Integrated Environmental Review
Minto Arcadia Phases 3 and 4

June 14, 2017

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TABLE OF CONTENTS

List of Tables

List of Figures

List of Appendices

1.0 INTRODUCTION

The Minto Communities has been actively developing its Arcadia residential community in Kanata, in Ottawa's west end since 2012. It is an 81 ha community in Kanata located north of the Queensway, west of the Carp River, and east of Huntmar Drive with easy access to Highway 417. The new development is also within walking distance to Canadian Tire Centre - home of the Ottawa Senators and a leading concert and entertainment venue. The proposed development has excellent proximity to shopping and services. It also provides ready access to riverside nature and bike routes, new roads and convenient transit access.

Minto is set to begin development of Phases 3 and 4 of Arcadia (Figure 1). The development and its supporting infrastructure (roadways, stormwater management systems, etc.) will be integrated with the infrastructure of the adjacent Phase 1 and 2 areas to the west. Land within the Phase 3 and 4 areas was previously stripped and surcharged in conjunction with development in the early phases. As such, there is currently no natural landcover on site. Land to the east is generally in similar condition and will be developed as Phases 5 and 6. The Carp River corridor further still to the east is currently being redeveloped as an improved natural area under the Carp River restoration project.

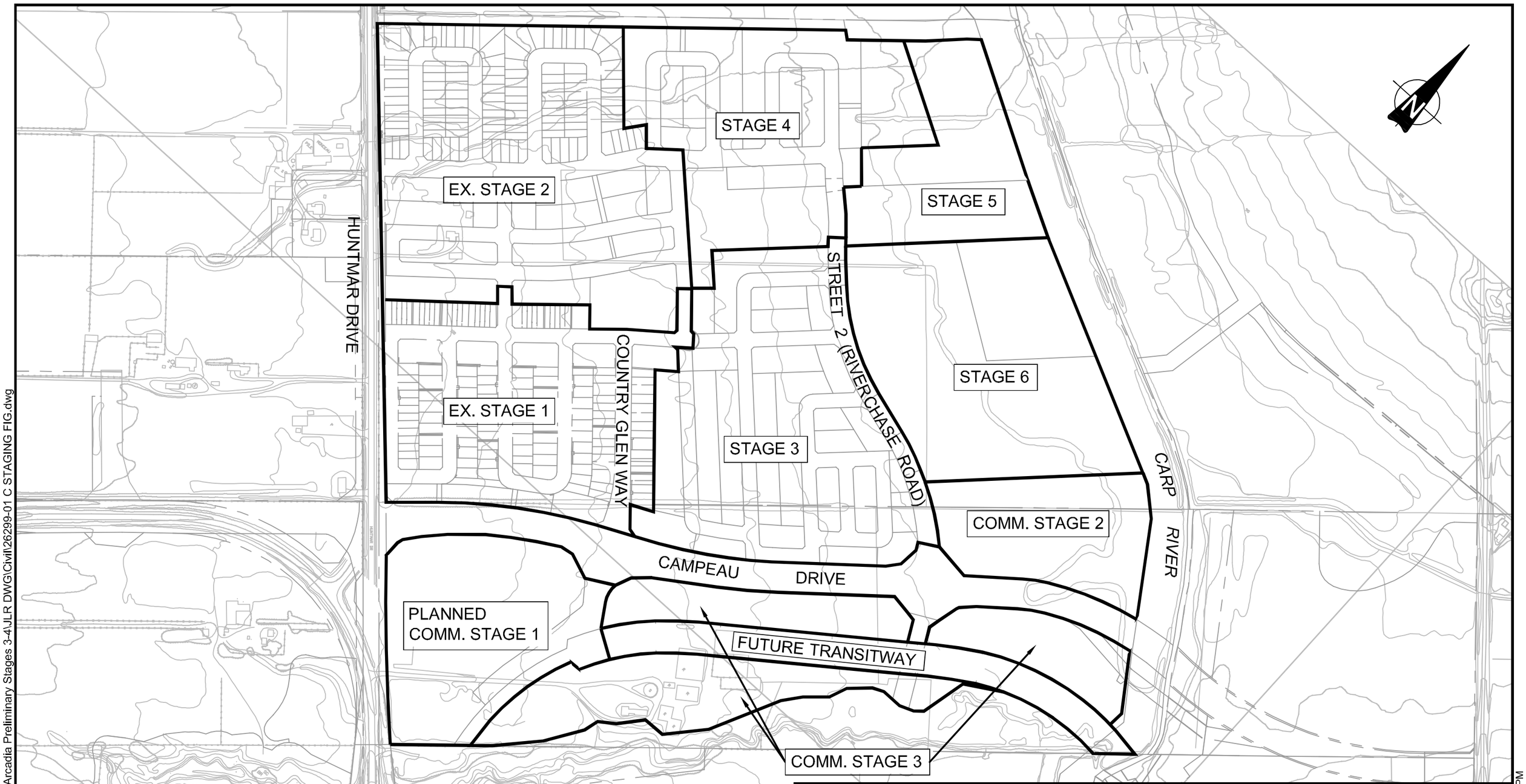
This document, the Integrated Environmental Review (IER), is written in support of Phases 3 and 4 of the Arcadia community. The IER has been written to meet the requirements of the City of Ottawa Official Plan, Section 4.7.1 – "Integrated Environmental Review to Assess Development Applications". This document presents information from studies completed in the planning and approvals process for the proposed development and demonstrates how information from the various environmental studies has influenced the design of the subdivision.

Herein and as per the IER guidelines we provide:

- a brief overview of the individual technical studies and other relevant environmental background material;
- graphic illustrations, showing the development concept for the residential area;
- a summary of the potential environmental concerns raised, the scope of environmental interactions between studies, and the total package of mitigation measures, including any required development conditions and monitoring, as recommended in the individual studies;
- a summary of how the proposed design complies with the environmental policies contained in Section 4 of the City of Ottawa's Official Plan;
- a statement with respect to how the recommendations of the supporting studies and the design with nature approach have influenced the design of the development;
- a description of how the principles of Design Objective 7 (Section 2.5.1) to maximize the energy-efficiency of development and to promote sustainable design that reduces consumption, energy use and carbon footprint of the built environment have been considered; and
- an indication that the statement has been reviewed and concurred with by the individual sub-consultants involved in the design and technical studies.

This report has the following structure:

- Section 2.0 provides an overview of the environmental setting, as determined by the component studies.
- Section 3.0 provides a description of the proposed project.
- Section 4.0 discusses the potential environmental effects and required mitigation measures that are proposed by the proponent, or required by regulating agencies.
- Section 5.0 provides a summary of how the project and its proposed design comply with the environmental policies in Section 4 of the City of Ottawa Official Plan.
- Section 6.0 provides a statement on how the recommendations of the supporting studies and the design with nature approach have influenced the design of the development. This section also includes the City's Green Checklist of how the principles of Design Objective 7 (Section 2.5.1) to maximize the energy-efficiency of development and to promote sustainable design that reduces consumption, energy use and carbon footprint of the built environment have been considered.
- Section 7.0 is the statement that this IER has been reviewed and concurred with by the individual sub-consultants involved in the design and delivery of technical supporting studies.



PROJECT:

MINTO COMMUNITIES INC. ARCADIA
STAGES 3, 4, 5, 6 & COMMERCIAL STAGES 2 & 3

DRAWING:

STAGING PLAN

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS
www.jlrichards.ca

DESIGN:	HM
DRAWN:	CJM
CHECKED:	LD
JLR #:	26299-01

NOT TO SCALE

DRAWING #:

FIGURE 1

File Location: R:\26000\26299-01 Arcadia Preliminary Stages 3-4\JLR DWG\Civil\26299-01 C STAGING FIG.dwg

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2.0 ENVIRONMENTAL CONDITIONS

2.1 General Site

Minto's development known as Arcadia will consist of six residential stages and three commercial stages. The western side of the Arcadia lands have been developed as a residential subdivision in Phases 1 and 2, while Commercial Stage 1 and another 1.6 ha external area located south of Campeau Drive, are pending approval for construction. Four more residential stages (Phases 3 through 6) and two commercial stages (Stages 2 and 3) are proposed and scheduled for urbanization in Arcadia. These future stages of development are sited on land that is bounded by the existing residential and planned commercial developments to the west, and by the Carp River to the east, as depicted in Figure 1. The site and adjacent lands lie within the Carp River Watershed, which is managed by the Mississippi Valley Conservation Authority.

This IER describes conditions, constraints and mitigations associated with residential Phases 3 and 4. No natural surface water features or wetland areas are present within these areas. A temporary storm water management pond for the area however, is located between Phases 3 and 4. A realigned, linear drainage channel runs near the north side of the site.

The site has been stripped, filled and graded. No original soil structures or layers exist on the surface. 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.

The following sections provide an overview of the various technical studies, a summary of the environmental concerns identified, interactions between disciplines and their concerns (if/when identified), mitigations identified, as well as development conditions and monitoring as identified by individual studies. The following environmental disciplines are considered here:

- Geotechnical Conditions
- Soil Quality
- Groundwater
- Terrestrial Environment
- Aquatic Environment
- Species at Risk

2.2 Geotechnical

Paterson Group Inc. (Paterson) has been retained by Minto to provide geotechnical consulting engineering services for the Arcadia Development (Patterson Group, 2017). Paterson has undertaken a number of geotechnical investigation stages and monitoring work for the Arcadia Development Lands and surrounding areas.

The Arcadia development parcel consists of cleared land, sloping gradually to the east toward the Carp River. The Arcadia Phase 3 and 4 parcels have been filled for surcharging purposes: Phase 3 in 2008 and Phase 4 in 2013. A temporary stormwater management pond, serving Arcadia Stages 1 and 2 is located between the fill areas covering the Phase 3 and 4 development areas. The lower east lands located within

300 to 400 m of the Carp River are mostly lower lying and were seasonally wet. Miscellaneous windrows and piles of stripped topsoil are still located on this part of the site.

The ground conditions have changed since the original drilling of many of the boreholes on site. A cut and fill program was undertaken in 2008 to cut much of the Arcadia Phase 1 and 2 development area to "rough grade" and the fill generated was used to surcharge Stage 3 development. In 2013, much of that initial surcharge was cut down to rough grade and the fill material generated, supplemented with additional suitable fill was used to extend the area fill further east and to surcharge the Phase 4 area. Ground conditions within the areas to the south of Campeau Drive and within the regulatory flood plain areas were not changed.

The bedrock underlying the area is expected to consist of dolomite, limestone, shale and/or sandstone. The inorganic native soil profile underlying the site consists primarily of a thick layer of sensitive silty clay. The thickness of the silty clay layer is estimated to generally range from about 5 to 26 m. The clay was confirmed or inferred to be underlain by a glacial till layer and, in turn, the bedrock surface.

2.3 Soil Quality

The Paterson Group completed a Phase 1 Environmental Site Assessment (ESA) in 2009 to investigate the potential for environmental concerns including contaminated soils on the property. The Phase 1 ESA included research of the historical use of the property and a site visit and examination of the property. The site and surrounding properties have historically been used for agricultural purposes.

The Paterson Group report concluded that no significant environmental concerns are present on the property, or adjacent properties, and that no further investigations are required for the site.

2.4 Groundwater

Groundwater levels were measured in standpipe piezometers installed in the boreholes (Paterson Group 2017). Prior to 2012 surcharging, depth to groundwater varied among dates and boreholes ranging from 0.04 to 3.2 m. Many of the PVC standpipes were installed into the glacial till layer and indicate an artesian condition in the till/bedrock confined by the silty clay layer. Many of those standpipes that were not installed into the till, but where a DCPT was conducted to refusal in the till/bedrock, seem to be hydraulically connected to the till/bedrock and show a slight artesian tendency.

It should be noted that groundwater levels are subject to seasonal fluctuations and that groundwater level could be different at the time of construction. Paterson Group (2017) considered the post-development long term groundwater level would be at a position 0.5 m lower than the assumed long-term low seasonal groundwater levels.

2.5 Terrestrial Environment

Most of the site is covered with bare fill. The small patches showing some limited vegetation regrowth have a sparse covering of common species including asters, burdock, clover, thistle, and vetch with occasional clumps of grass. No trees occur on or adjacent to the site.

The site does not represent quality wildlife habitat and is unlikely 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.

There are no rocky outcrops on the site and no Earth Science Areas or Natural and Scientific Interest.

2.6 Aquatic Environment

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 on site (Kilgour, 2016). Feedmill Creek is located >140 m south of Phase 3. 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 15m wide, City owned corridor as per the Carp River Subwatershed Study recommendation for Category 3 fish habitat and/or intermittent channels.

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 (Kilgour, 2016).

2.7 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 by Kilgour & Associates 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). Milksnake, Eastern Ribbonsnake, and Snapping Turtle (Special Concern) were also identified as possibly present though they were not protected under the ESA.

Bobolink were found to be using the property in 2012. Minto however, developed and implemented a compensation plan for the species 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 (Kilgour, 2016).

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 2016) though to the east of the Phase 3 and 4 areas. 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 and 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 (Kilgour, 2016).

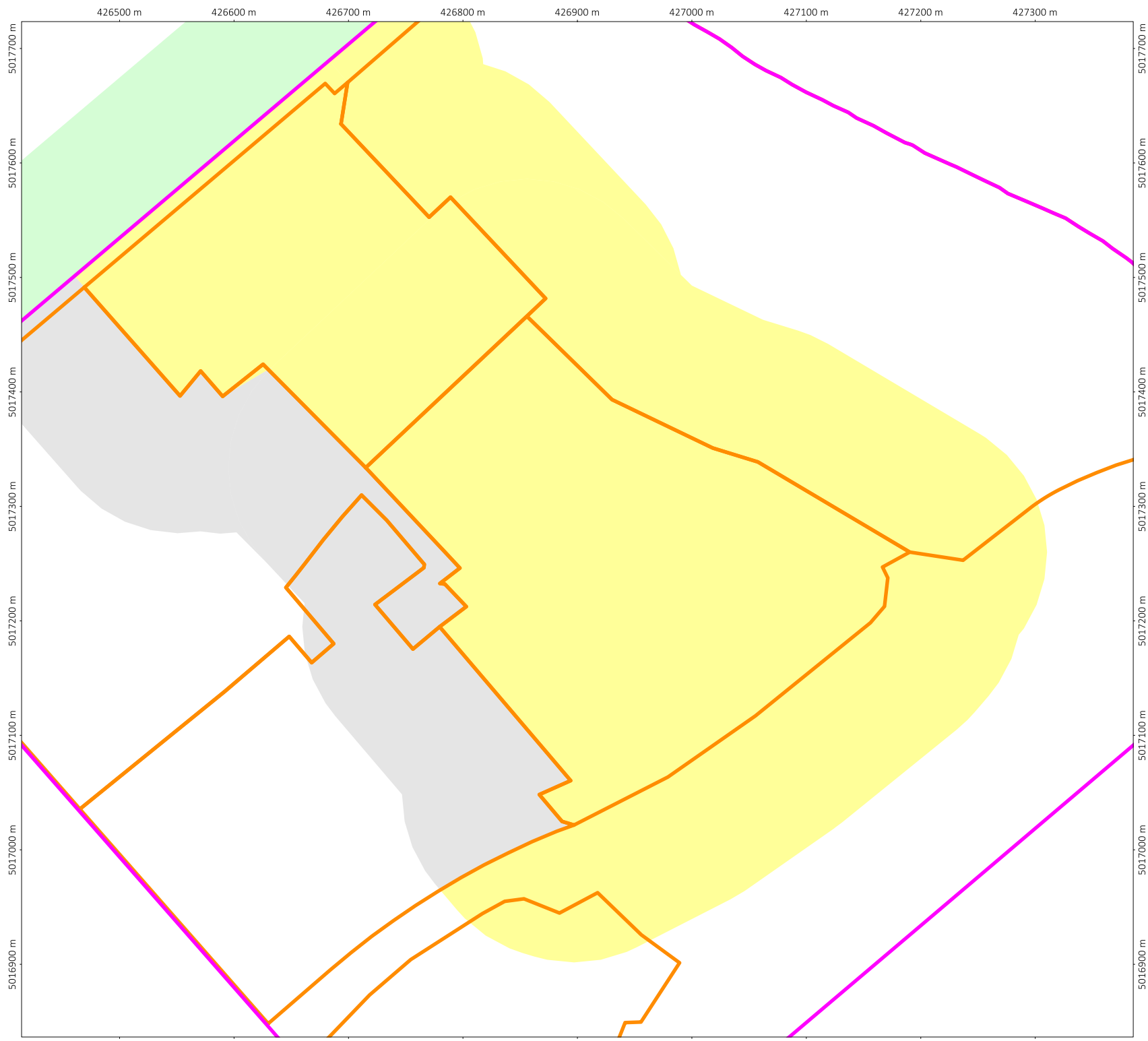

Figure 2 : Current vegetation and natural heritage

Legend

Phases

ELC

- Agriculture
- CUM
- Residential

0 150 m

Project:Arcadia Phase 3v3
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3.0 PROPOSED UNDERTAKING

3.1 General Site Development

The proposed development is depicted in Figure 3. Phase 3 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. Figure 4 indicates the limits of natural heritage constraints on development. All proposed development is outside of these limits.

3.2 Proposed Stormwater Management

The 2006 Kanata West Master Servicing Study (KWMSS) was prepared to investigate servicing requirements for a large mixed-use community referred to as Kanata West, which at build-out would include a population of approximately 17,000 persons in 6,300 households, 24,000 jobs in approximately 1 million square metres of commercial space. The KWMSS recommended that the Kanata West area be serviced by seven water quality/quantity SWM ponds. The largest facility in Kanata West, Pond 1, was identified to serve as the dedicated stormwater outlet for approximately 77 ha, including all of Minto's Arcadia lands.

The temporary SWM pond located east of existing Arcadia Stages 1 and 2 was constructed to provide stormwater management for the subdivision until the Carp River restoration works are completed and the construction of Pond 1 can proceed. Conceptual sizing of the ultimate Pond 1 was carried out in PCSWMM based on the City's latest SWM Design Guidelines and the target hydrographs of the Carp River. The model results indicated that the Pond 1 footprint would be approximately 3 ha larger than that originally identified in the 2006 KWMSS, and approximately 2 ha larger than that identified in the conceptual design carried out by IBI Group in 2013. Moreover, significant additional constraints were identified for a "one-pond solution" in completing the conceptual storm sewer design and PCSWMM model for the Arcadia Development.

The KWMSS Pond 1 servicing concept was re-evaluated with the objective of eliminating critical crossing constraints at the intersection of Paine Avenue and Riverchase Road, and reducing the hydraulic grade line at Campeau Drive as well as submergence and standing water along the storm sewer system. An alternative stormwater servicing strategy was therefore developed that consists of two ponds: the Campeau Drive Pond and the Paine Avenue Pond. The Campeau Drive pond will be located southeast of the Campeau Drive and Riverchase Road intersection and will service Stage 3, Commercial Stages 2 and 3, a portion of the Campeau Drive right-of-way and the future transitway corridor. The Paine Avenue Pond will make use of the existing temporary pond which will be retrofitted and expanded to become a permanent facility. The pond will be bisected by Riverchase Road and the forebays and inlets for Stages 1, 2, 4 and 5 will be located on the western side of Riverchase Road, while the forebay and inlet for Stage 6 will be located on the eastern side of Riverchase Road. The western and eastern portions of the pond will be hydraulically connected via four 2.4 m by 1.5 m box culvert crossing under Riverchase Road. The proposed two ponds have been sized to provide water quality control to achieve an MOECC Normal Level of Protection (i.e., 70% total suspended solids removal) before outletting to the Carp River, in accordance with the Carp River Watershed Study and the 2006 KWMSS.

The Arcadia Development is proposed to be designed with street sag storage in residential areas and on-site storage in commercial blocks. Street sag storage has been included in the model in the form of storage nodes based on a volume of 50 m^3/ha, in accordance with the storage requirements outlined the 2006 KWMSS. Storage nodes in the Commercial Blocks have been modelled to contain the 1:100 year event.

3.3 Sanitary Sewer Overflows

The sanitary sewers in Arcadia ultimately outlet to the Signature Ridge Pump Station (SRPS). The SRPS does not have capability for an emergency overflow within the surrounds of the pump station, and therefore alternative emergency overflows are provided within the SRPS service area. The purpose of an emergency overflow is to minimize the risk of basement flooding within the sewer system in the event of a catastrophic failure, and is a last line of protection during a situation where power backup and redundant pump features within the pumping station are rendered inoperable.

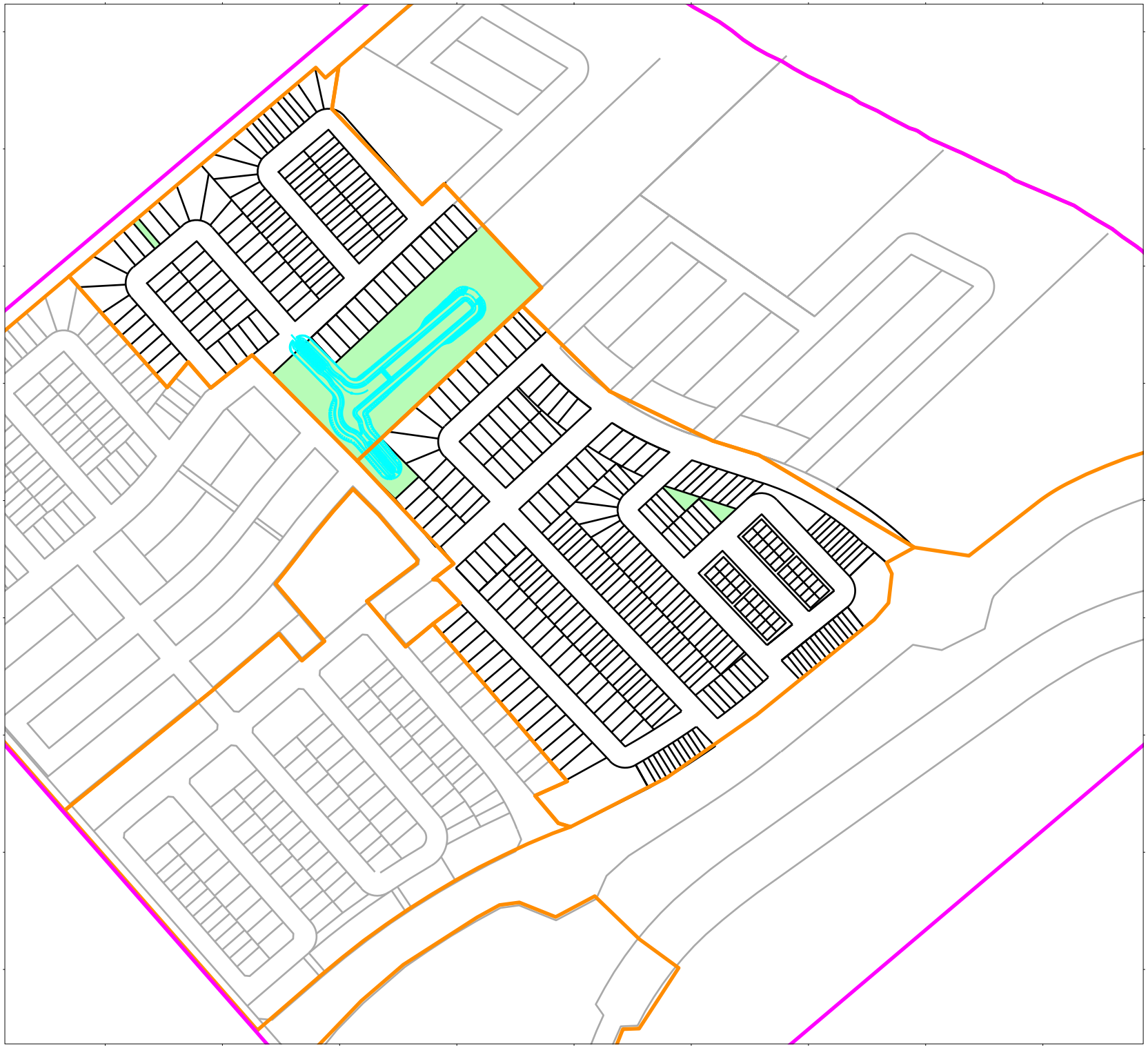

Figure 3 : Proposed development

Legend

Phases

0 150 m

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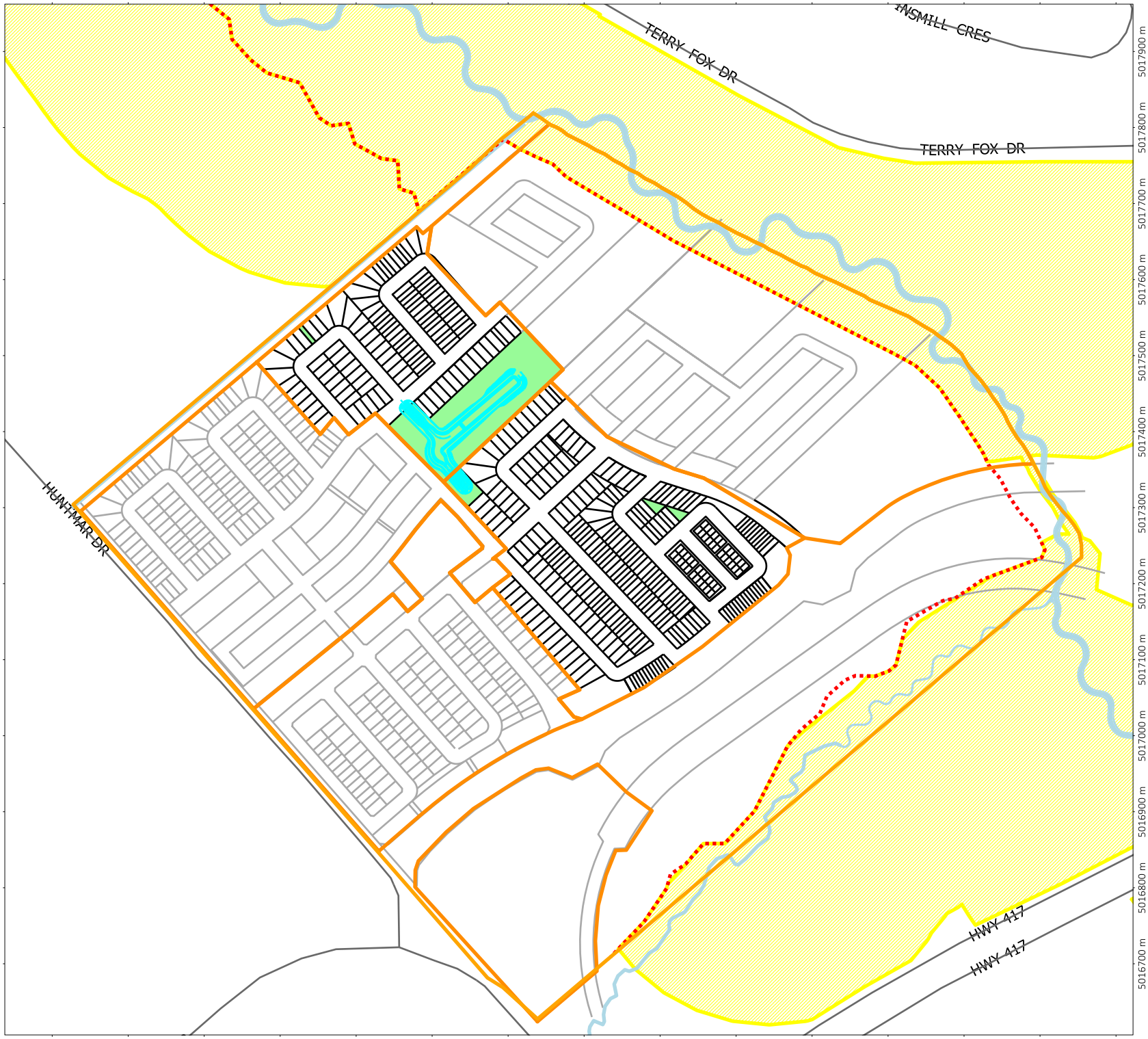

Figure 4: Natural Heritage Constraints

Legend

Phases

Blanding's Habitat
(MNRF-accpeted max extent post-Carp River restoration)

Limit of Grading
(i.e. maximum extent of floodplain, meander belt, geotechnical hazzard, and other aquatic setbacks)

0 150 m

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Printed on: 2017-06-14

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4.0 POTENTIAL EFFECTS AND MITIGATIONS

4.1 Groundwater/Geotechnical/Stormwater

4.1.1 Anticipated Effects

Arcadia Phases 3 and 4 are/were under surcharge and a geotechnical monitoring program is being used to accommodate grading and foundation conditions for residential development. The development of, first Phase 3, and then Phase 4, will proceed when the monitoring results indicate that sufficient surcharging improvement had been completed (Paterson Group 2017).

Based on geotechnical considerations, permissible grade raises for conventional construction, and/or construction where light weight fill is used within the garage and porch cavities for housing and under the slab-on-grade for small commercial buildings, and for road centre lines have been determined for the site. It is expected that the final grade raises could range between 1.0 m and 2.5 m, above existing grades, depending on the preferred site servicing strategy (Paterson Group 2017).

It has been considered that the groundwater level will vary seasonally and may be affected by other factors that could reduce groundwater infiltration as part of development (pavements, storm sewers, etc.) or promote groundwater depletion (trees, dry seasons, etc). As such, analyses consider the post-development long term groundwater level at a position 0.5 m lower than the assumed long-term low seasonal groundwater levels (Paterson Group 2017).

Stormwater management ponds have been sized to provide water quality control to achieve an MOECC Normal Level of Protection (i.e., 70% total suspended solids removal) before outletting to the Carp River, in accordance with the Carp River Watershed Study and the 2006 KWMSS (JL Richards 2017).

4.1.2 Required Mitigations

Contractors should be prepared to direct water away from all bearing surfaces and subgrades, regardless of the source, to prevent disturbance to the founding medium. The rate of flow of groundwater into the excavation through the silty clay should be low due to the relatively impervious nature of this material. It is anticipated that pumping from open sumps will be sufficient to control the groundwater influx through the sides of the excavations (with flatter excavation slopes being used below groundwater level), although surface water influx sources should also be considered. A temporary Ministry of the Environment and Climate Change (MOECC) permit to take water (PTTW) may be required for this project if more than 400,000 L/day of ground and/or surface water is to be pumped during the construction phase. A minimum 4 to 5 months should be allowed for completion of the PTTW application package and issuance of the permit by the MOECC.

Precautions must be taken if winter construction is considered for this project. The subsoil conditions at this site mostly consist of frost susceptible materials. In presence of water and freezing conditions ice could form within the soil mass. Heaving and settlement upon thawing could occur.

The standard City of Ottawa tree to structure setback of 7.5 m is too great to be realistic for this site that has medium to low volume change potential cohesive soils. Using the NHBC Standards, 2016, from the UK, a 4.5 m tree to structure setback, in conjunction with a 1.5 m footing depth, is suitable for maximum 12 m high trees consisting of up to moderate water demand broadleaf trees or up to high water demand coniferous trees. The landscape plan should conform to those requirements, where fine-grained soils are present, and other interpretations for clearance distances and trees species can be made, as necessary.

4.2 Site Trees

4.2.1 Anticipated Effects

There are currently no trees on site. Site development and landscaping will lead to increased canopy coverage in the area.

4.2.2 Required Mitigations

No trees occur on or adjacent to the site. If trees are 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:

- Tree removal on site should be limited to that which is necessary to accommodate site construction.
- To minimize impact to remaining trees during future site development:
    - Erect a fence beyond the critical root zone (CRZ, i.e. 10 x the trunk diameter) of trees. The fence should be highly visible (e.g., orange construction fence) and paired with erosion control fencing. Pruning of branches is recommended in areas of potential conflict with construction equipment;
    - Do not place any material or equipment within the CRZ of 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* (Canada, 1994) 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 (Ottawa, 2016d).

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.

4.3 Aquatic Habitat

4.3.1 Anticipated Effects

The unnamed channel along the north limit of the property is set back more than 15 m from the edge of the Phase 4 as per the Carp River Subwatershed requirement. It is located within a City owned corridor. The interim drainage system, as a temporary stormwater management system, does not constitute aquatic habitat.

4.3.2 Required Mitigations

No mitigations are required other than the implementation of erosion sediment controls during construction.

4.4 Species at Risk

4.4.1 Anticipated Effects

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

4.4.2 Required Mitigations

As no negative impacts are anticipated for species at risk, no specific mitigations beyond those for standard wildlife protection are required.

4.5 Wildlife

4.5.1 Anticipated Effects

The potential for wildlife presence on the highly disturbed site is very low. 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.

4.5.2 Required Mitigations

The following standard mitigation measures shall be implemented during construction of the project on site:

- Areas shall not be cleared during sensitive time of the year for wildlife, unless mitigation measures are implemented and/or the habitat has been inspected for a qualified biologist.

- Site clearing should begin at the north end of the site and proceed southward to drive any wildlife towards the large forest.
- Do not harm, feed, or unnecessarily harass wildlife.
- Food wastes and other garbage – effective mitigation measures include waste control (prevent littering); keeping all trash secured in wildlife-proof containers, and prompt removal from the site (especially in warm weather).
- Drive slowly and avoid hitting wildlife where possible.
- Shelter – effective mitigation measures include covering or containing piles of soil, fill, brush, rocks and other loose materials; capping ends of pipes where necessary to keep wildlife out; ensuring that trailers, bins, boxes, and vacant buildings are secured at the end of each work day to prevent access by wildlife.
- Checking the work site (including previously cleared areas) for wildlife, prior to beginning work each day;
- Inspecting protective fencing or other installed measures daily and after each rain event to ensure their integrity and continued function; and,
- Monitoring construction activities to ensure compliance with the project-specific protocol (where applicable) or any other requirements.

5.0 COMPLIANCE WITH POLICY 4.7 – ENVIRONMENTAL PROTECTION

5.1 Study Requirements

The following table indicates where studies and/or assessments have been required by the City of Ottawa in the completion of an Integrated Environmental Review, depending on characteristics of the site, to assess a development application. The study requirements and their status for the development area are indicated in the Table 1.

Table 1. Demonstrated compliance with Policy 4.7 Environmental Protection

OP Section	Studies/Assessment Required	Where Required	Relevant Study and Status	Summary of Issue
4.7.1	Integrated environmental review to assess development applications	Summary of all environmental studies/assessments submitted with development application	This document	
4.7.2	Tree retention and planting	All plans of subdivision and site plans	Kilgour & Associates (2016). Environmental Impact Statement Minto Arcadia Phases 3 & 4	No trees occur on site. Tree planting within the new area should be at least equivalent to one tree per lot in the residential areas.

OP Section	Studies/Assessment Required	Where Required	Relevant Study and Status	Summary of Issue
4.7.2	Demonstrate no impact on the natural features or on the ecological function for which the area is identified	On lands adjacent to significant portions of the habitat of endangered and threatened species	Kilgour & Associates (2016). Environmental Impact Statement Minto Arcadia Phases 3 & 4	No high quality specimen trees, valued woodlands, urban natural areas, rare communities, wetlands, steep slopes or valleys were observed on or adjacent to the site.
4.7.3	Demonstrate no negative impact on fish habitat; If there is impact – review by Department of Fisheries and Oceans	On or adjacent to fish habitat	Kilgour & Associates (2016). Environmental Impact Statement Minto Arcadia Phases 3 & 4	There is no fish habitat on site.
4.7.3	Erosion and sediment control plan	All development proposals	To be developed	
4.7.3	Determine appropriate setback from rivers, lakes and streams	Development proposals adjacent to rivers, lakes and streams	Kilgour & Associates (2016). Environmental Impact Statement Minto Arcadia Phases 3 & 4	There are no such features sufficiently close to the property to require further consideration of setbacks
4.7.5	Hydrogeology/terrain analysis	Subdivisions based on private services	Study not required	
4.7.5	Groundwater impact assessment	Groundwater resources areas	Study not required	Phase 3&4 lands are not a groundwater resource area.
4.7.5	Wellhead protection study	Wellhead Protection Area designated on Schedule K	Study not required	Subdivision based on public services. Area is not a wellhead protection area.
4.7.6	Stormwater site management plans	Site plan and subdivision and zoning amendment applications	JL Richards (2017) Arcadia Residential Stages 3, 4, 5 & 6 And Commercial Stages 2 & 3 Ottawa, Ontario Stormwater Management Strategy Report (April 17, 2017)	The stormwater management plan was developed and presented as part of the overall design brief.
4.7.7	Assessment of landscape feature	Geomorphic, Geological and Landform feature (designated on Schedule K); Features (e.g. ANSI) identified in other studies	Study not required.	No Features as identified on Schedule K of the City of Ottawa Official Plan

6.0 DESIGN WITH NATURE AND ENERGY EFFICIENCY

6.1 Incorporation of Design-With-Nature Principles

Section 4.7 – Environmental Protection of the City of Ottawa Official Plan identifies planning objectives to support natural features and functions in the development of lands within the City. The stated objectives are:

- Increasing forest cover across the city;
- Maintaining and improving water quality;
- Maintaining base flows and reducing peak flows in surface water;
- Protecting and improving the habitat for fish and wildlife in stream corridors;
- Protecting springs, recharge areas, headwater wetlands and other hydrological areas; and
- Managing resources by using low-maintenance, natural solutions.

The City of Ottawa desires that land developments achieve these objectives through design with nature. The purpose of this section is to demonstrate compliance with the design with nature principles.

In support of the Minto Arcadia development application, various studies (described above) have been completed to identify significant natural resources that may be present on the site.

In addition to the above noted studies, and prior to Minto bringing forward their development application the "Carp River, Poole Creek and Feedmill Creek Restoration Class Environmental Assessment Report" was completed and approved. This EA document stipulates the requirements to preserve and enhance the Carp River corridor and the Feedmill Creek corridor within the Minto lands. Minto is committed to the implementations of the EA requirements. This will enhance the design with nature features of the proposed development.

There were no significant environmental features identified on the property. That being said, the development application does support environmental initiatives identified by the City of Ottawa, as demonstrated above in Section 6. Additional measures are:

- Much of the area currently has no trees. While the residential development cannot produce new forest areas, canopy cover will be enhanced through tree planting;
- Surface water drainage will be routed through City approved stormwater management systems so that objectives for stormwater quality will be met during and post construction;
- The proposed project is being carried out in an area that does not contain significant wetland habitat, or significant habitat for species considered rare, threatened or endangered; and
- The development will have easy access to schools, transit and recreation (within walking distance).

6.2 Integration of Energy Efficiency and Sustainable Design

Section 4.7 – Environmental Protection of the City of Ottawa Official Plan requires the incorporation of energy efficient and sustainable design principles into new developments following a Sustainable Design Checklist (now known as the Green Checklist).

Table 2. City of Ottawa Site Plan Control Approval Green Checklist

ID	Question	Response
1a	Does the project proponent intent to seek LEED certification for this project?	No
1b	If yes, which level of LEED certification is the project intended or designed to meet?	N/A
1c	Will this project be seeking certification under another third-party green building rating system?	Yes
2	Will this project include renewable energy facilities and pursue a FIT or MicroFIT contract under the Ontario Power Authority's Feed-in Tariff program?	No
3	Which features is the project designed to incorporate?	N/A

7.0 CLOSURE

The following persons have read this Integrated Environmental Review and agree that this document provides a reasonable summary of the highlights of their individual component studies.

EIS and TCR Kilgour & Associates Ltd. Anthony Francis, PhD	**Stormwater Management** JL Richards
Geotechnical and Phase 1 Environmental Investigation Paterson Group Andrew J. Tovell, P.Eng	

Appendix 1: Detailed Analysis of Compliance of Minto Phases 3 and 4 at Arcadia with Section 4.2.7 of the City of Ottawa Official Plan

Appendix 1: Detailed Analysis of Compliance with Section 4.2.7 of the City of Ottawa Official Plan

This appendix provides a detailed examination of the requirements of Policy 4.7.1 of the City of Ottawa Official Plan as it pertains to the Minto development. Each of the policy requirements is provided verbatim, with a short discussion of the approach taken by Minto to comply with the specific policy, where relevant. The City Policy statements are *italicized*, while the Minto approach to compliance is in regular font.

Policy 4.7.1 – Integrated Environmental Review to Assess Development Applications

A comprehensive understanding of the relationship between the natural environment and the built environment is the foundation of site design and subdivision planning, as well as planning for the larger areas subject to community design plans. The integrated environmental review considers as a whole the significant findings from individual support studies (i.e., tree preservation and protection plans, environmental impact statements, stormwater site management plans, Phase 1 Environmental Site Assessments). It also ensures that development proceeds in keeping with the analysis and recommendations of any watershed and subwatershed studies and federal or provincial environmental assessments documents, where applicable. The integrated environmental review ensures that development design complies with the environmental policies contained in Section 4, and that the principles of design with nature have been applied. [Amendment 13, September 8, 2004]

4.7.1(1)Subdivisions, and major site plans and major rezoning applications, will be accompanied by an integrated environmental review statement demonstrating how all the studies in support of the application influence the design of the development with respect to effects on the environment and compliance with the appropriate policies of Section 4. The appropriate policies and studies will be identified through pre-consultation at the beginning of the design and review process.

4.7.1(2) The integrated environmental review statement will provide:

a. A brief overview of the results of individual technical studies and other relevant environmental background material;

b. A graphic illustration, such as an air photo, summarizing the spatial features and functions (e.g. natural vegetation, watercourses, significant slopes or landform features, recharge/infiltration areas) as identified in the individual studies;

c. A summary of the potential environmental concerns raised, the scope of environmental interactions between studies, and the total package of mitigation measures, including any required development conditions and monitoring, as recommended in individual studies;

d. A statement with respect to how the recommendations of the support studies and the design with nature approach have influenced the design of the development;

e. *An indication that the statement has been reviewed and concurred with by the individual sub consultants involved in the design team and technical studies.*

f. A description of how the principles of Design Objective 7 (Section 2.5.1) to maximize the energy-efficiency of development and to promote sustainable design that reduces consumption, energy use and carbon footprint of the built environment have been considered. A sustainable design checklist will be prepared to assist in this description. [Amendment #76, OMB File # PL100206, Ministerial Modification # 49, April 26, 2012.]

Minto Approach to Compliance

This document, i.e., the Integrated Environmental Review, satisfies this requirement. Note that the sustainable design checklist referred to in 4.7.1(2f) is now referred to as the green checklist.

4.7.2 – Protection of Vegetation Cover

Preserving vegetation on sites subject to development not only contributes to the urban and rural forest and the overall environmental health of the area, but also helps improve the visual appeal of newly developed areas. However, development proposals may necessitate removal of existing vegetative cover in some instances. Development proposals will be required to preserve vegetative cover or propose compensation measures, through the following policies. [OMB decision #1754, May 10, 2006]

Policy 4.7.2 (1) *In order to support the Official Plan objective for 30% tree cover, applications for subdivision or site plan approval will be supported by a tree preservation and protection plan and a landscape planting plan. [Amendment #76, OMB File # PL100206, April 26, 2012.]*

Minto Approach to Compliance 4.7.2 (1)

An EIS that includes the TCR has been prepared by Kilgour & Associates (2016) following City of Ottawa Guidelines and has been submitted to the City for review. A detailed landscape plan will be developed for the community following the recommendations of that report. The landscape plan will include plantings through out the residential development (equivalent to at least one tree per lot).

Policy 4.7.2 (2) *The Tree Conservation Report constitutes part of a complete application and may be submitted early in the design and development review process. It should be submitted before any tree removal occurs on development lands. The report will be completed in keeping with the Tree Conservation Report guidelines and in summary will: [Amendment #76, August 04, 2010]*

a. Retain as much natural vegetation as feasible, especially along surface water features, on steep slopes, in valued woodlots and in areas linking green spaces, with a particular emphasis on high quality or rare vegetative communities; [OMB decision #1754, May 10, 2006] [Amendment #76, OMB File # PL100206, April 26, 2012.]
b. Identify the presence of endangered or threatened species or their habitat as identified in the Endangered Species Act, 2007 and provide recommendations for protection measures to be used. [Amendment #76, OMB File # PL100206, April 26, 2012.]
c. Demonstrate how components of the proposed development, such as grading plans and the location of buildings, roads, and infrastructure, support tree conservation. [Amendment #76, OMB File # PL100206, April 26, 2012.]
d. Determine which stands of trees or individual trees warrant retention based on a preliminary assessment;

e. For those trees or stands of trees being retained, outline measures for their protection during construction and over the long term;

Minto Approach to Compliance 4.7.2 (2a,b,c,d,e)

The EIS (including TCR – Kilgour & Associates, 2016) confirmed that there were no trees, and no rare vegetation, no Areas of Natural and Scientific Interest, no significant wetlands, no natural areas, and no woodlands greater than 50 years old on or adjacent to the site. No endangered or threatened species or their habitats were present or within 120 m of the property.

Policy 4.7.2 (2,f)

f. Describe the area and nature of tree loss and compensation measures proposed;

Minto Approach to Compliance on Policy 4.7.2 (2f)

Kilgour & Associates (2016) surveyed the property and found no on site. The detailed landscape plan will include trees to provide canopy coverage throughout the new community.

Policy 4.7.2 (2g)

g. Where there is substantial alteration of the natural vegetation cover on the site, the impact on fauna or rare species during and after construction will be considered and mitigation measures proposed.

Minto Approach to Compliance on Policy 4.7.2 (2g)

There are no significant specimen trees on site. The site does not provide significant habitat for species listed as at risk under the Ontario ESA (Kilgour & Associates 2016). There is no net negative impact on fauna or rare species during or after construction, and no requirement for mitigation measures.

Policy 4.7.2 (2h)

h. Provide strategic recommendations to guide the landscape plan. [Amendment #76, June 24, 2009] [Amendment #76, August 04, 2010]

Minto Approach to Compliance on Policy 4.7.2 (2h)

Paterson Group (2017) provides limits for tree size and water requirement base on potential planting locations. The standard City of Ottawa tree to structure setback of 7.5 m is too great to be realistic for this site that has medium to low volume change potential cohesive soils. Using the NHBC Standards, 2016, from the UK, a 4.5 m tree to structure setback, in conjunction with a 1.5 m footing depth, is suitable for maximum 12 m high trees consisting of up to moderate water demand broadleaf trees or up to high water demand coniferous trees. The landscape plan should conform to those requirements, where fine-grained soils are present, and other interpretations for clearance distances and trees species can be made, as

necessary. Kilgour & Associates (2017) provided suggestion for suitable tree species and indicated on native species be used.

Policy 4.7.2 (3) *The landscape plan will:*

f. Indicate tree planting or vegetation cover required to provide protection for surface water features or steep slopes;
g. Investigate the appropriateness of the use of native species in tree planting strategies;
h. Provide a reference document for future residents on the importance and care of trees on their property.

Minto Approach to Policy 4.7.2 (3)

The streetscape plan has yet to be developed but will incorporate these directives into the overall landscape plan. Minto will provide or make available to future residents material on the importance and care of trees on their property.

Policy 4.7.3 – Erosion Prevention and Protection of Surface Water

Protecting stream corridors and the surface water environment serves the dual purpose of preserving and enhancing the environmental quality of stream and river corridors and their aquatic habitat, as well as reducing risks from natural hazards associated with watercourses. Ensuring that development is set back an appropriate distance from watercourses helps serve these purposes by ensuring a healthy, natural riparian zone and providing a margin of safety from hazards associated with flooding and unstable slopes.

Council has adopted Slope Stability Guidelines for Development Applications in the City of Ottawa, 2004, to guide slope stability assessments and requirements for setbacks. Slope stability assessments identify the geotechnical limit of the hazard lands, which includes the stable slope allowance plus, where appropriate, an allowance for future erosion and in some cases, an additional allowance to permit access in the event of future slope failure. Sites where slope stability issues are a concern were identified in the report, Slope Stability Study of the Regional Municipality of Ottawa-Carleton, 1976 (Ontario Misc. Paper MP 68) and are shown on Schedule K. Schedule K provides for early identification of slope stability concerns but is not sufficiently detailed to assess constraints on specific sites. [OMB decision #1754, May 10, 2006] [Amendment #76, OMB File # PL100206, July 21, 2011.]

Minto Approach to Policy 4.7.3

There are no steep slopes on the site requiring vegetative protection and no trees requiring a tree retention strategy (Kilgour & Associates, 2016). There are no other features on the property that require special consideration for erosion prevention and protection of surface waters as described in Section 4.7.3 of the City of Ottawa Official Plan.

Policy 4.7.3 (1)

1. *Except as otherwise provided for in this section, Council will establish minimum setbacks from rivers, lakes, streams and other surface water features in watershed, subwatershed and*

environmental management plans and in these plans identify any additional studies needed to refine the setback through the development review process as well as any site-specific measures needed to protect the setback. [OMB decision #1754, May 10, 2006] [Amendment #76, OMB File # PL100206, July 21, 2011.]

Minto Approach to Policy 4.7.3 (1)

The only aquatic feature on the site is a temporary stormwater management pond that will be removed or altered at a later date. It does not constitute an aquatic feature as per the City's OP.

Policy 4.7.3 (2)

2. *Where a Council-approved watershed, subwatershed, or environmental management plan does not exist, the minimum setback will be the greater of the following:*

    a. *Development limits as established by the regulatory flood line (see Section 4.8.1);*

    b. *Development limits as established by the geotechnical limit of the hazard lands;*

    c. *30 metres from the normal high water mark of rivers, lakes and streams, as determined in consultation with the Conservation Authority; or*
    d. *15 metres from the existing top of bank, where there is a defined bank. [OMB decision #1754, May 10, 2006]*

Minto Approach to Policy 4.7.3 (2)

The only aquatic feature on the site is a temporary stormwater management pond that will be removed or altered at a later date. It does not constitute an aquatic feature as per the City's OP.

Policy 4.7.3 (3)

2. *The setback provided for in policies 1 and 2 will be implemented through the zoning by-law and any change in the setback will require a zoning by-law amendment or variance that is consistent with the policies in this section of the Plan. [Amendment #76, OMB File # PL100206, April 26, 2012.]*

Minto Approach to Policy 4.7.3 (3)

The only aquatic feature on the site is a temporary stormwater management pond that will be removed or altered at a later date. It does not constitute an aquatic feature as per the City's OP.

Policy 4.7.3 (4)

3. *No site alteration or development is permitted within the minimum setback, except as otherwise provided for in this section. Site alteration is defined as activities, such as fill, grading and excavation that would change the landform and natural vegetative characteristics of a site. Development is defined as the creation of a new lot or the construction of buildings and*

structures requiring approval under the Planning Act or the issuance of a Building Permit under the Building Code Act. Exceptions to this policy are:

a. Activities that create or maintain infrastructure within the requirements of the environmental assessment process or works subject to the Drainage Act;
b. Alterations necessary for recreation, environmental restoration, or slope stability works that are approved by the City and the Conservation Authority. [OMB decision #1754, May 10, 2006]

Minto' Approach to 4.7.3 (4)

The only aquatic feature on the site is a temporary stormwater management pond that will be removed or altered at a later date. It does not constitute an aquatic feature as per the City's OP.

Policy 4.7.3 (5)

4. *The geotechnical limit of hazard will be determined in keeping with the Slope Stability Guidelines for Development Applications in the City of Ottawa 2004. Sites where slope stability issues are a concern were identified in the report, Slope Stability Study of the Regional Municipality of Ottawa-Carleton, 1976 (Ontario Misc. Paper MP 68) and are shown on Schedule K. Schedule K provides for early identification of slope stability concerns but is not sufficiently detailed to assess constraints on specific sites. [Amendment #76, OMB File # PL100206, July 21, 2011.]*

Minto Approach to 4.7.3 (5)

Paterson Group (2017) completed a geotechnical investigation of the property. The Phase 3 and 4 areas are well removed from any features requiring adherence to Slope Stability Guidelines.

Policy 4.7.3 (6)

5. Exceptions to the setbacks in policy 2 will be considered by the City in consultation with the Conservation Authority in situations where development is proposed:

a. On existing lots where, due to the historical development in the area, it is unreasonable to demand or impossible to achieve minimum setback distances because of the size or location of the lot, approved or existing use on the lot, or other physical constraint;

b. Adjacent to a minor tributary that serves primarily a surface water function and that may have only an intermittent flow. This provision includes situations where a watershed, subwatershed or environmental management plan exists but does not provide guidance on a minor tributary;
c. Adjacent to an existing top of bank where the regulatory flood line and the geotechnical limit of the hazard lands are within 15 metres from the existing top of bank [OMB decision #1754, May 10, 2006]

Minto Approach to Policy 4.7.3 (6)

The only aquatic feature on the site is a temporary stormwater management pond that will be removed or altered at a later date. It does not constitute an aquatic feature as per the City's OP.

Policy 4.7.3 (7)

6. *Where an exception to the setback is requested, an alternate setback will be considered by the City in consultation with the Conservation Authority on the basis of a study that addresses the following criteria:*

    a. *Slope of the bank and geotechnical considerations related to unstable slopes, as addressed in Council's Slope Stability Guidelines for Development Applications in the City of Ottawa, 2004;*

    b. *Natural vegetation and the ecological function of the setback area;*

    c. *The nature of the abutting water body, including the presence of a flood plain;*
    d. *The need to demonstrate that there will be no negative impacts on adjacent fish habitat. [OMB decision #1754, May 10, 2006]*

Minto Approach to Policy 4.7.3 (7)

The only aquatic feature on the site is a temporary stormwater management pond that will be removed or altered at a later date. It does not constitute an aquatic feature as per the City's OP.

Policy 4.7.3 (8)

7. *Notwithstanding policy 3, lot creation by subdivision may be considered which includes land within the required setback in Villages adjacent to a minor tributary that serves primarily a surface water function and that may have only an intermittent flow, subject to the following criteria:*

    a. *Where slope stability is an issue, the lot area outside the geotechnical limit of hazard is sufficient to meet the required minimum lot size and Council's Slope Stability Guidelines for Development Applications in the City of Ottawa, 2004 are satisfied; and*
    b. *The lot area outside the setback is sufficient to accommodate all structures and water and wastewater services. [OMB decision #1754, May 10, 2006]*

Minto Approach to Policy 4.7.3 (8)

The only aquatic feature on the site is a temporary stormwater management pond that will be removed or altered at a later date. It does not constitute an aquatic feature as per the City's OP.

Policy 4.7.3 (9)

8. *Notwithstanding policy 3, lot creation by subdivision may be considered which includes land within the required setback in the rural area outside Villages, subject to the following criteria:*

a. *Where slope stability is an issue, the lot area outside the geotechnical limit of hazard is sufficient to meet the required minimum lot size and Council's Slope Stability Guidelines for Development Applications in the City of Ottawa, 2004 are satisfied; and*
b. *The lot area outside the setback is sufficient to accommodate all structures and water and wastewater services. [OMB decision #1754, May 10, 2006]*

Minto Approach to Policy 4.7.3 (9)

The only aquatic feature on the site is a temporary stormwater management pond that will be removed or altered at a later date. It does not constitute an aquatic feature as per the City's OP.

Policy 4.7.3 (10)

9. *Notwithstanding policy 3, a lot created by severance in the rural area may include land within the required setback provided the criteria in policy 7 are satisfied. The new lot created by severance in the rural area should be located outside the setback to the extent possible. [OMB decision #1754, May 10, 2006]*

Minto Approach to Policy 4.7.3 (10)

The only aquatic feature on the site is a temporary stormwater management pond that will be removed or altered at a later date. It does not constitute an aquatic feature as per the City's OP.

Policy 4.7.3 (11)

10. *Under the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation, pursuant to the Conservation Authorities Act of Ontario, the approval of the Conservation Authority is required for works such as site grading, the placement of fill, the alteration of existing channels of watercourses, and certain construction projects. The Conservation Authority should be consulted for any project near a lake, river, stream or wetland regarding the need for a permit. The Rideau Canal is a federal waterway and as such all shoreline and in-water works along the canal system will also require approval of Parks Canada. [Amendment #76, OMB File # PL100206, July 21, 2011.]*

Minto Approach to Policy 4.7.3 (11)

There are no natural wetland areas on or within 120 m of the property.

Policy 4.7.3 (12)

11. *Where development is proposed on private services, no septic tank or distribution piping may be located closer than 30 m from the normal high water mark of a river, lake or stream or other watercourse unless an alternative setback has been permitted by the City in consultation with the Conservation Authority, for example, as may be required for existing lots in the rural area. [OMB decision #1754, May 10, 2006]*

Minto Approach to Policy 4.7.3 (12)

No development as part of the property residential construction will include servicing on private services.

Policy 4.7.3 (13)

12. *An erosion and sediment control plan will be provided that shows how erosion on the site will be minimized during construction through application of established standards and procedures. Measures to maintain vegetative cover along the slope during and after construction will be addressed.*

Minto Approach to Policy 4.7.3 (10)

The final Erosion and Sediment Control Plan will be established address these requirements and will be implemented during site construction to ensure that surrounding areas are protected from potential site runoff.

Policy 4.7.3 (14)

13. *Natural watercourses should be maintained in their natural condition. Where an alteration is assessed as being environmentally appropriate and consistent with an approved subwatershed plan, environmental management plan or a storm water site management plan or, in the case of public projects, through a Class Environmental Assessment, watercourse alterations must follow natural channel design. Watercourse alterations must also meet any other applicable provincial and federal regulations, as amended from time to time, such as the Lakes and Rivers Improvement Act, Public Lands Act and Fisheries Act and may require written approval from the appropriate Conservation Authority under the Fill, Construction and Alteration to Waterways regulations.*

Minto Approach to Policy 4.7.3 (14)

The only aquatic feature on the site is a temporary stormwater management pond that will be removed or altered at a later date. It does not constitute an aquatic feature as per the City's OP.

Policy 4.7.3 (15)

14. *Development and site alteration will not be permitted in fish habitat except in accordance with federal and provincial requirements. Development applications near or adjacent to water bodies that provide fish habitat will be required to demonstrate that the proposed development will not have a negative impact on fish habitat. Fish habitat is defined as those areas on which fish depend directly or indirectly to carry out their life processes. Fish habitat includes spawning grounds, nursery and rearing areas, areas that supply food, and features that allow migration. In the event that a negative impact is unavoidable, the proposal must be reviewed and authorized by the federal Department of Fisheries and Oceans, or its designate, which may or may not, under the federal Fisheries Act, authorize the work depending on development circumstances and type of habitat. [Ministerial Modification 45, November 10, 2003] [Amendment #76, OMB File # PL100206, July 21, 2011.]*

Minto Approach to Policy 4.7.3 (15)

No fish bearing water courses or any other type of fish habitat are present on the site.

Policy 4.7.3 (16)

15. *In addition to the provisions for setbacks described in this section, development proposals adjacent to municipal drains and other works under the Drainage Act must also maintain clear access to the legal working space adjacent to the drain. This working space is defined in the Engineer's Report adopted through a By-law approved by Council under the Drainage Act for the construction and future maintenance of drainage works. Many drains also provide fish habitat. [Amendment #76, OMB File # PL100206, July 21, 2011.]*

Minto Approach to Policy 4.7.3 (16)

No municipal drains occur on the property.

Policy 4.7.3 (17)

16. In support of the policies of this Plan, the City will:

a. Support initiatives of the Ministry of Agriculture and Food, other provincial ministries, farming organizations, Conservation Authorities and others, which encourage sound agricultural land management and soil conservation practices and other measures that minimize or eliminate the amount of pesticides, nutrients, silt and other contaminants that can enter the ground and surface water systems of Ottawa; [Ministerial Modification 46, November 10, 2003]

b. Investigate means to control land alteration in significant wetlands and natural areas, and the removal of top soil and peat extraction, by applying the provisions of the Conservation Authority Act, or the Municipal Act as amended from time to time, in partnership with the Conservation Authorities;

c. When reviewing its own practices, serve as a model and ensure that the development of its properties and the provision of its infrastructure take advantage of opportunities to design with nature;

d. Initiate an annual recognition program to recognize innovative projects that design with nature.

Minto Approach to Policy 4.7.3 (17)

No response required.

4.7.4 – Protection of Endangered Species

Endangered and threatened species are those species either listed under the regulations of the Ontario Endangered Species Act *or are considered by the provincial government to be at risk of becoming endangered through all or a portion of its Ontario range. The habitat of these species is identified and protected by the Ministry of Natural Resources. Wildlife habitat generally is protected through environmental designations in this Plan.*

Butternut (Juglans cinerea) is an endangered tree whose main threat is a fungal disease that kills the infected trees. Butternut trees have special policies under the Ontario Regulation 242/08 of the Endangered Species Act 2007, administered by the Ministry of Natural Resources. The identification of butternut (and other trees) on a site will be required under the policies in Section 4.7.2 of this Plan. Where butternut is identified, the health of the tree(s) will be assessed by a certified Butternut Health Assessor and a permit from the Ministry of Natural Resources is required to remove a healthy tree.

Policy 4.7.4 (1)

1. *Endangered and threatened species are those listed under Ontario Regulation 230/08 of the Endangered Species Act, 2007.*
2. *Significant habitat of endangered and threatened species is defined as the habitat, as approved by the Ontario Ministry of Natural Resources, that is necessary for the maintenance, survival, and/or recovery of naturally occurring or reintroduced populations of endangered species or threatened species, and where those areas of occurrence are occupied or habitually occupied by the species during all or any part of its life cycle. Significant habitat of endangered and threatened species will be identified by:*
    a. *Regulations made under the Endangered Species Act, 2007;*
    b. *An Environmental Impact Statement in areas where there is potential for significant habitat to exist; or,*
    c. *Other studies as approved by the City and Ministry of Natural Resources (e.g., subwatershed studies or environmental management plans).*
3. *The Ministry of Natural Resources has mapped areas with potential for significant habitat, based on known occurrences of endangered and threatened species. These maps will be consulted during pre-consultation to determine the need for an EIS and its scope as described in Section 4.7.8. The requirements of the Environmental Impact Statement will vary depending on such matters as the scale of proposed development, the nature of the site, the availability of comprehensive studies for the area and other matters identified in Section 4.7.8.*
4. *Environmental Impact Statements that address the potential for significant habitat of endangered or threatened species will be reviewed by the Ministry of Natural Resources. The Ministry of Natural Resources will approve the extent of significant habitat for endangered and threatened species.*
5. *No development or site alteration, as defined in Section 4.7.8, will be permitted in significant habitat of endangered and threatened species. [Ministerial modification #50, December 24, 2009]*
6. *Development and site alteration will not be permitted within 120m of the boundary of identified significant habitat of endangered and threatened species unless the ecological function of the adjacent lands has been evaluated and the Environmental Impact Statement demonstrates that there will be no negative impact (as defined in Section 4.7.8) on the significant habitat of endangered and threatened species or on its ecological functions. [Ministerial modification #50, December 24, 2009]*

Minto Approach to Policy 4.7.4

The EIS by Kilgour & Associates (2016) provided an assessment of present flora and fauna for the entire property. The site does not support any vegetation Species-At-Risk (including butternut), nor does it provide any significant habitat for provincially listed Species-At-Risk. Adjacent neighbouring areas are subject to development in the near future as and thus will do not/will not support endangered species.

4.7.5 – Protection of Groundwater Resources

In order to safeguard the integrity of groundwater resources, the City will ensure that new development can be accommodated within the system without affecting supplies available to other users. Some uses however, are not appropriate in areas where residents rely on groundwater and are more appropriately located in a fully serviced industrial park probably within the urban area. [Amendment #76, August 04, 2010]

Policy 4.7.5 (1)

1. *When reviewing development applications, the City will consider the potential for impact on groundwater resources.*
    a. *A groundwater impact assessment may be required where the City has identified that the lands play a role in the management of the groundwater resource or the need is indicated in other available information such as subwatershed plans or local knowledge, and*
    b. *A groundwater impact assessment may be required where the proposed use has the potential to negatively impact the groundwater resource. [Amendment #76, August 04, 2010*

In either case, the proposed use will not be permitted without a favourable impact assessment.

Minto Approach to Policy 4.7.5 (1)

Minto retained Paterson Group (2017) to complete the Geotechnical Investigation, which identifies groundwater levels. No negative impacts were identified.

The City has not identified the need for a Groundwater Impact Assessment to be completed.

Policy 4.7.5 (2)

2. *When evaluating a non-residential land-use in a rural land-use designation reliant on private, individual services, Council will consider whether or not it would be better located in a fully serviced part of the City because of its potential impact on groundwater quality and quantity. [Amendment #76, August 04, 2010]*

Minto Approach to Policy 4.7.5 (2)

No development in the property will include servicing on private services.

Policy 4.7.5 (3)

3. *Regardless of the provisions in policies 1 and 2 above, an application to amend the zoning by-law to permit a high risk industrial use will not be permitted in the rural area. In this regard, high risk means an industrial use;*
    a. *Which requires the use of water in an processing operation and;*
    b. *Which has as a by-product water-borne wastes requiring municipal waste treatment.*

[Amendment #76, August 04, 2010]

Minto Approach to Policy 4.7.5 (3)

The proposed development is not high risk industrial land use.

Policy 4.7.5 (4)

4. *Where wellhead protection areas have been identified, the policies in Section 4.8.2 will apply.*

Minto Approach to Policy 4.7.5 (4)

No wellhead protection area has been identified by the City of Ottawa.

4.7.6 – Stormwater Management

The City's commitment to plan on a watershed and subwatershed basis is outlined in Section 2.4.3. The City will implement the recommendations of the watershed, subwatershed and environmental management plans through the implementation mechanisms of this Plan or other appropriate mechanisms. In reviewing applications, the City will require that stormwater site management plans be submitted in accordance with the guidance set out in the environmental management, subwatershed and watershed plans.

Policies

Policy 4.7.6 (1)

1. *A stormwater site management plan will be required to support subdivision and site-plan applications.*

Minto Approach to Policy 4.7.6 (1)

The stormwater management plan was developed and presented as part of the Stormwater Management Strategy Report (JL Richards 2017).

Policy 4.7.6 (2)

2. *Stormwater site management plans will be prepared in accordance with the guidance set out in a subwatershed or watershed plans (see Section 2.4.3). Generally, stormwater site management*

plans will include details on subdivision management, specific best management practices for stormwater, erosion and sediment control, and details for enhancement and rehabilitation of natural features. Where no subwatershed plan or environmental management plan exists, the City will review stormwater site management plans to ensure that:

a. *Watercourse flows are not altered in a way that would increase the risk of downstream flooding or channel erosion;*

b. *Base flow in the watercourse is not reduced;*

c. *The quality of water that supports aquatic life and fish habitat is not adversely affected;*

d. *The quality of water that supports water-based recreational uses is not affected;*

e. *Natural habitat linkages that are located in or traverse the site are maintained or enhanced;*

f. *Groundwater is not negatively impacted;*

g. *Any other impacts on the existing infrastructure or natural environment are addressed in a manner consistent with established standards and procedures;*

h. *Objectives related to the optimization of wet weather infrastructure management are realized.*

Minto Approach to Policy 4.7.6 (2)

The stormwater management plan was developed and presented as part of the Stormwater Management Strategy Report (JL Richards 2017) and addresses the points above.

4.7.7 – Landform Features

Landform features are geomorphic, geological and other landform features that are distinctive to Ottawa. Many of these features were described in a 1975 study Geological Sites and Features in the Regional Municipality of Ottawa-Carleton, undertaken in partnership with the Ministry of Natural Resources. The MNR has identified some of these features, such as Hog's Back Falls as provincially significant Earth Science Areas of Natural and Scientific Interest that are part of the City's natural heritage system. Geomorphic, Geological and Landform Features are shown on Schedule K. [Amendment #76, August 04, 2010]

Policy 4.7.7 (1)

1. *When reviewing development proposals or when designing or reviewing public works, the City will ensure that the educational, scientific and landscape value of the Geomorphic, Geological and Landform Features, as shown on Scheduled K, will not be impaired. Only permitted development that is sympathetic to the unique characteristic of the resource, its setting and its*

interpretation value will be considered. Earth Science ANSIs are subject to the policies of Section 2.4.2 [Amendment #76, August 04, 2010]

Minto Approach to Policy 4.7.7 (1)

On the basis of the various studies commissioned by Minto, there are no significant natural features on, or on lands adjacent to, the property.

Policy 4.7.7 (2)

2. *Development and site alteration within provincially significant Earth Science Areas of Natural and Scientific Interest or on land within 50m of these features will not be permitted unless it is demonstrated through an Environmental Impact Statement that there will be no negative impact on the feature or its ecological functions. These features are shown on Schedule K. Definitions of these terms and the policies regarding Environmental Impact Statements are provided in Section 4.7.8. [Amendment #76, OMB File # PL100206, Ministerial Modification # 51, July 21, 2011.]*

Minto Approach to Policy 4.7.7 (2)

On the basis of the various studies commissioned by Minto, there are no significant natural features on, or on lands adjacent to, the property.

Policy 4.7.7 (3)

3. *The City will encourage the protection of other significant landform features, such as rock outcrops, escarpments, knolls, valley or other features identified in such studies as provincial ANSI studies, or municipal subwatershed studies and community design plans.*

Minto Approach to Policy 4.7.7 (3)

On the basis of the various studies commissioned by Minto, there are no significant natural features on, or on lands adjacent to, the property.

Policy 4.7.7 (4)

4. *When considering subdivision or site plan applications, the City will ensure the protection of landform features by encouraging owners or developers to implement such measures as:*

    a. *Selective grading to minimize topographic change;*

    b. *Orienting buildings and roads parallel to topographic contours;*

    c. *Setting back development from the bottom and top of steep slopes;*

    d. *Flexible setbacks;*

e. Providing flexibility for road layouts and right-of-way requirements.

Minto Approach to Policy 4.7.7 (4)

No landform features have been identified for protection on the property.

4.7.8 – Environmental Impact Statement

Development within or adjacent to woodlands, wetlands, and other natural features has potential to impact the feature and its functions by removing vegetation, increasing the amount of paved or other impermeable surfaces, changing the grading of the site, or making other changes. The Environmental Impact Statement serves to identify the natural features of a site early in the development process and consider ways to avoid or mitigate these impacts, and enhance natural functions. [Amendment #76, OMB File # PL100206, April 26, 2012.]

Almost all of the city's natural heritage system, defined in Section 2, is contained within areas designated as Rural Natural Features, Urban Natural Features, Significant Wetland, and Natural Environment Areas. The requirements for an Environmental Impact Statement for development proposed within Rural Natural Features or on lands adjacent to these designated areas are described in Section 3. An Environmental Impact Statement is also required for development proposed within or adjacent to significant woodlands, significant valleylands, significant wildlife habitat and other components of the natural heritage system, regardless of their designation in the Plan. [Amendment #76, OMB File # PL100206, Ministerial Modification #52, April 26, 2012.]

Policy 4.7.8 (1 & 2)

0. *An Environmental Impact Statement is required for development and site alteration proposed within and adjacent to natural heritage features designated as Rural Natural Features and adjacent to land designated as Urban Natural Feature, Significant Wetland, and Natural Environment Area. It is also required for development and site alteration within or adjacent to other elements of the natural heritage system, as required in Section 2, that are not designated on Schedule A or B. [Amendment #76, OMB File # PL100206, April 26, 2012]*
1. *No development or site alteration will be permitted within the natural features described in policy 1 above, where permitted by the policies of this Plan, or on adjacent lands unless an Environmental Impact Statement indicates it will have no negative impact, defined as degradation that threatens the health and integrity of the natural features or ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities. [Amendment #76, OMB File # PL100206, April 26, 2012]*

Minto Approach to Policy 4.7.8 (1 & 2)

No Rural Natural Features or Urban Natural Features as designated or identified in the City's Urban Natural Areas Environmental Evaluation framework are present on or adjacent to the Phase 3 or 4 areas.

Policy 4.7.8 (3, 4, 5, 6)

2. *Development is defined as creation of a new lot, a change in land use, or the construction of buildings and structures, requiring approval under the Planning Act, but does not include activities that create or maintain infrastructure authorized under an environmental assessment process; or works subject to the Drainage Act. [Amendment #76, OMB File # PL100206, April 26, 2012]*
3. *Site alteration is defined as activities, such as grading, excavation and the placement of fill that would change the landform and natural vegetative characteristics of a site. [Amendment #76, OMB File # PL100206, April 26, 2012]*
4. *Ecological function are defined as: the natural processes, products or services that living and nonliving environments provide or perform within or between species, ecosystems and landscapes, including biological physical and socio-economic interactions. [Amendment #76, OMB File # PL100206, Ministerial Modification #53, April 26, 2012]*
5. *The requirements for an EIS adjacent to natural heritage features designated on Schedule A and B in this Plan are described in Section 3. The requirements for an EIS adjacent to the significant habitat of endangered and threatened species and Earth Science Areas of Natural and Scientific Interest are described in Section 4. [Amendment #76, OMB File # PL100206, April 26, 2012]*

Minto Approach to Policy 4.7.8 (3, 4, 5, 6)

No response required.

Policy 4.7.8 (7)

6. *Where significant woodlands, significant wildlife habitat, significant valleylands or other natural heritage features are not designated, development and site alteration will not be permitted for:*
    a. *any development permitted under the policies of this Plan within the feature;*
    b. *any development permitted under the policies of this Plan within 120 metres of the feature in the rural area;*
    c. *any development permitted under the policies of this Plan within 30 metres of the feature in the urban area;*

Minto Approach to Policy 4.7.8 (7)

No significant woodlands, significant wildlife habitat, significant valleylands or other natural heritage features occur on or adjacent to the Phase 3 or 4 areas.

Policy 4.7.8 (8 & 9)

7. *The need for an Environmental Impact Statement and its scope will be confirmed through preconsultation with the City early in the development review process, based on a preliminary screening for natural environment features within and adjacent to the study area. Aerial photographs, watershed and sub-watershed studies, field investigations and other information sources such as the Natural Heritage Information Centre may be consulted. The screening should consider the potential for endangered or threatened species habitat, significant woodlands, valley lands, wetlands and wildlife habitat that are not designated in the plan, in accordance with the Provincial Policy Statement definition of significant and the relevant identification and*

evaluation factors specified in the Natural Heritage Reference Manual for the Provincial Policy Statement. [Amendment #76, OMB File # PL100206, Ministerial Modification #53, April 26, 2012]

8. *There are different types of Environmental Impact Statements:*
    a. *Full site-impact statements to assess the effects of large-scale development proposals, such as a subdivision proposal. They are prepared by a qualified professional with expertise in assessing impacts on the natural environment, but reviewed and approved by the municipality;*
    b. *Impact statements for lands adjacent to Urban Natural Features where the emphasis will be on managing the interface or transition zone between urban developments and natural features in an urban context. This would include such concerns as surface drainage adjacent to the feature; natural infiltration and soft edges adjacent to features such as wetlands, wet meadows and moist forests; protection of woodland edges (drip-line setbacks, soil compaction, removal and stock-piling); and management of access and other potential issues related to uses along the edge of the feature;*
    c. *Scoped site-impact statements to assess the potential impacts of smaller development proposals, such as single-lot severances, where impacts would be minor. A scoped impact study can be as simple as a checklist of matters to be addressed as part of the application process, and can be completed by the applicant. Scoped site-impact studies may also be appropriate to address the potential impacts of larger proposals if more detailed studies, such as a comprehensive impact study, are available.*

Minto Approach to Policy 4.7.8 (8 & 9)

No response required.

Policy 4.7.8 (10)

9. *No development or site alteration will be permitted within the natural features described in policy 1 above, where permitted by the policies of this Plan, or on adjacent lands unless an Environmental Impact Statement indicates it will have no negative impact, defined as degradation that threatens the health and integrity of the natural features or ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities. [Amendment #76, OMB File # PL100206, July 21, 2011.]*

Minto Approach to Policy 4.7.8 (10)

The EIS found no impact of the development to SAR.

Policy 4.7.8 (11)

10. *Environmental Impact Statements will include:*
    a. *A map drawn to scale identifying the location and extent of the feature, a description of the environmental values within the environmental feature or designation which could potentially be adversely affected by the proposed development, a description of the terrain/topography, vegetative cover and types, soil type and depth, and surface water movement patterns;*

b. Where the potential for significant habitat of endangered and threatened species has been identified, a description of the habitat present on the site and its suitability for the specific endangered and threatened species that potentially may use the area, as required in Section 4.7.4. [Amendment #76, August 04, 2010]

c. A description of the proposed development;

d. A description of the impacts on the environmental feature that might reasonably be expected to result from the proposed development;

e. A description of the actions that may be reasonably required to prevent, change, minimize or mitigate impacts on the environmental feature as a result of the proposed development, including the identification of opportunities for ecological restoration, enhancement and long-term conservation of the feature;

f. A description of the flora and fauna present on the site and how the development may impact on the flora and fauna within the site or natural feature and proposed mitigation measures to be taken during and after construction;

g. An evaluation of the cumulative effects of the proposed development and other existing or proposed activities or development within or adjacent to the study area. For the purpose of this policy 'proposed activities or development' refers to applications that have been lodged with and which are waiting or have received City approval. The evaluation will assess residual effects following mitigation on the natural features and ecological functions identified in the area; [Amendment #76, OMB File # PL100206, April 26, 2012]

h. A professional opinion on whether negative effects on the natural features and ecological functions will occur, and the significance of these impacts in the context of the evaluation of the natural area (i.e., the natural features and functions for which the area was originally identified as significant and the residual impact of the proposed development on the general significance rating of the larger natural area);

i. Identification of monitoring needs and recognition of parties to be responsible for assessing and reporting on these needs over a prescribed period of time.

Minto Approach to Policy 4.7.8 (11)

No response required.