



FINAL

Environmental Impact Study

20 Cedarow Court, Ottawa, Ontario

Prepared for:

Nautical Lands Group

700 Finley Ave., Unit 4

Ajax, ON L1S3Z2

Attn: Angela Mariani
Development Planner

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Contact: Angela Mariani
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Pinchin File: 247248.000
Issuing Office: 2470 Milltower Court, Mississauga, ON L5N 7W5
Primary Pinchin Rocky Yao
Contact: Project Manager
905-363-1383

Author: Courtney Butler, B.E.S
Project Biologist
905-363-0678
cbutler@pinchin.com

Author: Alex Kissel, B.Sc.
Project Biologist
905-363-1479
akissel@pinchin.com

Reviewer: Rocky Yao, M.Sc, CISEC, EP
Regional Practice Lead, Biologist
905-363-1383
ryao@pinchin.com



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1.0 INTRODUCTION

Pinchin Ltd. (Pinchin) was retained by Nautical Lands Group (Client) to complete an Environmental Impact Study (EIS) for the subject property located at 20 Cedarow Court, Ottawa, ON (Site). The purpose of the EIS is to evaluate the natural heritage features within 120 m of the Site (Study Area) with regard to potential impacts and recommended mitigation measures from the development of the Site. A map of the Site with the surrounding area is shown on Figure 1 in **Appendix A**. As shown on Figure 2 in **Appendix A**, the Site consists of undeveloped land with four different vegetation communities occurring directly on the Site. The vegetation communities include a mixed meadow, a maple deciduous forest, a sumac shrub thicket and a residential roadway. A fifth vegetation community, a graminoid mineral marsh, occurs north of the site alongside Poole Creek, which is located approximately 25-50 m north of the Site. A detailed review and analysis on the vegetation communities and potential natural features on the Site is provided in Section 5.0 of this report. The Phase I of development construction has already occurred on the property immediately to the east of the Site, and now the Client proposes to construct Phase II of the development, including the construction of four multi-storey, mixed use commercial/residential buildings as well as associated amenities.

In order to support the Site Plan Control application, this EIS was requested by the Client as a part of the Site Plan Approval (SPA) requirements for the proposed development. This Scoped EIS as required will be conducted in accordance with the City of Ottawa EIS Guidelines (2010) and the City of Ottawa Official Plan (2003). This Scoped EIS will also be completed in consistency with the provincial and regional policies including the Provincial Policy Statement (2014), Ontario Regulation 153/06 under the Conservation Authorities Act (1990), and Endangered Species Act (2007).

This EIS report was prepared to: identify natural heritage features present on or immediately adjacent to the Site; characterize their ecological functions; evaluate the environmental effects of the development proposal that might reasonably be expected to have an impact on the natural features; and provide recommendations of mitigation measures to minimize and mitigate the potential direct and indirect impacts.

2.0 NATURAL HERITAGE POLICY CONTEXT

The following provincial, regional and municipal legislation and policies were reviewed prior to an evaluation of the natural heritage features and functions of the Site and adjacent area was undertaken:

- Provincial Policy Context (2004);
- City of Ottawa Official Plan (2003; and
- Ontario Regulation 153/06 (1990)



The following sections provide a summary of the above legislation and policies applicable to potential development planning of the Study Area.

2.1 Provincial Policy Statement

The Provincial Policy Statement (2014) sets a policy foundation for regulating development and land use. It sets out guidelines for development while protecting resources of interest to the province, public health and safety and the quality of the natural environment. The PPS does support development and improved land use for planning, management and growth, but it does so in ways to enhance communities through efficient land use and environmental management and protection.

2.2 City of Ottawa Official Plan

The Site is designated as a General Urban Area on Schedule B of the Official Plan, as shown in Figure 1 in **Appendix B**. This designation permits development of mixed housing, retail, service, entertainment and more. The proposed development is in line with this zoning, as it will provide residential apartments as well as spaces for businesses to sell their goods and services. The Site is not recognized as a part of the Natural Heritage System as indicated in Schedules L2 and L3 of the Official Plan; however, Poole Creek, which is adjacent to the Site within the Study Area, is a part of the City's Natural Heritage System. Any new development proposed of lands adjacent to Poole Creek must meet all applicable Conservation Authority regulations of the MVCA (City of Ottawa, 2003).

2.3 Ontario Regulation 153/06

Pursuant to the *Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses*, any development in or on areas defined in the regulation area (e.g. river or stream valleys, hazardous land, wetlands) requires permission from the Mississippi Valley Conservation Authority (MVCA) under the Ontario Regulation 170/06. The Mississippi Valley Conservation Authority may grant permission for development in or on these areas if the control of flooding, erosion, dynamic beaches, pollution or the conservation of land will not be affected by the development. The Regulation also states that all areas within the jurisdiction of the Authority are delineated on a series of maps under the title "Ontario Regulation 97/04: Regulation for Development, Interference with Wetlands and Alterations to Shorelines and Watercourses", which is discussed in detail in section 2.2 (MVCA, 2019).

3.0 METHODOLOGY OF BIOPHYSICAL INVENTORY

3.1 Background Review and Agency Consultation

A desktop background review of available information sources relating to the Study Area was conducted prior to a site reconnaissance.



Included in the review were natural heritage features present on the Site and in the surrounding area, historical species occurrences available from the Natural Heritage Information Centre (NHIC), existing wildlife data records, Species of Conservation Concern lists and other relevant information. Additionally, information and documents available from the Client including site history and Site plan were also reviewed for this Site. Applicable policies and guidelines including the City of Ottawa Official Plan (City of Ottawa, 2003). This document references the MNRF Natural Heritage Reference Manual (Ministry of Natural Resources, 2010) and the Provincial Policy Statement 2014 (Ministry of Housing and Municipal Affairs, 2014) which were reviewed for this report.

Natural heritage resources with the potential to be present on the Study Area were identified through the following information sources:

- An assessment of habitat through aerial photographs and online mapping:
 - Land Information Ontario (MNRF 2019a); and
 - Google Earth.
- A review of historical occurrence records for Species of Conservation Concern within or adjacent to the Study Area:
 - Natural Heritage Information Centre (MNRF 2019b) 1Km grid zone 18VR2714;
 - Atlas of the Breeding Birds of Ontario (BSC 2019) 1Km grid zone 18VR21;
 - Atlas of the Mammals of Ontario (Dobbyn 1994) 100 Km grid, zone VF 18;
 - Ontario Reptile and Amphibian Atlas (ON 2019) 1Km grid zone 18VR21;
 - Ontario Butterfly Atlas (TEA 2019) 1Km grid zone 18VR21;
 - Ontario Regulation 230/08 Species at Risk in Ontario List (COSSARO 2019a); and
 - Provincial and federal assessments, recovery strategies, and management plans.

3.2 Field Assessment

Pinchin conducted field surveys to characterize the natural heritage features present on the Site and in the surrounding landscape. A summary of methodologies for the field work component completed by Pinchin is provided below for reference.



3.2.1 Vegetation Assessment

Vegetation communities within the Study Area were assessed and described using the provincial Ecological Land Classification system. The *Ecological Land Classification for Southern Ontario: First Approximation and its Application* (Lee et al., 1998) was referenced to classify the habitats by ecosite. Ecosites classified within the Study Area were then applied to polygons mapped using aerial imagery.

The vegetation communities were sampled for their structure, species composition and habitat characteristics. This information was supplemented by floristic surveys at the time of visit. Species names generally follow the nomenclature of Flora Ontario (Newmaster and Ragupathy, 2012) and the NHIC.

3.2.2 Areas of Natural and Scientific Interest and Provincially Significant Wetland

Areas of Natural and Scientific Interest (ANSI) are defined as areas of land and water containing natural landscapes or features that have been identified as having life science or earth science values related to protection, scientific study or education. The MNRF categorizes ANSIs as either provincially significant, regionally significant or locally significant based on five criteria: representation, condition, diversity, other ecological considerations and special features. Provincially significant ANSIs represent the “best examples” of their representative features and characteristics in the province as a whole; they have extra protection from the provincial Planning Act and Natural Heritage policies of the Provincial Policy Statement (PPS) compared with the other two categories (MNR, 2010).

Wetlands are defined as lands that are seasonally or permanently covered by shallow water as well as lands where the water table is close to the surface causing the formation of hydric soils and favouring the dominance of hydrophytic or water tolerant plants. Provincially Significant Wetlands (PSW) are wetlands that have been identified by the Ontario Ministry of Natural Resources as crossing a threshold score using the Ontario wetland Evaluation System (OWES) during their identification and evaluation. This score takes into account a variety of factors including diversity of landforms, vegetation communities, plant and animal species and habitat as well as ecological functions such as water filtration and erosion control, as well as value for scientific research and public education (MNR, 2010).

3.2.3 Significant Valleylands

The Natural Heritage Reference Manual (OMNR, 2010) provides criteria for the identification and classification of valleylands. Some of these criteria include surface and ground water connections, landform prominence, distinctive geomorphic landforms, degree of naturalness, species and community diversity, unique species and communities, habitat value and linkage functions. Within the City of Ottawa, Significant Valleylands are defined as valleylands with slopes more than 15% and a length of more than 50 m, with water present for some period of the year, excluding man-made features (City of Ottawa, 2003). These Significant Valleylands act as corridors and linkages in the City of Ottawa's Natural Heritage System, shown in figure 2 in **Appendix B**.



3.2.4 *Species at Risk*

The likelihood of occurrence for species at risk was assessed qualitatively based on the ability of the habitat to meet one or more life requisites for each species at risk identified during the desktop assessment. If habitat suitable for species at risk was identified, additional survey effort was applied in that area. If incidental species at risk were observed, they were recorded throughout the field assessment within and adjacent to the Site.

3.2.5 *Incidental Wildlife Observations*

Wildlife was surveyed as part of general wildlife surveys during the Site visits. These surveys involved general coverage recording all species observations and signs, including tracks / trails, scat, burrows, dens, browse, and vocalizations. The wildlife surveys took place during the coincident surveys for vegetation communities and vascular plants. Significant wildlife habitat was assessed according to the MNRF Natural Heritage Reference Manual and the MNRF Significant Wildlife Habitat Technical Guide (MNRF 2000).

4.0 RESULTS OF INVENTORY AND ANALYSIS

A summer field assessment was conducted by a qualified biologist on August 20th, 2019 starting at 11:30am. The weather during the field assessment was sunny and 28 degrees Celsius. A map of the natural features present on and surrounding the Site is provided on **Appendix A**. Selected Site photographs as described below are provided for reference in **Appendix C**.

4.1 **Landform Features**

The Site is bounded by Cedarow Court and residential developments to the west, Hazeldean Road to the south, industrial development to the east and Poole Creek to the north. The area surrounding the site consists of residential developments, businesses and other urban centre uses. The northern most area of the Site near Poole Creek lies within the regulation limit under the Authority of the MVCA. Just north of the property line also lies the floodplain. The Site consists of natural features with only the eastern edge containing development. The Ontario Geological Survey classifies the Site as being of Middle Ordovician origin (limestone, dolostone, shale, arkose and sandstone) (Ontario Geological Survey, 1991) and on swamps and bogs (Chapman and Putnam, 1984). The soils in the Study Area are classified by Agricultura Canada and the Ministry of Agriculture and Food as Mineral soils, of the Gleysolic Order (Soil landscapes of Canada ID 54500631) (OMAF, 1979). Soil samples taken at the time of visit indicated a clay loam soil, with wetland indicators (mottles and gley) being found within the Reed-canary Grass marsh described below. Gley occurs when the oxygen in the soil becomes depleted (due to water saturation) resulting in the iron being reduced taking on a blue-grey colouration.



This reduced iron is also mobile and can re-oxidize, producing reddish, yellow, or orange spotting, which is known as mottling. Both of these features are indicators of wetland presence due to the water table being close to the surface.

4.2 Vegetation Survey

The Study Area consists of five different vegetation communities with four within the Site and one just north of the Site. Ecological Land Classification (ELC) polygons for the Site are shown on Figure 3 in **Appendix A**.

A total of 76 vascular plant species were identified on the Site from the vegetation survey. A full vascular plant species inventory as observed on the Site is catalogued in Table 1 in **Appendix D**.

4.2.1 Vegetation Communities

A review of historic aerial photography shows that the Site was cleared for agriculture as recently as 1980 (City of Ottawa, 2019). Since this, these former crop fields have become colonized with common and early-successional species. In total, five vegetation communities were identified on and north of the Site, including High Density Residential, Dry Fresh Manitoba Maple Deciduous Forest, Reed-canary Grass Graminoid Mineral Meadow Marsh, Dry Fresh Mixed Meadow, and Sumac Deciduous Shrub Thicket communities. These communities show a range from very early-successional (mixed meadow) to later early-successional (deciduous forest) and therefore have high species overlap. Each vegetation community is described in detail below, and a map of their locations is shown on Figure 3 in **Appendix A**.

Dry-Fresh Mixed Meadow (MEMM3): This community begins at the edge of Hazeldean Road to the south of the Site. This community consists of a generally disturbed meadow with species and composition typical of urban areas. The dominant species include Smooth Brome (*Bromus inermis*) and Late Goldenrod (*Solidago altissima*), with secondary species including Common Milkweed (*Asclepias syriaca*), Lesser Burdock (*Arctium minus*) and Wild Parsnip (*Pastinaca sativa*). Wild Parsnip is a tall perennial wildflower from the carrot family (*Apiaceae*) but is an unwanted invasive plant in Ontario. The seeds of Wild Parsnip, containing chemicals called furanocoumarins as deterrence to animals from eating the plant, can cause a burn-like rash on skin if exposed to the sap and then sunlight. Within this community, Wild Parsnip is found in scattered clumps throughout with the highest density being close to Hazeldean Road. Care should be taken in and around these invasive plants. A soil sample taken from this community showed silty clay soils with no mottling of gley present. A second, smaller meadow of the same composition is located within the Manitoba Maple Forest described below as shown on Figure 3.

Sumac Deciduous Shrub Thicket (THDM1-2): This community occurs between Cedarow Court, the above mixed meadow and the Manitoba Maple Forest described below. Similar to the mixed meadow, this community contains common native and invasive species which are well adapted to urban areas.

The dominant species in this community are Staghorn Sumac (*Rhus typhina*) and Common Red Raspberry (*Rubus idaeus*). These shrubs are commonly found throughout southern and eastern Ontario, particularly within open areas due to the lack of shading from taller trees, as are found elsewhere on the Site. Typical understory species include Late Goldenrod and Smooth Brome. Wild Parsnip is also found within this community, with the highest density being found in and around the disturbed area near Cedarow Court. A soil sample taken within this community showed silty clay soils, with no mottling or gley found.

Dry-Fresh Manitoba Maple Deciduous Forest (FODM4-5): This community occurs along the northern edge of the Site and extends off onto the public property. This community is dominated by Manitoba Maple (*Acer negundo*) with White Ash (*Fraxinus americana*), Balsam Poplar (*Populus balsamifera*) and White Elm (*Ulmus Americana*) making up the rest of the canopy. Manitoba Maple is an invasive non-native species which is frequently found within urban areas. This species was not present pre-settlement but is now naturalized throughout eastern Ontario. The subcanopy is dominated by Staghorn Sumac, Manitoba Maple and White Ash. The ground cover layer is dominated by Late Goldenrod and Smooth Brome. There are a number of dead ash trees within this community, and some living trees which are displaying bark sloughing that is an early sign of Emerald Ash Borer infestation. Emerald Ash Borer is an invasive insect, originally from Asia, which was first discovered in Ontario in 2002, and have been a major issue in southern Ontario since their introduction (OFAH, 2012).

Reed-canary Grass Graminoid Mineral Meadow Marsh (MAMM1-3): This community occurs entirely off of the Site within the publicly owned lands. The marsh begins at the base of the bank and stretches across Poole Creek to the bank of the other side. This community is dominated by Reed-canary Grass (*Phalaris arundinacea*), with Spotted Jewelweed (*Impatiens capensis*), Spotted Joe-pye Weed (*Eutrochium maculatum*), and cattails (*Typha angustifolia* and *Typha X glauca*) forming the secondary species. A soil sample taken from this community showed loam soils with mottling seen at a depth of 20 cm and gley at a depth of 35 cm.

The final community, High Density Residential (**CVR_2**), consists of a roadway being used on the adjacent property as part of the first phase of development.

4.3 Surface Water, Groundwater and Fish Habitat

Results from the background review and field assessment indicate that no watercourses or fish habitat were present on the Site. The nearest watercourse is the Poole Creek located north of the Site approximately 40-50 m away. No Aquatic Species at Risk were identified in the background review for the Site. The floodplain has been identified as being north of the Site; however a small portion of the Site falls under the regulation limit of the MVCA.



The stretch of Poole Creek within the Reed-canary Grass Graminoid Mineral Meadow Marsh community consists of a free flowing meandering stream, with a primarily cobblestone substrate and with gravel and sand within the gaps (MVCA, 2009). The thermal regime of this creek is cool/cold water, indicating potential groundwater recharge areas at some sections of the watercourse. There is evidence of beaver activity adjacent to Poole Creek with stumps of felled trees and game trails visible within the grasses. These stones provide essential habitat for benthic species such as caddisflies, mayflies and stoneflies, which were all observed within the stream.

The rocky substrate also provides habitat for fish species with Creek Chub (*Semotilus atromaculatus*) and Bass (*Micropterus sp.*) being observed. At the time of visit, the wet width and bankfull width of the stream were approximately 2.5 m and 3.5 m, respectively. There is also extensive refuse dumping observed within the stream and adjacent riparian areas.

Groundwater was not studied for this report but included in a separate geotechnical investigation for groundwater for foundations of the proposed development. Seasonal variations in the water table should be expected, with higher levels occurring during wet weather conditions in the spring and fall and lower levels occurring during dry weather conditions.

4.4 Area of Natural and Scientific Interest and Provincially Significant Wetland

There are no Areas of Natural and Scientific Interest (ANSI) including life science and earth science ANSIs present on or adjacent to the Site.

Based on the NHIC mapping during desktop review, there are no evaluated wetlands including *Provincially Significant Wetlands* mapped on the Site or within the Study Area (i.e. 120 m from the Site). After completing the field assessment, one wetland community was found in the Study Area, but off of the Site. This wetland lies within the floodplain of Poole Creek just north of the Site boundary. The exact boundaries and significance of the wetland are not known at this time. It is noteworthy that the proposed development footprint is farther south from this wetland area.

4.5 Significant Valleylands

The stream valley of Poole Creek is considered Significant Valleylands due to the steep slopes (>15%) and extended length (>50 m) associated with the valley, the presence of Poole Creek and associated cold water fish habitat, vegetated valley slopes and a distinctive geomorphic landform. MVCA was previously consulted on the top of slope limits prior to the Phase 1 development phase. The top of stable slope was surveyed within the Study Area with MVCA and is shown within the Site Plan in Figure 1 in **Appendix G**.

A minimum 15 m buffer for the top of stable slope is required from the MVCA.



This protective buffer is indicated on Figure 1 in **Appendix G**. A minimum 30 m buffer from the boundary of Urban Natural Features unless it is demonstrated through an EIS that there will be no negative impacts to the feature. These impacts will be addressed further in sections 5.0 and 6.0 below.

4.6 Species at Risk

A total of 15 Species at Risk (SAR) were identified as having potential habitat on the Site as a result of the background review of the NHIC records and other available data sources for the Study Area surrounding the Site. Those species, their listing status, the last observed date, and the sources used to identify their presence in the area surrounding the Site are all summarized in the Species At Risk Screening Table in **Appendix E**.

Based on background review and field assessment, the majority of those SAR do not have suitable habitat on the Site. Species that have a potential to occur include Snapping Turtle (*Chelydra serpentina*), Blanding's Turtle (*Emydoidea blandingii*), Bobolink (*Dolichonyx oryzivorus*), Eastern Meadowlark (*Sturnella magna*), Eastern Wood-pewee (*Contopus virens*) and Monarch Butterflies (*Danaus plexippus*). Butternut (*Juglans cinerea*) have been found on the Site and within the Study Area.

Potential SAR on the Site

Monarch Butterflies (provincially *Special Concern*) can be found wherever milkweed and wildflowers exist and were observed on our Site during field surveys. There are also occasional milkweed and wildflowers present in the mineral meadow on the Site, however it is too small in size to be considered significant wildlife habitat.

Both Snapping Turtles (*Special Concern*) and Blanding's Turtles (*Threatened*) have the potential to utilize the Site as habitat due to the proximity to Poole Creek. It is likely that they could utilize the wetland area to the north of the Site in the Study Area as habitat and potential nesting areas. The wetland is small in size, but it is adjacent to Poole Creek which these reptile species likely utilize as a corridor for movement to other wetlands upstream and/or downstream.

The Eastern Meadowlark (*Threatened*) and Bobolink (*Threatened*) have the potential to utilize the Dry-Fresh Mixed Meadow on Site as habitat. The meadow is small in size and next to a busy road, so it is not the best quality habitat for these avian species. Given the surrounding urban landscapes, there is a chance these species would utilize this habitat over other areas due to large amount of developed areas. However, the noise pollution from being in a busy urban area could deter the birds from utilizing this space.

The Eastern Wood-pewee (*Special Concern*) has the potential to utilize the Dry-Fresh Manitoba Maple Deciduous Forest as habitat. This species often utilizes edge habitats of mature deciduous forests. The forest on the Site is small in size but is near a watercourse and provides potential habitat to this avian species.



It is likely that due to the fragmented and urbanized landscape surrounding the Site that this species may choose to utilize this space. However, the noise pollution from being in a busy urban centre could deter the birds from utilizing this space.

None of the above Species at Risk or Species of Conservation Concern were observed on the Site or within the Study Area during the field surveys.

Confirmed SAR on the Site

Butternuts, *Endangered*, are most often found on moist, well-drained soils and along streams. Nine Butternut saplings (i.e. juvenile trees) were discovered on the Site during the field surveys, and this was confirmed by the previous Arborist assessment conducted for both Phase I and II development areas. A map showing the location of these juvenile Butternuts identified on the Site can be found in **Appendix F**. More detailed discussions on Butternuts and their treatment on the Site are included in Sections 5.0 and 6.0 below.

4.7 Incidental Wildlife Observations

Due to the anthropogenic influences experienced on the Site and surrounding areas there were limited number of wildlife observed during the field survey. The following wildlife species were observed on the Site and in the Study Area: Creek Chub (*Semotilus atromaculatus*, S5), White Tailed Deer (*Odocoileus virginianus*, S5), Banded Hairstreak (*Satyrrium calanus*, S4), Yellow Garden Orbweaver (*Argiope aurantia*, S5), American Beaver (*Castor canadensis*, S5), Eastern Cottontail (*Sylvilagus floridanus*, S5) and Brown-headed Cowbird (*Molothrus ater*, S4B). All of these species are well adapted to urban environments, and none of these species are endangered, threatened or special concern in protection status.

4.8 Natural Heritage System and Ecological Connectivity

The Site is bounded by an under-construction residential apartment building to the east, an industrial/commercial development to the west, Poole Creek to the north, and Hazeldean Road to the south. The Site is in an area zoned as urban, with much of the surrounding landscape consisting of housing developments and businesses. The watercourse to the north of the Site within the Study Area flows through the urban area with a riparian zone established throughout its reach. Currently, there is a significant riparian zone separating our Site from the watercourse.

Due to the Site being surrounded by urban development, the watercourse north of the Site acts as a corridor for wildlife movement and dispersal. Poole Creek is well connected within the landscape and provides safe passage for species that need to avoid busy urban centres. Although the surrounding areas are mostly urban and residential, Poole Creek eventually leads to less disturbed and green spaces which these species can utilize.



The natural features on the Site do not appear to have a great amount of ecological value as a public area. The watercourse in the Study Area and its riparian zone should be maintained with an appropriate buffer to allow for wildlife to traverse freely as a movement corridor. The proposed development should be set back from these valuable features to maintain their ecological integrity. Efforts at ecological restoration including invasive species removal, planting of native species, and removal of dumping refuse could elevate the ecological value of the disturbed area.

5.0 PROPOSED DEVELOPMENT

Currently, the Client has completed Phase I of the construction to the east of the Site, creating a residential apartment complex. Phase II is proposed for the Site, consisting of four mixed-use residential apartment buildings with business and retail fronts, underground parking and associated amenities. A Site Plan for the proposed development is included in **Appendix G** in this report.

As a result of the proposed construction of these structures and associated activities, direct and indirect impacts have been identified and assessed in detail below.

5.1 Impact Assessment (Direct and Indirect)

5.1.1 Direct Impacts

The proposed development will be entirely contained within the existing footprint of the Site. From an ecological perspective, the potential direct impacts from site construction on the natural features as a result of the proposed residential development on the Site include:

- The removal of trees and vegetation on the Site;
- The removal of Butternut trees on the Site; and
- The displacement of wildlife on the Site.

Three vegetation communities on the Site, including Dry-Fresh Mixed Meadow, Sumac Deciduous Shrub Thicket, and Dry-Fresh Manitoba Maple Deciduous Forest, will be removed to accommodate the proposed development. A Tree Conservation Report previously submitted and approved for the Phase I and II development areas documented all trees to be retained or preserved with a minimum DBH of more than 10 cm as required by the City of Ottawa guidelines. The wetland to the north of the Site within the Study Area will be protected from the proposed development and associated construction activities. A set back from development from this wetland will be established from the wetland boundary. Poole Creek and the associated Significant Valleylands are adjacent to the Site to the northwest and provide connectivity for wildlife movement within the larger landscape; therefore, this watercourse and valleylands will also need to be adequately protected from construction activities.



Although Poole Creek and the associated Significant Valleylands will not be impacted by the development, the proposed development will take place within the 30 m Significant Valleylands buffer as well as within the 15 m buffer from the Top of Stable Slope. A separate report, titled Geotechnical Investigation: Proposed Mixed-Use Development, prepared by Paterson Group, has shown that although the development encroaches within these buffers, there will be no negative impacts to the hazard lands. This determination and mapping can be found in Figure 1 of **Appendix A**. In addition, a small area of approximately 0.013 hectare will be encroached within the 15 m buffer by the proposed development. As an ecological offset, an area of 0.06 hectare exceeding the impacted area located in the northwest corner of the Site will be designated as a recommended restoration area. Restoration and enhancement is also recommended within this designated restoration area shown on Figure 4 in **Appendix 1**.

As mentioned earlier, a total of nine Butternut saplings as protected plants were found on the Site during the field assessment as confirmed by previous Butternut Health Assessment conducted by others for the Phase I and II development areas. As a result of the proposed development, any impacted Butternuts on the Site will be removed from the Site; therefore, they will need to be properly transplanted or compensated. An agreement between the Client and the City of Ottawa titled "Butternut Compensation Planting and Maintenance Agreement" is included for reference in **Appendix F**. This formal agreement allows for the compensation planting of Butternut trees and inter-planting of other trees on the subject property. The Client is also required by this agreement to carry out the required maintenance and monitoring of the Butternut trees and inter-planted trees.

Existing wildlife that inhabit the Site within the footprint of construction will be displaced as a result of site alteration and construction. As many were observed incidentally on the Site, these wildlife are mostly common suburban species that could migrate to wooded and wetland areas away from the Site to continue their life processes.

5.1.2 Indirect Impacts

The potential indirect impacts to the natural heritage features (i.e. wetland and watercourse within the Study Area) include the following:

- Effects on plants and wildlife at the northern portion of the Site and adjacent to the Site by construction noise, dust and vibration; and
- Sedimentation of the wetland on the Site by construction activities.

The impact on the wetland community and its inhabitant plants and wildlife is limited to the species located within or directly adjacent to the Site, as a result of the contained development within the Site.



Further, this indirect impact is not significant as construction will take place during the day and the species have adapted to traffic noise as well as human activities in the suburban area. A buffer between the wetland boundary and the proposed development will be established to ensure that the wetland does not incur significant damage.

During the construction period, wildlife including birds and mammals that occasionally use the wetlands on the Site for foraging and breeding may be disrupted and are likely to abandon the disturbed portions due to indirect impacts of noise and vibration. It is likely that any species impacted will utilize the wildlife corridor that Poole Creek provides to move off of the Site. With the application of protective measures to the surrounding natural areas, the wetland ecosystem will continue to perform their landscape and ecological functions.

Stormwater runoff from site construction and alteration has potential impacts to the adjacent forest and wetland by releasing sediment-laden water to these natural features. The successful establishment of erosion and sediment control measures may act as a sufficient barrier to protect these adjacent features. A wildlife exclusion fence should also be installed to ensure that turtle species with the potential to be on the Site cannot enter into the construction area (MNR, 2013).

5.2 Residual and Cumulative Effects Assessment

Residual environmental effects are any permanent, non-mitigable change in an identified valued ecosystem component. As residual environmental effects on the natural environment cannot be completely addressed through mitigation, they are likely to persist following project completion. Residual effects may result in cumulative effects through the interaction between residual effects of the project and those associated with other identified project and/or activities. Due to local construction of the material retail units building within the Site surrounded by developed land, the residual effects from the Site construction is projected to be low significance in magnitude, geographic extent, duration and frequency.

With sufficient mitigation measures implemented prior to the construction activities, no cumulative impacts to the natural heritage features are anticipated as a result of the proposed residential construction. Recommendations and mitigation and enhancement measures for the potential direct and indirect impacts are detailed in Section 6.0 below.

6.0 RECOMMENDED MITIGATION AND ENHANCEMENT MEASURES

Based upon the above impacts assessment according to the EIS guidelines provided by the City of Ottawa and the MVCA, there are identified direct impacts and minor indirect impacts on the natural environment, including woodland present on the Site and wetland and watercourse within the Study Area. The wetland to the north of the Site is currently unidentified, and therefore have no status. The wetland may form a part of a larger wetland complex along Poole Creek.



The Poole Creek as a cool/cold watercourse has its headwaters in the Upper Poole Creek Wetland Complex and drains north-easterly through the village of Stittsville into the Carp River. According to the City of Ottawa and MVCA's EIS Guidelines, proposed mitigation measures, including recommendations for timing windows or other specifications for implementation, for all potential negative impacts will need to be included in the EIS.

Furthermore, mitigation measures relating to the protection of setbacks and buffers during on-site works (such as fencing) must be implemented prior to the commencement of those works. Therefore, exclusion fencing to the sensitive natural features should be established and protected from the proposed apartment building development.

As avoidance is the most effective approach to mitigating environmental impacts, the proposed development will be set back from the wetland, valleyland and drainage features north of the Site. Within the exclusion zone established, no development activities including site grading and construction will take place on the Site.

The natural heritage features described above provide a good ecological value for plant, fish and wildlife, protection of the wetland and watercourse from the proposed development is warranted to prevent soil erosion from occurring and sediment-laden water from entering these valuable natural features during site construction. The following recommendations are provided for the protection of the above key features prior to construction or site alteration.

Additionally, restoration and/or enhancement plans must be timely developed and effectively implemented on the Site to ensure that no negative impacts will occur to the woodland post construction.

Tree and vegetation removal:

- The extent of potential tree and vegetation removal within the Site is restricted to the construction footprint as necessary.
- The removal or preservation of trees should follow the Tree Conservation Report previously submitted and approved for the Phase I and II development areas.
- To minimize or avoid impacts to breeding and nesting birds, the removal of tree and vegetation will be outside of the critical breeding period between April 15 and August 15.
- As Wild Parsnip was confirmed to be present within the mixed meadow (MEMM3) and shrub thicket (THDM1-2) communities. This is a toxic plant that should be handled carefully. The removal of any Wild Parsnip and other noxious plants should be conducted by a Professional Landscaper who is familiar with the species and with the procedures of invasive plant control and removal.

Erosion and sediment control:

- An Erosion and Sediment Control (ESC) Plan with ecological protection measures will need to be developed for the construction on the Site. It is recommended that the site alteration and construction against this ESC Plan will be monitored regularly (i.e. weekly) by a qualified Environmental Monitor and overseen by a certified Inspector of Sediment and Erosion Control.
- Prior to construction and site alteration, adequate ESC measures including a sediment fencing should be established around the Site upgradient from the natural heritage features until the disturbed area is restored upon construction completion. Sufficient buffers to the adjacent natural features through protection zones will be established.
- If required, repair and maintenance of the installed ESC measures are conducted regularly with outcomes monitored by the qualified Environmental Monitor until construction completion.
- Disturbed areas should be stabilized immediately post construction to prevent site erosion and/or sedimentation.

Wildlife and Species at Risk encounter protocol:

- If wildlife are encountered during construction, work should cease immediately and allow the animal to naturally move out of the construction zone. If the animal does not leave the area for a prolonged period of time, please consult with a qualified biologist or Environmental Monitor for possible response or mitigation measures.
- If an animal is injured or deceased or if a Species at Risk is found on the Site, the Ministry of Environment, Conservation and Parks will be contacted for guidance and handling.
- Wildlife exclusion fencing for turtles should be installed along the property boundary to deter any species from entering the construction area due to the proximity of the Site to Poole Creek and the associated wetland.

Restoration measures and transplanting monitoring:

- A Restoration Plan will be developed for the restoration and enhancement of the woodland area on the Site. Appropriate restoration for the replaced or removed trees and shrubs through this restoration plan is utmost important to ensure that no negative impact will occur to the woodland as a result of the construction. The restoration plan will also include a restoration and enhancement area for the minor encroachment into the Significant Valleylands and top of stable slope buffers.



- A total of eight Butternuts are to be transplanted on Site outside of the proposed development area. Seven of these are less than 3 cm diameter at breast height and will therefore involve the planting of one seedling each. Tree number 25 (from Butternut Health Assessment Data Collection Form) will also involve the planting of three replacement seedlings. This brings the total number of planted Butternuts to be 10 saplings. Any planted trees found to be dead during the monitoring described above must be replaced.
- Monitoring reports describing the condition of the planted Butternuts are to be submitted annually to the Ministry by October 30 as indicated in the Butternut Agreement. Each planted Butternut is to be monitored once a year between May 15 and September 15 for a minimum of 5 years.

With the above recommendations taken into account and diligently implemented on the Site, no additional adverse negative impacts to the ecological integrity of the Site and the Study Area will result from the proposed residential development.

7.0 CLOSURE

The enclosed Environmental Impact Study report has been prepared to assess the natural heritage features including the terrestrial and aquatic conditions on the Site and within the Study Area. The information contained herein as a result of the EIS regarding the proposed residential development is provided to the Client for the Application of a Site Plan Approval.

In the event that clarifications or further information is required by the Client, please do not hesitate to contact the primary Pinchin contact indicated in the contact page of this document.

8.0 REFERENCES

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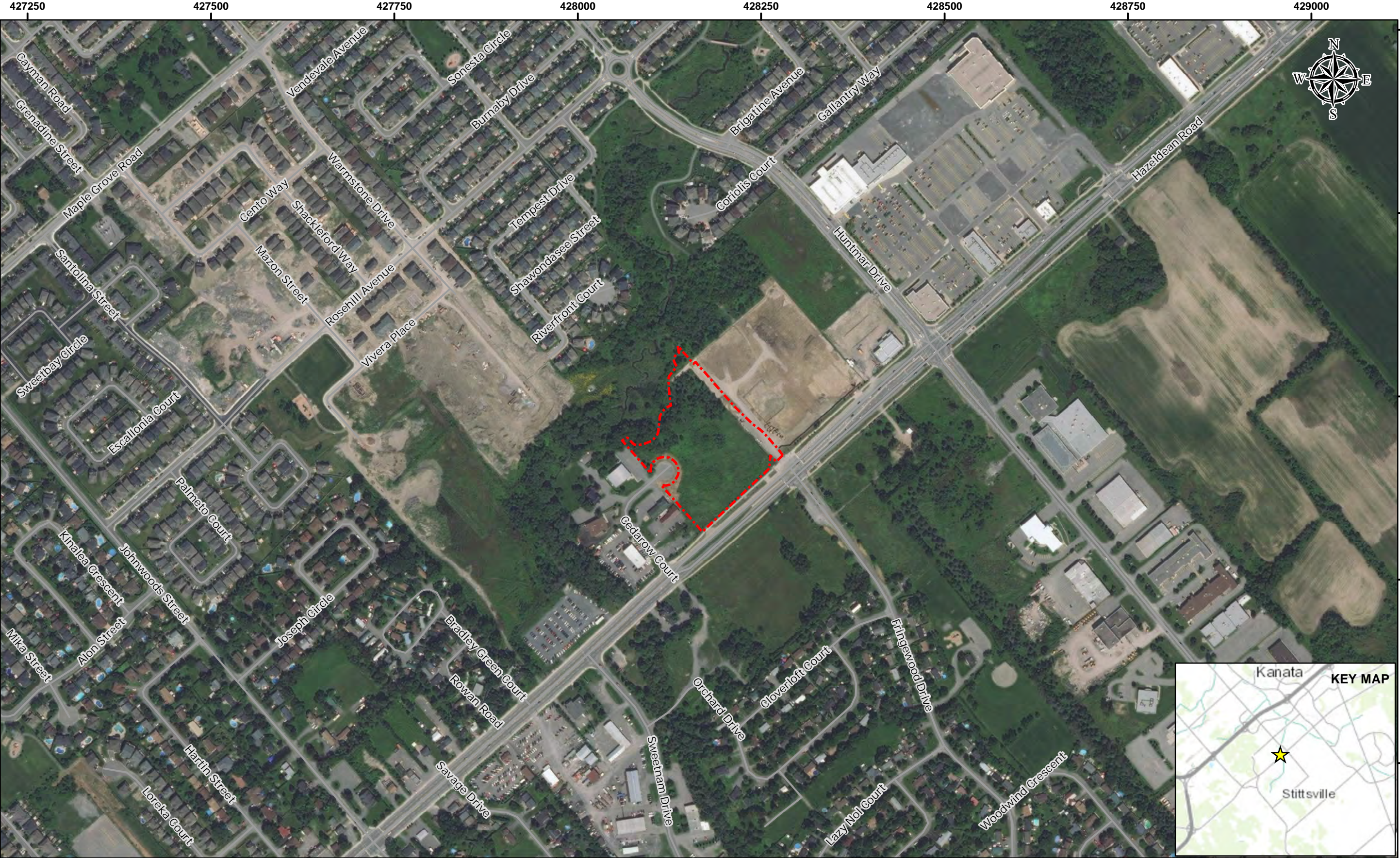
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9.0 LIMITATIONS

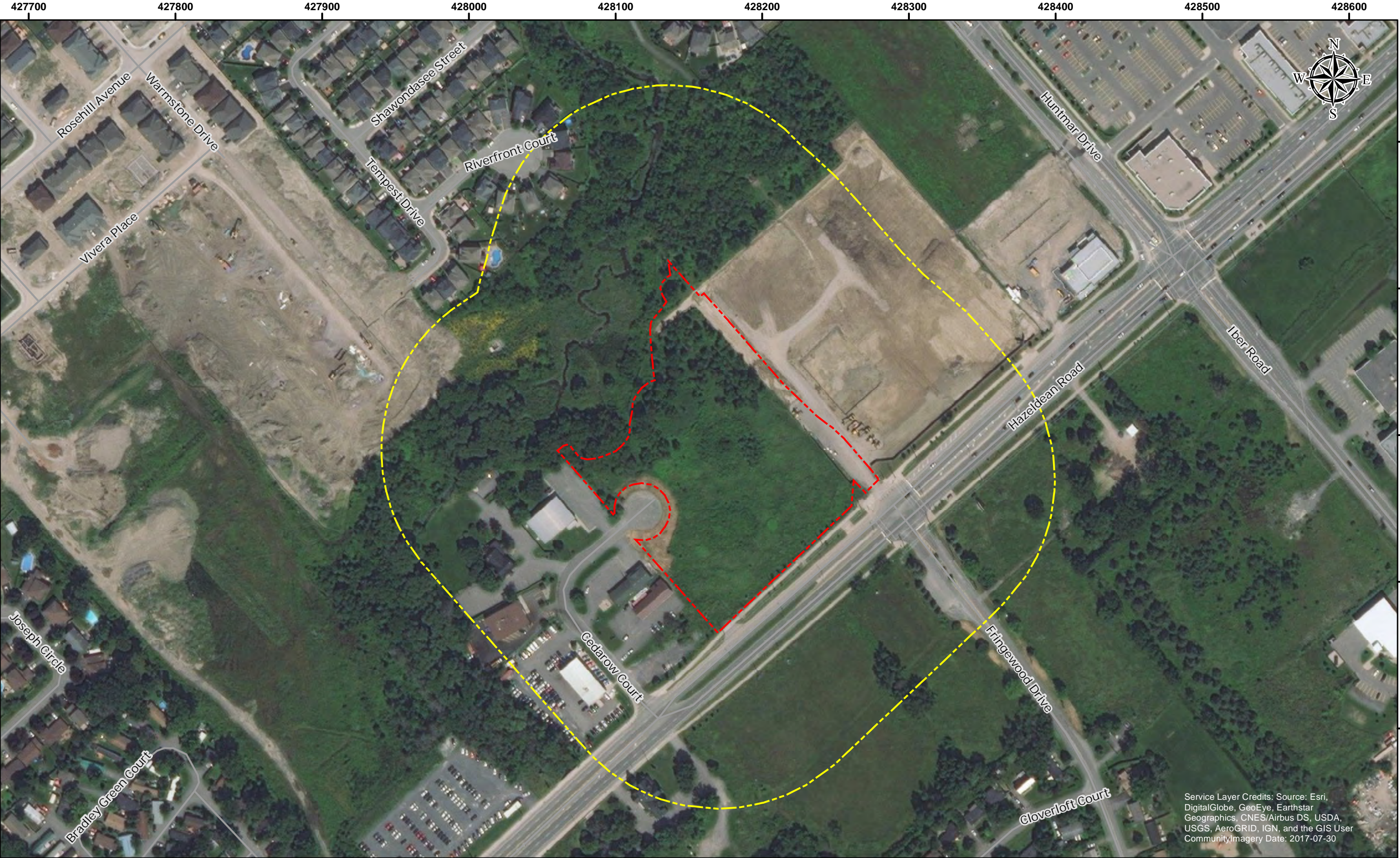
This EIS report work was performed subject to the Terms and Limitations presented or referenced in the proposal for this project. Information provided by Pinchin is intended for the Client to obtain a Site Plan Approval. Pinchin will not provide results or information to any third party unless disclosure by Pinchin is required by law. Any use by a third party of reports or documents authored by Pinchin or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

247248 REVISED FINAL Environmental Impact Study 20 Cedarow Crt Stittsville December 11 2019.docx

APPENDIX A
SITE FIGURES



	PROJECT NAME:	20 CEDAROW COURT, STITTSVILLE ENVIRONMENTAL STUDY	PROJECT NO.	247248	LEGEND  Subject Property	<p>Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community</p>	<p>0 50 100 200 Metres</p> <p>Coordinate System: WGS 1984 UTM Zone 18N Projection: Transverse Mercator Datum: WGS 1984</p>
	CLIENT NAME:	NAUTICAL LANDS GROUP	DATE:	SEPT. 2019			
	PROJECT LOCATION:	20 CEDAROW COURT, STITTSVILLE, ONTARIO	SCALE:	1:5,000			
	FIGURE NAME:	SITE LOCATION	FIGURE NO.	1			

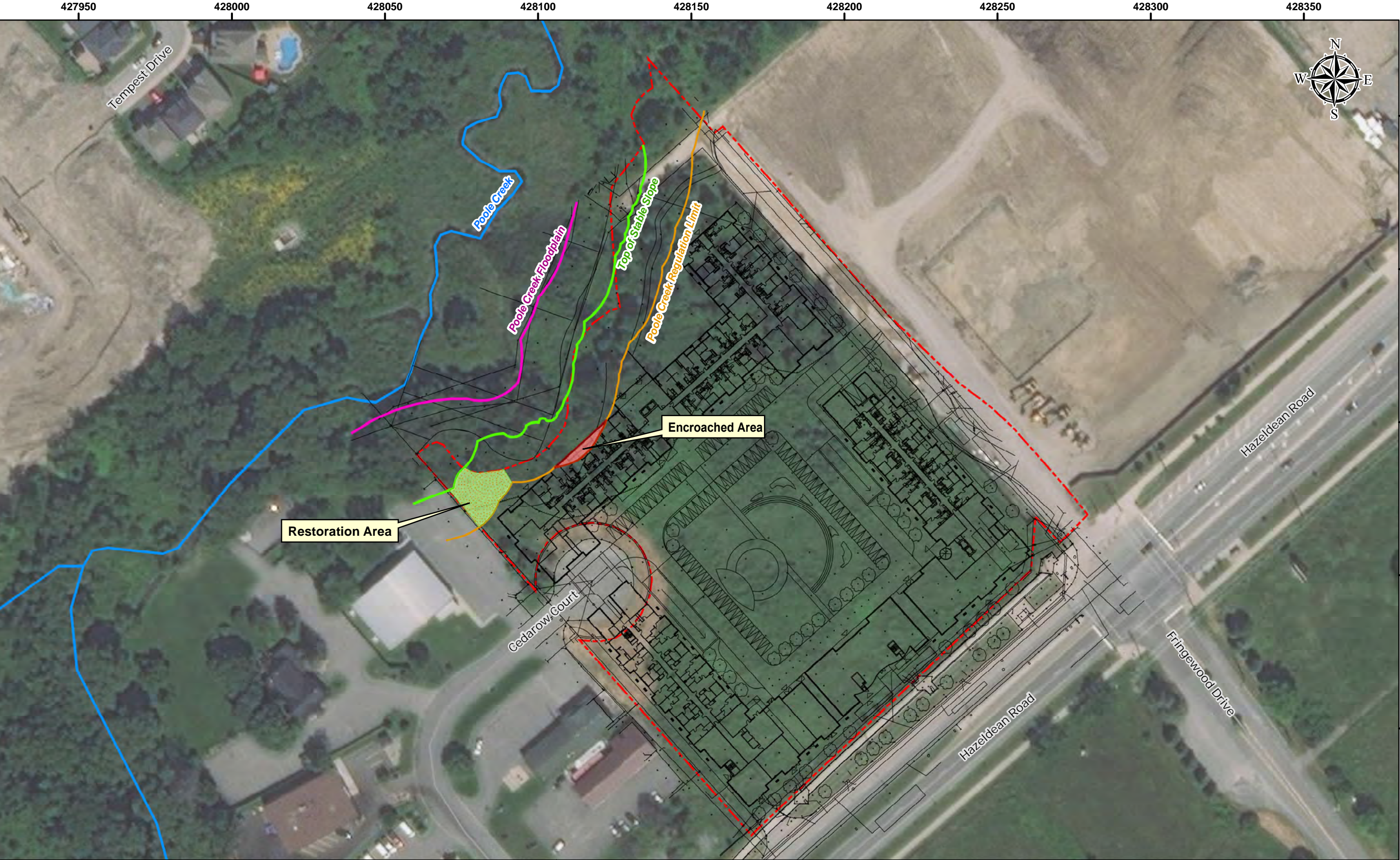


Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Imagery Date: 2017-07-30

	PROJECT NAME: 20 CEDAROW COURT, STITTSVILLE ENVIRONMENTAL STUDY		PROJECT NO. 247248	LEGEND <div><div></div> Approximate Site Boundary</div> <div><div></div> Study Area</div>	<div><div>02550100</div><div>Metres</div></div> <p>Coordinate System: WGS 1984 UTM Zone 18N Projection: Transverse Mercator Datum: WGS 1984</p>
	CLIENT NAME: NAUTICAL LANDS GROUP		DATE: SEPT. 2019		
	PROJECT LOCATION: 20 CEDAROW COURT, STITTSVILLE, ONTARIO		SCALE: 1:2,500		
	FIGURE NAME: STUDY AREA		FIGURE NO. 2		



	PROJECT NAME:	20 CEDAROW COURT, STITTSVILLE ENVIRONMENTAL STUDY	PROJECT NO.	247248	LEGEND <div><div><div></div>Approximate Site Boundary</div><div><div></div>Watercourse</div></div> <div>Ecological Land Classification <div><div></div>CVR_2 – High Density Residential</div><div><div></div>FODM4-5 - Dry – Fresh Manitoba Maple Deciduous Forest</div><div><div></div>MAMM1-3 – Reed-canary Grass Graminoid Mineral Meadow Marsh</div><div><div></div>MEMM3 – Dry – Fresh Mixed Meadow</div><div><div></div>THDM1-2 – Sumac Deciduous Shrub Thicket</div></div>
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PROJECT NAME: 20 CEDAROW COURT, STITTSVILLE ENVIRONMENTAL IMPACT STUDY

CLIENT NAME: NAUTICAL LANDS GROUP

PROJECT LOCATION: 20 CEDAROW COURT, STITTSVILLE, ONTARIO

FIGURE NAME: SITE PLAN WITH RESTORATION AREA

PROJECT NO. 247248

DATE: DEC. 2019

SCALE: 1:1,200

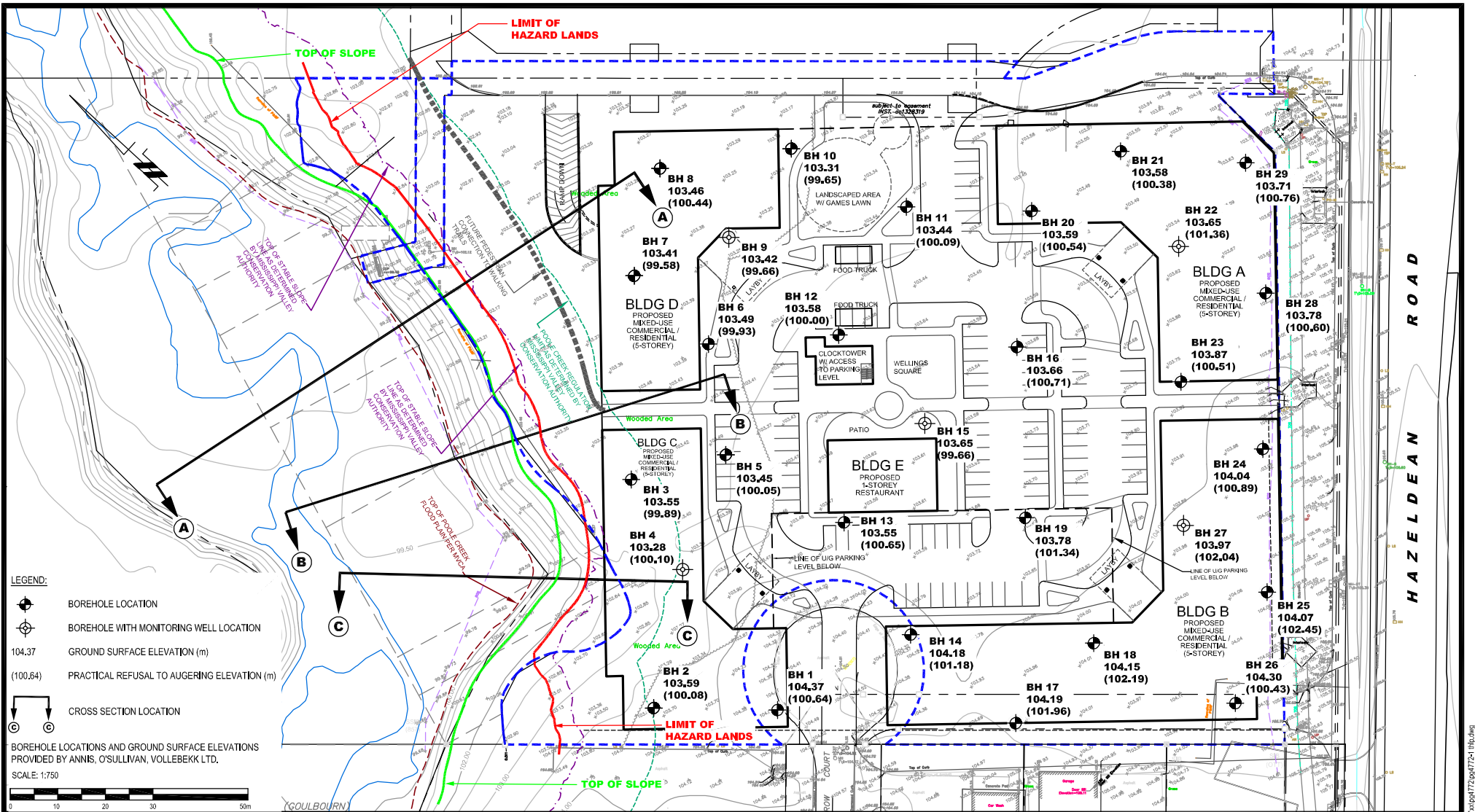
FIGURE NO. 3

- LEGEND**
- Approximate Site Boundary
 - Watercourse
 - Poole Creek Floodplain
 - Top of Stable Slope
 - Poole Creek Regulation Limit
 - Restoration Area
 - Encroached Area

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community/Imagery Date: 2017-07-30
Site Plan and constraints provided by chmielarchitects, dwg A-101, 2019.



Coordinate System: WGS 1984 UTM Zone 18N
Projection: Transverse Mercator
Datum: WGS 1984



patersongroup
consulting engineers

154 Colonnade Road South
Ottawa, Ontario K2E 7J5
Tel: (613) 226-7381 Fax: (613) 226-6344

1	LIMIT OF HAZARD LANDS REVISED	28/02/2019	FA
NO.	REVISIONS	DATE	INITIAL

NAUTICAL LANDS GROUP
GEOTECHNICAL INVESTIGATION
PROP. MIXED-USE DEVELOPMENT - WELLINGS OF STITTSVILLE PHASE 2 - 20 CEDAROW CT.
OTTAWA, ONTARIO

Title: **TEST HOLE LOCATION PLAN**

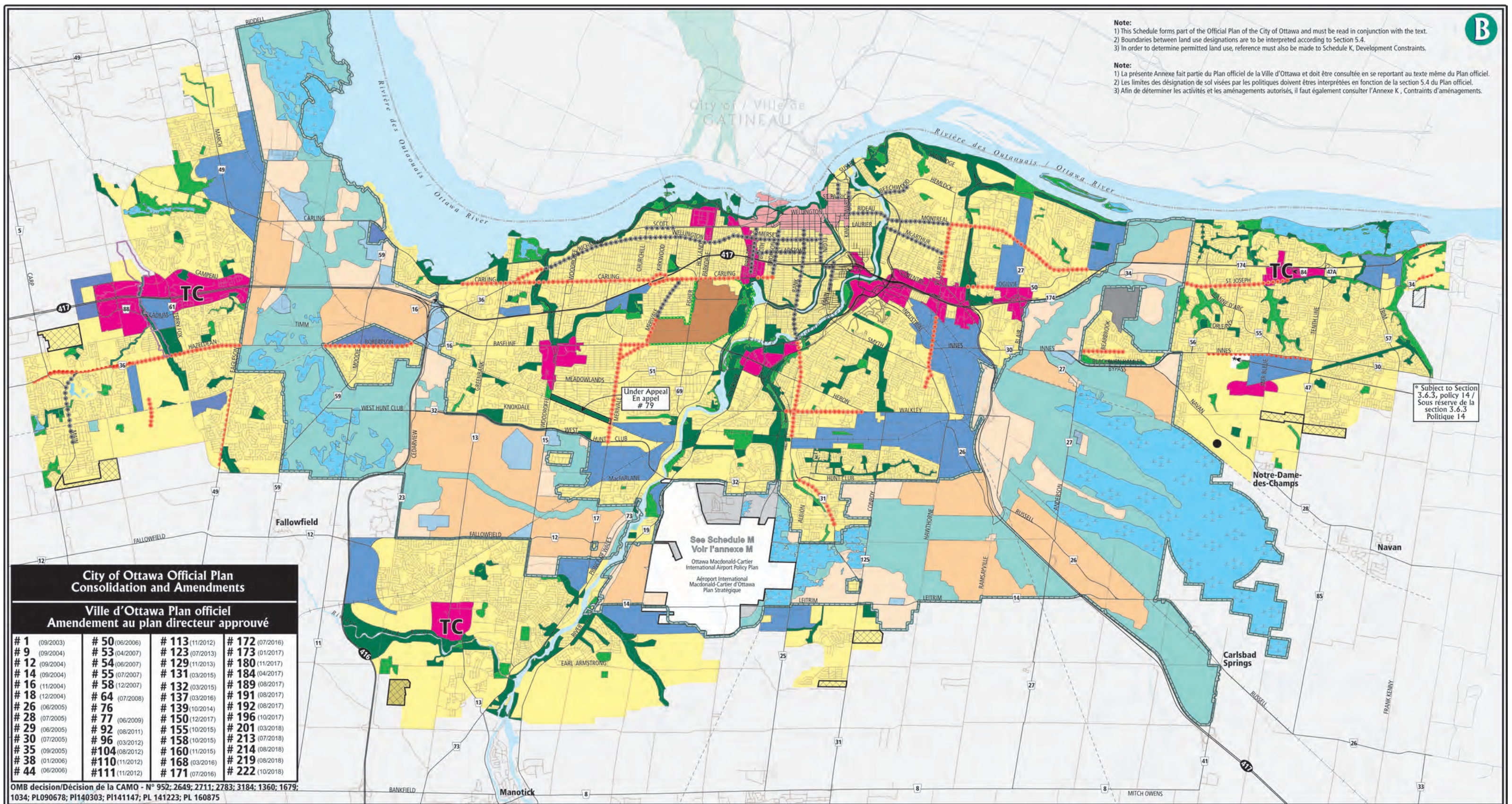
Scale:	1:750	Date:	01/2019
Drawn by:	MPG	Report No.:	PG4772-1
Checked by:	FA	Dwg. No.:	PG4772-1
Approved by:	DJG	Revision No.:	1

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APPENDIX B
CITY OF OTTAWA PLANNING MAPS

Note:
1) This Schedule forms part of the Official Plan of the City of Ottawa and must be read in conjunction with the text.
2) Boundaries between land use designations are to be interpreted according to Section 5.4.
3) In order to determine permitted land use, reference must also be made to Schedule K, Development Constraints.

Note:
1) La présente Annexe fait partie du Plan officiel de la Ville d'Ottawa et doit être consultée en se reportant au texte même du Plan officiel.
2) Les limites des désignations de sol visées par les politiques doivent être interprétées en fonction de la section 5.4 du Plan officiel.
3) Afin de déterminer les activités et les aménagements autorisés, il faut également consulter l'Annexe K, Contraintes d'aménagements.



City of Ottawa Official Plan Consolidation and Amendments			
Ville d'Ottawa Plan officiel Amendement au plan directeur approuvé			
# 1 (09/2003)	# 50 (06/2006)	# 113 (11/2012)	# 172 (07/2016)
# 9 (09/2004)	# 53 (04/2007)	# 123 (07/2013)	# 173 (01/2017)
# 12 (09/2004)	# 54 (06/2007)	# 129 (11/2013)	# 180 (11/2017)
# 14 (09/2004)	# 55 (07/2007)	# 131 (03/2015)	# 184 (04/2017)
# 16 (11/2004)	# 58 (12/2007)	# 132 (03/2015)	# 189 (08/2017)
# 18 (12/2004)	# 64 (07/2008)	# 137 (03/2016)	# 191 (08/2017)
# 26 (06/2005)	# 76 (06/2009)	# 139 (10/2014)	# 192 (08/2017)
# 28 (07/2005)	# 77 (06/2009)	# 150 (12/2017)	# 196 (10/2017)
# 29 (06/2005)	# 92 (08/2011)	# 155 (10/2015)	# 201 (03/2018)
# 30 (07/2005)	# 96 (03/2012)	# 158 (10/2015)	# 213 (07/2018)
# 35 (09/2005)	# 104 (08/2012)	# 168 (03/2016)	# 214 (08/2018)
# 38 (01/2006)	# 110 (11/2012)	# 171 (07/2016)	# 219 (08/2018)
# 44 (06/2006)	# 111 (11/2012)		# 222 (10/2018)

OMB decision/Décision de la CAMO - N° 952; 2649; 2711; 2783; 3184; 1360; 1679; 1034; PL090678; P1140303; P1141147; PL 141223; PL 160875

Official Plan - Schedule B

Urban Policy Plan

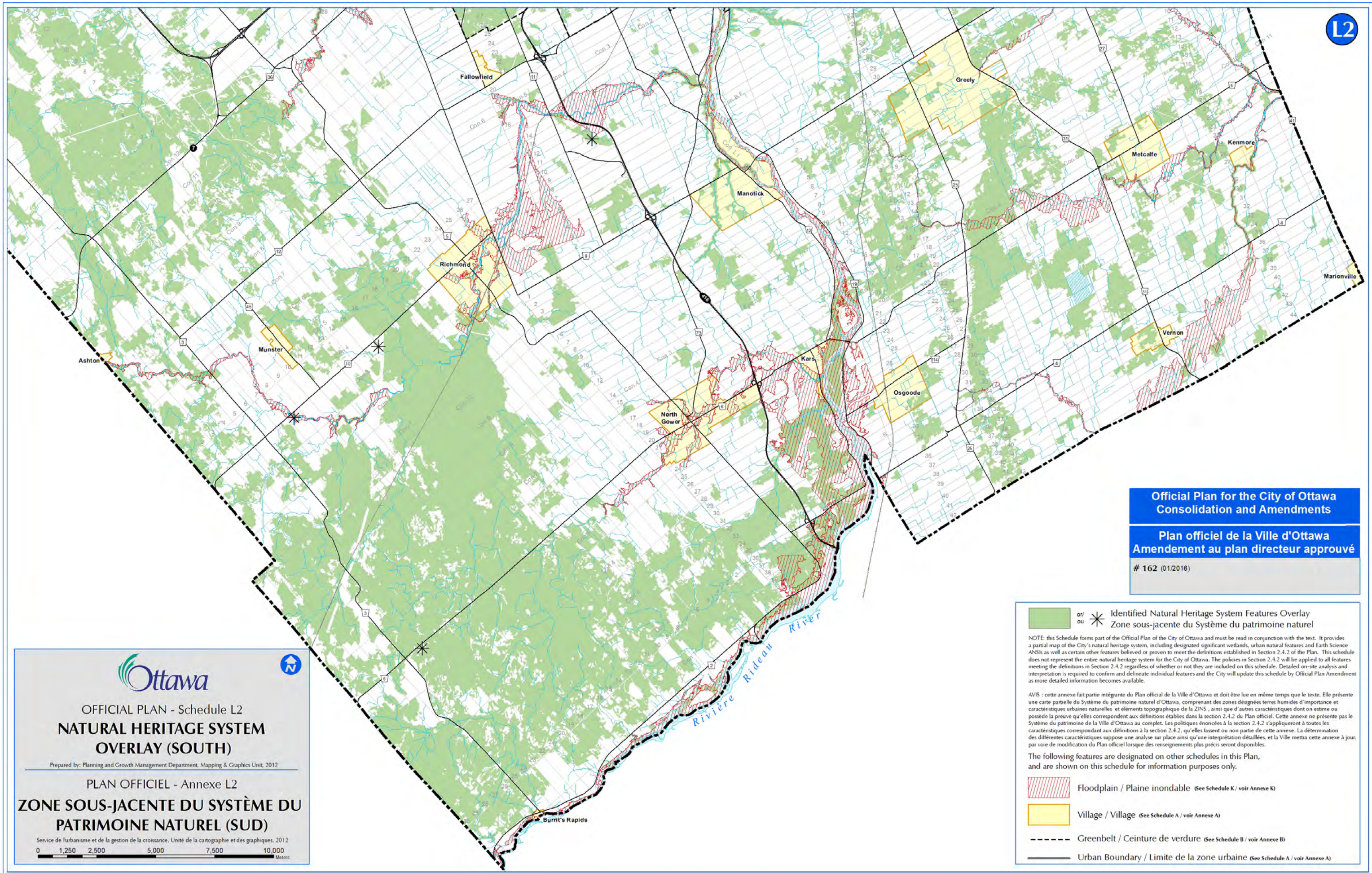
Prepared by: Planning, Infrastructure and Economic Development Department

Plan officiel - Annexe B

Plan des politiques en milieu urbain

Préparé par : Services de la planification, de l'infrastructure et du développement économique

General Urban Area	Zone urbaine générale	Natural Environment Area	Zone écologique naturelle	Major Open Space	Grand espace vert
Urban Expansion Study Area	Zone d'étude d'expansion urbaine	Agricultural Resource Area	Zone de ressources agricoles	Urban Natural Features	Caractéristiques naturelles zone urbaine
Central Area	Zone centrale	Agricultural Research Area	Zone de recherche agricoles	Bedrock Resource Area	Zone de ressources en substrat rocheux
Town Centre	Centre ville	Macdonald-Cartier International Airport	Aéroport international Macdonald-Cartier	Significant Wetlands	Terres humides d'importance
Traditional Mainstreet	Rue principale traditionnelle	Greenbelt Employment and Institutional Area	Zone d'emploi et d'équipement collectif de la Ceinture de verdure	Central Experimental Farm	Ferme expérimentale centrale
Arterial Mainstreet	Artère principale	Urban Employment Area	Zone d'emploi urbaine	Greenbelt Boundary	Limite de la Ceinture de verdure
Mixed Use Centre	Centre polyvalent	Greenbelt Rural	Ceinture de verdure secteur rural	Solid Waste Disposal Site	Site d'enfouissement des déchets solides
Carp River Restoration Policy Area Overlay	Zone sous-jacente de restauration de la rivière Carp	Sand and Gravel Resource Area	Zone de ressources de sable et de gravier	Lands leased by the Ottawa International Airport Authority	Terrains loués par l'administration de l'aéroport international d'Ottawa
Developing Community (Expansion Area)	Communauté en développement (zone d'expansion)				



**Official Plan for the City of Ottawa
Consolidation and Amendments**

**Plan officiel de la Ville d'Ottawa
Amendement au plan directeur approuvé**

162 (01/2016)

OFFICIAL PLAN - Schedule L2
**NATURAL HERITAGE SYSTEM
OVERLAY (SOUTH)**

Prepared by: Planning and Growth Management Department, Mapping & Graphics Unit, 2012

PLAN OFFICIEL - Annexe L2
**ZONE SOUS-JACENTE DU SYSTÈME DU
PATRIMOINE NATUREL (SUD)**

Service de l'urbanisme et de la gestion de la croissance, Unité de la cartographie et des graphiques, 2012

0 1,250 2,500 5,000 7,500 10,000
Meters

or

Identified Natural Heritage System Features Overlay
Zone sous-jacente du Système du patrimoine naturel

NOTE: this Schedule forms part of the Official Plan of the City of Ottawa and must be read in conjunction with the text. It provides a partial map of the City's natural heritage system, including designated significant wetlands, urban natural features and Earth Science ANSIs as well as certain other features believed or proven to meet the definitions established in Section 2.4.2 of the Plan. This schedule does not represent the entire natural heritage system for the City of Ottawa. The policies in Section 2.4.2 will be applied to all features meeting the definitions in Section 2.4.2 regardless of whether or not they are included on this schedule. Detailed on-site analysis and interpretation is required to confirm and delineate individual features and the City will update this schedule by Official Plan Amendment as more detailed information becomes available.

AVIS : cette annexe fait partie intégrante du Plan officiel de la Ville d'Ottawa et doit être lue en même temps que le texte. Elle présente une carte partielle du Système du patrimoine naturel d'Ottawa, comprenant des zones désignées terres humides d'importance et caractéristiques urbaines naturelles et éléments topographiques de la ZIN, ainsi que d'autres caractéristiques dont on estime ou possède la preuve qu'elles correspondent aux définitions établies dans la section 2.4.2 du Plan officiel. Cette annexe ne présente pas le Système du patrimoine de la Ville d'Ottawa au complet. Les politiques énoncées à la section 2.4.2 s'appliqueront à toutes les caractéristiques correspondant aux définitions à la section 2.4.2, qu'elles fassent ou non partie de cette annexe. La détermination des différentes caractéristiques suppose une analyse sur place ainsi qu'une interprétation détaillée, et la Ville mettra cette annexe à jour, par voie de modification du Plan officiel lorsque des renseignements plus précis seront disponibles.

The following features are designated on other schedules in this Plan, and are shown on this schedule for information purposes only.

Floodplain / Plaine inondable (See Schedule K / voir Annexe K)

Village / Village (See Schedule A / voir Annexe A)

Greenbelt / Ceinture de verdure (See Schedule B / voir Annexe B)

Urban Boundary / Limite de la zone urbaine (See Schedule A / voir Annexe A)

APPENDIX C
SELECTED SITE PHOTOGRAPHS



Photo 1 – View of deciduous thicket from Cedarow Court. The Phase I development construction is visible in the background. Note: all photos were taken during Site surveys on August 20th, 2019.



Photo 2 – Mixed meadow at the southern end of the Site



Photo 3 – Reed-canary Grass marsh to the north of the Site



Photo 4 – Mixed meadow with deciduous forest in the background



Photo 5 – View of the Site from Hazeldean Road.



Photo 6 – View of Poole Creek to the north of the Site, with the Reed-Canary Grass marsh on both riparian areas.

APPENDIX D
VASCULAR PLANT LIST

Table 1: Vascular Plant Species

Scientific Name	Common Name	S-Rank	CC	CW
<i>Acer freemanii</i>	Freeman's Maple	SNA	6	-5
<i>Acer negundo</i>	Manitoba Maple	S5	0	0
<i>Acer tartaricum ssp. Ginnala</i>	Amur Maple	SNA		5
<i>Alliaria petiolata</i>	Garlic Mustard	SNA		0
<i>Ambrosia artemisiifolia</i>	Common Ragweed	S5	0	3
<i>Arctium minus</i>	Common Burdock	SNA		3
<i>Artemisia vulgaris</i>	Common Wormwood	SNA		5
<i>Asclepias incarnata</i>	Swamp Milkweed	S5	6	-5
<i>Asclepias syriaca</i>	Common Milkweed	S5	0	5
<i>Bidens cernuus</i>	Nodding Beggarticks	S5	2	-5
<i>Bidens frondosa</i>	Devil's Beggarticks	S5	3	-3
<i>Bromus inermis</i>	Smooth Brome	SNA		5
<i>Butomus umbellatus</i>	Flowering-rush	SNA		-5
<i>Cichorium intybus</i>	Chicory	SNA		5
<i>Cirsium arvense</i>	Canada Thistle	SNA		3
<i>Cirsium vulgare</i>	Bull Thistle	SNA		3
<i>Cornus racemosa</i>	Gray Dogwood	S5	2	0
<i>Daucus carota</i>	Queen Anne's Lace	SNA		5
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	S5	5	-3
<i>Echinocystis lobata</i>	Wild Mock-cucumber	S5	3	-3
<i>Elymus repens</i>	Creeping Wildrye	SNA		3
<i>Equisetum arvense</i>	Field Horsetail	S5	0	0
<i>Erigeron annuus</i>	Annual Fleabane	S5	0	3
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	S5	1	-3
<i>Eutrochium maculatum</i>	Spotted Joe Pye Weed	S5	3	-5
<i>Frangula alnus</i>	Glossy Buckthorn	SNA		0
<i>Fraxinus americana</i>	White Ash	S4	4	3
<i>Glyceria striata</i>	Fowl Mannagrass	S5	3	-5
<i>Impatiens capensis</i>	Spotted Jewelweed	S5	4	-3
<i>Inula helenium</i>	Elecampane	SNA		3
<i>Leucanthemum vulgare</i>	Oxeye Daisy	SNA		5
<i>Linaria vulgaris</i>	Butter-and-eggs	SNA		5
<i>Lonicera tatarica</i>	Tartarian Honeysuckle	SNA		0
<i>Lotus corniculatus</i>	Garden Bird's-foot Trefoil	SNA		3
<i>Lycopus uniflorus</i>	Northern Water-horehound	S5	5	-5
<i>Lythrum salicaria</i>	Purple Loosestrife	SNA		-5
<i>Medicago lupulina</i>	Black Medic	SNA		3
<i>Melilotus albus</i>	White Sweet-clover	SNA		3
<i>Mentha canadensis</i>	Canada Mint	S5	3	-3
<i>Oxalis stricta</i>	Upright Yellow Wood-sorrel	S5?	0	3
<i>Panicum capillare</i>	Common Panicgrass	S5	0	0
<i>Parthenocissus quinquefolia</i>	Virginia creeper	S4?	6	3
<i>Pastinaca sativa</i>	Wild Parsnip	SNA		5
<i>Persicaria maculosa</i>	Spotted Lady's-thumb	SNA		-3
<i>Phalaris arundinacea</i>	Reed Canary Grass	S5	0	-3

<i>Phleum pratense</i>	Common Timothy	SNA		3
<i>Phragmites australis</i>	Common Reed	S4	0	-3
<i>Plantago major</i>	Common Plantain	SNA		3
<i>Poa palustris</i>	Fowl Bluegrass	S5	5	-3
<i>Populus deltoides</i>	Eastern Cottonwood	S5	4	0
<i>Potamogeton crispus</i>	Curly-leaved Pondweed	SNA		-5
<i>Rhamnus cathartica</i>	Common Buckthorn	SNA		0
<i>Rhus typhina</i>	Staghorn Sumac	S5	1	3
<i>Robinia pseudoacacia</i>	Black Locust	SNA		3
<i>Rubus allegheniensis</i>	Allegheny Blackberry	S5	2	3
<i>Rubus idaeus</i>	Common Red Raspberry	S5	2	3
<i>Rumex crispus</i>	Curly Dock	SNA		0
<i>Sagittaria latifolia</i>	Broad-leaved Arrowhead	S5	4	-5
<i>Salix discolor</i>	Pussy Willow	S5	3	-3
<i>Salix euxina</i>	Crack Willow	SNA		0
<i>Schoenoplectus tabernaemontani</i>	Soft-stemmed Bulrush	S5	5	-5
<i>Silene vulgaris</i>	Bladder Campion	SNA		5
<i>Solanum dulcamara</i>	Bittersweet Nightshade	SNA		0
<i>Solidago altissima</i>	Tall Goldenrod	S5	1	3
<i>Solidago rugosa</i>	Rough-stemmed Goldenrod	S5	4	0
<i>Stachys palustris</i>	Marsh Hedge-nettle	SNA		-5
<i>Taraxacum officinale</i>	Common Dandelion	SNA		3
<i>Trifolium pratense</i>	Red Clover	SNA		3
<i>Trifolium repens</i>	White Clover	SNA		3
<i>Tussilago farfara</i>	Colt's-foot	SNA		3
<i>Typha angustifolia</i>	Narrow-leaved Cattail	SNA		-5
<i>Typha X glauca</i>	(<i>Typha angustifolia</i> X <i>Typha latifolia</i>)	SNA		-5
<i>Ulmus americana</i>	American Elm	S5	3	-3
<i>Urtica dioica</i>	Stinging Nettle	S5	2	0
<i>Vicia cracca</i>	Tufted Vetch	SNA		5
<i>Vitis riparia</i>	Riverbank Grape	S5	0	0

APPENDIX E
SPECIES AT RISK SCREENING TABLE

Table 1. Species at Risk Screening for the Study Area

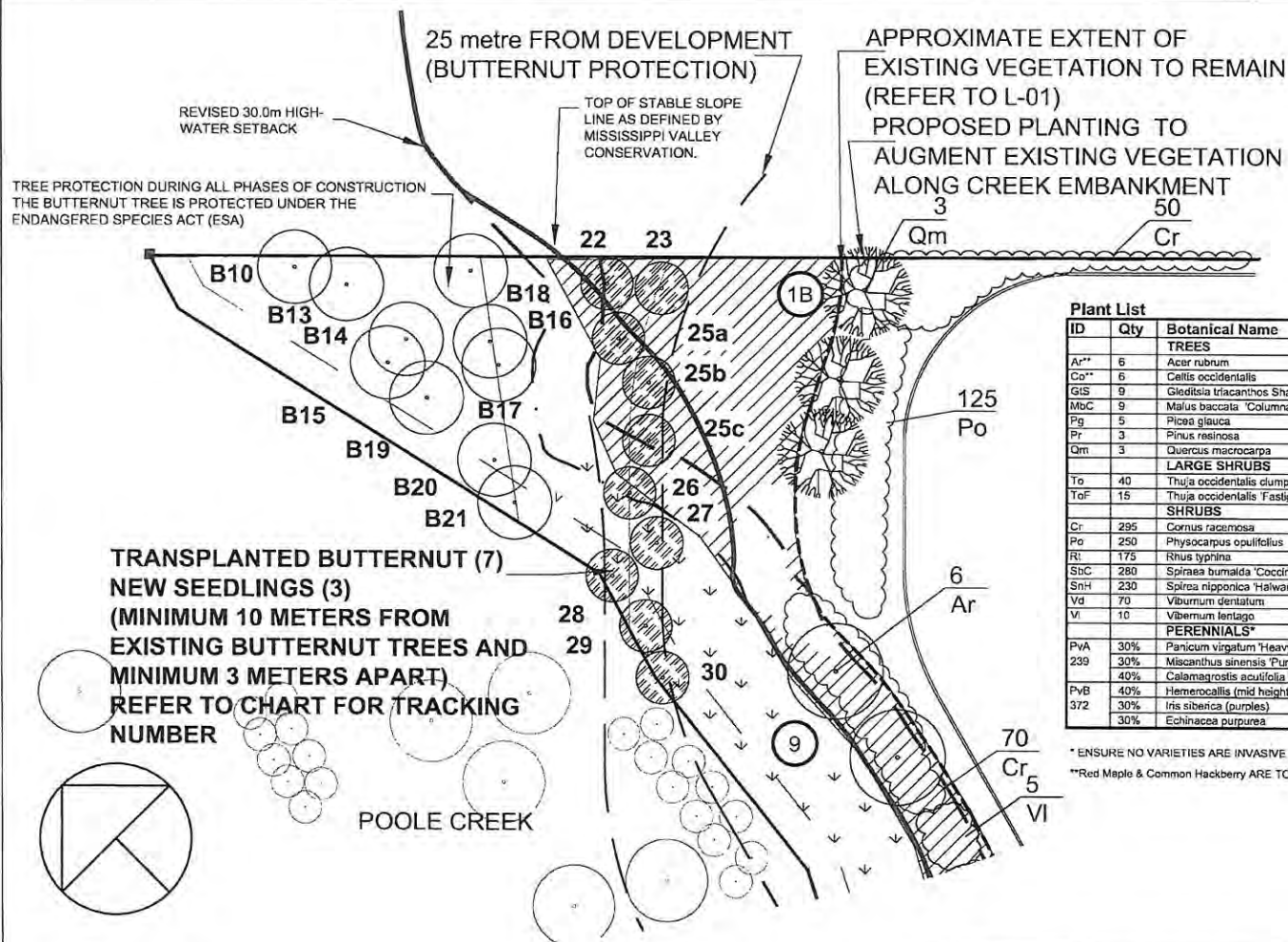
Type	Common Name	Scientific Name	Srank	SARO Status	COSEWIC Status	Last Obs Date	Background Information Source					Notes on Preferred Habitat ¹	Confirmed observation on Site	Suitable Habitat on Site
							NHIC Grid 18VR2714	Atlas of Ontario Mammals (Dobbyn 1994)	Atlas of the Breeding Bird of Ontario (Cadman 2009)	Ontario Reptile and Amphibian Atlas (ON 2018)	Ontario Butterfly Atlas (Macnaight on 2018)			
REPTILE	Snapping Turtle	<i>Chelydra serpentina</i>	S3	SC	SC	2018	◆			◆		Prefer shallow, slow-mmovnig waters with abundant vegetation, but can also live in deeper water habitats. During the nesting season June-July, they can be gound on gravelly or sandy areas on land.	No	Yes, the Reed-canary Grass mineral meadow and the Mixed Meadow both provide potential nesting habitat for the species. Due to the proximity to the stream in the Study Area, this species could occur on the Site.
	Blandings Turtle	<i>Emydoidea blandingii</i>	S3	THR	THR	2019				◆		Can be found in shallow water in large wetlands and shallow lakes with abundant water vegetation. During nesting season they can be found utilizing sandy and gravelly areas.	No	Yes, the Reed-canary Grass mineral meadow and the Mixed Meadow both provide potential nesting habitat for the species. Due to the proximity to the stream in the Study Area, this species could occur on the Site.
BIRD	Bank Swallow	<i>Riparia riparia</i>	S4B	THR	THR	2004			◆			Nest in burrows in natural nd human-made settings where there are vertical faces in silt and sand deposits. Many nests are on river banks, but can be found in sand and gravel pits.	No	No, there were no banks on the Site that were suitable for this species.
	Bobolink	<i>Dolichonyx oryzivorus</i>	S4B	THR	THR	2004			◆			Can be found in tallgrass prairie, open meadows, hayfields, and dense grasses. They build their nests on the ground amongst the dense vegetation .	No	Yes, this species could utilize the Fresh Mixed Meadow on the Site has habitat.
	Eastern Meadowlark	<i>Sturnella magna</i>	S4B	THR	THR	2004			◆			Breed primarily in moderately tall grasslands such as pastures, hayfields and weedy borders of croplands, roadsides and other open areas.	No	Yes, this species could utilize the Fresh Mixed Meadow on the Site has habitat.
	Barn Swallow	<i>Hirundo rustica</i>	S4B	THR	THR	2003			◆			Nest along human-made structures such as open barns, under bridges and in culverts. Attracted to open structures to build their nests, including ledges. They prefer rough-cut wood structures as the mud nests adheres better.	No	No, there were no structures on the Site that this species could utilize as habitat.

Type	Common Name	Scientific Name	Srank	SARO Status	COSEWIC Status	Last Obs Date	Background Information Source					Notes on Preferred Habitat ¹	Confirmed observation on Site	Suitable Habitat on Site
							NHIC Grid 18VR2714	Atlas of Ontario Mammals (Dobbyn 1994)	Atlas of the Breeding Bird of Ontario (Cadman 2009)	Ontario Reptile and Amphibian Atlas (ON 2018)	Ontario Butterfly Atlas (Macnaight on 2018)			
BIRD	Eastern Wood-Pewee	<i>Contopus virens</i>	S4B	SC	SC	2005			◆			Live in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It is most abundantly found in intermediate-age mature forest stands with little understory vegetation.	No	Yes, this species could utilize the Dry Fresh Manitoba Maple Deciduous Forest that is on the Site.
	Evening Grosbeak	<i>Coccothraustes vespertinus</i>	S4B	SC	SC	2005			◆			Generally found in open, mature mixed-wood forests dominated by ir species, White Spruce of Trembling Aspen. Is dependant on the Spruce Budworm and seed crops from boreal species.	No	No, the forest on the Site does not provide suitable habitat for this species preferences.
	Wood Thrush	<i>Hylocichla mustelina</i>	S4B	SC	THR	2004			◆			Lives in mature deciduous and mixed forests, seeking moist stands of trees with well-developed undergrowth and tall trees for perching. They prefer large forests, but will also use smaller stands of trees, building their nests in saplings, trees or shrubs, usually of Sugar Maple or American Beech.	No	No, the forest on Site is not mature enough and does not provide suitable habitat for this species preferences.
MAMMAL	Little Brown Bat	<i>Myotis lucifuga</i>	S4	END	END	-		◆				Roost in trees and buildings such as attics, abandoned buildings and barns. Generally found in coniferous or deciduous forests along edge habitat, foraging in clearings near sources of water.	No	No, this species does not have suitable habitat on the Site.
	Eastern Small-footed Myotis	<i>Myotis leibii</i>	S2S3	END	END	-						Roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines or hollow trees	No	No, this species does not have suitable habitat on the Site.
	Northern Myotis	<i>Myotis septentrionalis</i>	S3	END	END	-						Roost under loose bark and in cavities of trees. Hibernates from October/November to March/April most often in caves or abandoned mines	No	No, this species does not have suitable habitat on the Site.

Type	Common Name	Scientific Name	Srank	SARO Status	COSEWIC Status	Last Obs Date	Background Information Source					Notes on Preferred Habitat ¹	Confirmed observation on Site	Suitable Habitat on Site
							NHIC Grid 18VR2714	Atlas of Ontario Mammals (Dobbyn 1994)	Atlas of the Breeding Bird of Ontario (Cadman 2009)	Ontario Reptile and Amphibian Atlas (ON 2018)	Ontario Butterfly Atlas (Macnaight on 2018)			
MAMMAL	Tri-coloured Bat	<i>Pipistrellus subflavus</i>	S3	END	END	-		◆				Forms day roosts and maternity colonies in older forests but can also be found in barns or other structures. Forage over water along streams in the forest. Overwinter in caves from October-April.	No	No, this species does not have suitable habitat on the Site.
INSECT	Monarch	<i>Danaus plexippus</i>	S4B	SC	SC	2018					◆	Caterpillars feed on milkweed plants and are confined to meadows and open areas where milkweed grows. Adults forage on a variety of wildflowers and milkweed.	No	Yes, there is milkweed and wildflowers growing on the Site that this species could utilize as habitat.
PLANT	Butternut	<i>Juglans cinerea</i>	S2?	END	END	-						Grows alone or in small groups in deciduous forests. Prefers moist, well-drained soil and is often found along streams	Yes	Yes. Individuals were found. Further information can be found in Appendix B

SARO	Species at Risk Ontario (O. Reg. 230/08)	<u>NHIC Srank (Subnational) Legend</u>	
COSEWIC	Committee on the Status of Endangered Wildlife in Canada		
<u>Definitions</u>			
Endangered (END)	Species facing imminent extirpation or extinction	S1	Critically imperiled, at very high risk of extirpation.
Threatened (THR)	Species likely to become endangered if nothing is done to reverse the factors leading to their extirpation or extinction	S2	Imperiled, at high risk of extirpation.
Special Concern (SC)	Species that may become threatened or endangered because of a combination of biological characteristics and identified threats	S3	Vulnerable, at moderate risk of extirpation.
Extirpated (EXR)	Species which no longer exist in the wild in Ontario, but exist elsewhere in the world	S4	Apparently secure, at fairly low risk of extirpation.
DD	Data deficient	S5	Secure, at low or no risk of extirpation.
<u>References</u>		B	Conservation status refers to breeding population.
		N	Conservation status refers to non-breeding population.
1	Ministry of Natural Resources (MNR). 2000. Significant Wildlife Habitat Technical Guide. Peterborough: Queen’s Printer for Ontario.		
2	Government of Canada. 2018. Species at Risk Act: COSEWIC Assessments and Status Reports. Accessed February 2019. https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports.html .		
3	Government of Canada. 2011. Species at Risk Public Registry: A to Z Species Index. Ottawa: Government of Canada. Accessed February 2019. http://sararegistry.gc.ca/sar/index/default_e.cfm .		
4	Ministry of the Environment, Conservation and Parks. 2018. Species at Risk in Ontario. Accessed February 2019. https://www.ontario.ca/page/species-risk-ontario#section-3 .		
5	Butterflies of Ontario. 2019. Red-disked Alpine. Accessed February 2019. http://www.ontariobutterflies.ca/families/nymphalidae/red-disked-alpine .		
6	Butterflies and Moths of North America. 2018. Red-disked Alpine. Accessed February 2019. https://www.butterfliesandmoths.org/sighting_details/1053970 .		

APPENDIX F
BUTTERNUT MAPPING AND AGREEMENT



BUTTERNUT TO BE TRANSPLANTED ON SITE:

#22 - SEEDLING
#23 - SEEDLING
#25 - CALIPER SIZE, MOVE BY TREE SPADE
#26 - SEEDLING
#27 - SEEDLING
#28 - SEEDLING
#29 - SEEDLING
#30 - SEEDLING

REMAINDER OF BUTTERNUT TO BE RETAINED

Plant List

ID	Qty	Botanical Name	Common Name	Size	Remarks
TREES					
Ar**	6	Acer rubrum	Red Maple	60mm dia.	WB Staked
Co**	6	Celtis occidentalis	Common Hackberry	60mm dia.	WB Staked
GIS	9	Gleditsia triacanthos Shademaster	Shademaster Honeylocust	60mm dia.	WB Staked
MbC	9	Malus baccata 'Columnaris'	Columnar Siberian Crab Apple		
Pg	5	Picea glauca	White Spruce	200cm ht.	WB Staked
Pr	3	Pinus resinosa	Red Pine	200cm ht.	WB Staked
Qm	3	Quercus macrocarpa	Bur Oak	60mm dia.	WB Staked
LARGE SHRUBS					
To	40	Thuja occidentalis clumps	White Cedar clumps	175cm ht.	2-3 per clump, 0.6m o.c.
ToF	15	Thuja occidentalis 'Fastigiata'	Pyramid Cedar	175cm ht.	Potted, 0.75m o.c.
SHRUBS					
Cr	295	Cornus racemosa	Gray Dogwood	50cm ht.	spacing 1.25m o.c.
Po	250	Physocarpus opulifolius	Ninebark	50cm ht.	spacing 1.2m o.c.
RI	175	Rhus typhina	Staghorn Sumac	80 cm ht.	spacing 1.5m o.c.
SbC	280	Spiraea bumalda 'Coccinea'	Dwarf Red Spirea	50cm ht.	spacing 0.9m o.c.
SnH	230	Spiraea nipponica 'Halward's Silver'	Halward's Silver Spirea	50cm ht.	spacing 0.9m o.c.
Vd	70	Viburnum dentatum	Arrowwood	60 cm ht.	spacing 1.5m o.c.
Vi	10	Viburnum lentago	Nannyberry	80 cm ht.	spacing 2.0m o.c.
PERENNIALS*					
PvA	30%	Panicum virgatum 'Heavy Metal'	Heavy Metal Switch Grass	150cm pcl	Heavy 2 fan division, 80cm o.c.
239	30%	Miscanthus sinensis 'Purpureus'	Purpleleaf Eulalia Grass	150cm pcl	Heavy 2 fan division, 60cm o.c.
	40%	Calamagrostis acutifolia 'Karl Foster'	Karl Foster Feather Reed Grass	150cm pcl	Heavy 2 fan division, 90cm o.c.
PvB	40%	Hemerocallis (mid height, gold, reds)	Daylily varieties	150cm pcl	Heavy 2 fan division, 60cm o.c.
372	30%	Iris siberica (purples)	Siberian Iris varieties	150cm pcl	Heavy 2 fan division, 75cm o.c.
	30%	Echinacea purpurea	Purple Coneflower	150cm pcl	Heavy 2 fan division, 60cm o.c.

* ENSURE NO VARIETIES ARE INVASIVE AND/OR AGGRESSIVE SPREADERS.

**Red Maple & Common Hackberry ARE TO BE PLANTED IN THE SPRING.

project
COMMERCIAL DEVELOPMENT
HAZELDEAN ROAD @ 20 CEDAROW ROAD



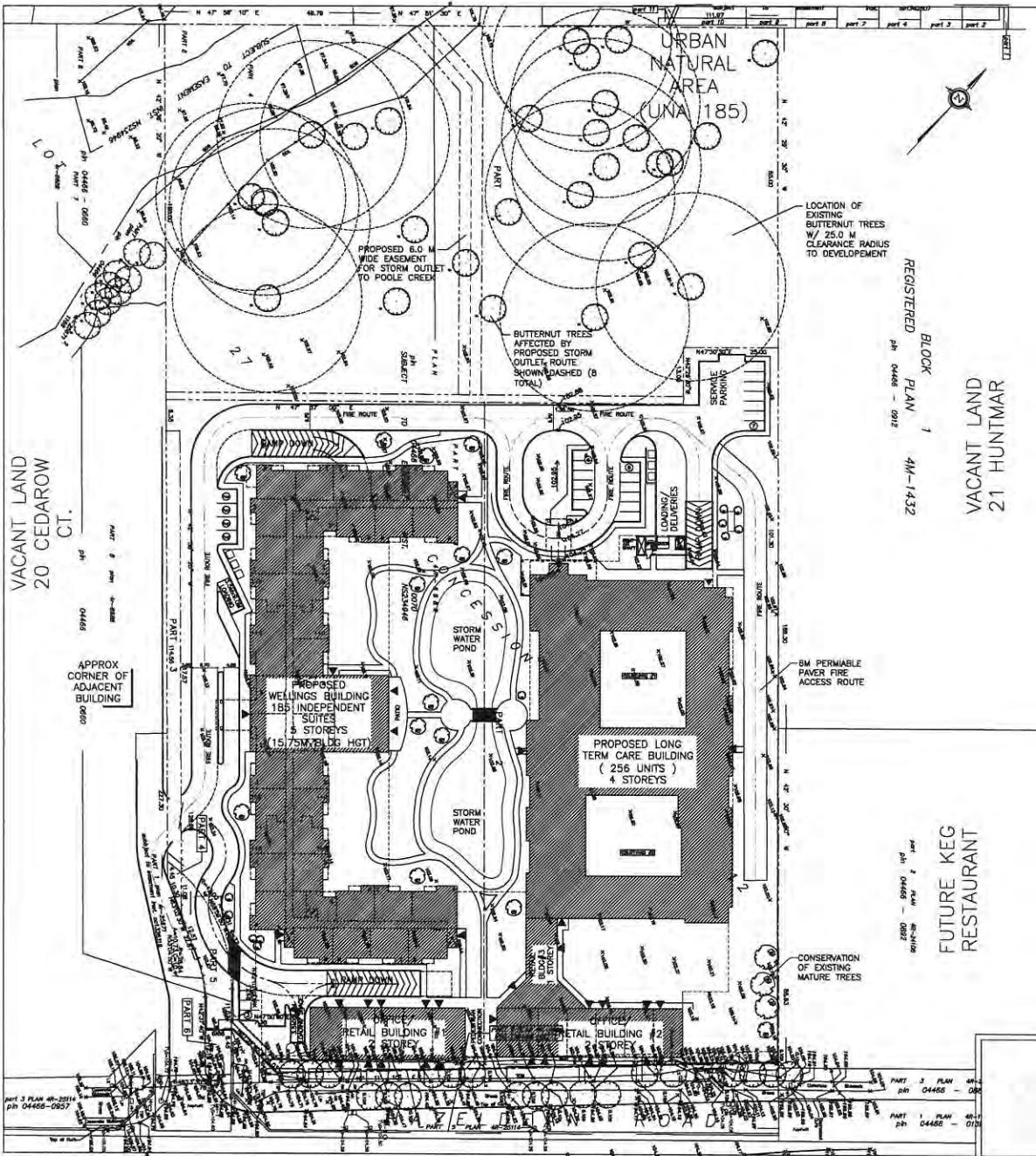
110 - 1750 Centennial Crescent, Ottawa, ON K2C 2B5
Tel: (613) 234-1661 Fax: (613) 234-1131 E-mail: info@dala.ca

drawing
PROPOSED BUTTERNUT TREES
TRANSPLANT LOCATION

scale 1:400	date Jun. 2011	project no. 09-002	dwg. no. SK-L3
drawn by M. Malkov	checked by M. Ruhland	revision no. 1	



DOF-12-09-0060



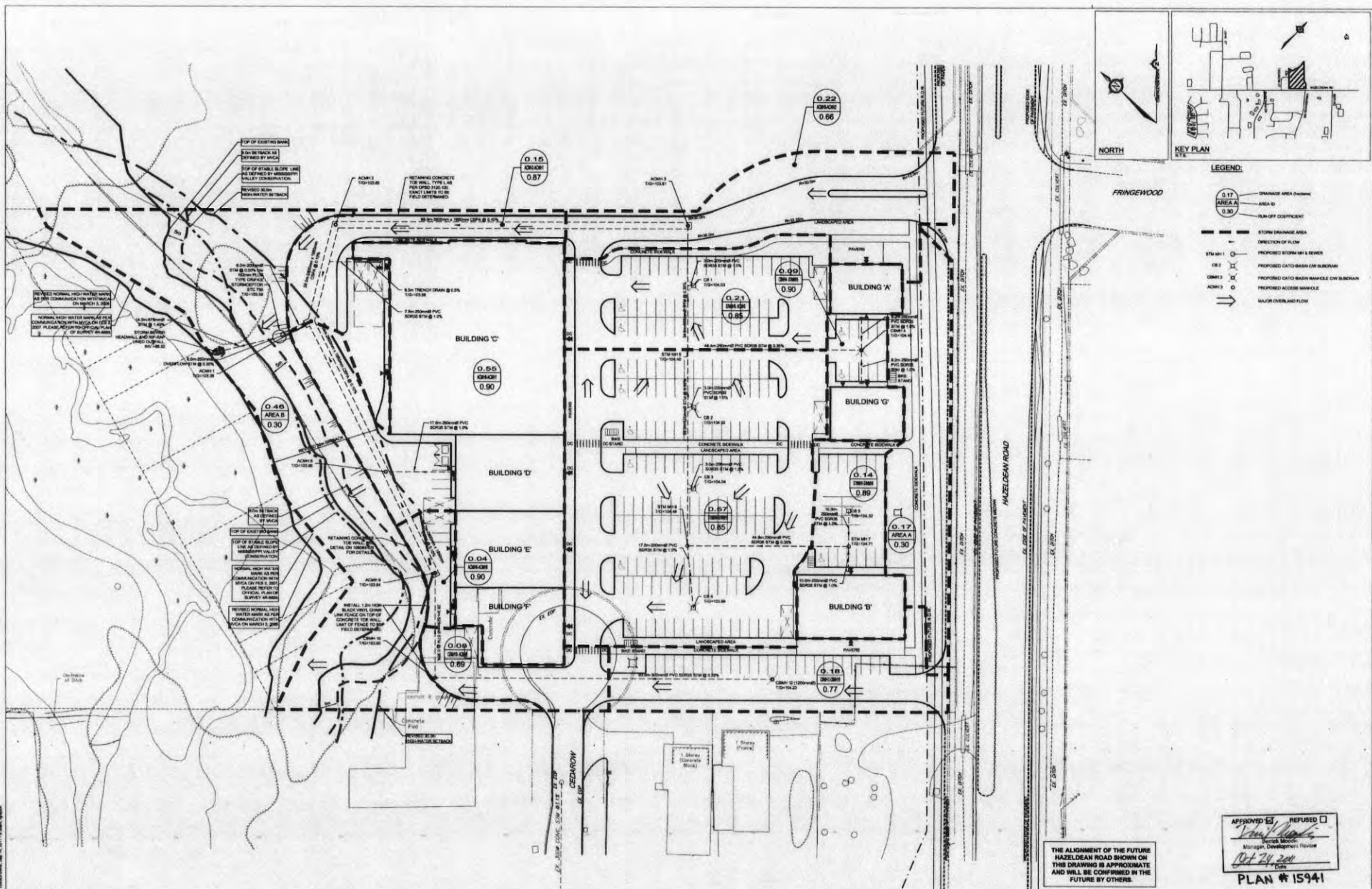
Wellings

NORTH AMERICAN CORPORATION
RETAIL DEVELOPMENT

ZONING MATRIX		
AM9 ZONE	REQUIRED	PROVIDED
LOT AREA	NO MIN.	28 114m ²
LOT WIDTH	NO MIN.	134.09m
BLDG WALLS WITHIN 3M FRONT LOT LINE	30 % MIN.	53.25 %
REAR YARD		
INT. SIDE YD	7.5 M MIN.	7.5m
	7.5M (ABUTTING RES.)	N.A.
CORNER SIDE YARD	NO MIN (OTHER)	3.0m
BLDG HEIGHT	3.0 M	3.0m
	11M (< 20M OF RES.)	16m
FLOOR INDEX	15 M (OTHER CASES)	15m
	3.5max(80% PARKING U/G)	
LANDSCAPE BUFFER	2max (OTHER CASES)	1.1
	-3M (ABUTTING RES.)	N.A.
	-5M (REAR YD ABUTTING NON RES)	5m.
PARKING (0.25 PER UNIT+ 0.2 VISITOR)	-3 M MIN. (OTHER)	3m.
	335 SPACES	335 SPACES
BICYCLE PARKING (0.25 PER UNIT)	441 X .25 = 111	111
LOADING SPACE	N/A (RES.)	
PARKING LOT LANDSCAPE AREA	15% MIN.	U/G PRKNG

REVISIONS	
1. ISSUED FOR REVIEW	02/15/15
2. ISSUED FOR REVIEW	NOV/15/15
3. ISSUED FOR REVIEW	DEC/1/15
4. ISSUED FOR REVIEW	DEC/1/15
5. ISSUED FOR REVIEW	DEC/1/15
6. ISSUED FOR REVIEW	JAN/15/16
7. ISSUED FOR REVIEW	JAN/15/16
8.	
9.	
10.	

PROJECT: WELLINGS OF STITTSVILLE SENIORS LIVING AND EXTENDICARE L.T.C. STITTSVILLE 5731 HAZELDEAN RD, STITTSVILLE	DATE: NOV. 2015	DRAWING NO. A1
	SCALE: NTS	
DRAWN BY: CONCEPTUAL SITE PLAN	PROJECT NO.: 1405	



NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS,
WATERMANS, SEWERS AND OTHER
UNDERGROUND AND OVERGROUND UTILITIES AND
STRUCTURES IS NOT NECESSARILY SHOWN ON
THE CONTRACT DRAWINGS, AND WHERE SHOWN,
THE ACCURACY OF THE POSITION OF SUCH
UTILITIES AND STRUCTURES IS NOT GUARANTEED.
BEFORE STARTING WORK, DETERMINE THE EXACT
LOCATION OF ALL SUCH UTILITIES AND
STRUCTURES AND ASSUME ALL LIABILITY FOR
DAMAGE TO THEM.

NO.	REVISION	DATE	BY
1	PREPARED FOR SITE PLAN APPROVAL	APR 12/11	MP
2	REVISED FOR SITE PLAN APPROVAL	APR 12/11	MP
3	REVISED FOR SITE PLAN APPROVAL	APR 12/11	MP
4	REVISED FOR CITY APPROVAL	APR 12/11	MP
5	REVISED FOR SITE PLAN APPROVAL	APR 12/11	MP

SCALE	FOR REVIEW ONLY
1" = 100'	DCN
1" = 200'	MP
1" = 400'	CV
1" = 800'	MP
1" = 1600'	RSC

THE ALIGNMENT OF THE FUTURE
HAZLEWOOD ROAD SHOWN ON
THIS DRAWING IS APPROXIMATE
AND WILL BE CONFIRMED IN THE
FUTURE BY OTHERS.

APPROVED ☒ REFUSED ☐

[Signature]

Manager, Development Review

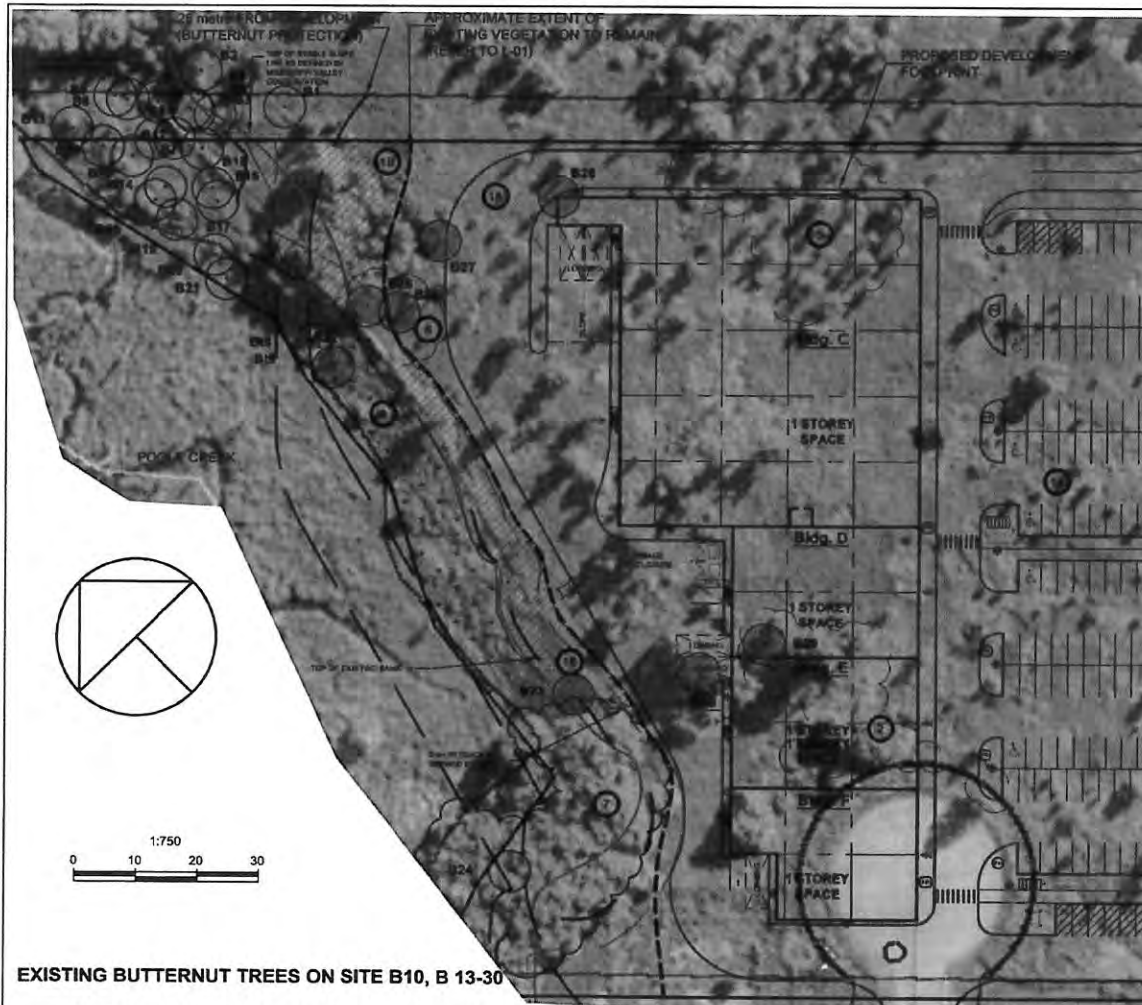
Oct 24 2011

PLAN #15941

LOCATION
CITY OF OTTAWA
20 CEDARROW COURT

DRAWING NAME
STORMWATER
MANAGEMENT PLAN

DN-12-09-0008



EXISTING BUTTERNUT TREES ON SITE B10, B13-30

TREE PROTECTION DURING ALL PHASES OF CONSTRUCTION. THE BUTTERNUT TREE IS PROTECTED UNDER THE ENDANGERED SPECIES ACT (ESA). TRANSPLANTING OF BUTTERNUT IS REGULATED BY THE MNR. EXISTING BUTTERNUT ON SITE HAS BEEN REVIEWED BY MNR. PERMIT FOR TRANSPLANTING VIABLE BUTTERNUT WITHIN 25 METRE OF PROPOSED DEVELOPMENT IS BEING APPLIED FOR. B22, B23, B25-30 ARE TO BE TRANSPLANTED ON SITE, AS PER ESA ASSOCIATED REGULATIONS. B10, B13-21, B24 ARE TO REMAIN AND BE PROTECTED.

BUTTERNUT ON SITE AND ON ADJACENT SITES, AS NOTED BY Rose Fleguel, Certified Butternut Health Assessor

BUTTERNUT TO BE TRANSPLANTED ON SITE:

- #22 - SEEDLING
- #23 - SEEDLING
- #25 - CALIPER SIZE, MOVE BY TREE SPADE
- #26 - SEEDLING
- #27 - SEEDLING
- #28 - SEEDLING
- #29 - SEEDLING
- #30 - SEEDLING

REMAINDER OF BUTTERNUT TO BE RETAINED

EXISTING VEGETATION

THE MAJORITY OF THE SITE CONSISTS OF OLD MEADOW WITH PIONEERING SPECIES ESTABLISHING. VEGETATION TYPES ARE BROKEN DOWN AS FOLLOWS:

.1 OPEN MEADOW - VEGETATION CONSISTS OF GRASSES WITH WOODY SPECIES ESTABLISHING AND CONSISTING PREDOMINANTLY OF ASH, GLOSSY BUCKTHORN AND SUMAC WITH POCKETS OF RED MAPLE, ELM, HAWTHORN, POPLAR, DOGWOOD. SIZE RANGING FROM 50 - 200MM DIAMETER FOR TREE SPECIES.

1A - AREA TO BE REMOVED.

1B - APPROXIMATE AREA TO BE REMAIN.

.6 MATURE MANITOBA MAPLE COLLAPSED ALONG TOP OF BANK NEAR SIDE OF PROPERTY. PARTIAL OR ENTIRE REMOVAL DUE TO TRANSPLANTING OF BUTTERNUT.

.9 CREEK EMBANKMENT CONSISTS MAINLY OF GRASSES WITH HAWTHORN AND GRAPE VINES ALONG FARMER'S FENCE. TO REMAIN.

REFER ALSO TO EXISTING VEGETATION REPORT DATED MARCH 24, 2009.

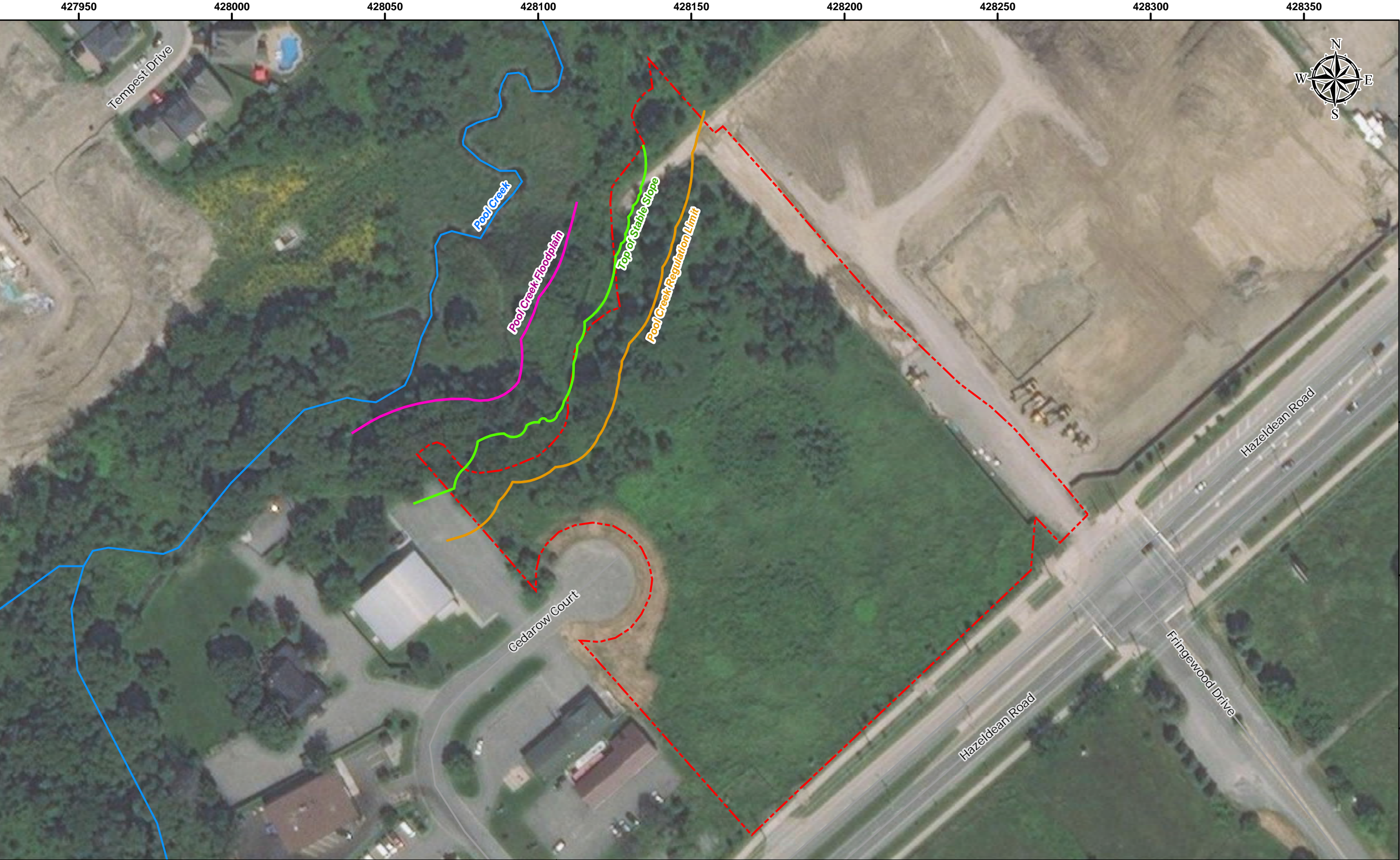
project
COMMERCIAL DEVELOPMENT
HAZELDEAN ROAD @ 20 CEDAROW ROAD


DALA
DOUGLAS ASSOCIATES
Landscape Architects Ltd
112 - 1750 Conquest Court, Oakville, ON L6M 3B5
Tel: (905) 236-6766 Fax: (905) 236-1171 E-mail: dala@progress.ca

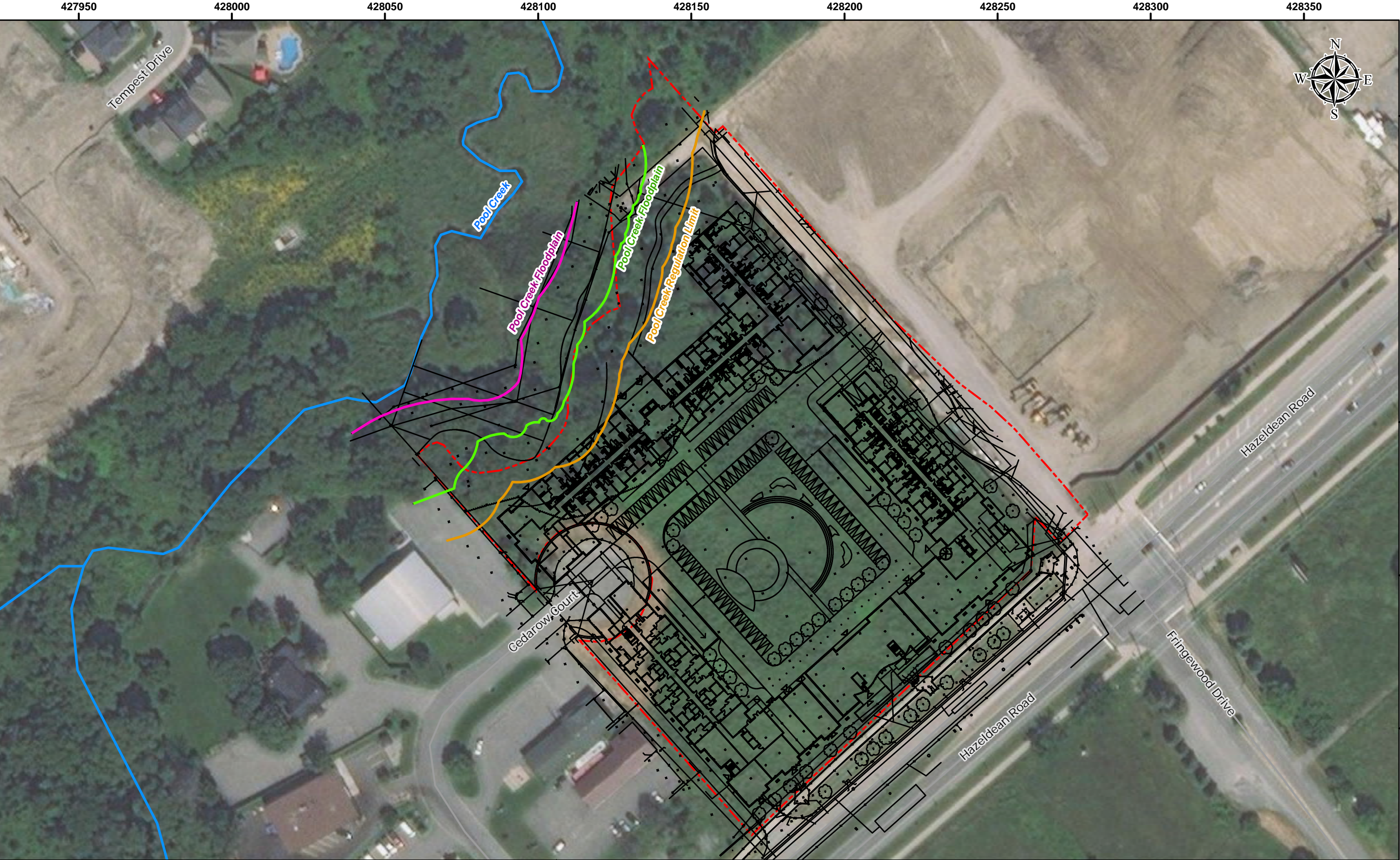
drawing
EXISTING BUTTERNUT INVENTORY


scale 1:750	date Jun. 2011	project no. 09-002	dwg. no. SK-L1
drawn by M. Malkov	checked by M. Ruhland	revision no. 1	

APPENDIX G
SITE PLAN



	PROJECT NAME:	20 CEDAROW COURT, STITTSVILLE ENVIRONMENTAL IMPACT STUDY	PROJECT NO.	247248	LEGEND <div><div><div></div></div>Approximate Site Boundary</div> <div><div></div></div> Watercourse
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	PROJECT NAME:	20 CEDAROW COURT, STITTSVILLE ENVIRONMENTAL IMPACT STUDY	PROJECT NO.	247248	LEGEND <div><div><div></div></div>Approximate Site Boundary</div> <div><div></div></div> Watercourse
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