**City of Ottawa Integrated Environmental Review for the Barrhaven Conservancy East** 

# **Preliminary Report**

August 6, 2020

#### Submitted To:

Hugo Lalonde Director, Land Development

Barrhaven Conservancy Development Corporation 2934 Baseline Road, Suite 302 Ottawa, ON K2H 1B2

**KILGOUR & ASSOCIATES LTD.** www.kilgourassociates.com Project Number: CAIV 1015

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#### List of Acronyms and Abbreviations

ANSI – Areas of Natural or Scientific Interest BCDC - Barrhaven Conservancy Village Development Corporation cm – centimetres CRZ - Critical Root Zone DBH - Diameter at Breast Height e.g. - exempli gratia EIS - Environmental Impact Statement ESA – Endangered Species Act ESC – Erosion Sediment Control i.e. - id est IER - Integrated Environmental Review ha - hectare km – kilometre LID – Low Impact Design m - metre NEIA - Natural Environment & Impact Assessment Study RVCA – Rideau Valley Conservation Authority SAR – Species at risk



# 1.0 INTRODUCTION

This preliminary Integrated Environmental Review (IER), has been prepared by Kilgour & Associates Limited (KAL) on behalf of Barrhaven Conservancy Development Corporation (BCDC) in support of their proposed residential subdivision, named Barrhaven Conservancy East (the "Site") located in the Barrhaven area of Ottawa, Ontario.

The Site, along with the entire Barrhaven Conservancy Community, is owned by the Barrhaven Conservancy Development Corporation (2934 Baseline Rd Suite 302, Ottawa, ON K2H 1B2, 613-518-1864). The full Barrhaven Conservancy Community is comprised of seven contiguous property parcels at 3285, 3288, 3300, and 3305 Borrisokane Road, and 4305, 4345, and 4375 McKenna Casey Drive (Concession 3 Lots 13 – 14 and Concession 4 Lots 13-15) and covers approximately 168 ha. The Site itself includes all portions of this area east of the Foster Ditch, covering an area of approximately 88 ha. The Site is zoned Developmental Reserve (DR) with a small portion along the Fraser-Clarke corridor zoned as Parks and Open Space Zone (O1).

The Site is entirely within the City of Ottawa Urban Area and was largely dominated by agricultural land uses in the past. An earthwork program in support of the proposed residential subdivision (a cut and fill program) was undertaken on the Site and completed in 2020. This IER has been written to meet the requirements of the City of Ottawa Official Plan (OP; 2020), Section 4.7.1 - "Integrated Environmental Review to Assess Development Applications". It is presented as a preliminary report to accompany the draft plan submission for the proposed development on the Barrhaven Conservancy Land site. This document presents information from studies completed to-date as part of the planning and approvals process for the proposed development. The studies reviewed will form part of the initial draft plan submission that has not yet been reviewed or approved by the City of Ottawa. The intent of the report is to summarize the natural heritage information from the various environmental studies, to indicate findings that will influence the detailed design of the proposed site plan, and to confirm the proposal and application comply with Section 4.7 of the OP.

Herein and as per OP Section 4.7.1 – Integrated Environmental Review to Assess Development Applications, Policy 2:

- a brief overview of the individual technical studies and other relevant environmental background material;
- graphic illustrations, showing the spatial features and functions (e.g. natural vegetation, watercourses,) as have been identified in the individual studies;
- 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;
- a summary of how the proposed design complies with the environmental policies contained in Section 4 of the OP;

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- 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; and
- an indication that the statement has been reviewed and concurred with by the individual subconsultants involved in the design team 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 a regulating agency.
- Section 5.0 provides a summary of how the project and its proposed design comply with the environmental policies in Section 4 of the OP.
- Section 6.0 provides a statement on how the recommendations of the support studies and the "Design With Nature" approach have influenced the design of the development, per the requirements of Policy 4.7 of the OP.
- 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.
- Appendix A provides figures and supporting documents.
- Appendix B provides a line-by-line review of Section 4.7 of the OP to demonstrate compliance of the proposed BCDC Development Plan with policies therein.

# 2.0 ENVIRONMENTAL CONDITIONS

This section provides an overview of the various technical studies related to the Site and a summary of the environmental concerns identified.

# 2.1 Geotechnical

## 2.1.1 General Geotechnical Assessment

The geotechnical investigation, prepared by Paterson Group Inc. (2019) reviewed available subsurface soil and groundwater information prepared by others and provided geotechnical recommendations for the design of the proposed residential development, including construction considerations which may affect its design. The investigation concludes that the Subject Lands are suitable for the proposed residential development, utilizing conventional shallow footings placed on undisturbed clay surfaces or engineered fill; further, grade raise restrictions are recommended due to the presence of silty clay deposits which will also result in specific area restrictions on tree planting.



# 2.1.2 Soil Quality

A Phase One Environmental Site Assessment was prepared by Golder Associates Ltd. (2018) in October 2018. The report concludes that, based on the Subject Lands' prior agricultural and residential use, they do not require further investigation to support their development for urban residential purposes.

# 2.2 Terrestrial Environment

The Site had historically been subject to active agriculture, generally to within 10 m of the Jock River and to within 5 m of the drainage features traversing the site (the Foster Ditch and the Fraser-Clark Watercourse). When it was an agricultural area, the site had treed hedgerows between fields. Most of the hedgerows were removed as part of the cut and fill project that adjusted the regulatory floodplain across the site in late 2019 and early 2020. The narrow band of trees occurring directly along the banks of the Jock River, the Foster Ditch and the Fraser-Clark Watercourse were fully retained (Appendix A - Figure 1).

The narrow bands of trees that were retained (i.e. and so still occur) directly along the banks of the Jock River, the Foster Ditch and the Fraser-Clark Watercourse consist primarily of deciduous trees species such as: Manitoba Maple (*Acer negundo*), Crack Willow (*Salix fragilis*), Glossy Buckthorn (*Rhamnus frangula*), Trembling Aspen (*Populus tremuloides*), American Elm (*Ulmus Americana*), Green Ash (*Fraxinus pennsylvanica*), Silver Maple (*Acer saccharinum*), Bur Oak (*Quercus macrocarpa*), and American Basswood (*Tilia americana*; KAL, 2020). The largest trees are approximately 20 - 50 cm DBH. Many of the American Elm and Green Ash are dead or in visibly poor health.

Natural Heritage Features and Core Natural Areas were and are largely absent from the Site. The City of Ottawa's Official Plan indicates areas adjacent to the Jock River as a natural corridor area. No Provincially Significant Wetlands, wetlands found in association with Significant Woodlands, Significant Valleylands, or Areas of Natural and Scientific Interest occur on or adjacent to the Site. The nearest Provincially Significant Wetland is the Stoney Swamp Wetland Complex, which is > 3 km east of the Site. Other than the narrow bands of retained trees along the three watercourses adjacent to the Site (i.e. the Jock River, the Foster Ditch and the Fraser-Clarke Watercourse), the Site currently consists of bare soil and flat topography, though the soil has been seeded with a grass mix to provide erosion control.

The South Nepean Urban Area Secondary Plan (City of Ottawa, 2020), which predates amalgamation, provided a development vision for the area with floodplain lands along the Jock River to be re-naturalized, while areas of mid- to high-density residential development with some areas of commercial development were to occur outside of the naturalized area. The floodplain on the Site was modified through a cut and fill program under Official Plan Amendment (OPA) 212. OPA 212 delineates areas of Conservation designation and the Residential designation separated by the new regulatory flood line for the Jock River.

The Jock River Reach One Subwatershed Study (Stantec, 2017) generally reflects the intent of the Secondary Plan, i.e., the protection of natural heritage elements including existing shoreline vegetation and fish habitat with the renaturalization of the floodplain areas. While the subwatershed study identified a number of specific natural heritage features (e.g. forest and wetland areas) required to be preserved within the broader catchment, none of those habitats occur within the proposed residential areas of the Barrhaven Conservancy Community, nor in the existing floodplain corridor. The subwatershed study also



noted both the general importance of the Jock River riparian area as an important natural corridor and the significant lack of natural forest and wetland cover throughout the catchment.

# 2.3 Aquatic Environment

The Jock River flows from west to east along the southern boundary of the Barrhaven Conservancy Community, including the Barrhaven Conservancy East lands, for approximately 3 km to its confluence with the Rideau River (Appendix A – Figure 1 Error! Reference source not found.). The Site is entirely within Reach 1 of the Jock River Subwatershed. The Jock River adjacent to the Site has a meandering channel with moderate macrophyte coverage and relatively steep banks. The river is largely 'run' habitat with substrate dominated by clay and muck/silt. Water velocities are relatively slow and depths at mid-channel are 3 to 4 m. Areas of coarse substrate (i.e., cobble, boulder, gravel) with shallower depths and higher flow velocities occur beyond the west end of the Site at Highway 416 and east of the Site at the Greenbank Road crossing (KAL, 2020). The existing riparian area along the Jock River contains a band of mature forest as a natural riparian buffer. The buffer along most of the Site (i.e. east of Borrisokane Road) is rarely more than 10 m wide (KAL, 2020). The Jock River is classified as a warm/warm-cool water system that is home to a baitfish and recreational fishery of approximately 40 species (RVCA, 2016).

Two former municipal drains occur within the Site and flow to the Jock River: the Foster Ditch, the Fraser-Clarke Watercourse (Appendix A – Figure 1). These features support tolerant warm water fishes (KAL, 2020). The existing vegetated buffer along these features is ~5 m in width.

The required development setbacks for all three drainage features adjacent to the site are based, per the requirement of the *Jock River Reach One Subwatershed Study* (Stantec, 2007), on the maximum of the greatest of: the regulatory floodplain, the meander belt width, the geotechnical hazard limit, 15 m top of the defined bank or 30 m from the normal high watermark. For the Foster Ditch and Fraser-Clarke Watercourse, the setbacks correspond with 30 m from the normal high-water mark; for the Jock River, it corresponds with the 100-year flood line (KAL, 2020).

# 2.4 Species at Risk

Four species at risk were identified with potential to occur on or near the Site, or otherwise interact with the current development project: Bank Swallow, Northern Map Turtle, Snapping Turtle, and Blanding's' Turtle (KAL, 2020).

# 3.0 PROPOSED UNDERTAKING

The Site is approximately 88 ha in area and is comprised of 3285, 3305 and portions of 3288 and 3300 Borrisokane Road; located within Barrhaven: south of Strandherd Drive and north of the Jock River, between the Foster Ditch to the Fraser-Clarke Drain. The full build-out of the community is anticipated to take several years to complete.

The neighbourhood will be comprised of single-detached dwellings (on a variety of lot sizes) and rear lane townhouses (primarily oriented to Borrisokane Road), together with a series of parks intended to accent natural heritage system features. A significant buffer along the Jock River has been established as a wide



natural corridor to ensure the integrity of the natural heritage system is protected for the long term. A future block to accommodate high-density residential uses will also be provided.

The road network will provide for a centralized east-west collector road with a connection to the northeast. An internal grid local road system provides access to the individual residential lots. The local road system will provide public sidewalks. A number of internal pathways will bisect the larger residential blocks with several connections to the Jock River open space block and a series of trails.

# 3.1 Water Supply Servicing

Water supply is expected to be connected through the Town Centre Lands along Chapman Mills Drive and shall conform to all City and Ministry of the Environment, Conservation and Parks Guidelines and Policies (DSEL, 2020).

# 3.2 Wastewater Management

Capacity in the South Nepean Centre sanitary sewer has been confirmed and the development is expected to connect at the future Chapman Mills Drive (DSEL, 2020).

# 3.3 Stormwater Management

Within the development area, stormwater is collected and conveyed by underground pipe sewer and passed through a local water quality control unit which provides 80% TSS removal (enhanced quality control) at the south boundary of the development area. The natural drainage towards the Jock River via existing surface flows and tributaries will be replicated in the design through the use of multiple stormwater outlets contributing at different discharge points along the adjacent river. These multiple drainage points will outlet to naturalized wetlands and channels within the open space blocks which provide polishing and thermal mitigation prior to outletting to the Jock River. The naturalized wetlands in turn benefit from hydration provided by the stormwater inputs (DSEL, 2020).

Quantity controls are not required in this reach of the Jock River in accordance with the subwatershed study, however management for erosion control, if required, will be incorporated (DSEL, 2020).

Constraint considerations on the site such as clay soils, high water table and grade raise restrictions will result in the requirement for sump pump servicing of residences. These constraints also limit the opportunities to implement effective low impact design (LID) measures, however, options will be considered in the detailed design stage (DSEL, 2020).

# 3.4 Floodplain Renaturlaization

The new regulatory flood plain line along the entire Barrhaven Conservancy Community (East and West) will allow lands between 80 and 400 m wide to be re-established as a natural Jock River open space corridor. This area will include the development of ~5 ha of wetland and ~32 ha of forest cover. Features to support public recreation will include a recreational pathway system along the northern edge of the floodplain, and canoe-launch proposed adjacent to Borrisokane Road (Appendix A - Figure 2). The canoe-launch, and vegetation improvements immediately adjacent to the feature, are the only alterations



proposed on the City-owned lands that include the Compensation Pond and the Foster Pond. All other enhancements discuss below will occur on lands owned by BCDC.

Wetland areas will include two major types of features: three large naturalized ponds covering ~3 ha, and a ~2 ha Silver Maple swamp, in accordance with the RVCA directives for increased wetland space. Naturalized pond features will be connected directly to the Jock River via deeper channels. The ponds and main inlet and outlet channels to the ponds would be approximately 2.5-3 m deep, with gently rising grades to the shoreline. The depth of these features is anticipated to ensure they remain accessible with open connections to the Jock River for aquatic life (e.g. fish, turtles, and amphibians) throughout the year. A forested buffer will occur between the natural ponds and the Jock River. Woody material could be included on the banks of the natural ponds and their outlet channels at the Jock River. This landscape design is intended to protect and enhance critical fish habitat and spawning areas along the Jock River.

Pathways around the natural ponds may extend to the river to provide a lookout area.

# 4.0 POTENTIAL EFFECTS AND MITIGATION

# 4.1 Geotechnical

# 4.1.1 Anticipated Effects

From a geotechnical perspective, the subject site is suitable for the proposed residential development. It is expected that the proposed residential buildings will be founded on conventional shallow footings placed on an undisturbed, stiff to firm silty clay-bearing surface or engineered fill over an approved subgrade surface (Paterson Group, 2019).

Due to the presence of a silty clay deposit, permissible grade raise restrictions are recommended for this site. Through most of the site, a low to medium sensitivity clay soil was encountered between the anticipated design underside of footing elevations and 3.5 m below finished grade. In the northwest corner of the site, high sensitivity clay soils were encountered between the anticipated design underside of footing elevations and 3.5 m below finished grade. In the northwest of footing elevations and 3.5 m below finished grade (Paterson Group, 2019).

Slope Stability was examined and setbacks were established in the geotechnical report.

# 4.1.2 Required Mitigation

To reduce potential long-term liabilities, consideration should be given to accounting for a larger groundwater lowering and to provide means to reduce long term groundwater lowering (e.g. clay dykes, restriction on planting around the dwellings). Buildings on silty clay deposits increase the likelihood of movements and therefore of cracking. The use of steel reinforcement in foundations placed at key structural locations will tend to reduce foundation cracking compared to unreinforced foundations. Based on the above discussion, several options could be considered to accommodate proposed grade raises with respect to our permissible grade raise recommendations, such as the use of lightweight fill, which allow for raising the grade without adding a significant load to the underlying soils. Alternatively, it is possible to preload or surcharge the subject site in localized areas to achieve the desired settlements (Paterson Group, 2019).



Slope stability setbacks must be respected per the Geotechnical Report. They are entirely contained within the Open Space blocks. Existing vegetation on the slope faces will not be removed as the vegetation contributes to the stability of the slope and reduces erosion (Paterson Group, 2019).

A permit to take water may be required depending on the proposed construction plan and timing of construction (Paterson Group, 2019).

# 4.2 Erosion and Sediment

# 4.2.1 Anticipated Effects

Soil erosion occurs naturally and is a function of soil type, climate, and topography (David Schaeffer Engineering Limited, 2020). The extent of erosion losses is exaggerated during construction where the vegetation has been removed and the top layer of soil is disturbed.

# 4.2.2 Required Mitigation

An erosion and sediment control (ESC) plan must be developed by the project engineers prior to the commencing construction. ESC measures must be in place during construction. The ESC plan must include, at a minimum, the following recommendations in the contract documents (David Schaeffer Engineering Limited, 2020):

- Limit the extent of exposed soils at any given time.
- Re-vegetate exposed areas as soon as possible.
- Minimize the area to be cleared and grubbed.
- Protect exposed slopes with plastic or synthetic mulches.
- Install silt fencing to prevent sediment from entering existing ditches.
- No refuelling or cleaning of equipment near existing watercourses.
- Provide sediment traps and basins during dewatering.
- Install filter cloth between catch basins and frames.
- Installation of mud mats at construction accesses.
- Construction of temporary sedimentation ponds to treat water prior to discharging into existing wetlands and watercourses.

# 4.3 Trees

## 4.3.1 Anticipated Effects

There are few trees remaining on the Site and no unique treed habitats or tree species are currently present. Of the few remaining trees on the Site, none are anticipated to be impacted by the development. Trees along the Foster Ditch and Fraser-Clarke Watercourse occurring within the 30 m buffer surrounding these features and the riparian hedgerow along the Jock River remain intact and are unlikely to be impacted by the project (KAL, 2020).

The renaturalization of the Jock River Floodplain is proposed to included significant areas of reforestation. Combined with tree planting in the residential development both on individual lots and in common areas



(i.e. which currently have no tree cover), canopy cover over the Site is anticipated to exceed 30% at maturity and meet the City of Ottawa target for this area (KAL, 2020).

## 4.3.2 Required Mitigation

To minimize impacts to trees remaining within and occurring adjacent to the Site, the following general protection measures are recommended as necessary during construction:

- Tree removal on Site should be limited to that which is necessary to accommodate construction.
- To minimize impact to remaining trees during Site development:
  - Erect a fence beyond the critical root zone (CRZ; i.e. 10x the DBH) of trees. The fence should be highly visible (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 trees;
  - Do not attach any signs, notices, or posters to any trees;
  - Do not raise or lower the existing grade within the CRZ of trees without approval;
  - Tunnel or bore when digging within the CRZ of a tree;
  - Do not damage the root system, trunk, or branches of any remaining trees; and
  - Ensure that exhaust fumes from all equipment are not directed towards any tree's canopy.

Tree planting plans will be created as part of the landscape plan for the development (KAL, 2020). The tree planting plan for floodplain areas of the Site to subject reanturalization is to include directives that will lead to ~15 ha of forested cover (i.e. within both forest and swamp features) at maturity. The tree planting plan for the residential areas of the Site is to include directives that will lead at least 6% canopy cover at maturity (i.e. considering trees planted on private lots and in common areas). Trees species identified in landscape plans must be non-invasive and should be native to the Ottawa area.

Within the Jock River open space corridor and other site watercourses, consultations with City and RVCA staff shall determine the species, density and location of significant tree planting undertakings.

Tree planting within the residential development area shall be governed by the geotechnical guidelines appropriate for the on-site soil types.

The following tree planting setbacks are recommended for low to medium soil sensitivity areas. Large trees (mature height over 14 m) can be planted within these areas provided a tree to foundation setback equal to the full mature height of the tree can be provided (e.g. in a park or other green space). Tree



planting setback limits may be reduced to 4.5 m for small (mature height up to 7.5 m) and medium-size trees (mature tree height 7.5 to 14 m), provided that specific conditions are met (Paterson Group. 2019).

The following tree planting setbacks are recommended for high soil sensitivity areas. Large trees (mature height over 14 m) can be planted within these areas provided a tree to foundation setback equal to the full mature height of the tree can be provided (e.g. in a park or other green space). Tree planting setback limits are 7.5 m for small (mature height up to 7.5 m) and medium-size trees (mature tree height 7.5 to 14 m), provided that certain conditions are met (Paterson Group. 2019).

Removal of trees can only be undertaken following appropriate consultation with City planning staff.

# 4.4 Fish and Fish Habitat

# 4.4.1 Anticipated Effects

No development work will occur within the newly defined floodplain or within 30 m of the normal highwater mark of the Jock River. The Foster Ditch and the Fraser-Clarke Watercourse will be protected with setbacks of 30 m from the normal high-water mark. Existing roadside ditches will be maintained but do not require setbacks.

The uppermost reach of the Fraser-Clarke Watercourse (adjacent to the northern site boundary east of Borrisokane Road) is currently situated approximately 15 m beyond the edge of the proposed development. This portion of the channel had previously been hydrated by overland flows from the west side of Borrisokane but is now dry following the spring freshet. BCDC will file an application with the RVCA to realign this reach of the watercourse northward, to achieve the required 30 m setback. The design for the realigned feature will include considerations for how to improve the hydration of the channel (e.g. lot level drainage) and increase riparian vegetation. This is anticipated to provide a net improvement to the overall habitat of the feature.

No negative impacts to surface water features during site development are anticipated given the application of conventional construction-phase mitigation.

## 4.4.2 Required Mitigation

Construction works near water during the development of the residential community will, at minimum, require standard erosion and sediment control mitigation measures to protect receiving waters from sediment-laden runoff, including:

- a multi-faceted approach to provide erosion and sediment control;
- retention of existing vegetation and stabilize exposed soils with vegetation where possible;
- limiting the duration of soil exposure and phase construction;
- limiting the size of disturbed areas by minimizing nonessential clearing and grading;
- minimizing slope length and gradient of disturbed areas;
- refuelling of machinery should occur >30 m from any watercourse;
- maintaining overland sheet flow and avoid concentrated flows; and



• storing/stockpiling all soil away (e.g. greater than 30 m) from watercourses, drainage features and top of steep slopes.

# 4.5 Species at Risk

## 4.5.1 Potential Effects

Three SAR have potential to be impacted by the development project: Bank Swallow, Butternut, and Snapping Turtle.

Bank Swallows have not been observed nesting on the Site. However, landscape conditions created during the cut and fill for the area, and subsequent construction activities, may result in suitable nesting habitats. There is therefore some potential (in the absence of mitigation) for the project to interact with Bank Swallow. The implementation of suitable mitigation measures will minimize the risk resulting in no impacts to Barn Swallow.

Butternut trees were observed on the City of Ottawa lands to the south of the development. The Butternut trees here are more than 50 m from the currently proposed work and are not anticipated to be impacted by the project.

The Snapping Turtles are most likely to occur in the Jock River or the drain features on the Site. The development will be at least 30 m from any water feature and is not anticipated to alter any of these features. The planned pond, wetland, and nesting features will provide an increased amount of higher quality habitat for turtles. The implementation of suitable mitigation measures will minimize the risk resulting in no impacts to Snapping Turtle (or other species of turtle; i.e., Blanding's, Map, Painted).

## 4.5.2 Required Mitigation

- All on-site staff should undergo environmental awareness training to be able to identify the potential SAR that may be encountered
- If the proposed works are to occur between April 1st October 30th, consider isolating the Site with suitable fencing prior to commencing work
- Removal of vegetation suitable as nesting habitat should occur outside of the breeding bird season (April 1 to August 31)
- Perform daily pre-work searches of the construction area to ensure no wildlife has entered the work area overnight.

Bank Swallows and turtles may occur on the Site. General wildlife mitigation measures will be sufficient to protect these species.

The Butternuts remaining on site are far enough away from proposed work areas that no specific mitigation is required to project the species.

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# 4.6 General Wildlife

## 4.6.1 Potential Effects

Common wildlife species were observed on site, all of which are represented throughout the developed adjacent landscape. With the application of appropriate mitigation measures, the potential for negative impacts to these species can be minimized.

## 4.6.2 Required Mitigation

The following mitigation measures should be implemented during construction of the project to generally protect wildlife (KAL, 2020):

- Areas shall not be cleared during sensitive times of the year for wildlife (breeding season; early spring to early summer), unless mitigation measures are implemented and/or the habitat has been inspected by a qualified Biologist.
- Do not harm, feed, or unnecessarily harass wildlife.
- Manage waste to prevent attracting wildlife to the site. Effective mitigation measures include litter prevention and keeping all trash secured in wildlife-proof containers and promptly removing it from the Site, especially during warm weather.
- Drive slowly and avoid hitting wildlife.
- Manage stockpiles and equipment on Site to prevent wildlife from being attracted to artificial habitat. Cover and contain any piles of soil, fill, brush, rocks and other loose materials and cap ends of pipes where necessary to keep wildlife out. Ensure that trailers, bins, boxes, and vacant buildings are secured at the end of each workday to prevent access by wildlife.
- Check the entire work site for wildlife prior to beginning work each day.
- Inspect protective fencing and/or other installed wildlife exclusion measures daily and after each rain event to ensure their integrity and continued function.
- Monitor construction activities to ensure compliance with the project-specific protocol (where applicable) or any other requirements.
- If SAR are encountered on the worksite, immediately stop all work in the immediate vicinity and comply with the project-specific SAR protocol (where applicable; e.g. contact project Biologist to determine next steps).
- Buildings on Site should be inspected to ensure the absence of snakes, bats, and any other wildlife
  immediately prior to demolition. Bats may day-roost in buildings while snakes may be present in
  building foundations/walls in search of food, shelter, and/or overwintering habitat. Any wildlife
  present in buildings should be removed and safely relocated by a qualified person.



# 5.0 COMPLIANCE WITH POLICY 4.7 – ENVIRONMENTAL PROTECTION

A number of studies have been required by the City of Ottawa in the completion of an Integrated Environmental Review to assess a development application (Table 1). The study requirements and status for the development application demonstrate compliance with the requirements of the Official Plan.



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 tehdevelopment application	This document	
4.7.2	Tree retention and planting	All plans of subdivision and site plans	Kilgour & Associates Limited (2020)	Existing trees on site will be retained
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 Limited (2020)	No valued woodlands, urban or rural natural areas, rare communities, wetlands, steep slopes or valleys, or ANSIs were observed on 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 Limited (2020)	Existing channels will be protected with required setback. Renaturalization of the Jock River floodplain includes the creation of additional areas of fish habitat.
4.7.3	Erosion and sediment control plan	All development proposals	David Schaeffer Engineering Limited (2020)	ESC Plan requirements are detailed within the Master Infrastructure Review
4.7.3	Determine appropriate setback from rivers, lakes and streams	Development proposals adjacent to rivers, lakes and streams	Kilgour & Associates Limited (2020)	Setback for the Jock River is equal to the 100 yr floodplain. Setbacks for other watercourses on site is 30 m from the normal high watermark
4.7.5	Hydrogeology/terrain analysis	Subdivisions based on private services	Study not required.	Subdivision based on public services.

# Table 1. Demonstrated compliance with Policy 4.7 Environmental Protection



OP Section	Studies/Assessment Required	Where Required	Relevant Study and Status	Summary of Issue
4.7.5	Groundwater impact assessment	Groundwater resources areas	Study not required	N/A
4.7.5	Wellhead protection study	Wellhead Protection Area designated on Schedule K	OP Schedule K (City of Ottawa, 2020)	N/A
4.7.6	Stormwater site management plans	Site plan and subdivision and zoning amendment applications	David Schaeffer Engineering Limited (2020) Master Infrastructure Review and Adequacy of Servicing Report	SWM will respect natural drainage and provide appropriate quality and quantity controls for the Jock River and tributaries.
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 landscape features as identified on Schedule K of the City of Ottawa Official Plan.



# 6.0 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 (City of Ottawa, 2020). 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 the compliance of the proposed development with the design with nature principles.

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

There are no significant environmental features occurring on or being retained on the site. The development application does support environmental initiatives identified by the City of Ottawa, as demonstrated above in Section 6. Additional measures are:

- The development area currently has limited tree coverage. While the residential development cannot produce new forest areas, canopy cover will be enhanced through tree plantings;
- Surface water drainage shall respect natural drainage patterns and meet stormwater quality and quantity controls for the receivers;
- The proposed project is being carried out in an area that does not and has not contained significant wetland habitat, or significant habitat for species considered rare, threatened or endangered species; and
- Significant investment is being proposed in the open space blocks along the Jock River and tributaries to restore wetland, meadowlands and forest to the catchment area.

# 6.1 Integration of Energy Efficiency and Sustainable Design

The City of Ottawa calls for a description of how efficient and sustainable design principles have been incorporated into new developments following a Sustainable Design Checklist (City of Ottawa, 2020; now known as the Green Checklist; Table 2).



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?	None
1c	Will this project be seeking certification under another third-party green building rating system?	No
2	Will this project include renewable energy facilities and pursue a FIT or MicroFIT contract under the Ontario Power Authority's Feed-in Tarrif program?	No
3	Which features is the project designed to incorporate?	None

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

Kilgour & Associates Ltd.



# 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.

Natural Environment, Aquatic Habitat, Tree	Geotechnical Investigation
Conservation	Paterson Group:
Kilgour & Associates Limited:	
Anthony Francis, PhD	
Stormwater Management	Site Environmental Assessment
David Schaeffer Engineering Limited:	Golder Associates Limited:



# 8.0 LITERATURE CITED

- City of Ottawa. 2020. City of Ottawa Official Plan. Available at: https://ottawa.ca/en/planningdevelopment-and-construction/official-plan-and-master-plans/official-plan
- David Schaeffer Engineering Ltd. (DSEL). 2020. Adequacy of Services Report for Barrhaven Conservancy Developmetn Corporation, Conservancy East. DSEL Reference: 16-891, 1st submission, July 2020
- Golder Associates Ltd. 2018. Phase 1 ESA, 4305, 4375, 4345 McKenna Casey Drive, 3285, 3300, 3305 Borrisoakne Road, Ottawa, ON. October 2018, Golder Reference: 1771847.
- Kilgour & Associates Limited. (KAL), 2020 City of Ottawa Environmental Impact Statement for the Barrhaven Conservancy Development. July 22, 2020
- Paterson Group. 2019. Geotechnical Investigation, Proposed Residential Development, Conservancy East Lands, Ottawa, ON, September 24th 2019, Paterson Reference PG5036-1.
- Stantec Consulting Limited. 2007. Village of Richmond Water and Sanitary Master Servicing Study. Report date: June, 2011



Appendix A Figures



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City of Ottawa Integrated Environmental Review for the Barrhaven Conservency East Caivan Communities CAIV977 August 6, 2020



#### Figure 2 Proposed site development

Notes: Figure provided by NAK Design based on input by Kilgour & Associates Ltd.

Appendix B Detailed Analysis of Compliance of the BCDC Development Plan with Section 4.7 of the City of Ottawa Official Plan

#### Detailed Analysis of Compliance with Section 4.7 of the City of Ottawa Official Plan

This appendix provides a detailed examination of the requirements of Policy 4.7 of the City of Ottawa Official Plan as it pertains to subject development plan by BCDC. Each of the policy requirements is provided verbatim, with a short discussion of the approach taken by BCDC to comply with the specific policy, where relevant. The City Policy statements are *italicized*, while the BCDC 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 I 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. [Amendment #76, OMB File # PL100206, Ministerial Modification # 48, April 26, 2012.]

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.

#### **BCDC Approach to Compliance**

This 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.]

#### BCDC Approach to Compliance 4.7.2 (1)

The Tree Conservation Report for the project (KAL, 2020) indicates full retention of existing trees on site. The Enhance Environmental Impact Statement (KAL, 2020) provides a concept plan for a renaturalization of the Jock River floodplain including ~15 ha of reforestation. The Enhance Environmental Impact Statement also directs the proponent to produce a landscape plan for the proposed residential areas with a projected canopy cover at maturity of over six percent. The combination of reforestation and urban tree planting will provide > 30% canopy cover through the Site.

**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;

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

The Tree Conservation Report (KAL, 2020) confirmed that there were no significant specimen trees within areas subject to clearing, and no rare vegetation, Areas of Natural and Scientific Interest, significant wetlands, natural areas, and no woodlands greater than 50 years within the development areas. No endangered or threatened species or their habitats are present in areas subject to residential development. Butternuts do occur within areas that will be renaturalized but will not be negatively impacted by that work. All existing trees on site occur outside of areas proposed for residential development will be retained.

Policy 4.7.2 (2f)

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

#### BCDC Approach to Compliance on Policy 4.7.2 (2f)

Existing site trees will be retained (KAL, 2020), thus no compensation is required.

#### 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.

#### BCDC Approach to Compliance on Policy 4.7.2 (2g)

Areas of existing natural vegetation will be retained.

#### Policy 4.7.2 (2h)

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

#### BCDC Approach to Compliance on Policy 4.7.2 (2h)

The Enhance Environmental Impact Statement (KAL, 2020) provides a concept plan for a renaturalization of the Jock River floodplain including a strategic recommendation for ~15 ha of reforestation. The Enhance Environmental Impact Statement also directs the proponent to produce a landscape plan for the proposed residential areas with a projected canopy cover at maturity of over six percent. The combined strategic recommendations for reforestation and urban tree planting are intended to provide > 30% canopy cover through the Site.

#### 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.

#### BCDC Approach to Policy 4.7.2 (3)

The site Landscape Plan is still being developed. It will be developed accordingly.

#### 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.]

#### BCDC Approach to Policy 4.7.3

All residential development will occur outside of all required setbacks to the Jock River, the Fraser-Clarke Watercourse and the Foster Ditch to protect these features accordingly (KAL, 2020). Renaturalizatation will occur within the setback areas to further further this goal.

#### Policy 4.7.3 (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.]

#### BCDC Approach to Policy 4.7.3 (1)

The Jock River Reach One Subwatershed Study (Stantec, 2007) is a council approved subwatershed study proving required setbacks for this area. All residential development will occur outside of all required setbacks to the Jock River, the Fraser-Clarke Watercourse and the Foster Ditch (KAL, 2020).

#### 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);
  - c. Development limits as established by the geotechnical limit of the hazard lands; 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]

#### BCDC Approach to Policy 4.7.3 (2)

The Jock River Reach One Subwatershed Study (Stantec, 2007) is a council approved subwatershed study proving required setbacks for this area. Setback requirements indicated by the subwatershed study match the default guidelines with the OP. All residential development will occur outside of all required setbacks to the Jock River, the Fraser-Clarke Watercourse and the Foster Ditch (KAL, 2020).

#### Policy 4.7.3 (3)

3. 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.]

#### BCDC Approach to Policy 4.7.3 (3)

All residential development will occur outside of all required setbacks to the Jock River, the Fraser-Clarke Watercourse and the Foster Ditch (KAL, 2020). A zoning by-law amendment or variance is not required.

#### Policy 4.7.3 (4)

- 4. 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]

#### BCDC Approach to 4.7.3 (4)

All residential development will occur outside of all required setbacks to the Jock River, the Fraser-Clarke Watercourse and the Foster Ditch to protect these features accordingly (KAL, 2020). Renaturalizatation of floodplain lands within the setback constitutes environmental restoration work. The proposed renaturalization will only proceed with the approval of the City and the RVCA.

#### Policy 4.7.3 (5)

5. 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.]

#### BCDC Approach to 4.7.3 (5)

All residential development on site will occur beyond the geotechnical limit of hazard.

#### Policy 4.7.3 (6)

- 6. 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]

#### BCDC Approach to Policy 4.7.3 (6)

All residential development will occur outside of all required setbacks to the Jock River, the Fraser-Clarke Watercourse and the Foster Ditch (KAL, 2020).

#### Policy 4.7.3 (7)

7. 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:

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- 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]

#### BCDC Approach to Policy 4.7.3 (7)

All residential development will occur outside of all required setbacks to the Jock River, the FraserClarke Watercourse and the Foster Ditch (KAL, 2020).

#### Policy 4.7.3 (8)

- 8. 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]

#### BCDC Approach to Policy 4.7.3 (8)

This Site is not within a Village.

#### Policy 4.7.3 (9)

- 9. 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]

#### BCDC Approach to Policy 4.7.3 (9)

This Site is not in a rural area.

#### Policy 4.7.3 (10)

10. 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]

#### BCDC Approach to Policy 4.7.3 (10)

This Site is not in a rural area.

#### Policy 4.7.3 (11)

11. 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.]

#### BCDC Approach to Policy 4.7.3 (11)

There are no natural wetland areas on or adjacent to the development area. All residential development will occur outside of all required setbacks to the Jock River, the Fraser-Clarke Watercourse and the Foster Ditch to protect these aquatic features accordingly (KAL, 2020). Renaturalizatation of floodplain lands within the setback will require site alteration of shoreline/riparian areas, though it constitutes environmental restoration work. The proposed renaturalization will only proceed with the approval of the City and the RVCA.

#### Policy 4.7.3 (12)

12. 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]

#### BCDC Approach to Policy 4.7.3 (12)

No part of the development will include servicing on private services.

#### Policy 4.7.3 (13)

13. 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.

#### BCDC Approach to Policy 4.7.3 (10)

The Design Brief for the project (David Schaeffer Engineering Limited, 2020) provides a site Erosion and Sediment Control (ESC) Plan.

#### Policy 4.7.3 (14)

14. 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.

#### BCDC Approach to Policy 4.7.3 (14)

All residential development will occur outside of all required setbacks to the Jock River, the Fraser-Clarke Watercourse and the Foster Ditch to protect these aquatic features accordingly (KAL, 2020). Renaturalizatation of floodplain lands within the setback will require site alteration of shoreline/riparian areas, though it constitutes environmental restoration work. The proposed renaturalization will only proceed with the approval of the City and the RVCA.

#### Policy 4.7.3 (15)

15. 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.]

#### BCDC Approach to Policy 4.7.3 (15)

All residential development will occur outside of all required setbacks to the Jock River, the Fraser-Clarke Watercourse and the Foster Ditch to protect these aquatic features accordingly (KAL, 2020). Renaturalizatation of floodplain lands within the setback will require site alteration of shoreline/riparian areas, though it constitutes environmental restoration work. The proposed renaturalization will only proceed with the approval of the City and the RVCA. Works associated with the proposed renaturalization

that, following detailed design, are determined will occur below the normal high-water mark of fishbearing waters will be submitted for review and approval to DFO.

#### Policy 4.7.3 (16)

16. 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.]

#### BCDC Approach to Policy 4.7.3 (16)

There are no municipal drains currently present on adjacent to the Site. The Design Brief for the project (David Schaeffer Engineering Limited, 2020) provides plans for stormwater management including appropriate access to drainage works.

#### Policy 4.7.3 (17)

- 17. 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.

#### BCDC 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 [and Forestry]. 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]

#### BCDC Approach to Policy 4.7.4

The EIS for the project by KAL (2020) provides mitigation measures to limit or prevent negative impacts to the species at risk potentially occurring in the vicinity.

#### 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.* 

#### BCDC Approach to Policy 4.7.5 (1)

The Site does not occur within a wellhead protection area. A groundwater impact assessment was not required.

#### 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]

#### BCDC Approach to Policy 4.7.5 (2)

No part of the development 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]

#### BCDC 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.

#### BCDC Approach to Policy 4.7.5 (4)

The proposed development is not located within a wellhead protection area.

#### 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.

#### BCDC Approach to Policy 4.7.6 (1)

David Schaeffer Engineering Limited (2020) is preparing the final stormwater management plan for the project. It will be included within the submission package.

#### 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.

#### BCDC Approach to Policy 4.7.6 (2)

David Schaeffer Engineering Limited (2020) is preparing the final stormwater management plan for the project. It will be included within the submission package.

#### 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]

#### BCDC Approach to Policy 4.7.7 (1)

On the basis of the various studies commissioned by BCDC, there are no significant geomorphic, geological and other landform features within the proposed residential development area.

## 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.]

#### BCDC Approach to Policy 4.7.7 (2)

On the basis of the various studies commissioned by BCDC, there are no provincially significant Earth Science Areas of Natural and Scientific Interest in or within 50 m of the proposed residential development area.

#### 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.

#### BCDC Approach to Policy 4.7.7 (3)

On the basis of the various studies commissioned by BCDC, there are no other significant landform features, such as rock outcrops, escarpments, knolls, or valleys within the proposed residential development area.

#### 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.

#### BCDC Approach to Policy 4.7.7 (4)

On the basis of the various studies commissioned by BCDC, there are no provincially significant Earth Science Areas of Natural and Scientific Interest or significant landform features (e.g., rock outcrops, escarpments, knolls, or valleys) within the proposed residential development area.

#### 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)

- 1. 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]
- 2. 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]

#### BCDC 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 proposed residential development area.

#### Policy 4.7.8 (3, 4, 5, 6)

1. 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]

- 2. 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]
- 3. 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]
- 4. 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]

#### BCDC Approach to Policy 4.7.8 (7)

No response required.

#### Policy 4.7.8 (3, 4, 5, 6)

- 5. 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;

#### BCDC Approach to Policy 4.7.8 (7)

No significant woodlands, significant wildlife habitat, significant valleylands or other natural heritage features occur within the proposed residential development area.

#### Policy 4.7.8 (8 & 9)

- 6. 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]
- 7. 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.

#### BCDC Approach to Policy 4.7.8 (8 & 9)

No response required.

#### Policy 4.7.8 (10)

8. 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.]

#### BCDC Approach to Policy 4.7.8 (10)

This project was reviewed and assessed under an EIS by KAL (2020), which concluded the project would have no significant negative impacts.

#### Policy 4.7.8 (11)

- 9. 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.

#### BCDC Approach to Policy 4.7.8 (11)

The Enhanced EIS for this project was produced KAL (2020) and addresses all points except for "i." regarding monitoring requirements. A monitoring program will be required under the proposed renaturalization program for the Jock River floodplain but will be established as part of the detailed design.