

**INTEGRATED ENVIRONMENTAL REVIEW STATEMENT (IERS)
BRIGIL KANATA NORTH – 927 MARCH ROAD**

INTEGRATED ENVIRONMENTAL REVIEW STATEMENT

**BRIGIL
KANATA NORTH
(March Road)**

December 2020

Prepared for:

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**INTEGRATED ENVIRONMENTAL REVIEW STATEMENT (IERS)
PREPARED FOR BRIGIL**

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1.0 INTRODUCTION

JL Richards & Associates has been retained by Brigil Construction to prepare an Integrated Environmental Review Statement (IERS) and a Planning Rationale in support of three planning applications for approximately 20 hectares of land in the Southwest Quadrant of the Kanata North CDP area, municipally known as 927 March Road.

The planning applications include a Draft Plan of Subdivision, a Zoning By-Law Amendment and an Official Plan Amendment. The proposed Draft Plan of Subdivision will divide the existing parcel into nine (9) blocks, consisting of:

- two (2) nine (9) storey mid-rise residential apartments (600 units);
- nine (9) four (4) storey low-rise residential apartments (1200);
- townhouses, (33 units);
- single detached dwellings (28 units);
- a stormwater management pond (SWM); and
- a school site and a creek corridor.

The roads proposed consist of 24 m wide right of way (ROW) collector roads and 18 m wide ROW local roads. The rezoning application will permit the proposed uses on-site and the Official Plan Amendment will permit the two (2) mid-rise buildings (9 storeys) in the General Urban Area designation and a reduction in the overall share of single detached dwellings for the entire CDP area, from 30% to 22.5%.

Further details of the proposed undertaking, including development statistics and planning applications, are provided in Section 4.0 of this report.

It is anticipated that the proposed development will occur in seven (7) phases over the course of several years. There have been several studies prepared in support of the proposed development. A list of required plans and studies was confirmed by the City of Ottawa in March 2020. In accordance with Section 4.7 of the Official Plan, the list included:

- Site Servicing Plan;
- Site Servicing Study (Assessment of Adequacy of Public Services);
- Grade Control and Drainage Plan;
- Geotechnical Study / Slope Stability Study;
- Transportation Impact Assessment;
- Stormwater Management Report;
- Hydraulic Water main Analysis;
- Noise and Vibration Study;
- Draft Plan of Subdivision;
- Planning Rationale;
- Concept Plan showing proposed land uses and landscaping;
- Archaeological Resource Assessment;
- Survey Plan;
- Phase 1 Environmental Site Assessment;

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- A combined Tree Conservation Report and Environmental Impact Statement (EIS)

It is the purpose of this IERS report to firstly demonstrate how the proposed development meets the requirements of the City of Ottawa's Official Plan and, secondly, to present information from all of the servicing, environmental and planning studies completed to date.

What follows includes a summary of the technical studies, including existing conditions; the potential effects and mitigation measures; and a concluding analysis which demonstrates how the design of the proposed development complies to policies and is embedded in nature principles, as well as energy efficiency and sustainability. The following section will briefly outline the requirements of the IERS.

1.1 Integrated Environmental Review Statement (IERS) Requirements

The requirements for an IERS are provided in section 4.7.1 of the City of Ottawa's Official Plan.

An IERS is intended to provide the full picture of what supporting studies mean for the future development of a site, including the most significant findings from individual servicing and environmental studies and reports. The IERS should verify that the proposed development will comply with all servicing and environmental related policies (Federal, Provincial, Municipal) and that the principles of "design with nature" have been applied through the planning and design development process.

Section 4.7.1 provides the following policies which form the foundation of this report:

Policy 1:

Subdivision, and site plan and rezoning applications requiring an Environmental Impact Statement, Tree Conservation Report or landform feature assessment, 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.]

Policy 2:

The integrated environmental review statement will provide:

- A brief overview of the results of individual technical studies and other relevant environmental background material;*
- 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 #150 December 21, 2017]*

This report fulfills the requirements of Section 4.2.7 in that it provides the results of all required plans and studies that influence the servicing and environmental design components of the proposed development and comply with the policies of Section 4.

Further, this report provides a summary of all the existing conditions of the site, including graphics, and discusses potential concerns related to those conditions, as well as any solutions provided to ensure that the proposed development complies with all the policies and design objectives of Section 4 of the Official Plan.

1.2 Summary of Consultants and Technical Studies

Several consultants were retained by Brigil Construction to review both the environmental and servicing conditions, as well as the design considerations associated with the proposed development.

1.2.1 Paterson Group

Paterson Group was retained by Brigil to undertake three studies in support of the planning applications, including: A Stage 2 Archaeological Assessment; a Phase I Environmental Site Assessment; and a Geotechnical Investigation.

Archaeological Assessment

Dated on June 18, 2020, the Stage 2 Archaeological Assessment report was prepared by Ben Mortimer (MA). The objectives of the investigation were to assess the archaeological potential of the property in accordance with the Planning Act as Brigil is developing the property for residential use (Map 2).

A Stage 1 assessment was completed in 2013 by Paterson Group (2013). The Stage 1 assessment determined that the subject property has archaeological potential based on the

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proximity to Shirley’s Creek and historic transportation routes, along with census records, and historical maps that show the study area was likely occupied from early in the nineteenth century. The Stage 2 Archaeological Assessment confirms that no further archaeological study is required for the subject property.

Phase I- Environmental Site Assessment

Dated on April 27, 2020, the Phase I – Environmental Site Assessment was prepared by Mandy Witteman (B.Eng., M.A.Sc.) and Mark S. D’Arcy, (P.Eng.QPESA). The purpose of this Phase I-ESA was to research the past and current use of the subject site and the Phase I Study Area and to identify any environmental concerns with the potential to have impacted the Phase I Property. Based on the results of this study, the authors concluded that a Phase II – Environmental Site Assessment is not required for the subject property.

Geotechnical Investigation

Dated on May 13, 2020, the Geotechnical Investigation was prepared by Joey R Villeneuve, (M.A.Sc., P.Eng) and David J. Gilbert (P.Eng). This report builds upon the findings of an earlier study conducted by Paterson Group (2013) which provided a consolidated preliminary geotechnical investigation for the KNUEA.

The objective of the investigation was twofold:

- To determine the subsurface soil and groundwater conditions by means of boreholes and monitoring well program; and
- To provide preliminary geotechnical recommendations for the foundation design of the proposed buildings and provide geotechnical construction precautions which may affect the design.

The report ends with geotechnical recommendations pertaining to the design and construction of the proposed development. Investigating the presence or potential presence of contamination on the subject property was not part of the scope of work of this present investigation. Therefore, the present report does not address environmental issues.

1.2.2 Stantec Inc.

Stantec Inc. was retained by Brigil Construction to provide a hydraulic water main analysis and assess the adequacy of public services; grading and drainage options; transportation impact; and stormwater management. With the exception of the transportation impact assessment, study findings are presented in one document, titled the “Brigil Kanata North Functional Site Servicing and Stormwater Management Report”, dated August 21, 2020.

Brigil Kanata North Functional Site Servicing and Stormwater Management Report

This servicing report was prepared Ana M. Paerez (P.Eng) and Kris Kilborn. The document provides a recommended servicing plan for the major municipal infrastructure needed to support the future development of the subject property. The report provides background information and

considerations for potable water; wastewater servicing; storm drainage; geotechnical components; and grading; erosion control during construction; utility connections; and subsequent approvals.

This report demonstrates how the proposed municipal servicing conforms to the Kanata North Master Servicing Study (KNMSS) and to the Kanata North Environmental Management Plan (KNEMP). This report also identifies the solutions that deviate from these plans and provide sufficient rationale for the changes.

Transportation Impact Assessment

Stantec is conducting the Traffic Impact Assessment (TIA). Proper improvements (e.g. road widening) will be provided to address future traffic concerns related to the proposed development.

1.2.3 McKinley Environmental Solutions

McKinley Environmental Solutions was retained by Brigil Construction to prepare a Combined Environmental Impact Statement (EIS) & Tree Conservation Report (TCR) for the Brigil Kanata North Development. The report's author is Senior Biologist, Dr. Andrew McKinley, EP, RP Bio. The EIS and TCR have been prepared in accordance with sections 4.7.2, 4.7.4 and 4.7.8 of the Official Plan.

Dated September, 2020, the document provides an examination of the site's existing vegetation communities and natural features, including wetlands and watercourses, wildlife habitat and species at risk. This report provides options for mitigating the impacts of development on natural features and tree habitats, as well as identifies necessary development approvals. The development of the Site is not anticipated to have a significant negative effect on the natural features and functions, if the recommended measures are implemented and regulatory approvals obtained.

1.2.4 Gradient Wind (Engineers & Scientists)

Gradient Wind was retained by Brigil Construction to provide a roadway traffic noise feasibility assessment in support of the proposed planning applications. Dated on May 29, 2020, this report was based on the proposed development and summarizes the methodology, results, and recommendations related to a roadway traffic noise feasibility assessment.

The principal objective of the study was to calculate the future noise levels on the study site produced by exterior noise levels, including local roadway traffic, and explore potential for noise mitigation where required. The assessment is based on (i) theoretical noise prediction methods that conform to the Ministry of the Environment, Conservation and Parks (MECP) and City of Ottawa requirements; (ii) noise level criteria as specified by the City of Ottawa's Environmental Noise Control Guidelines (ENCG); (iii) future vehicular traffic volumes based on the City of Ottawa's Official Plan roadway classifications; and (iv) draft site plan drawings provided by Brigil.

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2.0 BACKGROUND

2.1 Site Location

The legal description of the lands is Part of Lot 12, Concession 3, Geographic Township of Ottawa-Carleton, City of Ottawa.

The Subject Property is located north of South March in Kanata North, approximately 20 kilometers west of downtown Ottawa via Highway 417. The irregular shaped parcel includes a portion of the 927 March Road property, which was previously severed into several parts. The lands consist of approximately 20 hectares of developable land, which are entirely located within the Southwest Quadrant of the Kanata North CDP area. The property is also located within the jurisdiction of the Mississippi Valley Conservation Authority (MVCA) and within the Shirley's Brook sub-watershed.

The surrounding lands consist of both undeveloped and developed lands used for a range of purposes. The lands to the north and east are also predominantly occupied by agricultural uses, while the lands to the west are occupied by a rural subdivision (Marchbrooke Circle) and the lands to the south are occupied by urban mixed-use development.

2.2 Kanata North CDP Background & Supporting Studies

The planning process for the Kanata North CDP was initiated by a group of landowners, known as the "Kanata Land Owners Group" (KNLOG). While the current group of landowners have changed slightly, they represent approximately 87% of the approximately 181 ha of land area, which is divided into four main quadrants.

The City of Ottawa, in conjunction with principal landowners, initiated the study of the potential urban lands and development of a Community Design Plan (CDP) for the Kanata North Community. The subject lands were designated part of the Kanata North Urban Expansion Area (KNUEA) in 2009. Through Official Plan Amendment 76 (OPA 76) the lands were re-designated from 'General Rural' to 'Urban Expansion Area'. The properties were then added to the city's general urban area in 2016.

The CDP for Kanata North establishes a wide range of design guidelines and development principles with respect to land uses, street system, parks and greenspace, community services and facilities, mixed use, institutional uses, and residential densities, lot and building configuration. The Kanata North CDP is supported by and linked to three main studies: the Environmental Management Plan (EMP), the Master Servicing Study (MSS) and the Transportation Master Plan (TMP) among others.

2.2.1 Kanata North Environmental Management Plan (KNEMP)

The Kanata North Environmental Management Plan (EMP) examines the existing natural conditions of the Subject Lands. The Report provides recommendations for compensation and mitigating the potential environmental impacts of any proposed development, including appropriate setbacks and buffers from Shirley's Brook Tributaries, the enhancement of creek corridors to preserve natural heritage features, and site servicing options based on low-impact design and sustainability principles. Environmental compensation and mitigation relate specifically to species at risk, headwater drainage features, and stream corridors.

The southwest quadrant environmental compensation and mitigation plan is summarized as follows:

- 40 m corridor + 6 m pathway for Shirley's Brook Tributary #3.
- Channel 'G' (Marchbrook Circle) (also referred to as the Stormwater Swale (Tributary #4)) should be intercepted at the KNUEA property boundary and piped to Tributary #3.
- Blanding's Turtle compensation with deep pools, shallow pans/pools, and deep channel pockets.
- Headwater features compensation within the protected and/or enhanced creek corridor.

2.2.2 Kanata North Master Servicing Study (KNMSS)

The provides the conceptual servicing design to assist in the development of future detailed design work which will be required at the development approvals stage. A key objective of this Study was to identify the existing infrastructure conditions and implementation strategies that provide the best possible servicing options for the site in accordance with the projected distribution of land uses and increase in density. The Study covered topics such as stormwater drainage, sanitary servicing and water servicing.

2.2.3 Kanata North Transportation Master Plan (KNTMP)

The Kanata Transportation Master Plan (TMP) examines the existing conditions of the transportation network and establishes the road hierarchy for the CDP, including potential pedestrian and cycling connections throughout the site. The TMP builds upon the work conducted for the City of Ottawa 2013 Transportation Master Plan and identifies opportunities to support the expansion plans for the BRT along March Road. The TMP also serves as the Environmental Assessment document for the proposed transportation and transit infrastructure.

All required studies discussed in this IERS report were conducted in response to the plans and studies identified above, as required by the Kanata North CDP. For the most part, the prepared in the analysis in which relate to and expand upon the findings of these studies.

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3.0 SUMMARY OF EXISTING SITE CONDITIONS

This section provides a summary of the existing site conditions examined by the individual studies discussed previously in Section 1.2.

The following environmental disciplines are considered here:

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

Each study provides an analysis of the existing conditions mentioned above. This section integrates the most important information from all these studies in order to provide a wholistic understanding of the observations made by each consulting report – the end goal being to demonstrate the suitability of the proposed development for subject lands.

3.1 Geotechnical

The existing elevations within the site range from 88 m Above Sea Level (ASL) to 79m ASL, generally sloping and draining from west to east. A 1 to 2 m high ditch was noted crossing the site from west to east with a 40 m wide pond area.

Original field work conducted by Paterson Group in 2013 noted that subsoil conditions consisted of topsoil underlain by a very stiff silty clay deposit, followed by a glacial till layer and bedrock. At the time, Paterson Group identified that bedrock conditions below the majority of the Site consisted of interbedded sandstone and dolomite of the March formation. Areas of exposed bedrock were noted within the channel of the North Branch.

Paterson undertook additional field work between April 23 to 27, 2020 in order to provide current information to support the proposed planning applications. The report provides the surface, subsurface and groundwater conditions of the site. From a geotechnical perspective, Paterson concluded that the subject site is suitable for the proposed residential development.

At that time of the fieldwork, 11 boreholes were completed to a maximum depth of 7.1 m below existing ground surface. The test hole locations were located and surveyed by Paterson personnel in the field. Soil samples underwent laboratory testing and analytical testing, including a Standard Penetration Test (SPT). One soil sample was submitted for analytical testing to assess the corrosion potential for exposed ferrous metals and the potential of sulphate attacks against subsurface concrete structures. Groundwater monitoring wells (32 mm) were installed in two borehole locations, while Flexible piezometers were installed in all the other boreholes to monitor the groundwater level subsequent to the completion of the sampling program.

A review of the existing ditch side slopes by Paterson, included as a part of this geotechnical assessment, confirms that the slopes are considered to be stable and no active erosion is occurring along the watercourse. Therefore, no setback from the top of slope is required.

3.2 Soil Quality

According to Paterson Group's (2020) findings, the subsurface profile of the site consists of an agriculturally disturbed clayey organic layer overlying a very stiff to hard brown silty clay crust. Glacial till, composed of gravel, cobbles and boulders within a silty clay soil matrix was encountered underlying the brown silty clay crust at several locations.

Based on available geological mapping, the bedrock in the area is part of the March formation, which consists of sandstone and dolostone. Also, based on available geological mapping, the overburden thickness is expected to range from 1 to 5 m.

Paterson's report (2020) demonstrates that subsurface conditions are suitable for the future development of the site. However, due to the presence of the silty clay layer, Paterson Group identified that any proposed development would be subjected to grade raise restrictions. Study results also indicate the presence of a low to moderately aggressive environment for exposed ferrous metals at this site, which is typical of silty clay samples submitted for the subject area.

3.3 Groundwater

The property is situated in an area where private wells and septic systems are relied upon. No domestic wells were observed on-site, nor are they expected to be present as the majority of the land is vacant and undeveloped. While site drainage occurs primarily through infiltration, groundwater flow is interpreted to be in a south-easterly direction towards the Shirley's Brook. In other words, the site generally drains from west to east. Groundwater levels measured in February 2008 showed levels that ranged between 0.7 m to 1.6 m below ground surface elevation.

Groundwater level readings were recorded on May 5, 2020 during fieldwork conducted by Paterson Group at the piezometer and monitoring well locations. Based on the observation of soil samples, such as colouring, moisture levels and consistency, the long-term groundwater level is not expected within the overburden soils. However, the groundwater level readings within the monitoring wells indicate that an artesian pressure is present below the bedrock surface within the north portion of the site.

3.4 Terrestrial Environment

The site is mostly vacant and predominantly agricultural, being covered by harvested crop and grass covered areas. The lands include a collapsing barn and cultivated fields which were mostly recently planted with soybeans in the summer of 2018, as well as Fallow Fields (Graminoid Meadow).

Available topographic maps indicate that the regional topography in the general area of the site is generally flat and that ground surface is slightly below the grade of March Road. Within the site, the land slopes down in a south-easterly direction towards Shirley's Brook.

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Treed habitats within the Site include two (2) Deciduous Hedgerows, a Cultural Thicket, and three (3) small Tree Stands. There are no forested areas within the Site. Vegetation communities found within the Site include the following (See **Figure 1**):

- Deciduous Hedgerows (Features A & B);
- Cultural Thicket (Feature C);
- Tree Stands (Features D to F);
- Cultivated Fields; and
- Fallow Fields (Graminoid Meadow).

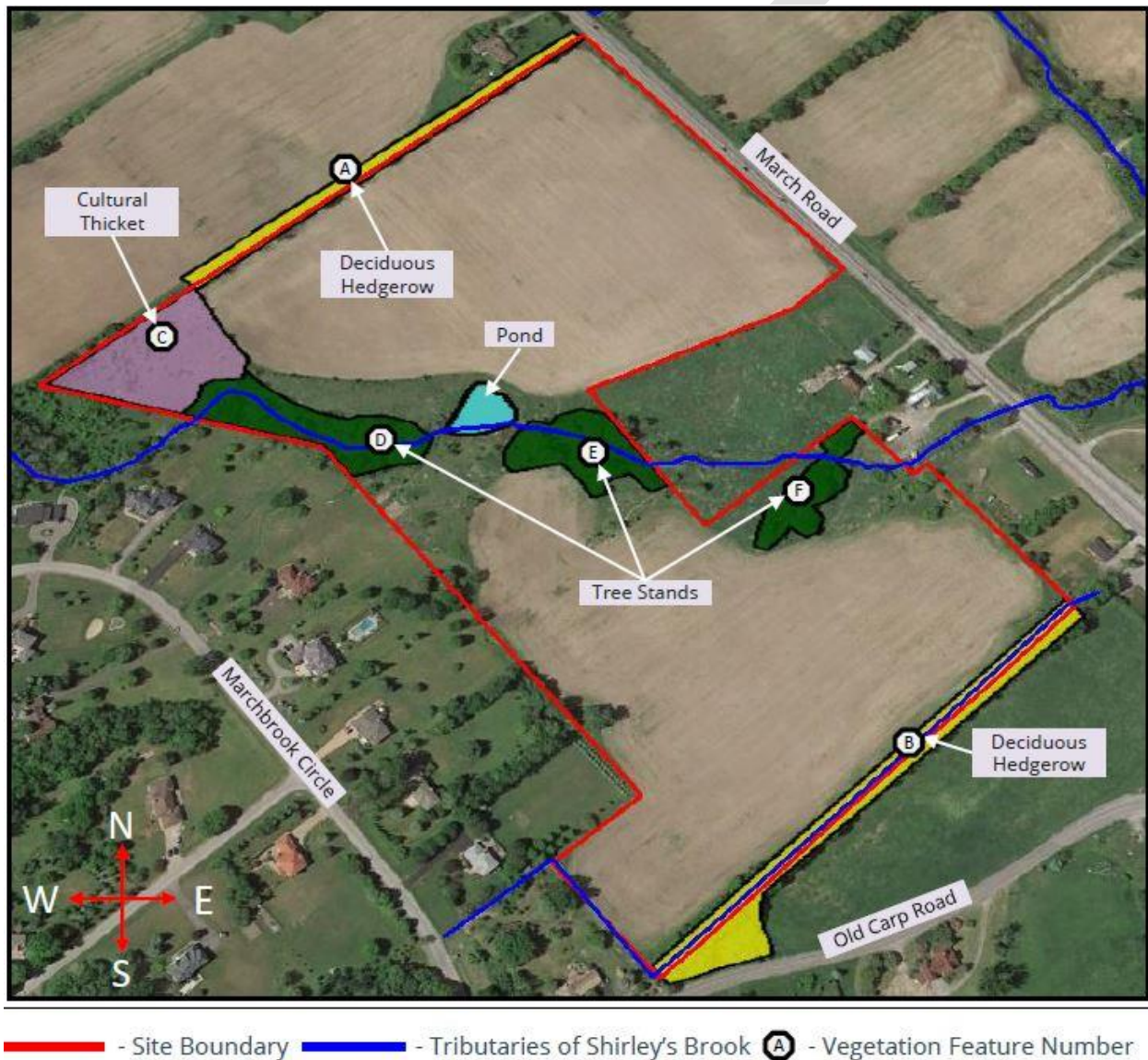


Figure 1: Location of Trees & Vegetation Communities (McKinley, 2020)

Site surveys were carried out by McKinley Environmental Solutions to gather information on vegetation communities and to inventory trees. Site visits to inventory plants and measure tree

sizes were completed by Dr. McKinley on May 12th, May 15th, and June 21st, 2018. Most trees and shrubs found on the subject lands represent recent regrowth that is between 10 years and 40 years of age. During the 2018 vegetation surveys and tree inventory, no Butternut Trees were noted within the Site. Therefore, a Butternut Health Assessment (BHA) was not required to support the proposed development.

In terms of other constraints, there was no evidence of hazardous materials, surficial staining stressed vegetation, or current or former railway or spur lines.

3.5 Aquatic Environment

The aquatic environment was also observed by McKinley Environmental Solutions. The North Branch (Tributary #3) of Shirley's Brook, which includes an inline pond, crosses the Site from the west to east. The Stormwater Swale (Tributary #4) borders the southern property line and flows through the Site in a southwest to northeast direction. The tributaries of Shirley's Brook are shown in Figure 2 (following page).

Within the Site, the North Branch (Tributary 3) channel has well-defined banks. The inline pond is a relatively shallow feature, with much of its substrate consisting of bedrock. The presence of bedrock at the bottom of the inline pond likely limits its functionality as Blanding's Turtle habitat. Vegetation was found growing within the channel and along the banks of the North Branch (Tributary 3) and within the inline pond. Five (5) species of fish were documented within the North Branch (Tributary 3).

A Stormwater Swale (Tributary 4) flows through the Site in a southwest to northeast direction. The Stormwater Swale occurs within Deciduous Hedgerow B and is fed by stormwater outflow from the adjacent Marchbrook Circle subdivision and the roadside ditch of Old Carp Road. The Stormwater Swale does not include significant aquatic vegetation, and the feature's substrate is dominated by woody debris. Previous studies conducted for the site indicate that the feature is not ecologically significant, as it does not appear to provide direct fish habitat. The McKinley Environmental Solutions report (2020) reiterates these findings.

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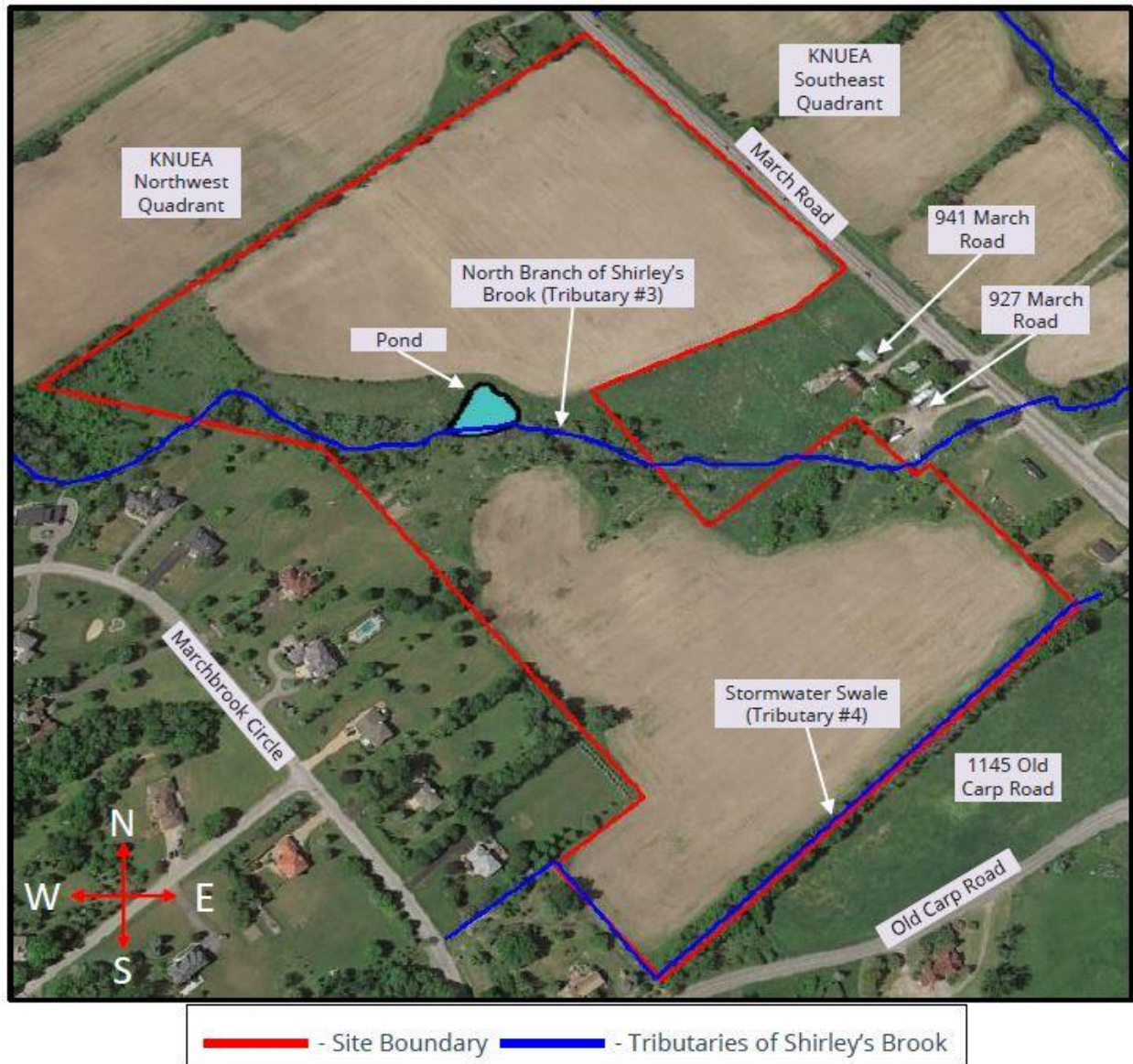


Figure 2: Location of Shirley's Brook Tributaries (McKinley, 2020)

3.6 Species at Risk (SAR)

In 2018, McKinley Environmental Solutions also surveyed the site for the presence of Species at Risk, Wildlife, as well as Significant Wildlife Habitat. There are several species at risk observed which are well documented within the Site and most notably present along the Creek Corridor. Notably, the habitat of Blanding's Turtle (threatened) and Snapping Turtles (special concern) is known to occur within the Site and there were Barn Swallow (threatened) nests documented within the aforementioned collapsing barn in 2018. Aquatic wildlife species, including fish, Snapping Turtles, and Blanding's Turtles, may utilize the North Branch (Tributary #3) as a movement corridor to traverse the Site.

The presence of Blanding Turtle Habitats was examined in the light of previous studies and mapping data for the subject lands. There are three types of categories of habitat for Blanding Turtles. Category 1 habitat includes areas where Blanding's Turtles overwinter and nesting areas. Category 2 habitat includes wetlands and watercourses within 2 km of known Blanding's Turtle occurrences. Category 3 habitat includes terrestrial areas extending up to 250 m from the edge of Category 2 wetlands and watercourses. The subject lands provide Category 2 and 3 habitats for the Blanding Turtles. As such, mitigation measures and regulatory requirements will apply.

The presence of Barn Swallow and Chimney Swift were also studied through site surveys. Two (2) Barn Swallow nests were observed within the collapsing barn (one (1) active nest and one (1) inactive nest). The collapsing barn does not have a chimney, and therefore the Chimney Swifts that were observed foraging over the Site are unlikely to be nesting within the Site. As such, while the Chimney Swift are unlikely to generate concern for the proposed development, the presence of the barn swallow will need to be considered from a regulatory and mitigation perspective.

The presence of Bobolink and Eastern Meadowlark was also studied. The lack of Bobolink sightings during the breeding bird season suggests that the Site did not provide Bobolink habitat in the summer of 2018. No evidence of Eastern Meadowlark was documented within the Site during the 2018 breeding bird surveys. Bobolink and Eastern Meadowlark are therefore unlikely to be a significant concern for the proposed development.

As previously mentioned, while the North Branch (Tributary #3) of Shirley's Brook provides warm-water fish habitat, the Stormwater Swale (Tributary #4) does not provide direct fish habitat. Finally, a total of forty-nine (49) bird species were noted within the site. The majority of bird species and other wildlife observed within the Site are common species typically found in suburban and rural areas.

3.7 Transportation

Several other studies were undertaken that consider the existing and planned environmental conditions related to roads and transportation. Gradient Wind was commissioned by Brigil to undertake a roadway traffic noise feasibility assessment in support of the proposed development. Dated May 29th, 2020, the consultant's report provides a thorough analysis of all noise impacts generated in the vicinity of the subject lands. Major sources of noise impacting the site include roadway traffic along March Road to the east, several proposed collector roadways internal of the site, and minor influence from Old Carp Road to the south.

A Planning Rationale prepared by JL Richards & Associates provides an analysis of existing transportation conditions. Stantec Inc. is preparing the TIA assessment / forms.

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4.0 PROPOSED UNDERTAKING

Brigil has created a conceptual plan for the subject lands. A Draft Plan of Subdivision has been prepared by Annis O’Sullivan Vollebakk Ltd. (AOV). All servicing and environmental studies have been prepared based upon the block sizes and number of units that are proposed within these plans.

The proposed Draft Plan of Subdivision (Figure 3) will divide the existing parcel (Subject Property) into nine (9) blocks, consisting of two (2) nine (9) storey mid-rise residential apartments (600 units); nine (9) four (4) storey low-rise residential apartments (1200 units), 33 townhouse units and 28 single detached units. The proposed development includes a 4.26-hectare (ha) park, a 1.60 ha SWM pond, a 1.58 ha creek corridor and a 1 ha school site to be developed later by others.

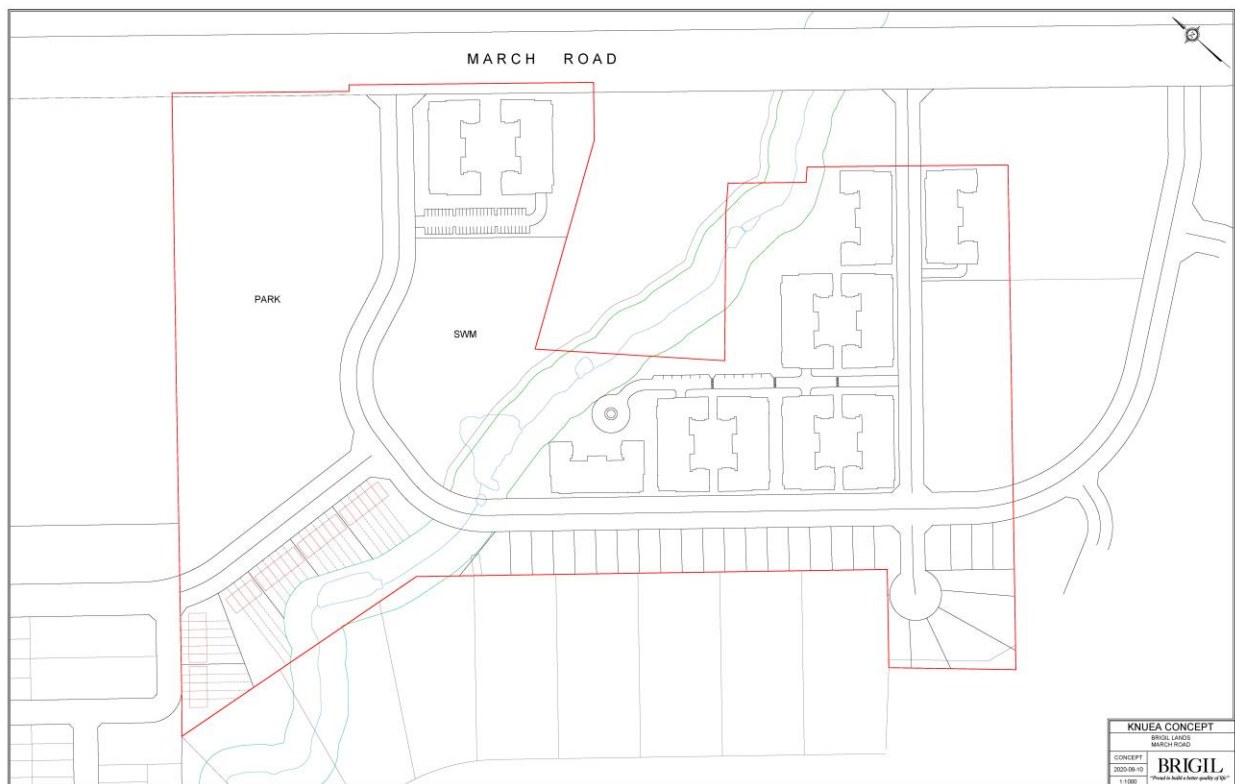


Figure 3: Site Layout (Concept)

The roads proposed consist of 24 m wide right of way (ROW) collector roads and 18 m wide ROW local roads, with tree plantings and other public realm infrastructure (See Figures 4 and 5).

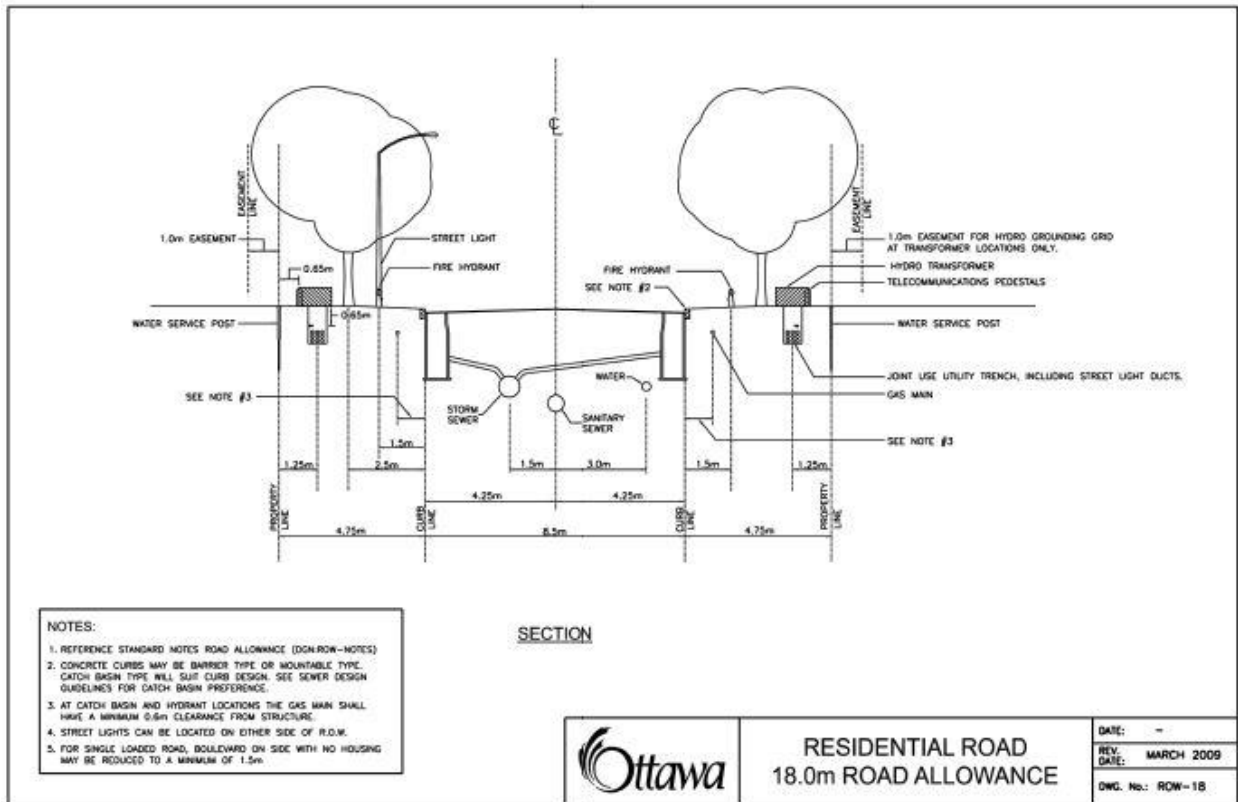


Figure 4: 18 m Road Allowance (Local Roads), prepared by Stantec (August 18th, 2020)

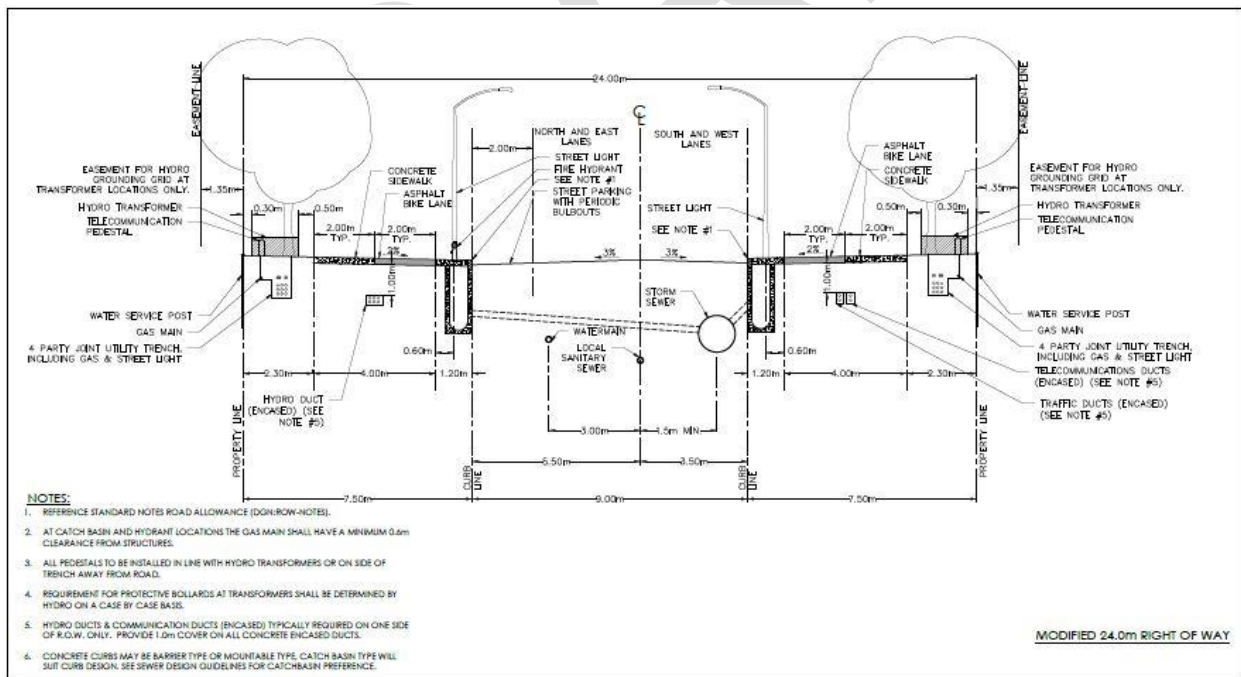


Figure 5: 24 m Right-of-way (Collector Roads), prepared by Stantec (August 18th, 2020)

The proposed development will be designed to optimize existing and planned infrastructure and respect the environmental conditions of the site in accordance with the criteria of the KNMSS, KNEMP and KNTMP and other City of Ottawa Official Plan policies and design guidelines. For

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the most part, the overall design of the proposed development avoids deviation from the master plans and studies discussed previously.

The following points summarize the proposed undertaking from an environmental and servicing design perspective:

- The establishment of a 40 m wide creek corridor with habitat enhancement features
- The reshaping of the inline pond along Tributary #3 of Shirley's Brook and the installation of the culvert crossing of Tributary #3.
- The proposed development will ultimately be serviced through two watermain connections to a future 400 mm diameter watermain on March Road. The proposed watermain network will be designed in accordance with City of Ottawa Design Guidelines and the recommendations provided in the KNMSS.
- The proposed development will be serviced by a network of gravity sewers designed in accordance with Sewer Design Guidelines. While a portion of the study area draining to the north will be connected to the future 600 mm diameter sanitary sewer on March Road, the remainder of the site draining south will have a separate connection to the future 600 mm diameter trunk sanitary sewer on March Road.
- The KN MSS and KN EMP assessed two locations for SWM Pond 2. However, a revised location for the SWM Pond has been proposed due to grading constraints, the proposed site layout and the unavailability of the adjacent land assumed as the location for SWM Pond 2.
- Minor system peak flows from the majority of the site will be directed to the proposed KNUEA SWM Pond 2 for quality and quantity control prior to discharging into a network of 600 mm diameter storm sewers that will ultimately discharge into Tributary 3 at March Road.
- Minor system peak flows from the rest of the site will be directed to the proposed storm sewer along the local street which will ultimately discharge into Tributary 3 at March Road.
- Major system peak flows from the majority of the site will be directed to the proposed KNUEA SWM Pond 2 for quantity control prior to discharging into Tributary 3.

5.0 POTENTIAL EFFECTS, MITIGATION MEASURES AND COMMITMENTS

This section of the IERS provides an overview of the potential effects associated with the proposed development, as well as the proposed mitigation measures and commitments. The commitments outlined in each of the following sections include necessary compensation for endangered or threatened species, permits, approvals and other regulatory requirements identified during the individual studies.

5.1 Geotechnical / Groundwater

From a geotechnical perspective, the subject site is deemed suitable for the proposed development. However, there are some concerns from a geotechnical design perspective, relating mostly to grading, foundation design and the potential impacts of site excavation and construction, including vibration. Efforts will be made to reduce the impacts of the proposed development on the long-term groundwater level.

Site grading and preparation will involve stripping topsoil and deleterious fill from the building and paving areas of the site; bedrock removal for basement/ parking levels; limiting the severity of vibration; the use of granular fill beneath building areas; and the use of non-specified fill for parking areas. Foundation design will involve the design of footings that are able to be placed on undisturbed soil bearing surfaces; the use of lean concrete filled trenches; adequate lateral support; total and differential settlements estimated at 25 and 20 mm respectively; and permissible grade raise restrictions. Based on the undrained shear strength testing results and experience with the local silty clay deposit, a permissible grade raise restriction of 3.0 m will be implemented for the subject site.

Bedrock removal will likely require drilling and blasting. These activities can potentially cause groundwater level lowering and/or adverse water quality problems in nearby wells. Moderate to high groundwater infiltration through the excavated bedrock is expected during construction.

To limit long-term groundwater lowering, it is recommended that a groundwater infiltration control system extending at least 1 m above the long-term ground water level be designed for the proposed buildings. Also, a perimeter foundation drainage system will be required as a secondary system to account for any groundwater, which breaches the primary ground infiltration control system.

It is anticipated that artesian groundwater pressure issues will be encountered during excavation. Therefore, groundwater control measures should be implemented, such as waterproofing or a clay liner above the bedrock surface for the pond construction. Also, while there are a limited number of wells in the vicinity of the proposed development, a proactive approach to well protection should be taken with respect to mitigating the effects of blasting.

The subsurface conditions at this site mostly consist of frost susceptible materials. In the presence of water and freezing conditions ice could form within the soil mass. Heaving and settlement upon thawing could occur. Precautionary measures for winter construction are therefore recommended.

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Paterson was able to confirm that the slopes are stable and no setback from the top of slope is required; no active erosion is occurring along the watercourses; and the soil would be suitable for development. It is anticipated that standard measures for corrosion protection are sufficient for services placed within the silty clay deposit.

During construction, existing conveyance systems along March Road and Old Carp Road could be exposed to significant sediment loading. Erosion and sediment controls must be in place at the time of construction. Mitigation measures include:

1. filtering groundwater in trenches prior to release to the environment.
2. Seepage barriers to be constructed in any temporary drainage ditches.
3. Install a silt fence along the site perimeter.
4. Limit extent of exposed soils at any given time.
5. Re-vegetate exposed areas as soon as possible.
6. Minimize the area to be cleared and grubbed.
7. Protect exposed slopes with plastic or synthetic mulches.
8. Provide sediment traps and basins during dewatering.
9. Install sediment traps between catch basins and frames.
10. Plan construction at proper time to avoid flooding.

5.2 Tree communities and Vegetative Environments

Tree cover within the Site is present within the two (2) Deciduous Hedgerows and the three (3) Tree Stands. As already discussed, the majority of the Site consists of open agricultural lands without significant tree cover. Where trees are located within areas identified for future development, trees generally cannot be preserved due to the density of the proposed development, and the practical requirements for site servicing, grading, excavation, etc.

As such, the proposed development will result in the loss of trees, shrubs and other vegetation. There are several recommendations for tree retention, replanting, and the mitigation of construction impacts.

McKinley's report (2020) offers several solutions to tree retention for the subject lands. Trees may be retained within the open space blocks and at the development edges. Tree retention will be implemented as follows:

- Where feasible, trees will be preserved within the open space blocks that will form the minimum 40 m wide corridor surrounding the North Branch (Tributary #3) of Shirley's Brook.
- Where compatible with the park design, portions of the Deciduous Hedgerow could be preserved along the northern edge of the Community Park Block. However, tree retention in this area is not considered a priority from a conservation perspective and should only be undertaken where tree retention is deemed compatible and/or beneficial to the design of the park.

Trees that are to be retained within tree retention areas (described above), must be protected during construction. In addition, trees that occur beyond the Site on neighboring properties must also be protected. McKinley's report (2020) provides the following tree preservation mitigation measures to help protect and preserve retained trees:

- Marking tree clearing areas and providing construction fencing around trees to be retained;
- Protecting the critical root zone (CRZ) of retained trees;
- Proper cutting techniques in locations where the roots of retained trees and trees proposed for removal overlap;
- Avoiding the placement of materials on or next to the tree that would potentially damage the tree or its CRZ;
- Directing exhaust fumes generated from construction away from any tree canopy; and
- Replanting disturbed areas with locally grown native species.

The following riparian planting measures will be implemented along Tributary 3:

- Seeding areas within the watercourse corridor in order to encourage the establishment of native wetland vegetation;
- Existing trees will be preserved within the 40 m wide watercourse corridor, wherever feasible and compatible with the habitat enhancement and development requirements;
- Selective tree planting in order to provide a suitable habitat for Blanding Turtle's, as well as to support erosion prevention, slope stabilization, water cooling and water absorption; and
- Utilizing plantings to provide a visual barrier and ensure that some portions of the watercourse remain undisturbed by potential recreational usage.

5.3 Aquatic Environment

The wastewater design, stormwater management and other elements of the proposed site servicing will have some impacts on the aquatic environment of the subject lands. Various mitigation measures have been proposed.

During the servicing studies, it was noted that Tributary 3 of the North Branch of Shirley's Brook would have sufficient capacity to convey the 100-year peak flow throughout the subject site to March Road (Hydraulic Structure S-6) and beyond to the confluence with Tributary 2. SWM facilities, including a significant SWM pond (SWM pond 2), are designed to support stormwater drainage and sanitary overflows. The southwest quadrant will be graded, where possible, to direct the major system drainage to Pond 2. Some areas of the southwest quadrant are at a lower elevation and the major system flow will be directed either along March Road directly to Tributary 3, or to cross under March Road to Pond 3.

The wastewater sewer network is designed to minimize crossings of the wastewater sewer with the Shirley's Brook. Watercourse crossings are designed in accordance with geomorphology principles and to preserve terrestrial and aquatic habitat. The North Branch will be preserved within the minimum 40 m wide watercourse corridor, thereby maintaining the associated fish habitat. While much of the creek corridor will be retained, site development will require the

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reshaping of an inline pond and the installation of a new wildlife passage culvert, with no significant disturbance to the aquatic environment or fish habitat.

Ontario Ministry of Environment, Conservation and Parks (MECP) Environmental Compliance Approvals (ECA) will be required for the proposed subdivision works related to stormwater management, the SWM Pond, inlet control devices, storm sewers and sanitary sewers. The MECP is expected to review the proposed servicing works by transfer of review submission. A MECP Permit to Take Water (PTTW) may be required for the site. A minimum of 4 to 5 months should be allowed for completion of the PTTW application package and issuance of the permit by the MECP.

The North Branch of Shirley's Brook will not be realigned as part of the proposed development and a 40 m wide corridor will be established in accordance with KNEMP and KNMSS requirements to reduce impacts on the creek. The entire length of the North Branch through the Site is intended to be retained and habitat enhancement features will be installed within the 40 m wide watercourse corridor. The intention of the habitat enhancement features is both to offset the loss of Category 2 Blanding's Turtle habitat associated with the development, and to restore/enhance the ecological functions of the North Branch.

Figure 6 shows the habitat enhancement features.

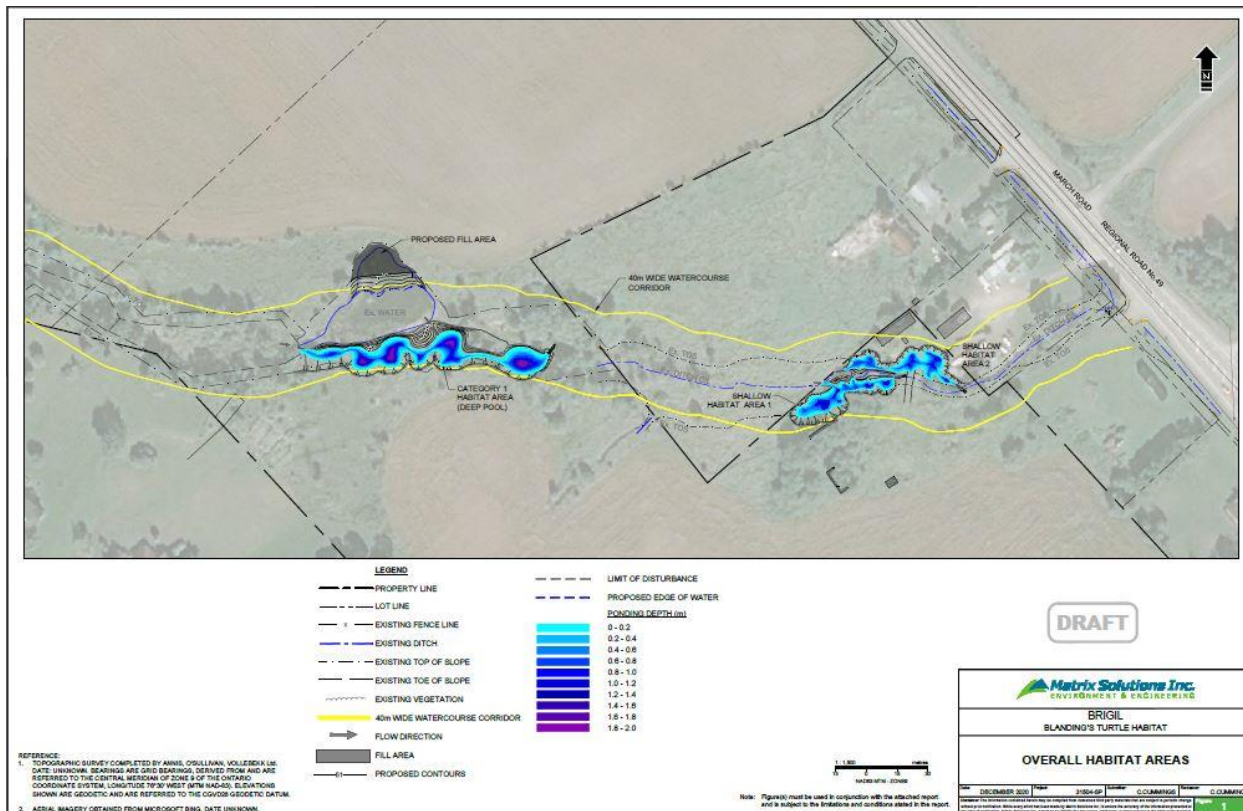


Figure 6: Conceptual Plan for Habitat Areas

The installation of the habitat enhancement features is shown in Figure 6 (above). The habitat enhancement features will include one (1) Deep Pool, two (2) Shallow Pans/Shallow Pools, two (2) Deep Channel Pockets, and Hard Substrate Features. The habitat enhancement features will provide new Category 1 habitat for Blanding's Turtle (the Deep Pool), while also enhancing the existing Category 2 habitat within the 40 m wide North Tributary corridor.

The Shallow Pan/Shallow Pool and the Deep Channel Pockets will be designed to mimic natural riparian marsh conditions. Other mitigation measures for the Blanding Turtle and other species at risk are further discussed in Section 5.4.

Department of Fisheries and Oceans (DFO) review is required due to the proposed reshaping of the inline pond and the proposed installation of a culvert for the Tributary #3 road crossing (collector road). At the detailed design stage, the culvert crossing will be designed to meet all applicable requirements and guidelines, including hydraulic capacity, geomorphology, fish passage, and species at risk requirements.

These activities may impact fish and/or fish habitat within Tributary #3. Under the new rules and regulations of the Fisheries Act, a review request will need to be submitted to Fisheries and Oceans Canada (FOC). FOC will determine whether an authorization under the Fisheries Act is required, or alternatively, whether the project can proceed through obtainment of a Letter of Advice.

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As previously mentioned, the proposed activities will occur within the area of the 40 m wide North Branch watercourse corridor. Interference with Wetlands and Alterations to Shorelines and Watercourses is regulated under Ontario Regulation 153/06, which means that a permit from the Mississippi Valley Conservation Authority (MVCA) will be required.

Also, due to the fact that the development of the Site will not involve the realignment and/or removal of the North Branch, a Headwaters Drainage Assessment (HDA) addressing the North Branch is not anticipated to be required.

Tributary #4 (the Stormwater Swale) will be decommissioned. The primary effect that the removal of the Stormwater Swale may have on downstream areas is a potential reduction in the flow of water and nutrients to downstream areas. However, as discussed above, the stormwater management system for the Site will maintain water flow to downstream areas. The Stormwater Swale is not a significant ecological feature and it does not provide significant fish habitat functions. As such, a Headwaters Drainage Assessment (HDA) addressing the Stormwater Swale (Tributary #4) is not anticipated to be required.

5.4 Species at Risk / Wildlife

The proposed development is anticipated to effect species at risk residing on the subject lands. Several mitigation and compensations measures will need to be implemented. Regulatory requirements will also need to be met.

The development of the Site is anticipated to result in the loss of Blanding's Turtle (threatened) habitat. The habitat enhancement features discussed in Section 5.3 will add approximately 0.08 ha of Category 1 habitat and approximately 0.06 ha of Category 2 habitat (within the minimum 40 m wide watercourse corridor). However, even with the aquatic habitat enhancement features taken into account, it is anticipated that ultimately there will be a net loss of both Category 2 habitat and Category 3 habitat associated with the development.

As such, an Overall Benefit Permit under Clause 17(2)(C) of the Ontario Endangered Species Act (ESA) will be required to support the development. The Overall Benefit Permit will require the proponent to offset the net loss of Blanding's Turtle habitat through offsite habitat compensation measures.

In addition to the habitat compensation work that is proposed within the 40 m wide North Branch corridor, the Kanata North CDP and EMP also identified that habitat compensation would be provided by installing wildlife exclusion fencing along March Valley Road, which is intended to reduce the risk of turtle road mortality along the road. Further details regarding the proposed March Valley Road fencing system will be developed through the Overall Benefit Permit application and review process.

The fencing along March Valley Road and the habitat enhancement works within the 40 m wide North Branch corridor are the major components of the Blanding's Turtle habitat compensation.

As previously discussed in Section 3.6, Barn Swallow were found on the site, and nests were located within the collapsing barn. The collapsing barn will be demolished to make way for the proposed development. The rules and regulations of the Ontario Endangered Species Act (ESA) require that prior to altering or demolishing a building containing Barn Swallow nests, the activity must be registered through the Ministry of Environment, Conservation, and Parks (MECP) Online Impact Registration Process. The proponent must also provide compensation habitat, which will include one (1) artificial nesting structure with six (6) nest cups, which will be located within 1 km of the Site. The artificial nesting structure will be maintained and monitored for a three (3) year period. The demolition of the collapsing barn must occur between September 1st and April 30th in order to avoid the Barn Swallow nesting season.

Potential effects of construction on terrestrial species at risk include the removal of habitat features and wildlife displacement; potential injury or mortality; and other disturbances to wildlife activities (e.g. foraging, breeding). Mitigation measures for reducing the impacts on terrestrial species during the construction process include pre-stressing; tree clearing direction; temporary exclusion fencing; inspections; sweeps; awareness training; reduced speeds for vehicle operators; equipment washing; creating spill response plans; stopping construction during species at risk (SAR) encounters; and timely construction to avoid the disturbance of wildlife during active seasons.

Similarly, in order to mitigate the impacts on aquatic life during the construction process, any in-water work shall include dewatering operations supervised by a Qualified Biologist; obtaining the necessary permits for in-water work from the Ministry of Natural Resources and Forestry (OMNRF); implementing a salvage plan; and conducting in-water work during a specified time.

5.5 Road and Transportation

Several studies were undertaken that consider the existing and planned road and transportation infrastructure and their potential impacts on the environment. As previously mentioned, roads will be designed in accordance with the KNTMP and City design guidelines. Culvert crossings at locations where the road intersects with the Shirley's Brook creek system will be required. The road system has been designed to mitigate the environmental impacts of the proposed road system.

Gradient Wind was commissioned by Brigil to undertake a roadway traffic noise feasibility assessment in support of the proposed development. Dated May 29th, 2020, the consultant's report provides a thorough analysis of all noise impacts generated in the vicinity of the subject lands. While the proposed development will be suitable on lands adjacent to March Road and in the vicinity of other noise major generators in the area, the report confirms that certain noise control measures could be explored to reduce impacts.

The results of the roadway traffic noise calculations indicate that:

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- the 9-storey blocks adjacent to March Road will require upgraded building components and air conditioning to allow windows to remain closed while maintaining a comfortable indoor environment.
- all other residential blocks will require forced air heating with provision for air conditioning.
- outdoor living areas on blocks adjacent to and having direct exposure to March Road will likely require noise control measures.
- a detailed roadway traffic noise study will be required at the time of subdivision registration to determine specific noise control measures for the development.
- specific mitigation will be determined during the detailed design assessment.

While specific mitigation will be determined during the detailed design assessment, the following noise control measures have been proposed for consideration:

- Distance setback with soft ground
- Insertion of noise insensitive land uses between the source and sensitive points of reception
- Orientation of buildings to provide sheltered zones in rear yards
- Shared outdoor amenity areas
- Earth berms (sound barriers)
- Acoustic barriers

Stantec is conducting the Traffic Impact Assessment (TIA). Proper improvements (e.g. road widening) will be provided to address future traffic concerns related to the proposed development.

6.0 COMPLIANCE WITH POLICY 4.7 – ENVIRONMENTAL PROTECTION

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 Statement (IERS), depending on characteristics of the site, to assess a development application.

The study requirements and their status for the development area are indicated in Table 1 on the following page. A more detailed description of the polices and compliance is provided in Appendix A.

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Table 1 – Demonstrated compliance with Policy 4.7 Environmental Protection

OP	Studies/ Assessment	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.	The proposed development reflects design-with-nature principles, as well as energy and sustainability objectives.
4.7.2	Tree retention and planting	All plans of subdivision and site plans	McKinley Environmental Solutions (2020) EIS & TCR, 927 March Road (Kanata North)	Trees within the 40 m wide creek corridor will be retained where feasible. Trees within the Community Park Block will be retained where deemed compatible with the design. Retained trees and CRZ will be preserved and protected during construction. Creek corridor will be replanted with riparian vegetation and street trees will be installed.
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	McKinley Environmental Solutions (2020) EIS & TCR, 927 March Road (Kanata North)	Blanding Turtles and Barn Swallow were identified on-site. Habitat enhancement features and compensation efforts will be implemented accordingly. Permits and approvals will be obtained.
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	McKinley Environmental Solutions (2020) EIS & TCR, 927 March Road (Kanata North)	There will be limited impact on fish and fish habitat in Tributary 3. Habitat enhancement features will be installed. Tributary 4 does not provide fish or fish habitat.
4.7.3	Erosion and sediment control plan	All development proposals	Stantec Inc (2020) Brigil Kanata North Functional Site Servicing and Stormwater Management Report	The functional servicing report provides the required elements of the ESC plan, as well as the mitigation measures outlined in Section 5.1. The Site has stable slopes (Paterson Group).
4.7.3	Determine appropriate setback from rivers, lakes and streams	Development proposals adjacent to rivers, lakes and streams	McKinley Environmental Solutions (2020) EIS & TCR, 927 March Road (Kanata North)	All proposed development will be appropriately setback and located outside the 40 m wide creek corridor.
4.7.5	Hydrogeology/terrain analysis	Subdivisions based on private services	Study not required	Proposed development will be connected to municipal services
4.7.5	Groundwater impact assessment	Groundwater resources Areas.	Study not required	Phase I lands are not a groundwater resource area.
4.7.5	Wellhead protection study		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	Stantec Inc (2020) Brigil Kanata North Functional Site Servicing and Stormwater Management Report	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

7.0 DESIGN WITH NATURE, ENERGY EFFICIENCY AND SUSTAINABILITY

Section 4.7.1(2) of the City of Ottawa's Official Plan requires that the IERS document outlines how the proposed development integrates design-with-nature principles, as well as energy efficiency and sustainable design. The proposed development will be compatible with and enhance the environmental features present on-site and incorporate sustainable features into wastewater and stormwater design.

7.1 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 a design-with-nature approach. The development application supports these environmental initiatives by:

- Establishing a 40 m wide creek corridor along Shirley's Brook Tributary 3, with habitat enhancement features and wildlife passage culverts that aim to protect and improve the habitat for fish and other wildlife in the corridor, as outlined in sections 5.3 and 5.4;
- Providing Stormwater management facilities, including Pond 2, that are sufficiently designed to support water quality control, as well as all minor and major system overflows for the entire site.
- The wastewater sewer network is designed to minimize crossings of the wastewater sewer with Shirley's Brook. Watercourse crossings are designed in accordance with geomorphology principles and to preserve terrestrial and aquatic habitat.
- Retaining trees within the 40 m wide creek corridor where feasible and in the Community Park Block where deemed compatible with the park's design. Street trees will also be planted in accordance with the street details developed by Stantec Inc. The 40 m wide corridor will be replanted with riparian vegetation.
- Undertaking tree preservation mitigation measures during the construction process to protect and preserve retained trees and their critical root zones (CRZ), as outlined in Section 5.2
- Obtaining all required permits and approvals, including compensation measures, to meet all environmental regulations, as explained throughout Section 5.

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Existing aquatic habitat that is present along Tributary #3 of Shirley's Brook will only be altered during the reshaping of the inline pond and during the installation of the culvert crossing, as described in Section 5.3 of this report. No re-alignment of Tributary #3 of Shirley's Brook is proposed as part of the current development. It is anticipated that these aforementioned actions will only cause minimal impacts on fish habitat and other aquatic and terrestrial life (Blanding's Turtle).

The creek corridor will be constructed following principals of creek corridor design, as established by the Kanata North CDP and KNEMP, and will incorporate features designed to increase the presence of Blanding Turtle Habitat. The new, wider corridor will additionally provide expanded areas that will encourage growth of existing trees to be retained and new riparian vegetation to be planted. The specific mitigation measures and commitments (e.g. permits, approvals) were previously addressed in Section 5.3 and 5.4 of this report and discussed further in the individual reports.

7.2 INTEGRATION OF ENERGY EFFICIENCY AND SUSTAINABLE DESIGN

Section 4.7 – Environmental Protection of the City of Ottawa Official Plan requires 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.

In accordance with Section 2.5.1, Design Objective 7, the proposed development implements energy efficient and sustainable design principles as follows:

- The proposed development promotes efficient development and land use patterns through the development of a large and vacant parcel of land located within the City of Ottawa General Urban Area.
- The pattern of development proposed for the site will reflect the desired land use distribution of the Kanata North CDP, which supports compact built form, pedestrian friendly streets, street trees and creek corridor enhancement that is sustainable and supportive of wildlife habitat.
- The proposed development promotes density for new housing that efficiently uses land, infrastructure and public service facilities, which will support the use of active transportation and transit.
- Building design, streetscape design and SWM management facilities (Pond 2) will emphasize sustainability and ensure the efficient use of existing and planned infrastructure. Low impact development tools for stormwater management are being explored for the site.
- Parks and open spaces (including public realm and private amenity areas) will be provided throughout the site.
- The proposed development will be transit supportive as transit services exist and are further planned along March Road.

Another IERS policy requirement is that a sustainable design checklist will be prepared to assist in the description of the principles of energy and sustainability integrated in the proposed design. While the proposed development will be implemented through a Draft Plan of Subdivision, this report consults the City of Ottawa Site Plan Control Approval 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?	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 Tariff program?	No
3	Which features is the project designed to incorporate?	None

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8.0 CLOSURE

This IERS report has been reviewed by the authors of the individual reports discussed herein. By providing their signatures below in **Table 3**, the authors confirm that they have read this IERS and agree that this document provides a reasonable summary of the technical plans and studies prepared in support of Brigil’s planning applications being submitted for 927 March Road (Kanata North).

Table 3 – Concurrence of Study Team

<p>Combined EIS & TCR McKinley Environmental Solutions</p> <hr/> <p>Dr. Andrew McKinley, EP, RP Bio</p>	<p>Phase 1 Environmental Site Assessment Paterson Group</p> <hr/> <p>Mandy Witterman (B.Eng., M.A.Sc.)</p>
<p>Functional Site Servicing and Stormwater Management Stantec Inc.</p> <hr/> <p>Ana M. Paerez, P.Eng</p>	<p>Geotechnical Investigation Paterson Group</p> <hr/> <p>Joey R Villeneuve, M.A.Sc., P.Eng</p>
<p>Roadway Traffic Noise Feasibility Assessment Gradient Wind (Engineers & Scientists)</p> <hr/> <p>Michael Lafortune, C.E.T., Environmental Scientist</p>	

Overall, the proposed development complies with the policies of Section 4.7 of the Official Plan and meets the requirements of the IERS (Section 4.7.1). The proposed development is also based on design-with-nature principles and reflects broader energy and sustainability objectives.

This report has been prepared for the exclusive use of Brigil for the stated purpose, for the named facility. Its discussions and conclusions are summary in nature and cannot be properly used, interpreted or extended to other purposes without a detailed understanding and discussions with the client as to its mandated purpose, scope and limitations. This report was prepared for the sole

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9.0 APPENDIX A – DETAILED DESCRIPTION OF OFFICIAL PLAN (4.7) COMPLIANCE

This appendix provides a detailed examination of the requirements of Policy 4.7 of the City of Ottawa Official Plan as it pertains to the Brigil development. Each of the policy requirements is provided verbatim, with a short discussion of the approach taken by Brigil to comply with the specific policy, where relevant. The City Policy statements are *italicized*, while the Brigil approach to compliance is in regular font.

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]

Policies

1. *In order to support the Official Plan objective for 30 per cent tree cover, applications for subdivision, condominium, site plan approval affecting vegetation cover on site, will be supported by a Tree Conservation Report and a Landscape Plan. [Amendment #150 December 21, 2017]*
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]*
 1. *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.]*
 2. *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.]*
 3. *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.]*
 4. *Determine which stands of trees or individual trees warrant retention based on a preliminary assessment;*
 5. *For those trees or stands of trees being retained, outline measures for their protection during construction and over the long term;*
 6. *Describe the area and nature of tree loss and compensation measures proposed;*
 7. *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.*

8. *Provide strategic recommendations to guide the landscape plan. [Amendment #76, June 24, 2009] [Amendment #76, August 04, 2010]*
3. *The landscape plan will:*
 1. *Indicate tree planting or vegetation cover required to provide protection for surface water features or steep slopes;*
 2. *Investigate the appropriateness of the use of native species in vegetation planting strategies; [Amendment #150 December 21, 2017]*
 3. *Provide a reference document for future residents on the importance and care of trees on their property.*

[Amendment #76, August 04, 2010]

4. The City will promote the use of native species in public projects and private tree planting and land conservation wherever appropriate. [OMB decision #1754, May 10, 2006]

5. On-site and adjacent natural features/functions will be protected and enhanced by incorporating them into public open spaces and recreational pathways.

6. Streetscapes will be designed to include the provision of trees.

Response to Policy 4.7.2:

The proposed development applications are supported by Tree Conservation Report (TCR) that identifies all trees and vegetation found on the site; areas for tree retention; mitigation measures during construction; and provides a plan that consists of replanting vegetation within the riparian corridor (e.g. native species) and along streets. Trees within the 40 m creek corridor and the Community Park Block (adjacent to deciduous hedgerow) will be retained where deemed feasible and reasonable within the proposed design. Rare tree species were not identified.

The proposed development complies with the policies of Section 4.7.2.

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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.]

Policies

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.]
2. Where a Council-approved watershed, subwatershed, or environmental management plan does not exist, the minimum setback will be the greater of the following:
 1. Development limits as established by the regulatory flood line (see Section 4.8.1);
 2. Development limits as established by the geotechnical limit of the hazard lands;
 3. 30 metres from the normal high water mark of rivers, lakes and streams, as determined in consultation with the Conservation Authority; or
 4. 15 metres from the existing top of bank, where there is a defined bank. [OMB decision #1754, May 10, 2006]
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.]
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:
 1. Activities that create or maintain infrastructure within the requirements of the environmental assessment process or works subject to the Drainage Act;

2. *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]*
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.]*
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:*
 1. *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;*
 2. *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;*
 3. *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]*
7. *Where an exception to the setback is requested under Policy 6, 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: [Amendment #96, February 22, 2012]*
 1. *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;*
 2. *Natural vegetation and the ecological function of the setback area;*
 3. *The nature of the abutting water body, including the presence of a flood plain;*
 4. *The need to demonstrate that there will be no negative impacts on adjacent fish habitat. [OMB decision #1754, May 10, 2006]*
8. *Notwithstanding policy 4, 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:*
 1. *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*
 2. *The lot area outside the setback is sufficient to accommodate all structures and water and wastewater services. [OMB decision #1754, May 10, 2006]*
9. *Notwithstanding policy 4, 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:*
 1. *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*
 2. *The lot area outside the setback is sufficient to accommodate all structures and water and wastewater services. [OMB decision #1754, May 10, 2006]*

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10. *Notwithstanding policy 4, a lot created by severance in the rural area may include land within the required setback provided the criteria in policy 9 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]*
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.]*
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]*
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.*
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.*
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.]*
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.]

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

- 1. Support initiatives of the Ontario Ministry of Agriculture and Food and Rural Affairs, 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] [Amendment #76, OMB File # PL100206, July 21, 2011.]*
- 2. 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;*
- 3. 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;*
- 4. Initiate an annual recognition program to recognize innovative projects that design with nature.*

Response to Policy 4.7.3:

The maintenance of a 40 m wide corridor surrounding Tributary #3 will ensure the retention of the watercourse and associated fish habitat. Development will be setback appropriately. The reshaping of the inline pond and the installation of the culvert crossing along Tributary #3 will result in alterations that require permits and approvals, as outlined in Section 4.7.3 and discussed throughout this report. Impacts on fish habitat and species at risk will be mitigated and offset through the establishment of habitat enhancement features.

Tributary #4 (the Stormwater Swale) is not ecologically significant and does not provide significant fish habitat functions.

Studies were able to confirm that the slopes are stable and no setback from the top of slope is required; no active erosion is occurring along the watercourses; and the soil would be suitable for development. It is anticipated that standard measures for corrosion protection are sufficient for services placed within the silty clay deposit.

All studies have been prepared in accordance with the policies of Section 4.7.3. As such, the proposed development complies.

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4.7.4 – Protection of Endangered and Threatened Species

Endangered and threatened species are those species listed under the regulations of the Endangered Species Act 2007. The significant habitat of these species is protected through Endangered Species Act 2007 and through the policies of this Plan. Wildlife habitat generally is protected through environmental policies 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.

Policies

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:
 1. Regulations made under the Endangered Species Act, 2007;
 2. An Environmental Impact Statement in areas where there is potential for significant habitat to exist; or,
 3. 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]

[Amendment #76, June 24, 2009]

Response to Policy 4.7.4:

The EIS prepared for the proposed planning applications identifies the species at risk and shows where measures can be implemented to minimize the impacts of the proposed development. As discussed in the IERS report, compensation and mitigation measures will be implemented to both compensate the loss of habitat, create new habitats where feasible, as well as to restore and enhance the existing habitats of the identified species at risk. Regulatory approvals and permits will be sought in accordance with the policies of Section 4.7.4. As such, the proposed development complies.

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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]

Policies

1. *When reviewing development applications, the City will consider the potential for impact on groundwater resources.
 1. *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*
 2. *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.

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]*

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]

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

Response to Policy 4.7.5:

No response required, as determined by Phase 1 – Environmental Site Assessment (Paterson)

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 managements plans be submitted in accordance with the guidance set out in the environmental management, subwatershed and watershed plans.

Policies

1. *A stormwater site management plan will be required to support subdivision and site-plan applications.*
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:*
 1. *Flows are not altered in a way that would increase the risk of downstream flooding or channel erosion in the receiving watercourse or municipal drain; [Amendment #76, August 04, 2010]*
 2. *Base flow in the watercourse is not reduced;*
 3. *The quality of water that supports aquatic life and fish habitat is not adversely affected;*
 4. *The quality of water that supports water-based recreational uses is not affected;*
 5. *Natural habitat linkages that are located in or traverse the site are maintained or enhanced;*
 6. *Groundwater is not negatively impacted;*
 7. *Any other impacts on the existing infrastructure or natural environment are addressed in a manner consistent with established standards and procedures;*
 8. *Objectives related to the optimization of wet weather infrastructure management are realized.*
3. *In areas of intensification the City will encourage new development or redevelopment to incorporate on-site stormwater management and/or retention measures. Where onsite measure cannot be provided other alternative measures identified in the document 'Managing Capacity to Support Intensification and Infill' contained in section 6 of the Infrastructure Master Plan may be considered. [Amendment #76, OMB File #PL100206, August 18, 2011]*
4. *Where insufficient stormwater and/or sewer capacity is available to support the development the proponent may be required to contribute to the advancement of any relevant sewer rehabilitation project of the City and/or undertake the rehabilitation of the sewer system on the City's behalf. [Amendment #76, OMB File #PL100206, August 18, 2011]*

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Response to Policy 4.7.6:

During the servicing studies, it was noted that Tributary 3 of the North Branch of Shirley's Brook would have sufficient capacity to convey the 100-year peak flow throughout the subject site to March Road (Hydraulic Structure S-6) and beyond to the confluence with Tributary 2. SWM facilities, including a significant SWM pond (SWM pond 2), are designed to support stormwater drainage and sanitary overflows. The southwest quadrant will be graded, where possible, to direct the major system drainage to Pond 2. Some areas of the southwest quadrant are at a lower elevation and the major system flow will be directed either along March Road directly to Tributary 3, or to cross under March Road to Pond 3.

The wastewater sewer network is designed to minimize crossings of the wastewater sewer with the Shirley's Brook. Watercourse crossings are designed in accordance with geomorphology principles and to preserve terrestrial and aquatic habitat. The North Branch will be preserved within the minimum 40 m wide watercourse corridor, thereby maintaining the associated fish habitat. While much of the creek corridor will be retained, site development will require the reshaping of an inline pond and the installation of a new wildlife passage culvert, with no significant disturbance to the aquatic environment or fish habitat.

Ontario Ministry of Environment, Conservation and Parks (MECP) Environmental Compliance Approvals (ECA) will be required for the proposed subdivision works related to stormwater management, the SWM Pond, inlet control devices, storm sewers and sanitary sewers. The MECP is expected to review the proposed servicing works by transfer of review submission. A MECP Permit to Take Water (PTTW) may be required for the site. A minimum of 4 to 5 months should be allowed for completion of the PTTW application package and issuance of the permit by the MECP.

Regulatory approvals and permits will be sought in accordance with the policies of Section 4.7.6. As such, the proposed development complies.

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]

Policies

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]*
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.]*
3. *The City will encourage the protection of other significant landform features, such as rock outcrops, escarpments, knolls, valley or other features identified in municipal subwatershed studies and community design plans. [Amendment #76, August 04, 2010]*
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:*
 1. *Selective grading to minimize topographic change;*
 2. *Orienting buildings and roads parallel to topographic contours;*
 3. *Setting back development from the bottom and top of steep slopes;*
 4. *Flexible setbacks;*
 5. *Providing flexibility for road layouts and right-of-way requirements.*

Response to Policy 4.7.7:

No response required.


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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 valley lands, 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.]

Policies

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- 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, July 21, 2011]*
 - 3. 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]*
 - 4. 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]*
 - 5. 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]*
 - 6. 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]

7. Where significant woodlands, significant wildlife habitat, significant valley lands or other natural heritage features are not designated, development and site alteration will not be permitted for:
 1. any development permitted under the policies of this Plan within the feature;
 2. any development permitted under the policies of this Plan within 120 metres of the feature in the rural area;
 3. any development permitted under the policies of this Plan within 30 metres of the feature in the urban area;

unless an Environmental Impact Statement demonstrates that there will be no negative impacts as defined in Section 4.7.8 on the natural features or their ecological functions. [Amendment #76, OMB File # PL100206, Ministerial Modification #53, April 26, 2012]

8. The need for an Environmental Impact Statement and its scope will be confirmed through pre-application consultation 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. Schedules L1, L2 and L3, 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 #150, December 21, 2017]

9. 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. [Amendment #76, OMB File #PL100206, April 26, 2012]

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

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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.

Response to Policy 4.7.8:

McKinley Environmental Solutions was retained by Brigil Construction to prepare a Combined Environmental Impact Statement (EIS) & Tree Conservation Report (TCR) for the Brigil Kanata North Development. The report's author is Senior Biologist, Dr. Andrew McKinley, EP, RP Bio. The EIS and TCR have been prepared in accordance with sections 4.7.2, 4.7.4 and 4.7.8 of the Official Plan. Dated September 2020, the document provides an examination of the site's existing vegetation communities and natural features, including wetlands and watercourses, wildlife habitat and species at risk. This report provides options for mitigating the impacts of development on natural features and tree habitats, as well as identifies necessary development approvals. The development of the Site is not anticipated to have a significant negative effect on the natural features and functions, if the recommended measures are implemented and regulatory approvals obtained. Regulatory approvals and permits will be sought in accordance with the policies of Section 4.7.8. As such, the proposed development complies.



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