat Description (MNR, 2013). These areas were found, however, to provide limited utility for the species (KAL, 2014). 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 5 areas) as non-turtle habitat (Appendix 3). This has taken place. The property no longer provides suitable turtle habitat and further Blanding's Turtle presence on the site 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 occurring on the site, and no previous observations of larger groupings of other taxa, no Significant Wildlife Habitat is present.

4.0 PROJECT DESCRIPTION

Proposed site development will occur outside of the required setbacks to the Carp River and to Feedmil Creek (Figure 2). Phase 5 (Appendix 4) development will occur on the developable lands created adjacent to the Carp River through the Carp River Restoration project. It will include 62 single homes, 89 executive townhomes and 74 avenue towns. Construction is anticipated to begin in mid-2021 with first-occupancy by homeowners by early 2022.

Phase 6 (Appendix 4) will include higher-density residential development with ~560 urban town units. The majority of parking for the site (~560 spaces) will be underground. Phase 6 development will occur outside of the Feedmill Creek corridor following the setbacks identified in Section 3.3 and will be separated from that feature by the City's rapid transit corridor. Construction is anticipated to begin in late-2021 and be completed by early-2023.

Figure 2. Propo

5.0 IMPACT ASSESSMENT

5.1 Impacts to Surface Water Features

As the Phase 5 areas respects the required setbacks to the Carp River (Figure 2) , no negative impacts are antipcated from the proposed development there to the river or its ecology.

The Phase 6 areas respects the required setbacks associated with the Feedmill Creek corridor (Figure 2) related to the flood plain limits, valley wall/erosion setbacks, and the meander belt allowances, as well as the composite Feedmill Creek Corridor limits at that account for aquatic habitat buffers and both terrestrial and wildlife habitat in accordance with previous studies (see Section 3.3). The proposed development will be separated from the creek corridor by the City-owned LRT corridor. Future pathways along the creek would be incorporated into the design of the LRT and be located within the LRT corridor. Accordingly, no negative impacts are antipcated from the proposed Phase 6 development to Feedmill Creek or its associate corrirdor.

5.2 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.

5.3 Impacts to Species at Risk

There are currently no SAR or their habitats on or adjacent to the site. Mitigation measures identified in is Section 6.2 must be in place to ensure no harm to transiently present individuals.

5.4 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.

6.0 MITIGATIONS

6.1 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 to avoid concentrated flows.

The zoning proposed for the proposed residential development for Phase 6 does not extend into the LRT corridor located between Phase 6 and Feedmill Creek corridor. It is recognized that if the LRT corridor is not constructed, it would be rezoned as O1, which would not impact the current devleoment or the ecology of the Feedmill Creek corridor. Any such planning measures related to the LRT, however, would be approved through the higher-level planning and would not otherwise be associated with the this project.

As a portion of the Phase 6 area extends to within the MVCA Regulation limit of Feedmill Creek site development work within that area area requires written permission from the Conservation Authority.

6.2 Mitigation for Trees and Site Vegetation

No trees occur on or adjacent to Phase 5. Two small clusters of trees occur on and adjacent to Phase 6 but these will be removed at the commencement of construction, which will leave the site free of trees. The tree removal can only be completed under a tree removal permit issued by the City of Ottawa. The *Migratory Bird Convention Act* protects the nests and young of migratory breeding birds in Canada. 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 the 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.

6.3 Mitigation for Species at Risk

Phases 5 and 6 are no longer protected as Bobolink habitat following the 2012 agreement with MNR, but direct impacts to individuals are still be prohibited. Accordingly, groundworks in the area are prohibited from commencing if/while the birds are but are fully permissible once the birds are absent. Grading work within Phase 5 and 6 has been ongoing since 2018. As such no suitable habitat remains and there is negligible potential for presence at any time of year.

The removal of the Phase 5 lands from the Carp River floodplain required areas previously classed a Blanding's Turtle habitat to be filled and regraded. The 2014 agreement with the MNR (Appendix 3)

imposed mitigation measures to be employed during the modification of corridor, but stipulated that "Once the corridor is modified and the new 100-year flood plain is legally established, filing of the required areas will begin and these 'filled' areas will be available as developable land" (i.e. will no longer constitute habitat). With the restoration of the corridor having been completed and the 100-year floodplain having been legally established (Ottawa, 2021a). The mitigation measures required under the MNR permit were to be (and were) implemented as part of the tender for the corridor restoration and no longer apply directly to the work in Phase 5. Regardless, it is recommended here the erosion and sediment control fencing surrounding Phases 5 and 6 be maintained in full working order throughout the period of land development and construction to prevent the potential transient entrance of turtles to work areas.

6.4 Mitigations for General Wildlife

Common wildlife species have been observed in the vicinity of Phases 5 and 6 during various field programs to support development in the Arcadia Community since 2012. The following mitigation measures shall be implemented during construction of the project:

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 not 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 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 workspace can retreat into the retained natural area without having to cross cleared lands;
    - Conduct vegetation clearing and groundworks 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.

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 measures shall be implemented to prevent impacts to trees and wildlife species in the area during project development.

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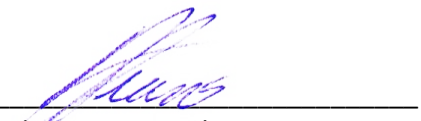

Anthony Francis, Ph.D.
Senior Ecologist

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Appendix 1
Qualifications of Report Author

Anthony Francis, PhD

Dr. Francis is an ecologist with over 20 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 2
Carp River, Poole Creek and Feedmill Creek
Corridor Width Limits Rationale

Carp River, Poole Creek and Feedmill Creek

Corridor Width Limits Rationale

Prepared by the City of Ottawa

March 2007
Revised August 2009

Background

The Carp River, Poole Creek and Feedmill Creek corridors within the Kanata West Development Area have been the subject of study since 2000. The definition of the creek corridors were conceptual defined in the Kanata West Concept Plan (FoTenn 2003) and the Carp River Watershed/Subwatershed Study (CRWSWS, Robinson, et.al, 2004). Generally, the Carp River and creek corridors were defined as follows:

Carp River Corridor:

- Rehabilitation of the Carp River by establishing a riverine wetland system through a modified floodplain concept.
- A minimum corridor width of 100 metres was recommended to support stream functions where not bounded by existing constraints.
- Pathways situated along both sides of the river.

Poole Creek & Feedmill Creek Corridors

- The minimum width of the riparian corridor necessary to support stream functions is dependent on a number of different functions:
    - Floodplain limits
    - Valley wall/erosion setbacks
    - Meander belt evolution allowances
    - Aquatic buffers
    - Terrestrial Features and Functions
    - Pathway Requirements
- Floodplain Limit – Poole Creek - 100 yr regulatory floodplain limit; Feedmill Creek – no floodplain mapping, new flood risk mapping required.
- Valley wall/erosion setbacks –established through site specific geotechnical study
- Meander belt evolution allowances – Creeks were classified as Rosgen Type C or E streams. Using the Rosgen classification system as a guide, this would suggest that meander belt widths for these lower reaches historically were in the order of 20 to 40 times the bankful width or 60 to 120 m for Poole Creek and 40 to 80 metres for Feedmill Creek, which may extend beyond the floodplain limits of the watercourses. Applying the meander belt width calculations of Prent and Parish (2000) yields an average corridor width of about 70 m for Feedmill Creek and 80 m for Poole Creek.
- Aquatic Buffer – Aquatic habitat target for both Poole Creek and Feedmill Creek is to support Type 1 fish community. As such, a 30 metre setback on each side of the watercourse is recommended.
- Terrestrial Features and Functions – no additional requirements associated with creek corridor limits.
- Pathways - situated along one side of the creek and on both sides of the creek, where required. Pathway situated on tableland, 5 metres offset from top of defined bank.

The Kanata West Concept Plan provided further environmental guidelines for Poole Creek and Feedmill Creek that included:

- Maintain and restore existing vegetation

- Provide an environmental protection area that extends at least 5m beyond the top-of-bank of the stream valleys or 30 m from the normal high water mark, whichever is greater
- Provide floodplain mapping for the portion of Feedmill Creek that is located within the Kanata West Concept Plan area
- Where recreational pathways are constructed on the tableland, increase the 5 m buffer zone by the width of the pathway plus 1.5m
- Consider construction of pathways in the valleylands only if this can be accomplished without disturbing the natural function of the corridor

In most cases, the meander belt allowance or setback from top of defined bank (tableland) is the greater of the setback requirements for Poole Creek and Feedmill Creek.

Carp River, Poole Creek and Feedmill Creek Restoration Class Environmental Assessment

Building upon the work completed in the CRWSWS, the Carp River corridor limit was refined in the EA study (Figure 3.1.1). The Carp River corridor width varies in dimension depending on property ownership and current development approvals. The Carp River corridor width ranges from the existing width of 75 m to intervals of 100m, 150 m, 200m and 250 m. A 4 metre paved pathway is situated on both sides of the Carp River within the established corridor limit, placed at or above the 1:10 yr storm event elevation. Pathways adjacent to SWM ponds should not be located between the Carp River and the pond berm. In these incidents, the pathway may need to be situated outside the river corridor as part of the swm pond design or adjacent to development. All stormwater management facilities will be situated outside the defined Carp River corridor limit.

For Poole Creek and Feedmill Creek, the corridor limit in the EA study reflects the average meander belt width calculation of 80 m and 70 m respectively. In terms of pathways, the EA shows the pathways on the tablelands, outside the valleylands. The construction of pathways in the valleylands would have an impact on stream function in terms of stream channel migration. In addition, the flow regime for Poole and Feedmill Creeks would not allow a pathway in the valleylands as the 1:10 yr water level elevation is situated at or above the toe of the slope. A pathway above the 1:10 yr elevation would require engineering the slopes of the valley to support a pathway. As such, the construction of the pathway would not meet the environmental objectives or guidelines for the creek systems.

Carp River, Poole Creek and Feedmill Creek Restoration – Detailed Design

The detailed design plans for the restoration project for Carp River, Poole Creek and Feedmill Creek have definitively defined the corridor limits for the three watercourses. Figures C-P1, F-P1 and P-P1 illustrate the corridor limits. The rationale for the corridor limits is provided below. For each watercourse, the corridor has been broken down into reaches based on a change in corridor limit definition. The reaches are described in an upstream direction.

Carp River Corridor – Refer to Figure C-P1

North of Highway 417:

Reach 1 - Richardson Side Road, upstream to Kanata Avenue approximately 520 m
Reach Length – 520 metres
Overall Corridor Width - 200-300 metres
Corridor Limit, East Side of the Carp River – 100 yr future water level
Corridor Limit, West Side of the Carp River – 100 yr regulatory floodplain

Reach 2 – Kanata Avenue, upstream a distance of 650 m to property limit
Reach Length – 650 metres
Overall Corridor Width – 200 to 400 metres
Corridor Limit, West Side of the Carp River – 50 metres from existing Carp River (2006)
Corridor Limit, East Side of the Carp River – 100 yr future water level

Reach 3 – Didsbury Road at Kanata Avenue to Highway 417
Reach Length – 600 metres
Overall Corridor Width - 100 metres
Corridor Limit, East and West Side of the Carp River – 50 metres from existing Carp River (2006)

South of Highway 417:

Reach 4 – Highway 417 to Palladium Drive
Reach Length – 600 metres
Overall Corridor Width – 75-150 metres
Corridor Limit, East and West Side of the Carp River – existing zoning limit

Reach 5 – Palladium Drive to Maple Grove Road
Reach Length – 420 metres
Overall Corridor Width – 150 metres
Corridor Limit, West Side of the Carp River – 50 metres from existing Carp River Corridor Limit, East Side of the Carp River – 100 yr future water level

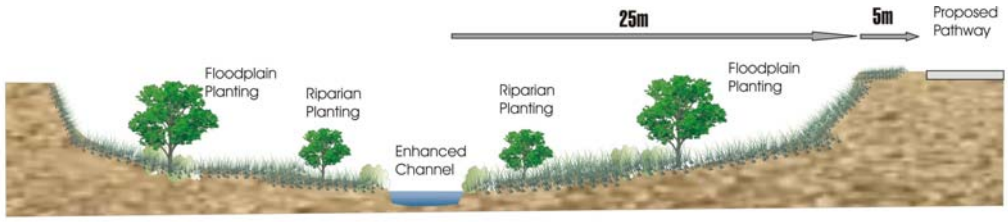
Reach 6 – Maple Grove Road to Hazeldean Road
Reach Length – 800 metres
Overall Corridor Width – 100 to 150 metres
Corridor Limit, West Side of the Carp River to Hazeldean tributary (550 m) – 50 metres from existing Carp River
Corridor Limit, West Side of the Carp River from Hazeldean tributary to Hazeldean Road (250 m) – 100 yr future water level
Corridor Limit, East Side of the Carp River (200 m) – 50 metres from existing Carp River
Corridor Limit, East Side of the Carp River (600 m) – 100 yr future water level (Walter Baker Park) and inclusion of fish habitat pond

Carp River Corridor Terminology/References
Regulatory Floodplain – MVCA Floodplain Mapping (Cumming Cockburn, December 1983)
Future 100 yr Water Level – Carp River Restoration Hydraulic Design Brief (Totten Sims Hubicki March, 2007)

50 metres from Carp River – measured from edge of river bank based on river alignment in 2006

Feedmill Creek – Refer to Figure F-P1

The corridor limit for Feedmill Creek is the greater of: floodplain limit, 30 m setback from the normal highwater mark, meander belt allowance, 5 m setback from top of defined bank or 13m setback from top of defined bank to include pathway requirements (5m offset from top of defined bank, 3 metre pathway, 5 metre buffer from private lands/development). The following figure illustrates a typical valley cross section utilizing as an example a 25 meter top of slope (TSH, 2006).



At the mouth of the Carp River for approximately 400m upstream, the river corridor and ancestral channel are situated in a very flat, low gradient environment. It is a sedimentation zone in this reach. Meanders in a sedimentation zone are more dynamic that in transition zones due to the reduced longitudinal forces along a watercourse defining its path of migration. As such, in this area the corridor limit is set by the meander belt allowance predominantly.

The topography of the corridor changes to a valleyland configuration approximately 400 m upstream from the Carp River. In the valleylands, the 5 metre offset from top of defined bank (tableland) or 13 m from top of defined bank where a pathway is required defines the corridor limit. The pathway is 3 metres wide, stone dust recreational pathway.

<u>Reach 1 – From the Carp River confluence to approximately 400m upstream</u>
Total Reach Length – 400 metres
Overall Corridor Width – ~100 metres
Corridor Limit, North and South of Feedmill Creek – 100 metre wide meander belt allowance or 30 m setback from the normal highwater mark, whichever is greater. Pathway situated inside corridor limit, above the 1:10 year storm event elevation.

<u>Reach 2 – From 400 m upstream of the Carp River confluence, to Huntmar Drive</u>
Total Reach Length – 440 metres
Overall Corridor Width – 70-80 metres
Corridor Limit, North and South of Feedmill Creek – 80 m meander belt with pathways situated inside corridor.
Corridor Limit, North and South of Feedmill Creek - defined valley lands with pathway on both sides; 13 metres from top of defined bank (tableland) on both sides of the creek or 30 m setback from the normal highwater mark, whichever is greater.

<u>Reach 3 – Huntmar Road to Palladium Drive Interchange</u>

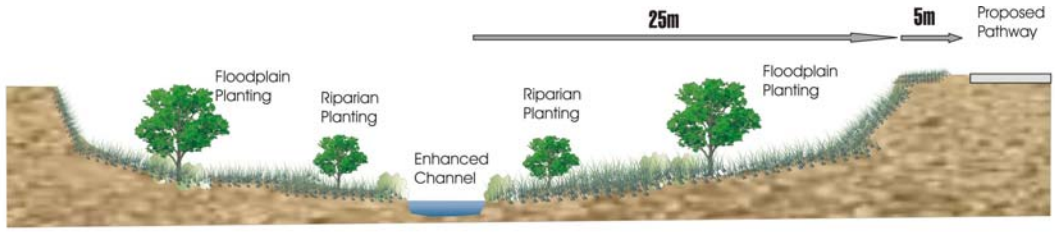
Total Reach Length – 400 metres
Overall Corridor Width - 70 metres
Corridor Limit, North and South of Feedmill Creek – defined valley lands with pathway on both sides; 13 metres from top of defined bank (tableland) on both sides of the creek or 30 m setback from the normal highwater mark, whichever is greater.

Reach 4 – Palladium Drive Interchange to Kanata West limit
Total Reach Length – 800 metres
Overall Corridor Width - 70 metres
Corridor Limit, North side of Feedmill Creek – defined valley lands with pathway; 13 metres setback from top of defined bank (tableland) or 30 m setback from the normal highwater mark, whichever is greater. Pathway to link to future public street sidewalks, the internal green spine and pathway corridor described in the Kanata West Concept Plan Urban Design Guidelines for the Prestige Business Park, and/or the future internal pedestrian circulation system of private development sites.
Corridor Limit, South side of Feedmill Creek – 5 metres from top of defined bank (tableland) on south side (no pathway) or 30 m setback from the normal highwater mark, whichever is greater.

Feedmill Creek Corridor Terminology/References
100 yr Floodline Elevation – Post Development Conditions: Flow Conditions and Flood Level Analysis (CH2M Hill, June 2006)
Meander Belt Width – Carp River Watershed/Subwatershed Study confirmed through Restoration EA
Top of Defined Bank – tableland/ basic transition as defined by survey or contour
13 metres from Top of Defined Bank – 5m offset from top of defined bank, 3 m pathway, 5 m buffer from pathway edge (all public lands)

Poole Creek Corridor – Refer to Figure P-P1

The corridor limit for Poole Creek is the greater of: floodplain limit, meander belt allowance, 5 m setback from top of defined bank or 13m setback from of top of defined bank to include pathway requirements (5m offset from top of defined bank, 3 metre pathway, 5 metre buffer from private lands/development). The following figure illustrates a typical valley cross section utilizing as an example a 25 meter top of slope (TSH, 2006):



At the mouth of the Carp River for approximately 300m upstream, the Poole Creek corridor is situated in a very flat, low gradient environment. The reach between the Carp River and Maple Grove Road is in a sedimentation zone. Meanders in a sedimentation zone are more dynamic

that in transition zones due to the reduced longitudinal forces along a watercourse defining its path of migration. As such, in this area the corridor limit is set by the meander belt allowance predominantly.

The topography of the corridor changes to a valleyland configuration upstream of Maple Grove Road. The meander belt width is typically contained within the defined valley land. In the valleyland area, the 5 metre offset from top of defined bank (tableland) or 13 m from top of defined bank where a pathway is required generally defines the corridor limit. The pathway is 3 metres wide, stone dust pathway.

Reach 1 – Carp River Confluence to Maple Grove Road
Total Reach Length – 300 metres
Overall Corridor Width – 80 - 100 metres
Corridor Limit, North side of Poole Creek – 100 metre wide meander belt allowance or regulatory floodline limit, whichever greater. Pathway situated inside corridor limit, above the 1:10 year storm event water level.
Corridor Limit, South side of Poole Creek – 100 metre wide meander belt allowance. Pathway situated inside corridor limit, above the 1:10 year storm event water level. The extent of the corridor limit is occupied largely on the east side of the corridor due to likely direction of potential migration course.

Reach 2 – Maple Grove Road to Transitway Corridor
Total Reach Length – 250 metres
Overall Corridor Width – ~80 metres (meander belt width is physically limited to approximately 50 m within valley lands)
Corridor Limit, North side of Poole Creek – 5 metres from top of defined bank (tableland). No pathway requirement.
Corridor Limit, South of Poole Creek – defined valley lands with pathway; 13 metres setback from top of defined bank (tableland). Pathway to link to parkland.

Reach 3 – Transitway Corridor/North South Arterial to Huntmar Road Crossing
Total Reach Length – 500 metres
Overall Corridor Width – ~80 metres (meander belt width is physically limited to approximately 40m to 60 m within valley lands)
Corridor Limit, North side of Poole Creek – Zoning limit (By-law 2006-160).
Corridor Limit, South side of Poole Creek – 5 metres from top of defined bank (tableland). No pathway requirement.

Reach 4 – Huntmar Road Crossing to Hazeldean Road
Total Reach Length – 650 metres
Overall Corridor Width – 80-130 metres (meander belt width is physically limited to approximately 40m to 90 m within valley lands)
Corridor Limit, North side of Poole Creek – defined valley lands with pathway; 13 metres setback from top of defined bank (tableland).
Corridor Limit, South side of Poole Creek – defined valley lands with pathway; 13 metres from top of defined bank (tableland) to Kanata West limit. Pathway to extend south along the west

edge of the City lands at 5731 Hazeldean Road to the intersection of Hazeldean Road and Fringewood Drive.

Poole Creek Corridor Terminology/References
100 yr Floodline Elevation – MVCA Floodplain Mapping (Novatech, 1985).
Meander Belt Width – Carp River Watershed/Subwatershed Study confirmed through Restoration EA.
Top of Defined Bank – tableland/ basic transition as defined by survey or contour .
13 metres from Top of Defined Bank – 5m offset from top of defined bank, 3 m pathway, 5 m buffer from pathway edge (all public lands).

Appendix 3
Government Communications and Records

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

Ministry of Natural Resources

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Minto Communities Inc.
2300 Carp Road
Ottawa, ON
K0A 1L0

August 15, 2012

Dear Fairouz Wahab

Re: Development Plan KV-D-002-12
Minto Communities' Arcadia Development
450 Huntmar Drive
Concession 1, Part Lot 4
Geographic Township of March

This letter is to acknowledge that on August 7, 2012, the Ministry of Natural Resources (MNR) received a development plan submitted by Aaron R.W. Shull on behalf of Minto Communities Inc. (the "Proponent") satisfying paragraph 23.2 (2) 1 of O. Reg. 242/08 (the "Regulation") in respect of the proposed development activity described therein and to be carried on at Concession 1, Part Lot 4, in the Geographic Township of March. The MNR also acknowledges the amendment to the development plan received August 9, 2012 in an email sent by Aaron A.W. Shull regarding seed mixture height requirements.

For your reference, the MNR has assigned the number KV-D-002-12 to the development plan.

To qualify for the exemption provided by section 23.2 of the Regulation, the Proponent must carry out the proposed development activity as described in development plan KV-D-002-12 and satisfy the remaining conditions of subsection 23.2(2) of the Regulation. If any of the information included in development plan KV-D-002-12 requires modification, Kemptville District staff should be notified.

The proponent is responsible for ensuring that all other necessary permits and approvals from other agencies are obtained.

If you have any additional questions, please do not hesitate to contact the undersigned at (613) 258-8418, marie-ange.gravel@ontario.ca.

Sincerely,

Marie-Ange Gravel
Species at Risk Biologist
Kemptville District

Cc: Anthony Frances (Kilgour & Associates Ltd.), Bruce Kilgour (Kilgour & Associates Ltd.), Aaron R.W. Shull (Barrister & Solicitor)

Ministry of Natural Resources

Kemptville District

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Ontario

June 16, 2014

Kelly Roberts
Manager, Environmental Planning
Parsons
1223 Michael Street, Suite 100
Ottawa, Ontario
K1J 7T2

Dear Ms. Roberts

RE: Carp River Restoration and Minto's Arcadia Development Projects and the *Endangered Species Act, 2007*

The Ministry of Natural Resources (MNR) has reviewed the information that you provided on your project "Carp River Restoration and Minto's Arcadian Development Projects" realignment of the Carp River channel between Richardson Side Road and Hazeldean Road, and the associated development west of the Carp River and east of Huntmar Drive, in Kanata, City of Ottawa.

We have reviewed the following documents submitted to MNR:

- Blanding's turtle habitat in the Carp River corridor dated January 23, 2014
- Final Blanding's turtle habitat mapping in the Carp River corridor dated February 28, 2014
- Integrated Environmental Review, Minto Arcadia Final Report Version 1 Revision 1 dated July, 2012
- Carp River Restoration Corridor, Inventories of Potential Species at Risk, Spring 2013
- Species at Risk in the Carp River Corridor dated March 15, 2013
- Kanata West Owners Group Carp River Restoration Design Brief- Addendum dated February 2014
- Sequence of Construction- Tender Mitigation Document dated January 20, 2014

From the information provided, it is our understanding that the proposed project falls within these parameters:

a) The restoration of the Carp River is necessary for the approved developments along the corridor between Richardson's Side Road and upstream of Hwy 417.
b) The restoration project will alter the floodplain by filling in various portions of the current floodplain to make those areas developable.
c) Once the corridor is modified and the new 100-year floodplain is legally established, filling of the required areas will begin and these "filled" areas will be available as developable land.

d) The restoration will involve a general excavation of the floodplain to increase storage capacity, offsetting the floodplain losses associated with areas being filled for future urban area expansion.
e) The Carp River restoration plan was approved through a municipal Class EA which will provide realignment of the channel, creating meanders, a narrower channel, wet meadows and a habitat pond to provide fish and turtle habitat.
f) The future value of the proposed developable lands will fund the restoration project and the restoration of the corridor cannot proceed without the approval for the modifications to the floodplain and approval for the development of urban area on those filled areas.
g) Therefore these two projects are inextricably linked and are considered a single project.
h) The sequence of construction is broken down into 4 phases:
    i. Phase 1 (Richardson Side Road to Hwy 417) - Construction access to phase 1 shall be from Terry Fox Drive north of the Carp River. Temporary crossing may be required to access south of the Carp River. Access from Richardson Side Road is also possible through construction of the pathway network.
    ii. Phase 2 (Hwy 417 to Maple Grove Road) - Construction access shall occur from the Palladium Drive and Maple Grove Road or as indicated on the contract drawings.
    iii. Phase 3 (Maple Grove Road to Hazeldean Road) - Construction access shall occur from the granular surfaced platform located on the south-east corner of the Hazeldean crossing of the Carp River. Access shall also occur from Maple Grove Road at the downstream limit of Phase 3.
    iv. Phase 4 (Downstream Richardson Side Road - 500m) - Commencement of construction through Phase 4 will facilitate positive drainage for the construction implementation of the upstream phases. Access to Phase 4 shall be from Richardson Side Road along the West bank of the Carp River.
i) Hauling of excess material shall be controlled so as to minimize disruption to vehicular traffic. Access to pedestrian traffic shall be delineated and controlled at the roadways to ensure safety. Pedestrian access to the work site shall be closed off and maintained regularly.
j) 3 wet meadows and ~2.4 ha of pond to be created could provide potential overwintering habitat for Blanding's turtles.
k) Species specific surveys were carried out at the site in April and May 2013 and focused on the ~100 m corridor that comprises the work area for the proposed Carp River Restoration. Specific surveys were conducted for:
    i. Least bittern
    ii. Blanding's turtle
    iii. Butternut
    iv. Grassland birds
l) None of the targeted species were observed with the exception of Barn swallow; however there are suitable habitat and species observations in proximity. Barn Swallow was seen in the area, however, the activities will not likely contravene Section 9 or 10 of the ESA and there is no mention of any structures that will be impacted on site that could provide nesting habitat for these birds.
m) Blanding's turtle surveys were carried out in 2013 with no observations within the area described above, however, through the Dillon Blanding's turtle study for the City of Ottawa (KNL), a single individual turtle was located just north of the Richardson Side Road in summer 2012; this observation is the basis of the General Habitat Description mapping.

n) MNR has worked with Kilgour & Assoc. to finalize the habitat mapping for category 2 and 3 habitat.
o) The restoration will reshape turtle habitat with a net increase in habitat space (suitable wetland and category 2 habitat) and improved wetland quality (increase in permanent wet space, wet meadows and permanent marsh).
p) The same amount of turtle habitat will still exist after restoration and development however it will be a minor change in footprint shape.
q) To avoid impacts to Species at Risk Parsons (formerly Delcan), Kilgour & Associates, Minto Group and any other party involved in this project will ensure the following mitigation measures are in place:
    i. The mitigation measures listed in the Sequence of Construction- Tender Mitigation document (January 20, 2014) will be adhered to.
    ii. All on-site staff shall undergo environmental awareness and Species at Risk identification training.
    iii. Habitat for the Least Bittern is found on site and there are general occurrences in the area; avoid vegetation removal and construction in their habitat during Least Bittern breeding season in early May to mid-July.
    iv. Erosion and sediment fencing will be maintained and monitored prior and post major rainfall events.
    v. Erosion and sediment control measures, including silt fencing will be installed along the project area prior to construction and early in the spring to clearly delineate the project from adjacent habitat and mitigate potential impacts to habitat.
    vi. All project fencing including erosion, sediment and silt fencing will be removed upon completion of activities.
    vii. Any areas where vegetation is to be removed and requires replanting will be replanted and/or reseeded with native species.
    viii. If dewatering is required a fish and turtle salvage is to be carried out by a qualified biologist.
    ix. A screen/filter on the pump(s) for dewatering will be used to prevent entrainment of fish and turtle species.
    x. Environmental Monitor (Turtles):
        - A qualified biologist will be on hand throughout the construction period to provide advice on turtle sensitive work activities, watching for mature, juvenile and hatchling turtles, in and around the work area.
        - As requested by the MNR, the qualifications of a suitable Environmental Monitor (Turtles) would include:
            - A degree from a recognized University or College in a related field
            - Minimum 3 years working experience in a relevant field that includes field sampling and monitoring programs in wildlife, as well as relevant experience with general civil construction that involves working around water.
    xi. The job description for the environmental monitor should include the following tasks:
        - Work closely with the contracting staff to provide awareness training for working near sensitive wildlife and for working in and around water.

- Provide regular inspection of silt fencing, security fences and dewatering treatment devices to minimize the effects of construction on the environment.
- Provide advice on suitable locations for stockpiling materials and supplies.
- Maintain an going awareness of the seasonal variations and remind the on-site staff through regular (weekly or as needed) tailgate meetings of their responsibilities, and report on the animal activities.
- Identification of the problems that may arise through human interactions with wildlife and act proactively on behalf of the fauna.
- Work with the contractors on the practical aspects of positioning the turtle fencing; make adjustments as necessary at the field level to ensure the fencing system is tight, effective and complete.

xii. Turtle Timing Restrictions (subject to local seasonal conditions):
- Overwintering October 15 -March 16
- Active season April 1- October 30

xiii. Construction Activities:
- In order to avoid or minimize the potential impacts to Blanding's turtle during construction, the following measures will be implemented for the Carp River Restoration and Arcadia Development Project:
    - The entire construction area will also be searched daily for evidence of turtle movement or active nests prior to commencing activities.
    - Restrictions on vegetative clearing during the turtle nesting season, which generally coincides with the bird nesting season of May to mid-July.
    - Contractor/Construction Worker Awareness Training (e.g., training obligations for encounters with turtles or turtle nests, construction zone turtle deterrents).
    - A protocol for encounters with injured or hibernating turtles.

ix. Restrictions on Vegetative Clearing during the Turtle Nesting Season:
- Vegetation clearing will be prohibited during the turtle nesting season (typically June), when turtles emerge from their wet habitats and search the highlands for sites to lay their eggs. They choose sandy or gravely locations with a sunny exposure, where their eggs will be kept warm as they incubate. Blanding's turtles have been documented laying eggs in organic substrates such as manure piles, and beaver lodges. This prohibition period coincides with the seasonal high period for breeding activity among other wildlife populations as well (e.g., breeding birds and some amphibians).
- In the event that vegetative clearing must occur during the month of June, then the Environmental Monitor (Turtles) will assess the disturbance area and deem it clear of turtle nests and/or nesting activity prior to clearing commencing. This would be done by assessing the suitability of the site(s) in terms of a brooding habitat based on the following four criteria: 1) warm sunny exposure, 2) loose sandy or gravel soils, 3) well drained soils,

4) organic mounds (beaver lodge, muskrat lodge, etc. and 5) minimal tree cover.

- If a nesting site is identified, an area of 5 m around the site will be immediately fenced and the MNR Species at Risk biologist from the Kemptville District Office will be contacted for further instructions.

x. Contractor/Construction Worker Awareness Training:

- All contractor workers, City employees, consultants and suppliers of any nature coming on site will be expected to undergo a ½ hour environmental awareness training, receiving a helmet sticker or card so they may work on the site. Part of this session will make the participants aware of their obligations, liabilities and responsibilities under the Endangered Species Act.
- While on site, failure to showing a legitimate sticker will result in ejection from the site until the person attends the training.
- The training session will be given by the designated Project Environmental Monitor and may also cover other current topics such as dewatering and silt controls, garbage disposal, working-around-water and where the acceptable refuelling locations are.
- Through trailer and tailgate meetings, handouts and mounted posters, construction workers will be educated on the Blanding's turtle, Least Bittern, and other sensitive fauna, so they can avoid harming an animal during their daily work routine.
- During construction, if turtles are observed in the vicinity of the construction area, workers should know what to do; whether they should be relocated prior to any further work commencing; what are the steps for doing that; who does it; and, where are they relocated to.
- The intent here is that any significant relocation will be done in consultation with the MNR Species at Risk biologist from the Kemptville District Office or if an animal is harmed in any way that MNR is notified.
- Telephone numbers and contacts will be permanently mounted in each contractor's construction trailer, each worker will be provided with a laminated card identifying the at-risk species and the initial training continually reinforced during the weekly safety / environmental tailgate sessions.

xi. During the turtle nesting season wherever construction is occurring, the construction area will be:

- Fenced-off with temporary silt fencing which, on a temporary basis, providing an effective barrier against turtle migration, guiding them around the work area.
- The construction area will also be searched regularly for evidence of turtle movement or active nests.
- If an active nest is located, construction activities within 5 metres of the nest will cease until guidance is received from the MNR on potential options.

- During dewatering activities, suitable screening will be installed around the intake points to ensure that turtles, as well as other species such as amphibians and fish are not drawn into the intake resulting in harm.
- Project activities could impact Blanding's turtles or other turtles documented in the Carp River restoration area through accidental interactions with construction equipment and/or prematurely unearthing hibernating turtles or active brooding nests during excavation of wetland substrates. If this occurs, all work in that area will shut down immediately and the MNR Species at Risk Biologist will be contacted for further instruction.
- It is important to note that if turtles are unearthed during hibernation, contact the MNR Species at Risk Biologist.
- If an injured turtle is encountered or a turtle is prematurely unearthed, the proposed emergency rescue protocol will involve the following sequence of events:
    - First: Stop all work within the area and remove the equipment
    - Second: Contact the Environmental Monitor who will call the MNR Species at Risk Biologist for further directions

xii. Construction Monitoring Program:

- A full time Environmental Monitor (Turtles) will monitor the construction area at daily intervals to ensure that the contractor is working in an environmentally acceptable fashion and to identify any unforeseen environmental issues that may develop during construction.
- The primary objective of environmental inspection/compliance monitoring during construction is to ensure that all activities are carried out pursuant to pertinent environmental legislation, regulations and industry standards as well as to adhere to the mitigation measures.
- The environmental monitor (Turtles) will work to educate contractors and construction staff on the identification of species at risk (e.g. Blanding's turtle) and other sensitive herptile species (e.g., frogs, salamanders, turtles, snakes, etc.) as noted above.

xiii. Post-Construction Monitoring:

- In addition to the monitoring program conducted during construction, post-construction, follow-up monitoring will be completed to ascertain the success of the restoration /mitigation efforts, particularly the river, habitat pond and wet meadows.
- Population-level monitoring surveys will occur in the spring and fall when migrations to breeding or wintering sites may be occurring using MNR approved survey protocols may provide the necessary information to evaluate the effectiveness of the proposed mitigation techniques.
- The expected scope of monitoring is expected to include some or all of the following:
    - Mark-recapture program to identify the physical size and characteristics (meristics) of individual specimens and determine a population size;

• Studies of the wetland habitats created on the Carp River Floodplain;
• Semi-weekly road kill inventories during active migration Periods.

xiiii. Permitting:

- Any handling of species at risk animals, for example to collect meristic or attach radio transmitters will require permitting by the MNR under the provisions Endangered Species Act.

xv. Reporting:

- In order to ensure the implementation of the turtle mitigation measures specified in this report a monthly compliance monitoring report will be prepared by the Environmental Monitor (Turtles), during the construction phase of the project.
- These monthly reports will be made available to the review agencies electronically on an as-requested basis throughout the period of construction.
- Annual post-construction and operational monitoring reports will be prepared to assess the efficacy of the mitigation, wet meadows and habitat pond for a period of five (5) calendar years following the completion of the restoration and development project.
- Annual reports will be submitted to the MNR Kemptville District Office on or before December 31 of each year of the monitoring.

Should any of the project parameters change please notify the MNR Kemptville District Office immediately to obtain advice on whether the changes may require authorization under the ESA 2007. Also, if any other protected species and/or habitats are observed on your property, please contact the District office as soon as possible.

It is important to be aware that changes may occur in both species and habitat protection. The ESA 2007 applies to species listed on the Species at Risk in Ontario List (www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/246809.html). Due to the fact that the list is updated from time to time, it is recommended that you visit this web page regularly and/or check with the Kemptville District about species status changes as well as information on protected habitats that may occur in your area.

Sincerely,

Scott Lee
A/District Manager
Ministry of Natural Resources, Kemptville District
Scott.lee@ontario.ca
613-258-8201

cc. Kerry Reed, Management Biologist, Ministry of Natural Resources
Shaun Thompson, Management Biologist (District Ecologist), Ministry of Natural Resources
Anthony Francis, Kilgour & Associates Ltd.
Fairouz Wahab, Project Manager, Minto Communities Inc.

Appendix 4
Site Plans

Title:

Concept Plan 13 Rev 4.2

Project:

Arcadia - Stage 5

Legend

- 30' Singles
- 36' Singles
- 43' Singles
- Executive Town Homes
- Avenue (B2B) Town Homes
- Condo Lands
- Rear Lane Town Homes
- Parkland
- Storm Water Management
- Open Space
- Stage Limits

Unit Type	Stage 5		Stage 6		Total	
	Units		Units		Units	
Singles	**62**	**27.6%**	**0**	**0.0%**	**62**	**27.6%**
30'	15	24.2%	0	0.0%	15	24.2%
36'	33	53.2%	0	0.0%	33	53.2%
43'	14	22.6%	0	0.0%	14	22.6%
Executive Towns	**89**	**39.6%**	**0**	**0.0%**	**89**	**39.6%**
Avenue Towns	**74**	**32.9%**	**0**	**0.0%**	**74**	**32.9%**
Rear Lane Towns	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Infusion Terraces	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Longbranch Condos	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Total	**225**	**100.0%**	**0**	**0.0%**	**225**	**100.0%**

No.	Description	Date	By
4.2	Updated Block 76 Grading Easement to match the legal 4M plan for Arcadia Stage 3	2/5/2021	M.S.
4.1	Add singles at the entrance of the P-Loop	1/27/2021	K.G.
4	Update Avenue block distribution, change Block 17-20 from Exec TH to singles	12/17/2020	K.G.
3	Update Block 8 & 9 to 3-unit blocks, remove 1 unit from Block 1 to meet zoning, re-lot singles.	12/10/2020	K.G.
2	Issued For Review	12/7/2020	M.S.
1	Issued For Review	12/2/2020	M.S.
0	Issued For Review	2020-11-19	B.A.

Revisions

minto Communities

Drawn By: M.S.
Checked By: C.S.

Minto Communities Inc
180 Kent Street,
Ottawa, ON
K1P 0B6

North

Scale: NTS

Title:

Concept Plan 26 Rev 2

Project:

Arcadia - Stage 6

Legend

- Amenity Area
- Storm Water Management
- Open Space
- Rear Towns
- Avenue Towns
- Urban Towns
- Stage Limits

Site Statistics

		Required	Provided
Total Amenity Space (3 sq m. + 6 sq m./unit)		3,024 Sq m.	6,616.13 Sq m.
Communal Amenity Space (6 Sq m./Unit)		2,016 Sq m.	4,978.13 Sq m.
Bike Rack Count (0.5/Unit)		21	21
Parking (Section 101)	Above Ground Parking (Units x 1.1)	159	160
	Under Ground Parking (Units x 1.1)	212	240

Unit Type	Stage 6	
Avenue Towns	52	12.7%
Rear Lane Towns	21	5.1%
Infusion Terraces	336	82.2%
Total	**409**	**100%**

No.	Description	Date	By
2	Added Extra Parking Spaces	2021-09-08	D.F.
1	Added Stall Parking on East side	2021-09-01	D.F.
0	Issued for Review	2021-08-31	D.F.

Revisions

minto Communities

Drawn By: D.F.
Checked By: C.S.

Minto Communities Inc
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North

Scale: NTS