University of Ottawa

Environmental Impact Statement with Tree Conservation Report

Proposed Site Redevelopment – 200 Lees Avenue, Ottawa, Ontario

CIMA+ file number: A001049-080
17 September 2020 – Review 00

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Proposed Site Redevelopment – 200 Lees Avenue, Ottawa, Ontario

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1. Introduction

CIMA+, in collaboration with Geosyntec Consultants International, Inc (Geosyntec), was retained by the *University of Ottawa* (uOttawa) to complete an Environmental Impact Statement (EIS) with Tree Conservation Report (TCR) report. The purpose of the assessment was to support a Site Plan Application to the City of Ottawa for the redevelopment of a portion of their property at 200 Lees Avenue Campus in Ottawa, Ontario, Canada.

1.1 Property Identification

The property is located on the uOttawa campus at 200 Lees Ave in Ottawa, Ontario, Canada. The discrete legal and property description in formation follows in the **Table** below. This property is irregularly shaped and has an approximate surface area of 66,100 m^2.

Table 1: Property Information

Owner	University of Ottawa
Municipal Address	200 Lees Avenue
Legal Description	CON D RF PT LOT G RP4R 299; PARTS 6, 9 &10 LESS 5R 5009; PARTS 1 to 8 LESS 5R 5015; PARTS 1&2
Property Information Numbers (PIN)	042030732 and 042030731
Land Use Designation/Zoning	Major Urban Facility – University TD2 (2077) TD3 (2029) O1H (2088)

1.2 Project Area

The project area is defined as the area where changes or disturbances will occur related to the project (e.g. construction, operation and maintenance) hereinafter referred to as the "Site". The Site consists of a portion of the 200 Lees Avenue property and has an approximate surface area of 22,000 m^2. The Site is bounded by the Rideau River to the south, Highway 417 to the north, the Transitway to the west, and the remainder of the property to the east (Building E, Building A, and the football field). Most of the Site is occupied by three (3) buildings (Building B, C, and D). Next to the buildings is a storage yard (south of Building B), parking lots to the north and west, and landscaping in much of the remaining open space. The "Study Area" consists of the adjacent (i.e. within 120 meters (m)) land around the perimeter of the Site.

The adjacent lands consist of the following:

- North: North of the overflow parking and Highway 417 is an Enbridge gas-line monitoring substation. Northeast is the City work yard (City of Ottawa Roadway Division);
- South: Rideau River;
- East: Open-air stadium with Rideau River beyond; and
- West: Rail Line with Residential Apartments beyond.

The Site and the features described above are presented on Figure 1 provided in **Appendix A**.

1.3 Existing and Past Land Use

The 200 Lees Avenue campus currently facilitates both administrative and academic services. Current occupants include the Faculty of Health Sciences (FHS), the library, the Faculty of Engineering, the Faculty of Arts, and Sports Services. The campus was originally developed in the early 1960's for Algonquin College, and was subsequently transferred to the University of Ottawa. Most of the main campus construction was completed in 1964, and included Buildings A to D, inclusive. The construction of Building E began and ceased with its completion in 1979; a second level was later added to Building C in 1993 (**CIMA+**, 2020).

The Site was formerly a municipal landfill (UR-12) from 1906 to 1947, including a railway yard and an incinerator. Adjacent to the site was a former industrial area to the north that consisted of a former coal gasification plant.

A review of available air photo imagery from GeoOttawa web mapping application indicates that the study area has been in its current configuration since 1965. The football field and associated facility at the east side of the property was constructed between 2011 and 2014 (City of Ottawa, 2020).

The Site is zoned TD3 (2029) and 01H (2088) – parks and open space zone for the portion along the Rideau River (City of Ottawa, 2017).

1.4 Purpose

During pre-consultation with the City of Ottawa (City) regarding the Site plan application they identified the need to complete an EIS with TCR report because the development is within an Identified Natural Heritage System Feature as per Schedule L1 of the City's Official Plan (City of Ottawa, 2015). The City identified the following specific concerns:

+ Proximity of the development to the Rideau River;
+ Potential for Species at Risk (SAR) to be present (i.e. Blanding and Snapping Turtles);
+ Tree health and canopy cover in final design; and
+ Design features to consider birds that have potential to inhabit and pass through the Site.

The primary objective of the EIS is to identify and describe valued ecosystem components which may be present on the Site or adjacent. In order to identify and assess whether the proposed development will result in potential impacts to the ecological significant components and propose measures to avoid or mitigate impacts so that the development can proceed. The primary objective of the TCR portion of the report is to identify the tree species on Site and their current health conditions and provide mitigation to retain mature trees or compensate for their loss.

This EIS with TCR Report has been prepared to meet the requirement of the City of Ottawa's EIS Guidelines (City of Ottawa, 2015) and the TCR by-law (City of Ottawa, 2019).

2. Description of Proposed Project

The University has proposed the demolition of Buildings B, C, and D and construction of a new "C" shaped building on Site. The most recent preliminary design by IBI Group (August 14, 2020) is provided in **Appendix B**.

The new multi-storey buildings are anticipated to be a slab-on-grade structure and will be located within a portion of the footprints of the existing B, C and D buildings. The southern portion of the new building would begin north of the top of slope/river setback line and north of the current path flowing the river parallel. **CIMA+** understands that activities would occur to demolish the current building including building wrecking, grading, laydown and transit areas, etc. Also, that construction and building activities would be confined to a buildable area which does not include the treed slope leading down to the Rideau River. The design also includes sustainable considerations including, landscaping, energy efficient considerations, art, etc. Once construction is complete, the site will continue to operate as a university campus.

3. Methods for Data Gathering and Analysis

The Site and adjacent natural heritage features were examined and analyzed by the review of available information from desktop research, consultation with the applicable authorities and on-Site ecological surveys.

3.1 Background Information

The following publicly available sources were reviewed and analyzed for Site specific applicable information as part of the desktop research process:

3.1.1 Federal Sources

+ Natural Resources Canada (NRC) Topographic Map 031G05 (NRC, 2020).

3.1.2 Provincial Sources

+ Geographic information from Land Information Ontario (LIO, 2020);
+ The Ministry of Natural Resources and Forestry's (MNRF);
+ Natural Heritage Information Center (NHIC) database – search completed July 6th, 2020 (NHIC, 2020);
+ Ecosystems of Ontario, Part 1 Ecozones and Ecoregions (MNRF, 2009);
+ Ecological Land Classification for Southern Ontario (MNRF, 1998);
+ Significant Wildlife Habitat Technical Guide (MNRF, 2000);
+ The Rideau Valley Conservation Authority Fish, wildlife and species at risk data records (RVCA, 2020);
+ Ontario Geological Survey Map MM5513 (OGS, 2010).

3.1.3 Municipal Sources

- Official Plan (City of Ottawa, 2017);
- Aerial/Satellite Imagery, property, zoning, and land use information (City of Ottawa, 2020);
- Environmental Impact Statement Guidelines (City of Ottawa, 2015);
- Tree Conservation Report Guidelines (City of Ottawa, 2019);
- Community Design Plan - Old Ottawa East Plan (City of Ottawa, 2011a);
- Community Design Plan - Old Ottawa East Secondary Plan (City of Ottawa, 2011b);
- Transit Oriented Plan - Lees (City of Ottawa, 2014).

3.1.4 Other Sources

- Aerial/Satellite imagery (Google Earth Pro, 2020);
- Atlas of Breeding Birds of Ontario (Cadman et al., 2007);
- Herps of Ontario Project (iNaturalist, 2020);
- Atlas of the Mammals of Ontario (Dobbyn, 1994);
- Ontario Butterfly Atlas Online (Toronto Entomologists' Association, 2020);
- Phase One Environmental Site Assessment – Proposed Site Redevelopment 200 Lees Avenue, Ottawa, Ontario – Draft (CIMA+, 2020);
- Species at Risk Screening – 200 Lees Avenue, Ottawa, Ontario (Golder Associates Ltd., 2011);
- Preliminary Geotechnical Study - Proposed New Building, Lees Campus - Report (Golder Associates Ltd., 2020);
- Pre-Application Consultation Meeting (Email, IBI Group, 2020);
- University of Ottawa Campus Master Plan (uOttawa, 2015).

3.2 Consultation

Information requests for the Site and adjacent properties were submitted to the Kemptville MNRF District, the Ontario Ministry of Environment, Conservation and Parks (MECP), the City of Ottawa, and the Rideau Valley Conservation Authority (RVCA) on Tuesday, July 7th, 2020 (**Appendix C**).

3.3 Site Characterization

The on-Site and adjacent characterization of the Natural Heritage features was conducted by qualified **CIMA+** employees (i.e. biologist and technologist) by visual assessment of the terrestrial and aquatic components on and adjacent to the Site during two site visits. On the following page, **Table 2** presents the details of those visits in terms of date, times, survey focus and weather conditions.

Table 2: Site Investigations

Date	Start/End Time	Field Surveys	Weather Conditions	Investigators
2020/07/09	0800 - 0900	• General wildlife • Species at Risk • Vegetation	Temperature: 22*C Wind (Beaufort scale): 2 Cloud cover: 50%	Nicholas Bertrand, biologist Jamieson-Lee Scott, technologist
2020/07/23	1200 - 1400	• Tree Inventory	Temperature: 26*C Wind (Beaufort scale): 1 Cloud cover: 20%	Jamieson-Lee Scott, technologist Vincent Bouchard, junior technician

3.3.1 Wildlife and Species at Risk Survey

Bird, amphibian, reptile, turtle, and mammal data was compiled for the general area. The data was augmented through compilation of wildlife datasets from prior studies conducted in the immediate area. This Site visit included the collection of bird data through incidental observations following the Ontario Breeding Bird Atlas survey protocol (OBBS, 2001).

Identification and general classification of wildlife habitat was identified following the Significant Wildlife Habitat Technical Guide (MNRF, 2000) and supporting documentation. Incidental wildlife and wildlife habitat observations (auditory, visual, tracks, scat, burrows, nests, etc.) were conducted within the Site boundaries on July 9th, 2020 to determine presence/absence. Habitat analysis with the aid of the wildlife SAR Screening Assessment was also conducted. SAR and/or potential habitats on and adjacent to the Site was considered and analyzed in relation to the background information review in comparison with on-Site visual observations.

3.3.2 Vegetation Survey and Tree Inventory

Ecological community characterization was completed in general accordance with the MNRF Ecological Land Classification (ELC) for Southern Ontario (MNRF, 1998).

The tree inventory was completed on July 23rd, 2020 in accordance with the City of Ottawa's *Tree Conservation Report Guidelines* (City of Ottawa, 2020). Measurements were collected for Trees/Shrubs exceeding 10 centimetres (cm) diameter at breast height (DBH) located within the Site boundaries and general canopy coverage of trees was approximate based on direct observation. The information was documented and classified according to species, condition, and health. Tree groups were noted instead of individual trees when several trees of a small and similar size were close together. Locational data was gathered using an EOS Arrow 100 sub-metre GPS receiver and collected via ESRI Survey123 on an Apple iPad.

4. Site Description and Existing Natural Heritage Components

4.1 Background Review and Consultation Results

4.1.1 Significant Woodlands and Urban Natural Features

There are no significant woodlands and Urban Natural Features (UNF's) on or adjacent to the Site (City of Ottawa, 2017). The nearest UNF identified occurs approximately 500 meters southwest, immediately east of Hinks Ln (City of Ottawa, 2017)[2].

4.1.2 Significant Valleylands

There are no significant valleylands present on or adjacent to the Site (City of Ottawa).

4.1.3 Significant Wildlife Habitat

Significant wildlife habitat is not present on or adjacent to the Site (City of Ottawa, 2017).

4.1.4 Significant Wetlands

There are no Provincially Significant Wetlands (PSWs) on or adjacent to the Site. The closest to the Site is the Mer Bleue wetland, approximately 7.5 kilometers (km) east.

4.1.5 Areas of Natural and Scientific Interest

There is no Area of Natural and Scientific Interest on or adjacent to the Site. The closest to the Site is the Greens Creek Conservation Area, approximately 5 km east.

4.1.6 Major Open Spaces

A major open space is located along the southern boundary of the site and is associated with the Rideau River riparian area, approximately corresponding with a 30-meter buffer between the river and adjacent properties. The feature is also associated with slope/soil stability hazards.

4.1.7 Old Ottawa East Secondary Plan

The Old Ottawa East Secondary Plan is a long-term plan covering the design and development of Old Ottawa East which considers land use, urban design, zoning, transportation, existing street conditions, compatibility of new development, and other issues of concern to the local community. The objectives of the plan focus on land use and building profiles with goals for intensification, as well as a greenspace network strategy primarily centered around Main Street. This Plan also provides the legal framework that supports the Old Ottawa East Community Design Plan (City of Ottawa 2011).

4.1.8 Old Ottawa East Community Design Plan

The goal of the Old Ottawa East Community Design Plan is to provide guidance and vision for Old Ottawa East and Main Street. The plan focuses on existing and proposed land use and includes an implementation strategy to achieve its goals. With respect to the project the plan calls for the reinstatement of the natural shoreline along the Rideau River and the maintenance of public access and open spaces for large institutional redevelopment (City of Ottawa 2020).

4.1.9 City of Ottawa Transit Oriented Plan

In anticipation of land development projects in proximity to the Confederation Line light rail stations, Ottawa City Council established areas for the creation of Transit-Oriented Development (TOD) plans. The plans seek to ensure that development in these areas is well-designed and compact neighbourhoods which are supportive of transit.

The Lees Transit Oriented Development Plan Area is inclusive of the Site and includes planning guidance for the improvement of pedestrian, cycling, street networks as well as greenspaces and general land use with general targets for design and intensification (City of Ottawa, 2014).

4.1.10 University of Ottawa Campus Master Plan

The Campus Master Plan describes how the university campus should be structured in terms of land use, open space and connectivity. It identifies priorities and initiatives over a 5 to 10-year timeframe, intended to improve the environment and functionality of the campus.

With respect to the Site, the Plan identifies the proposed land use for the Site as a combination of mixed-use academic and open space and calls for the strategic renewal and redevelopment of the Site. The plan also identifies a goal for the creation of a linear riverfront park with a mostly naturalized edge and multi-use trail and, eventually, a boat launch facility (University of Ottawa, 2015).

4.1.11 Geology and Topography

The overburden consists of a combination of soil and pavement over a layer of multicomponent fill approximately 6 meters below ground surface (mbgs), underlain by silty clay to alluvium. This in turn overlays fine-textured glacial deposits (basal till) – silt and clay, minor sand and gravel extending to the bedrock surface at or near 10 to 13 (mbgs) (**CIMA+**, 2020).

Underlying bedrock geology for the area consists of dark grey to black, fine-grained fissile, thinly bedded shale of the Billings Formation (OGS, 2010).

The site is relatively flat with an elevation of approximately 60 meters above sea level (masl), with the exception of a slope towards the Rideau river on the southern portion of the Site (NRC, 2020) The Site is within the Ottawa Valley Clay Plains region (OGS, 2010). Topographic, Bedrock and Surficial geology mapping is provided (**Appendix A**).

The RVCA responded in consultation (**Appendix C**) that a slope/soil stability hazard was identified on the Site.

4.1.12 Vegetation

The Site and adjacent properties are located within the Lake Simcoe-Rideau Ecoregion (6E), the second most densely populated ecoregion in Ontario. This ecoregion is part of the Mixed wood Plains Ecozone of Southern Ontario, characterized by relatively diverse vegetation (MNRF, 2019).

The Site is dominated by landscaped areas, with planted deciduous trees surrounding the buildings. A dense forested area exists to the south of the Site along the Rideau River. Aerial photography from GeoOttawa shows the Site has approximately 20% tree canopy coverage while the property has approximately 15% canopy coverage (City of Ottawa, 2020). The vegetated riparian buffer continues along the River to the east and west. Adjacent lands to the west and north are more developed (Transitway, Highway 401, etc.) with limited vegetation.

4.1.13 Surface Water and Fish Habitat

The Rideau River adjacent to the Site is defined as a natural heritage feature.

The Site and adjacent properties are within the Lower Rideau River sub-watershed (SWS) and Rideau Falls catchment. The headwaters of the Rideau River originate in Upper Rideau Lake and drains into the Ottawa River at the Rideau Falls (RVCA, 2012). The Site is located outside of the floodplain of the Rideau River (See **Appendix C** map from RVCA) (RVCA, 2020).

The Rideau Falls Catchment provides fish habitat to forty (40) fish species and is generally characterized as a warmwater system with cool water temperatures in limited area. Vegetation along the drainage channel is mainly composed of trees and shrubs (RVCA, 2012).

4.1.14 Species at Risk

The Ontario *Endangered Species Act, 2007* (ESA) prohibits any person from killing or damaging the habitat of species that are listed on the SAR in Ontario list. Some exemptions exist under O.Reg. 242/08 of the Act, related to particular species and activities. If a proposed undertaking is covered under one of the exemptions, a streamlined notification process applies. If none of the exemptions apply, a permit under section 17(1) of the Act is required. Endangered (END) indicates that the species lives in the wild in Ontario but is facing imminent extinction or extirpation. Threatened (THR) indicates the species lives in the wild in Ontario, is not endangered, but is likely to become endangered if steps are not taken to address factors threatening it. Special Concern (SC) means the species lives in the wild in Ontario, is not endangered or threatened, but may become threatened or endangered due to a combination of biological characteristics and identified threats. (MNRF, 2019). Only species which are considered Endangered of Threatened receive specific protections under the ESA.

The background information review resulted in a list of twenty SAR that have been previously documented to have potential to occur within or adjacent to the Site either through City of Ottawa Consultation for this Site Plan process and/or the previous SAR Screening (Golder, 2011). **Table 3** below provides the list of potential SAR including their common and scientific name, status under the federal *Species at Risk Act*, Ontario ESA and species specification information providing a general description of their preferred habitat, based on SAR Registry Species Profiles (federal and provincial), Species Recovery Strategies, City of Ottawa SAR Handbook (as available) (MNRF, 2019).

Table 3: Potential Species at Risk

Common Name Scientific Name Status	Species Specific Information
Western Chorus Frog (Great Lakes – St. Lawrence Population *Pseudacris triseriata* Federal – **THR** Provincial – **Not listed**	The Western Chorus Frog is primarily a terrestrial species. In marshes or wooded wetland areas, it is found on the ground or in low shrubs and grass and very rarely in permanent ponds. The Western Chorus Frog requires both terrestrial and aquatic habitats in proximity and it requires seasonally dry temporary ponds devoid of predators, particularly fish for breeding and tadpole development.

Common Name Scientific Name Status	Species Specific Information
Blanding's Turtle *Emydoidea blandingii* Federal - **THR** Provincial – **THR**	The Blanding's Turtle is a semi-aquatic species. Blanding's Turtles use aquatic habitats for overwintering, mating, foraging, thermoregulation, summer inactivity, and movement. They favour relatively shallow water, soft highly organic substrates, and abundant vegetation such as wetlands, slow flowing rivers and creeks as well as artificial channels. Terrestrial habitat and especially upland forest, is important for many activities of the Blanding's Turtle during the active season, including nesting, thermoregulation, summer inactivity, and movement. Blanding's Turtles can also use or move through human-altered habitats, generally open areas, such as agricultural fields, road shoulders, and quarries.
Eastern Ribbonsnake *Thamnophis sauritus* Federal - **SC** Provincial – **SC**	Eastern Ribbonsnakes are found in a variety of wetland habitats with both flowing and standing water. Eastern Ribbonsnakes spend winter in underground hibernacula where they must avoid freezing and dessication. They may hibernate in well-drained sites or in areas close to water and may even be completely submerged inside their hibernacula. Some Eastern Ribbonsnakes may move considerable distances from water to overwinter in forested areas.
Eastern Milksnake *Lampropeltis triangulum* Federal – **SC** Provincial - **SC**	Eastern Milksnakes are habitat generalists but prefer open habitats, including rock outcrops and meadows. They require suitable microhabitats for specific activities such as egg laying or thermoregulation. Eastern Milksnakes are well known for occupying barns, sheds and houses in rural landscapes. Eastern Milksnake habitat in portions of southwestern Ontario and parts of southwestern Quebec (e.g. urban regions and areas subject to intensive agriculture) is fragmented and consists of relatively small, natural areas.
Northern Map Turtle *Graptemys geographica* Federal - **SC** Provincial – **SC**	The Northern Map Turtle inhabits both lakes and rivers, showing a preference for slow moving currents, muddy bottoms, and abundant aquatic vegetation. These turtles need suitable basking sites and exposure to the sun for at least part of the day.
Snapping Turtle *Chelydra serpentina* Federal*- **(SC)** Provincial - **SC**	Canada's largest freshwater turtle, Snapping Turtles have large black, olive or brown shells. They typically inhabit shallow waters and hide under the soft mud and leaf litter. From early to mid-summer, females travel overland in search of a suitable nesting site, usually gravelly or sandy areas along streams but they will also nest in man-made structures including the gravel shoulders of roads, dams and aggregate pits.

Common Name Scientific Name Status	Species Specific Information
Spotted Turtle *Clemmys guttata* Federal – **END** Provincial – **END**	The Spotted Turtle prefers shallow, slow-moving water of wetlands and ditches. Aquatic habitats are characterized by soft muddy soil, moss cattails, water lilies and water-loving shrubs. Terrestrial habitats at certain times in its annual activity cycle with females nesting on sites with sun exposure. In southern Ontario, they often nest in groups The Spotted Turtle exhibits fidelity to its hibernation and breeding grounds, which are often communal sites.
Eastern Musk Turtle (stinkpot) *Sternotherus odoratus* Federal - **SC** Provincial –**SC**	The Eastern Musk Turtle is a preferentially aquatic species inhabiting waterways and wetlands with slow current and soft bottoms and abundant emergent vegetation. Nesting habitat is variable but must be close to water with direct sunlight. Nesting females dig shallow excavations in soil, decaying vegetation and rotting wood or lay eggs in muskrat lodges, on the open ground or in rock crevices.
Monarch *Danaus plexippus* Federal – **END** Provincial – **SC**	Milkweeds (numerous species) are the sole food plant for Monarch caterpillars. These plants grow predominantly in open and periodically disturbed habitats such as roadsides, fields, wetlands, prairies, and open forests. Milkweeds are often planted outside their native range, and sometimes wayward Monarchs are observed at these patches.
Barn Swallow *Hirundo rustica* Federal - **Not Listed** Provincial – **THR**	Barn Swallows forage in open areas throughout most of the continent, including suburban parks and ball fields, agricultural fields, beaches, and over open water such as lakes, ponds and coastal waters. Breeding habitat must include open areas for foraging, structures or cliffs to build nests on, and a source of mud such as a riverbank to provide the material for building nests.
Bobolink *Dolichonyx oryzivorus* Federal - **THR** Provincial - **THR**	The Bobolink is a medium sized songbird found in grasslands and hayfields. Bobolinks often build their small nests on the ground in dense grasses. Bobolinks spend much of their time out of sight on the ground feeding on insects and seeds.
Chimney Swift *Chaetura pelagica* Federal – **THR** Provincial – **THR**	The Chimney Swift spends most of its time flying and even forages in the air, catching its prey (flying insects) in flight. Primarily found in and around urban settlements where they nest and roost (rest or sleep) in chimneys and other manmade structures. They also tend to stay close to water as this is where the flying insects that they eat congregate.

Common Name Scientific Name Status	Species Specific Information
Common Nighthawk *Chordeiles minor* Federal - **THR** Provincial – **SC**	Common Nighthawk nests on the ground in open land or forest clearings, and on gravel roofs in cities. Foraging nighthawks require open areas with flying insects including over water. Almost any site with shade, camouflage from predators, and an unobstructed flight path for access from the air can be used for roosting.
Eastern Meadowlark *Sturnella magna* Federal - **THR** Provincial - **THR**	Eastern Meadowlarks are most common in native grasslands and prairies, but they also occur in pastures, hayfields, agricultural fields, airports, and other grassy areas.
Least Bittern *Ixobrychus exilis* Federal - **THR** Provincial - **THR**	The Least Bittern breeds in marshes dominated by emergent vegetation surrounded by areas of open water and stands of dense vegetation to support nesting. Nests are built 10 m of open water. Access to clear, open water is essential for the birds to see and ambush their prey from along vegetated margins. The Least bittern prefers large cattail marshes that have relatively stable water levels throughout the nesting period.
Peregrin Falcon *Falco peregrinus* Federal - **SC** Provincial –**Concern SC**	The Peregrine Falcon typically nest alone on cliff ledges or crevices, preferably 50 to 200 m in height, but sometimes on the ledges of tall buildings or bridges, near good foraging areas. Urban peregrines typically have a good year-round supply in the form of pigeons.
Lake Sturgeon (Great Lakes – Upper St. Lawrence population) *Acipenser fulvescens* Federal – **THR** Provincial – **END**	The Lake Sturgeon lives almost exclusively in freshwater lakes and rivers and prefer soft bottoms of mud, sand or gravel typically at depths of 5 to 20 m. They spawn in relatively shallow, fast-flowing water below water falls and dams with gravel and boulders at the bottom. Lake sturgeon are present within the Ottawa and Rideau Rivers.
American Eel *Anguilla rostrate* Federal – **Not listed** Provincial - **END**	In Ontario, American Eels can be found as far inland as Algonquin Park via the Ottawa River and its tributaries. They are night feeders and prey on a variety of organisms including small fishes, molluscs, insects and crustaceans.
American Ginseng *Panax quinquefolius* Federal - **END** Provincial - **END**	In Ontario, American Ginseng typically grows in rich, moist, but well-drained, and relatively mature, deciduous woods dominated by Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*) and American Basswood (*Tilia americana*). It usually grows in deep, nutrient rich soil over limestone or marble bedrock.
Butternut *Juglans cinereal* Federal - **END** Provincial - **END**	Butternut usually grows alone or in small groups in deciduous forests. It prefers moist, well-drained soil and is often found along streams.

END – Endangered **THR** – Threatened **SC** – Special Concern

4.1.15 Consultation Results

The Kemptville District MNRF responded on July 8, 2020, providing the 2018 editions of the *Natural Heritage Information Request Guide*, and *Kemptville District In-Water Timing Guidance* documents. At this time, the MNRF requested that a preliminary screening, site visits, and preliminary report be completed before further correspondence.

The MECP responded on July 8, 2020, providing the 2019 draft *Client's Guide to Preliminary Screening for Species at Risk*. At this time, the MECP requested that a preliminary screening, site visits, and preliminary report be completed before further correspondence.

The RVCA responded on July 9, 2020, providing a copy of RVCA's mapping for the property parcel at 200 Lees Ave to indicate that the property/Site is partially within the RVCA's Regulatory Limit (**Appendix C**).

A follow-up correspondence with an RVCA biologist resulted in obtaining the Rideau River – Rideau Falls catchment report dated from 2012 (RVCA, 2012).

On July 8, 2020, the City of Ottawa responded to the request for information by providing raw data from a fish seining program conducted in 2009 at two (2) sites with 120 m of the Site.

Correspondence is included in **Appendix C**.

4.2 Field Observations

4.2.1 Vegetation

Most of the Site is dominated by landscaped areas surrounding the buildings. Vegetation consists of a mix of deciduous trees, shrubs, and conifers. A densely forested, steeply sloped riparian area exists to the south of the site between the mixed-use pathway and the Rideau River. Canopy coverage was consistent with the findings of the background review (approximately 20%). The rest of the property is vegetated and landscaped in a similar way to the Site and the vegetated riparian buffer continues along the River to the east and west. Adjacent lands to the west and north are more developed (Transitway, Highway 401, etc.) with limited vegetation.

4.2.2 Vegetation Types

Two (2) distinct vegetation communities were identified (Figure 4, **Appendix A**).

Vascular plant species observed within and adjacent to the Site consisted of common horticultural species, invasive weeds, deciduous, and coniferous tree species (**Appendix D**).

Lawn and treed areas (LAT)

Most of the Site is composed of human-made structures or landscaped areas. As a result, the vegetation is primarily composed of lawn and common horticultural species. The dominant species include small-leaved linden (*Tilia cordata*) and silver maple (*Acer saccharinum*). To a lesser degree, Gingko (*Ginkgo biloba*), Freeman's Maple (*Acer* × *freemanii*), and hackberry (*Celtis spp.*). In an area to the northeast of Building C, Staghorn Sumac (*Rhus typhina*) is the dominant species with several individuals tightly clustered.

Fresh-moist Willow lowland deciduous woodland (FOD7-3)

On the southern boundary of the site within a band of riparian vegetation along the Rideau River is a small woodland corresponding to a deciduous forest ecotype with fine silt and clay soil components. The band of dense woodland is dominated by Black Willow (*Salix Nigra*), and Manitoba Maple (*Acer Negundo*) with a dominant undergrowth of the invasive European Buckthorn (*Rhamnus cathartica*). A sizeable portion of the community is composed of invasive species, including Dame's Rocket (*Hesperis matronalis*), Japanese knotweed (*Fallopia japonica*), garlic mustard (*Alliaria petiolate*) and Bull thistle (*Cirisium vulgare*).

4.2.3 Tree Inventory

A full inventory and assessment of the trees located on-Site was completed (**Appendix E**) and photographs were taken. A total of twenty-eight (28) trees were identified: 4 Silver Maple, 6 Small-leaved Liden, 2 American Basswood, 3 Freeman's Maple, 2 Colorado Spruce, 2 Japanese Tree Lilac, 3 Hackberry, 1 unknown Oak, 1 Sugar Maple, 1 unknown Elm, 1 Siberian Elm, 2 Northern Red Oak, 1 White Spruce, 1 Tamarack, and 1 Norway Maple. Four (4) distinctive trees (greater than 50 cm DBH) were identified on site.

Due to the density of the band of riparian trees on the southern boundary of the site, tree groups were noted instead of individual trees; groups consisting of Black Willow, Manitoba Maple, and European Buckthorn were observed.

Twelve (12) tree species which met the assessment criteria (i.e., DBH of 10 cm of greater) were observed within the Site. All assessed trees were between 10 and 91 cm DBH and 5 to 21 meters in height. Data on the location, size, and composition of the trees in the inventory is provided in **Appendix E**.

4.2.4 Surface Water, Watercourse, Waterways

Surface drainage is managed by a system of storm drains located throughout the property parcel that is connected to an outfall located on the western limit of the property (**CIMA+**, 2020). **CIMA+** was informed that the current storm water system has a valid Section 53, Environment Compliance Approval (ECA) and the University also has a Storm Water Management Plan.

There were no visible signs of bank erosion along the Rideau River at the time of the Site visit. Adjacent properties where observed to be consisting of developed/urbanized (Highway, Transitway, etc.) lands with no visible surface water features.

4.2.5 Wildlife

Wildlife habitat observed within and adjacent to the Site was typical of an urban setting and based on field observation common species are expected to be present within these habitat features. No incidental observations of mammal, herpetofauna species or associated tracks were made during the wildlife survey. During the July 8th, 2020 site visit, six (6) bird species were identified by sight and/or sound and are presented in **Table 4**. No bird nests were observed on structures.

Table 4: Bird Species

Common Name	Scientific Name
American Redstart	*Setophaga ruticilla*
American Robin	*Turdus migratorius*
Cedar Waxwing	*Bombycilla cedrorum*
Red Cardinal	*Cardinalis cardinalis*
Song Sparrow	*Cardinalis cardinalis*
European Starling	*Sturnus vulgaris*

Gravel paths and gravel piles observed within and adjacent to the Site could provide basking, foraging and overwintering habitat for reptiles. The observed adjacent watercourse (Rideau River) may provide habitat for amphibian species and migration corridors for turtles. The observed dense deciduous forested band associated with the Rideau River riparian area could provide nesting habitat for migratory birds and small mammals.

4.2.6 Species at Risk

No SAR were identified on or adjacent to the Site during the site visit. There is potential habitat for Butternut within the vegetated riparian area along the Rideau River. Additionally, the structures along the southern edge of the Site may provide Barn Swallow nesting habitat though no birds or evidence of nesting was noted during the Site visit. Turtles have been noted to access the site from the Rideau River though the site does not constitute suitable habitat for these species.

The list of potential SAR identified during the background review (**Table 3**) was assessed based on observations collected during the site visits to determine which SAR have the potential to occur on or adjacent to the Site (**Table 5**).

Table 5: Assessment of Potential SAR

Common Name Scientific Name Status	Species observed on site	Potential Habitat on site	Potential Habitat Adjacent to Site	Comments
Western Chorus Frog (Great Lakes – St. Lawrence Population *Pseudacris triseriata*	No	No	No	
Blanding's Turtle *Emydoidea blandingii*	No	No	Yes	Rideau River
Eastern Ribbonsnake *Thamnophis sauritus*	No	No	No	
Eastern Milksnake *Lampropeltis triangulum*	No	No	No	
Northern Map Turtle *Graptemys geographica*	No	No	Yes	Rideau River

Common Name Scientific Name Status	Species observed on site	Potential Habitat on site	Potential Habitat Adjacent to Site	Comments
Snapping Turtle *Chelydra serpentina*	No	No	Yes	Rideau River
Spotted Turtle *Clemmys guttata*	No	No	Yes	Rideau River
Eastern Musk Turtle (stinkpot) *Sternotherus odoratus*	No	No	Yes	Rideau River
Monarch *Danaus plexippus*	No	No	No	
Barn Swallow *Hirundo rustica*	No	Yes	Yes	Nests were not observed on-Site.
Bobolink *Dolichonyx oryzivorus*	No	No	No	
Chimney Swift *Chaetura pelagica*	No	No	No	
Common Nighthawk *Chordeiles minor*	No	No	No	
Eastern Meadowlark *Sturnella magna*	No	No	No	
Least Bittern *Ixobrychus exilis*	No	No	No	
Peregrin Falcon *Falco peregrinus*	No	No	No	
Lake Sturgeon (Great Lakes – Upper St. Lawrence population) *Acipenser fulvescens*	No	No	Yes	Rideau River.
American Eel *Anguilla rostrate*	No	No	Yes	Rideau River.
American Ginseng *Panax quinquefolius*	No	No		
Butternut *Juglans cinereal*	No	Yes	Yes	FOD 7-3 – Fresh Moist Lowland Deciduous Forest.

5. Potential Impacts, Environmental Constraints and Mitigation Measures

This section analyzes the results of the Site description and valued ecosystem/existing natural heritage components identified from the desktop review (i.e. information and consultation) and field observation. The analysis is to determine where the Project interacts with those components, what environmental constraints are applicable and mitigation measure to eliminate, avoid or mitigate those impacts. Potential direct and indirect impacts, as well as short term and long terms impacts have been considered during demolition of the existing building (i.e. B, C and D), and construction and operation of the new "C' shaped building (**Appendix B**).

The proposed new building is not within the footprint of any valued ecosystem components or the highwater mark including the 30 m setback, although the construction of the building has the potential to cause ecological impacts. As a result, it is anticipated that most impacts will be associated with site preparation, demolition and construction activities.

5.1 Vegetation Cover, Tree Conservation and Invasive Species

Tree and vegetation removal are anticipated to occur on Site to demolish Buildings B, C and D which would consist of construction activities such as grading, provide set up and laydown space, etc within the buildable area (north of top of slope). No impacts or affects are anticipated to vegetation adjacent to Site. The preliminary design shows many trees and vegetation feature to be included in the design. Since the design is preliminary in nature the exact extent of the tree and vegetation removal is unknown. Analysis considered the requirement to clear all vegetation beside the treed slope. The detailed design will consider disturbed areas be revegetated using native, non-invasive trees and shrubs at a 2:1 ratio for vegetation in fair to good condition with the goal of achieving 40% canopy coverage.

The Invasive Species Act administered by the MNRF identifies restrictions intended to prevent and control the spread of invasive species. Species regulated under the Act pose a risk to Ontario's natural environment and are classified into two (2) main classes: prohibited species and restricted species. The classes define prohibitions on the possession, transportation and spread or sale of invasive species within Ontario (MNRF, 2012).

Numerous invasive plant species were identified along the vegetated shoreline of the Rideau River (**Appendix D**). At this time, all work is planned within the previously developed area north of the existing multi-use pathway running along the river and the existing vegetated bank will not be disturbed so it is anticipated that the potential for construction activities to spread invasive species is negligible. Measures to avoid the spread of invasive species will be required if this area will be modified by construction activities.

Mitigation measures to protect trees generally involve erecting an exclusion fence around the critical root zone. The critical root zone is established as being 10 cm from the trunk of a tree for every centimeter of trunk DBH. The critical root zone is therefore calculated as DBH x 10 cm. Typical fencing products used to protect the critical root zone of trees is orange vinyl construction fencing, chain link fencing or other similar fencing that is a minimum of 1.2 m in height. Fencing will be supported at a minimum of 3 m intervals with a material strong enough to support the fence and keep it in place during construction (City of Ottawa, 2020).

In situations where activities must occur within the critical root zone, standard 2 x 4 lumber arranged vertically around the tree trunk and fastened in place with wire can be used to encircle the tree. The intention of encircling the tree with lumber protects the main stem from incidental contact from machinery and/or falling debris (e.g. rocks) (City of Ottawa, 2020).

The following general mitigation measures are proposed to mitigate potential impacts to vegetation which consider the City of Ottawa's Tree Conservation Report Guidelines (City of Ottawa, 2019):

- Material or equipment will not be placed within the critical root zone of the tree;
- Signs, notices or posters will not be attached to any tree;
- The existing grade will not be raised/lowered within the critical root zone without approval;
- The root system, trunk or branches of any tree not designated for removal will be protected from damage;
- Exhaust fumes from equipment will not be directed towards any tree's canopy;
- Vegetation removal will be minimized and clearly delineate on the construction drawings;
- Construction vehicles will have designated access routes from and to the construction area.

5.2 Drainage, Erosion, Sediment Control and Protection of Fish Habitat

The project Site does not encompass any waterways, wetlands or fish habitat; however, it is located adjacent to the Rideau River.

The *Fisheries Act* is administered by the Department of Fisheries and Oceans Canada (DFO) and is intended to provide a framework for the management of threats to fish and fish habitat, including the prevention of pollution, regardless of their attachment to a fishery. Section 34.4 of the Act prohibits the carrying on of any work, undertaking or activity, that results in the death of fish or the "harmful alteration, disruption or destruction of fish habitat" (HADD). Fish habitat is defined as spawning grounds and any other areas frequented by fish, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly to carry out their life processes (Government of Canada, 1985).

It also gives authorities the ability to establish standards and codes of practice for all phases of the project's development cycle (Section 34.2), ensure free passage of fish or fish habitat concerning existing obstructions (Section 34.3), and develop a streamlined process that designates certain undertakings as likely to cause death of fish or HADD (Section 35.1).

The Ontario *Conservation Authorities Act* gives individual conservation authorities the power to regulate development and activities in or adjacent to river or stream valleys, Great Lakes and large inland lakes and shorelines, watercourses, hazardous lands and wetlands. Regulations made under the Act specify the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulations managed by individual Conservation Authorities. These regulations apply to lands within river or stream valleys, flood plains, wetlands, watercourses, lakes, hazardous lands or lands within 120 meters of a PSW or wetlands greater than 2 hectares, or lands within 30 meters of non-provincially significant wetlands. Development or site alteration within these regulated areas may be permitted provided development is conducted in accordance with existing policies (Government of Ontario, 1990).

For this project the RVCA is required to review development and alteration applications under the *Conservation Authorities Act* (O.Reg. 174/06) as the project site is located partially within the regulatory limit of RVCA. As the project also involves development within the regulatory limit, a permit from RVCA will be required. Additionally, a slope/soil stability hazard has been identified on the Site, which will require demonstrating that the proposed development meets geotechnical requirements.

New development is being planned to respect the 30 m setback from the watercourse's floodplain mapping and no new structures will be constructed within this buffer (See **Appendix B** and **C**). There is a small portion of the southwest corner of Building D within the 30 m setback which will be demolished (City of Ottawa, 2020). Construction work associated with the new "C" shaped building is planned within the previously developed area north of the existing multi-use pathway running along the river and the existing vegetated bank will not be disturbed. As a result, it is anticipated that any impacts to water quality and fish habitat in the adjacent Rideau River which may occur will be as a result of site preparation, demolition and construction activities (e.g. accidental spills and malfunctions) which may result in impacts site drainage, erosion and sedimentation if improperly managed. The following mitigation measures are proposed to avoid or mitigate impacts:

- Construction activities will be suspended during periods of heavy rains;
- Machinery will arrive at the site clean and free of leaks;
- If blasting activities are required, they will follow Measures to Avoid Causing harm to Fish and Fish Habitat for explosives;
- An erosion and sediment control plan will be developed by the contractor with the goal of controlling erosion and the movement of sediment laden water offsite;
- The contractor will be responsible to ensure that the erosion and sediment control (ESC) measures chosen are appropriate for the site and are functioning as intended;
- The contractor will maintain and monitor ESC measures, provide the results of monitoring, and ensure adjustments as needed are made on a continuous basis;
- No work will occur in or within 30 m of the water until the appropriate ESC measures have been properly implemented. These will be designed to prevent the movement of suspended sediments and concrete outside of the site preparation and construction work areas;
- Work will stop if sedimentation issues occur outside of work areas until the cause of sedimentation is identified and addressed;
- Dust particles created during concrete crushing, demolition, excavation, stockpiling etc. will be suppressed using the appropriate method (i.e. tarps);
- The existing vegetated buffer will be maintained. If required, any removal of riparian vegetation will be minimized, and removal will be completed using small machinery;
- Where possible, vehicle traffic will be restricted to access roads;
- The sediment fencing will not be removed until the terrestrial vegetation has become re-established;
- If required, wash-out stations for concrete trucks will be indicated by signage, located in an area where all precautions have been taken to contain wastewater and leftover concrete.
- Erosion control structures will be installed. These structures are to be left in place until vegetation is re-established and/or all exposed soils are stabilized;

- There will be no use of herbicides in clearing of vegetation;
- Refueling of equipment and maintenance shall be conducted off slopes and away from water bodies on impermeable pads (drip tray) or buried liners to allow full containment of spills;
- Emergency spill kits will be located on site;
- The contractor crew will be fully trained on the use of clean-up materials in order to minimize impacts of any accidental spills;
- The area will be monitored for leaks and spills. In the unlikely event of a minor spillage, the contractor will halt the activity and corrective measures will be implemented. Any spills will be immediately reported to the MECP Spills Action Centre (1-800-268-6060) and RVCA.

5.3 Wildlife and Migratory Birds

No significant wildlife habitat has been identified on the Site. Many bird species were observed, and the Site provides potential habitat.

The *Migratory Birds Convention Act, 1994* regulates the protection and conservation of migratory birds as populations and individuals and protects their nests. The Act applies to any areas that provide potential for nesting habitat of migratory birds. Section 6 of the Migratory Bird Regulations (2020) prohibits the disturbance, destruction of nests, eggs of migratory birds (Government of Canada, 1994).

Vegetation removal planned as part of the proposed development has the potential to impact migratory birds and their nesting activities unless planned in accordance with the appropriate timing windows.

Construction activities may result in disturbance of birds and wildlife within the project area and on adjacent lands as a result of site preparation and construction activities associated with vegetation clearing, use of heavy machinery, increased human presence and noise and light pollution. Additionally, through consultation, it has been noted that turtles occasionally move from the river up onto the open areas of the site to bask, etc. These areas do not constitute habitat for these species and measures will be taken to limit access for these species during construction.

The following mitigation measures are proposed to avoid or mitigate impacts:

- Removal of natural vegetation will be minimized and clearly delineated on construction drawings;
- Workforce will be educated on potential wildlife which could occur in the vicinity of the work area and measures to avoid wildlife;
- Removal of woody vegetation will not occur during the breeding bird season from April 15th - August 31st inclusive, unless a qualified biologist has searched the Site for nests and concluded that no nests are present, no more than 2 days prior to clearing. If nests are found, a protective buffer around the nest location will be required until such time that the nest is abandoned;
- When possible, work will be completed during daylight hours. If nighttime lights are used, they will be installed to illuminate the work area only to minimize impacts to nighttime activities of wildlife;
- Vehicles and equipment will have the appropriate mufflers installed;
- Vehicle and equipment engine idling will be minimized;

- Construction vehicles will have designated access routes from and to the construction area;
- If an unexpected rare plant or animal species are encountered, construction activities will be halted, and Parks Canada, Environment and Climate Change Canada (ECCC), the Ontario Ministry of Natural Resources and Forestry (MNRF) will be contacted to provide advice on additional mitigation measures or permits which may be required;
- Stockpiled materials will be surrounded by sediment control fencing to prevent nesting by turtles and snakes;
- Existing access roads will be used as much as possible and speed limits will be clearly posted on site access and construction roads to minimize the potential for turtle road mortality.

5.4 Species at Risk

At this time, no SAR or their habitats have been identified within the buildable area on-Site. South of the area on the tree slope there is potential habitat for Butternut Trees and adjacent to the Site. No work will be occurring in these potential habitats and no negative effects on habitat are anticipated. Although there is potential for SAR (i.e. turtles, snakes) to travel through the Site during construction activities and standard wildlife mitigation in Section 5.3 will be implemented. Consultation and possible approvals from the MECP may be required if the presence of these SAR and their habitat are identified during construction activities. The following mitigation measures are proposed to avoid or mitigate impacts:

- Workers will be provided with information on identifying SAR, such as the Ottawa Species at Risk Handbook (OSC, 2014); and
- If a SAR species individual is encountered at the site work will be stopped until the individual either moves off the site or can be relocated by trained personnel.

5.5 Related General Considerations

Construction activities may impact air quality as a result of noise, fugitive dust or vehicle/equipment exhaust. This potential impact could affect all ecological terrestrial and aquatic species and features and water quality within Rideau River. The following mitigation measures are proposed to avoid or mitigate impacts:

- Dust Management Plan will be developed by the contractor prior to construction;
- All equipment and vehicles will be equipped with dust collectors and mufflers as appropriate;
- During concrete removal, tarps will be used to contain airborne dust particles;
- Water will be applied, at a minimum, daily, to all inactive disturbed surface areas. Water will be applied more frequently if required to prevent the visible emissions of fugitive dust;
- Water will be applied to all unpaved roads used for vehicular traffic at a frequency enough to prevent the visible emissions of fugitive dust;
- Clean gravel with low fines content will be chosen as material to top unpaved roads. Unpaved roads will be regularly graded and maintained to avoid wash boarding and rutting that can increase fugitive dust emissions;
- All loads on haul trucks will be covered;

- During very windy conditions, material handling/transfer activity that generates fugitive dust will be avoided or reduced. If it is not possible to reschedule the activity, increased application of water for dust suppression may be used;
- A sprinkler or spray system will be considered for areas requiring frequent wetting;
- Water will be applied to all open stockpiles daily when there is evidence of wind driven fugitive dust;
- Wetted stockpiles will be surrounded with sediment and erosion control measures (i.e. fencing);
- Materials with the potential to generate dust will be sprayed with water 15 minutes prior to handling and/or at points of transfer;
- Disturbed areas will be re-vegetated following a re-vegetation plan which will utilize native shrubs and trees, based on local conditions, to promote the quick re-growth of a natural habitat and minimize fugitive dust.

6. Summary and Recommendations/Conclusions

This EIS with TCR provides an analysis of the potential impacts to the valued ecosystem components that may result from the proposed development of the Site located within 200 Lees Ave. The ecological features and functions identified within and adjacent to the Site which may be impacted by this development include the following:

- Increased potential sediment and erosion into the Rideau River as a result of construction activities;
- Damage or loss of trees during construction and spread of invasive species adjacent to the site;
- The loss of migratory bird nest, eggs and nestling due to tree cutting, vegetation clearing or building demolition activities;
- Temporary disruption to wildlife within and adjacent to Site during construction activities;
- Changes in air quality including of noise, fugitive dust or vehicle/equipment exhaust.

By following the mitigation measures recommended in the EIS the proposed development is not anticipated to result in adverse environmental effects to the natural heritage features identified.

6.1 Study Limitations and Constraints

CIMA+ completed diligent and reasonable research in the conduct of this evaluation, with respect to the recognized laws and standards of practice.

The facts presented in this report are strictly limited to the period of investigation. The conclusions presented in this report are based on the available information and documents, the observations made during the Site visit and the information obtained from communications with various contacts. The interpretation presented in this report is limited to this data.

CIMA+ is not responsible for erroneous conclusions due to voluntary abstention or the non-availability of pertinent information. Any opinion expressed in relation to legal or regulatory conformity is technical and should not be, in any case, considered as legal advice.

7. References

Atlas of Breeding Birds of Ontario, 2001-2005 (2005)

City of Ottawa. (2017). City of Ottawa Official Plan. Retrieved July 20, 2020, from City of Ottawa: http://ottawa.ca/en/city-hall/planning-and-development/official-plan-and-master-plans/official-plan

City of Ottawa. (2020). Retrieved July 2, 2020, from GeoOttawa: http://maps.ottawa.ca/geoottawa/

City of Ottawa. (2015). Environmental Impact Statement Guidelines. Retrieved July 2, 2020, from City of Ottawa: https://documents.ottawa.ca/en/files/environmental-impact-statement-guidelines

City of Ottawa. (2019). Tree Conservation Report Guidelines. Retrieved July 2, 2020, from City of Ottawa: https://ottawa.ca/en/living-ottawa/environment/trees-and-forests/tree-protection

City of Ottawa. (2011). Old Ottawa East Community Design Plan. Retrieved July 2, 2020, from the City of Ottawa: https://ottawa.ca/en/old-ottawa-east-community-design-plan

City of Ottawa. (2020) Old Ottawa East Secondary Plan. Retrieved July 2, 2020 from City of Ottawa: https://ottawa.ca/en/planning-development-and-construction/official-plan-and-master-plans/official-plan/volume-2a-secondary-plans/old-ottawa-east-secondary-plan

City of Ottawa. (2014). Transit-Oriented Development (TOD) PlansLees, Hurdman, Tremblay, St. Laurent, Cyrville and Blair. Retrieved July 2, 2020 from City of Ottawa: https://documents.ottawa.ca/sites/documents/files/documents/tod2_plan_main_en.pdf

Conservation Authorities Act, R.S.O. 1990, c. C.27. Government of Ontario.

Department of Fisheries and Oceans. 2019. Aquatic Species at Risk Mapping. http://www.dfo-mpo.gc.ca/species-especes/fppppp/index-eng.htm.

Dobbyn, J. (1994). Atlas of Mammals of Ontario. Retrieved July 1, 2020, from Longpoint Biosphere: http://longpointbiosphere.com/download/mammals/mammal_atlas-1994.pdf

Endangered Species Act, S.O. (2007). Government of Ontario.

Environment Canada. (2014). Incidental Take of Migratory Birds in Canada.

Environmental Assessment Act, R.S.O. 1990, c. C.16. Government of Ontario.

Golder Associates Ltd. (2011). 200 Lees Avenue, Ottawa, Ontario – Species at Risk Screening.

Google Earth Pro. (2020). Retrieved July 2, 2020

Fisheries Act, 1985. Government of Canada

Invasive Species Act, 2015, S.O. 2015, c. 22 - Bill 37. Government of Ontario.

Lee et. al. (2001). Ecological Land Classification for Southern Ontario: Training Manual. Ontario Ministry of Natural Resources, SCSIS Training Manual TM-01.North Bay: Ontario Ministry of Natural Resources.

Migratory Birds Convention Act, 1994. Government of Canada

Ministry of Natural Resources and Forestry. 2019. The Ecosystems of Ontario – Part 1: ecozones and ecoregions. https://www.ontario.ca/page/ecosystems-ontario-part-1-ecozones-andecoregions

Ministry of Natural Resources and Forestry. (2000). Significant Wildlife Habitat Technical Guide.

Ministry of Natural Resources and Forestry. (2012). Invasive Species Strategic Plan

Ministry of Natural Resources. Natural Heritage Information Centre. (2020). Retrieved July 2, 2020, from: https://www.ontario.ca/page/make-natural-heritage-area-map

Ministry of Natural Resources and Forestry (2019). Species at Risk. Retrieved July 2, 2020 from Ministry of Natural Resources: https://www.ontario.ca/page/species-risk

Ontario Geological Survey. (2020). Ontario Geological Survey Geological Maps and Digital Data Index. Retrieved July 2, 2020, from Ontario Geological Survey: https://data.ontario.ca/dataset/ontario-geological-survey-geological-maps-and-digital-data-index

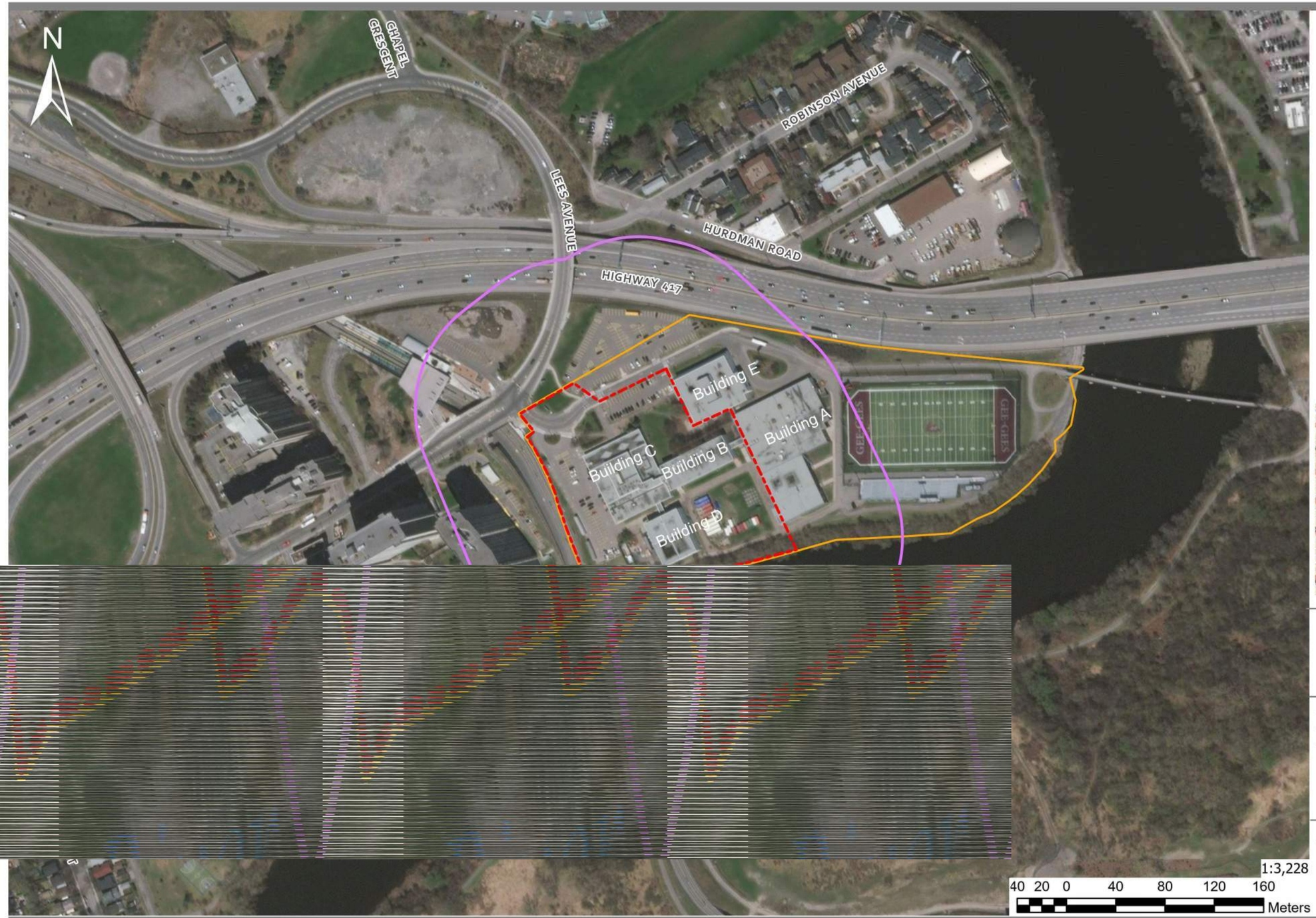
Rideau Valley Conservation Authority. (2012). Rideau River – Rideau Falls Catchment - Lower Rideau River Subwatershed Report 2012. Ottawa.

Toronto Entomologists' Association. (2020). The Ontario Butterfly Atlas Online. Retrieved July 2, 2020, from Ontario Insects: http://www.ontarioinsects.org/atlas_online.htm

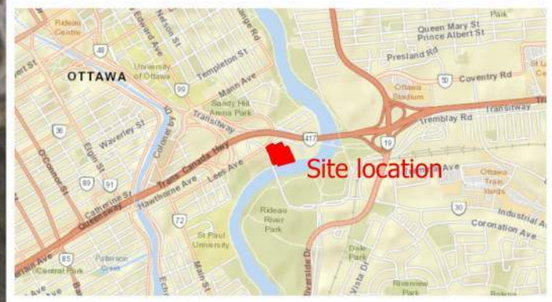
University of Ottawa, (2015). University of Ottawa: Campus Master Plan. Retrieved July 2, 2020 from University of Ottawa: https://www.uottawa.ca/facilities/master-plan.

A

Appendix A
Figures



Site boundary
120 m - Study Area
Property parcel



1:3,228

40 20 0 40 80 120 160

Meters

Spatial Reference
Name: WGS 1984 UTM Zone 18N
PCS: WGS 1984 UTM Zone 18N
GCS: GCS WGS 1984
Datum: WGS 1984

Sources:
- Topo. Plan, Annis, O'Sullivan, Vollebekk Ltd., 2020
- Basemap : Esri, HERE, Garmin, NGA, USGS, NPS, NRCan, GeoEye, Maxar

General Notes:

Dimensions on the plan should be read and not measured.
Any errors or omissions should be reported to CIMA +. The boundaries, areas and title deeds must be verified by a surveyor.

Figure 1 - Site Location Map

Environmental Impact Statement with Tree Conservation Report
200 Lees Avenue, Ottawa, Ontario
University of Ottawa

Ref # : C10-A001049-080-110

Survey by : J. Scott
Figure by : J. Scott
Concept by : J. Scott
Verified by : K. Greer

Revision 00 - - Issued for report - 31 July 2020

Site Boundary

Surficial Geology Type

- 10a: Massive-well laminated
- 12: Older alluvial deposits
- 19: Modern alluvial deposits

Spatial Reference
Name: WGS 1984 UTM Zone 18N
PCS: WGS 1984 UTM Zone 18N
GCS: GCS WGS 1984
Datum: WGS 1984

Sources:
- Terrestrial Survey, 2020
- Ontario Geological Survey 2010. Surficial geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 128 – Revised.
- Basemap : USDA FSA, GeoEye, Maxar, CNES/

General Notes:

Dimensions on the plan should be read and not measured.
Any errors or omissions should be reported to CIMA +. The boundaries, areas and title deeds must be verified by a surveyor.

1:3,228

40 20 0 40 80 120 160 Meters

Figure 2 - Surficial Geology

Environmental Impact Statement with Tree Conservation Report
200 Lees Avenue, Ottawa, Ontario
University of Ottawa

Ref # : C10-A001049-080-110

Survey by : J. Scott
Figure by : J. Scott
Concept by : J. Scott
Verified by : K. Markvorsen

Revision 00 - - Issued for report - 31 July 2020

Site Boundary

Bedrock Geology

55b,Shale, limestone, dolostone, siltstone

Spatial Reference
Name: WGS 1984 UTM Zone 18N
PCS: WGS 1984 UTM Zone 18N
GCS: GCS WGS 1984
Datum: WGS 1984

Sources:
- Terrestrial Survey, 2020
- Ontario Geological Survey 2011. 1:250 000 scale bedrock geology of Ontario; Ontario Geological Survey, Miscellaneous Release–Data 126 Rev 1
- Basemap : USDA FSA, GeoEye, Maxar, CNES/

General Notes:

Dimensions on the plan should be read and not measured. Any errors or omissions should be reported to CIMA +. The boundaries, areas and title deeds must be verified by a surveyor.

1:3,228

40 20 0 40 80 120 160 Meters

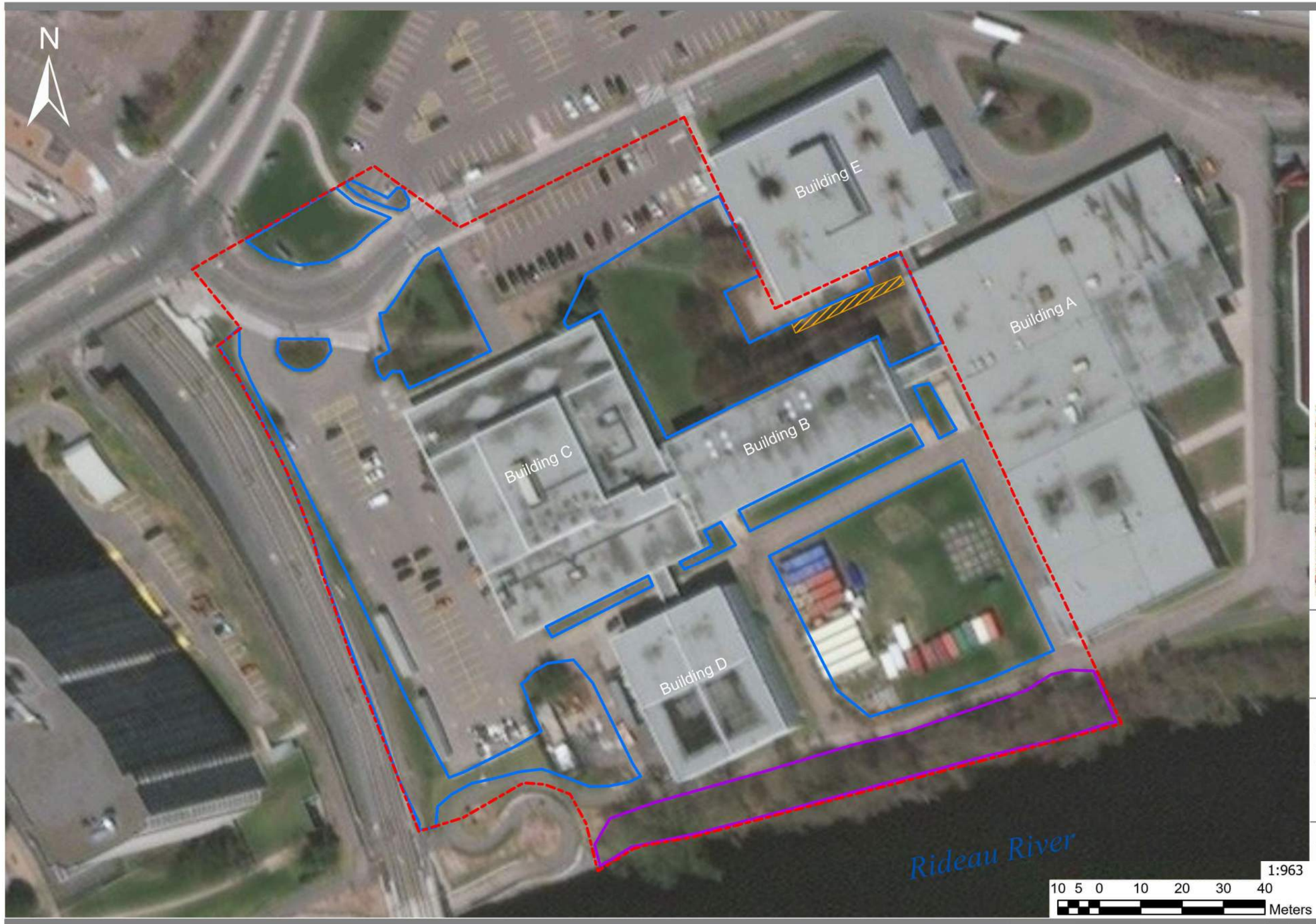
Figure 3 - Bedrock Geology

Environmental Impact Statement with Tree Conservation Report
200 Lees Avenue, Ottawa, Ontario
University of Ottawa

Ref # : C10-A001049-080-110

Survey by : J. Scott
Figure by : J. Scott
Concept by : J. Scott
Verified by : K. Markvorsen

Revision 00 - - Issued for report - 31 July 2020



Site boundary

ELC Communities

- LAT - Lawn and Treed
- FOD 7-3 - Fresh Moist Willow Lowland Deciduous Forest
- Staghorn Sumac (12+ individuals)

Spatial Reference
Name: WGS 1984 UTM Zone 18N
PCS: WGS 1984 UTM Zone 18N
GCS: GCS WGS 1984
Datum: WGS 1984

Sources:
- Terrestrial Survey, 2020
- Topo. Plan, Annis, O'Sullivan, Vollebekk Ltd., 2020
- Basemap : Esri, HERE, Garmin, INCREMENT P, NGA, USGS, NRCan, GeoEye, Maxar

General Notes:

Dimensions on the plan should be read and not measured. Any errors or omissions should be reported to CIMA +. The boundaries, areas and title deeds must be verified by a surveyor.

Figure 4 - Ecological Land Classifcations (ELC)

Environmental Impact Statement with Tree Conservation Report
200 Lees Avenue, Ottawa, Ontario
University of Ottawa

Ref # : C10-A001049-080-110

Survey by : J. Scott
Figure by : J. Scott
Concept by : J. Scott
Verified by : K. Markvorsen

Revision 00 - - Issued for report - 31 July 2020

Ontario

MINISTRY OF NATURAL RESOURCES AND FORESTRY

Make a Topographic Map

Environmental Impact Statement with Tree Conservation Report

Notes:
A001049 - Topographic Map

Legend

- Building as Symbol
- Building to Scale
- Airport
- Heliport \ Hospital Heliport
- Seaplane Base
- Ferry Route
- Trail Head \ Trail
- Railway \ Train Station
- Railway with Bridge
- Railway with Tunnel
- Road (Major → Minor)
- Winter Road
- Road with Bridge
- Road with Tunnel
- Primary, Kings or 400 Series Highway
- Secondary Highway
- Tertiary Highway
- District, County, Regional or Municipal Road
- Toll Highway
- One Way Road
- Road with Permanent Blocked Passage
- Road with Address Ranges
- Hydro Line, Communication Line or Unknown Transmission Line
- Natural Gas Pipeline, Water Pipeline or Unknown Pipeline
- Spot Height
- Index Contour
- Contour
- Wooded Area
- Wetland
- Waterbody
- Waterbody Elevation
- Watercourse
- Falls
- Rapids
- Rapids \ Falls
- Rapids
- Rocks
- Lock Gate
- Dam \ Hydro Wall
- Dam \ Hydro Wall
- Provincial \ State Boundary
- International Boundary
- Upper Tier \ District Municipal Boundary
- Lower Tier \ Single Tier Municipal Boundary
- Lot Line
- Indian Reserve
- Provincial Park
- National Park
- Conservation Reserve
- Military Lands

0 0.3 km

Projection: Web Mercator

N

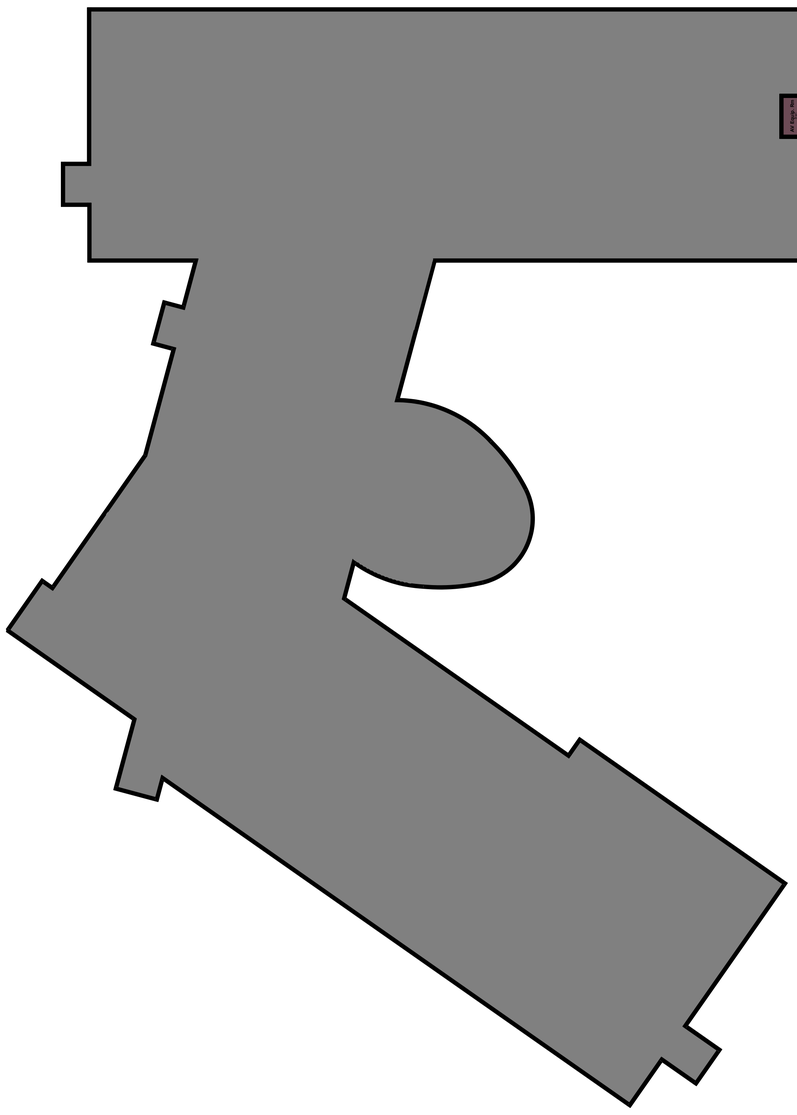
B

Appendix B
Preliminary Design

IN PROGRESS

BLOCK E

BLOCK A



LEGEND

- 3
- Instructional Activity
- Interdisciplinary School of Health Sciences
- School of Human Kinetics
- School of Nursing
- School of Nutrition Sciences
- School of Rehabilitation Sciences
- FHS Collaborative Research Facility
- FHS Administrative and Service Units
- CNFS (External Org)
- Lees Campus Library
- Nurse Practitioner Program
- Information Technology
- Community
- Students Organization
- Circulation Area
- Building Support
- Research Office Space
- Interdisiplinary Faculty Office Space

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200 Lees Campus

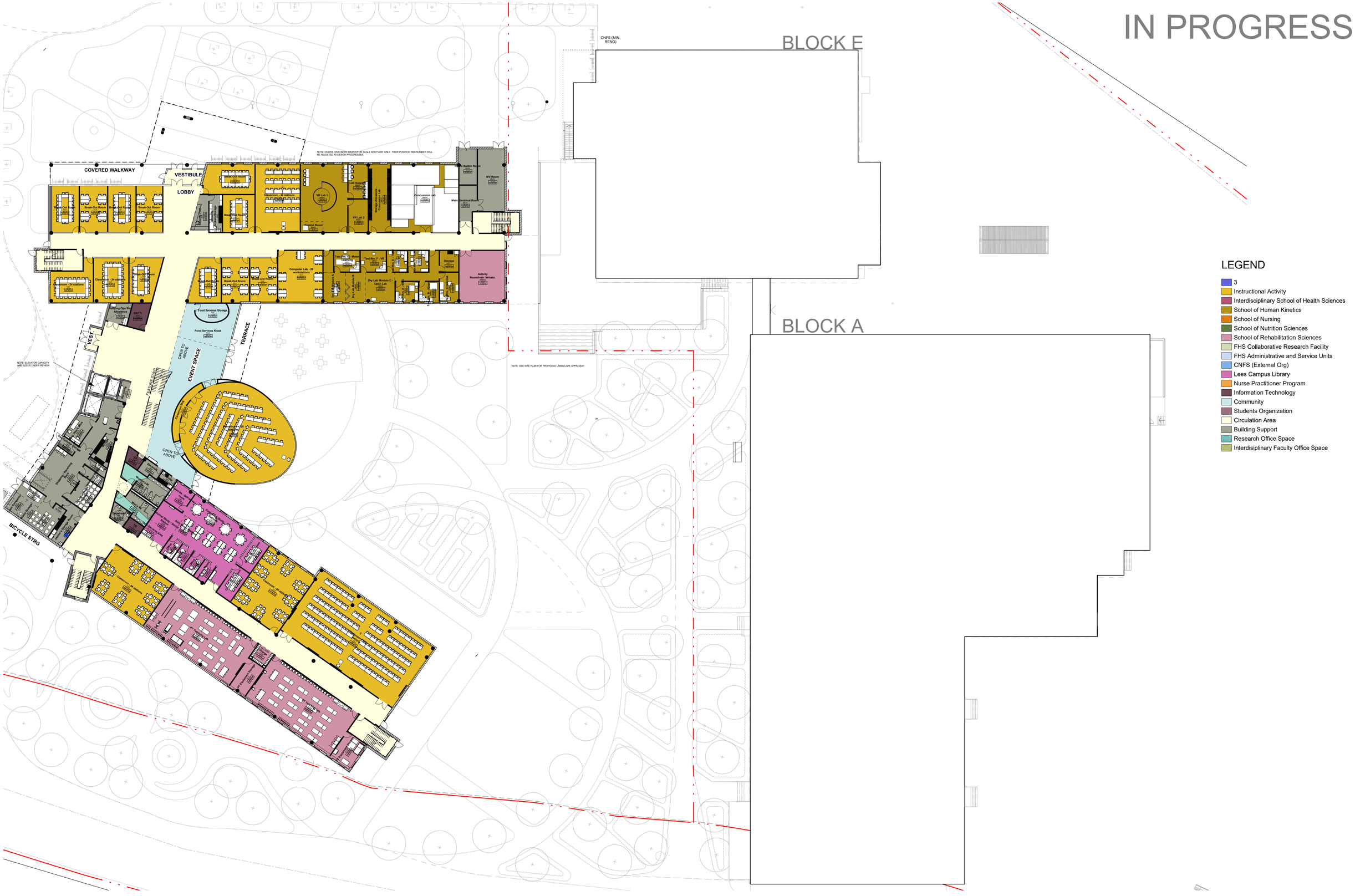
SCALE: 1 : 300

08/14/2020

INDICATIVE DESIGN - Level 0

A00

IN PROGRESS



LEGEND

- 3
- Instructional Activity
- Interdisciplinary School of Health Sciences
- School of Human Kinetics
- School of Nursing
- School of Nutrition Sciences
- School of Rehabilitation Sciences
- FHS Collaborative Research Facility
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SCALE: 1 : 300

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INDICATIVE DESIGN - Level 01

A01

IN PROGRESS

LEGEND

- 3
- Instructional Activity
- Interdisciplinary School of Health Sciences
- School of Human Kinetics
- School of Nursing
- School of Nutrition Sciences
- School of Rehabilitation Sciences
- FHS Collaborative Research Facility
- FHS Administrative and Service Units
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- Students Organization
- Circulation Area
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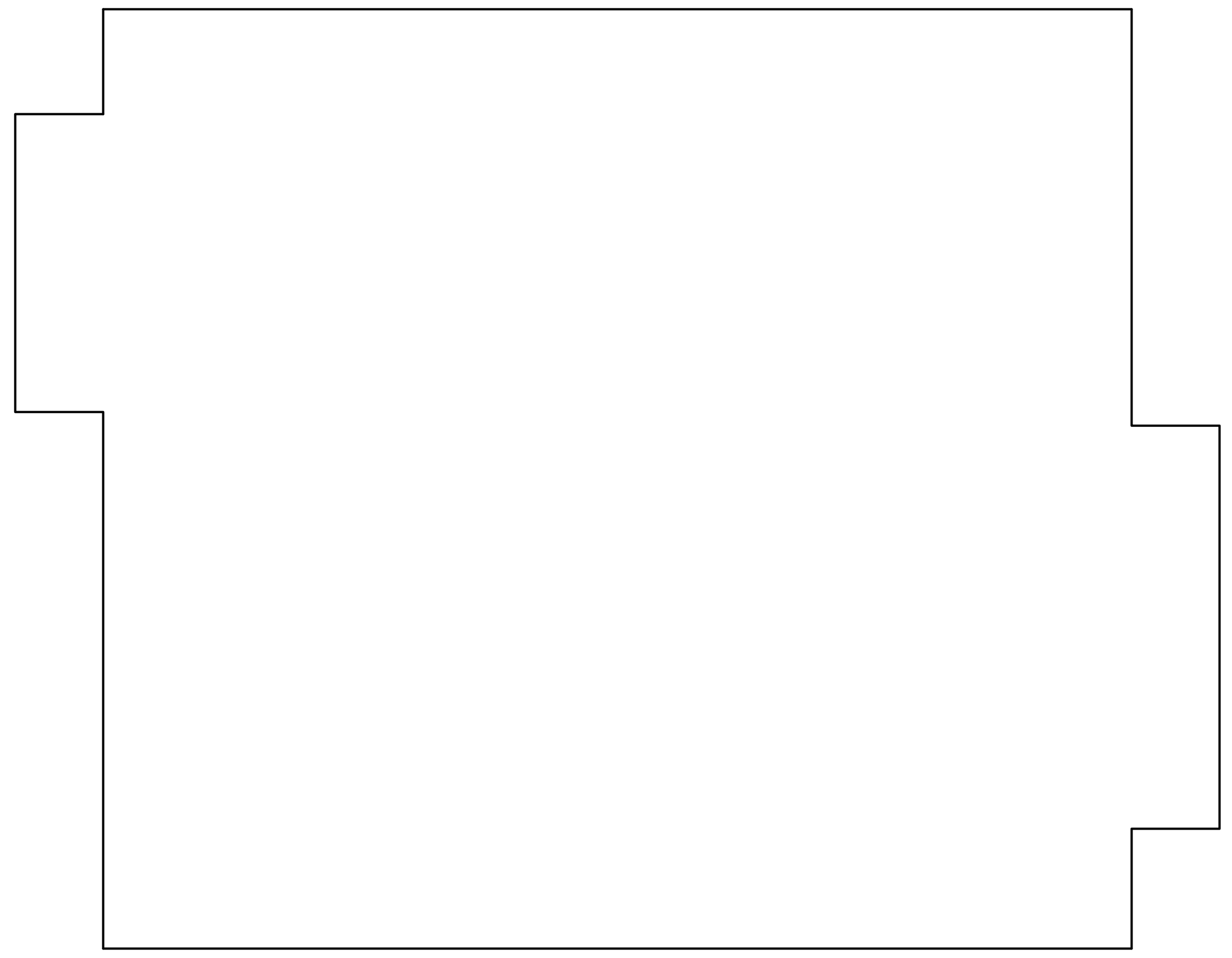

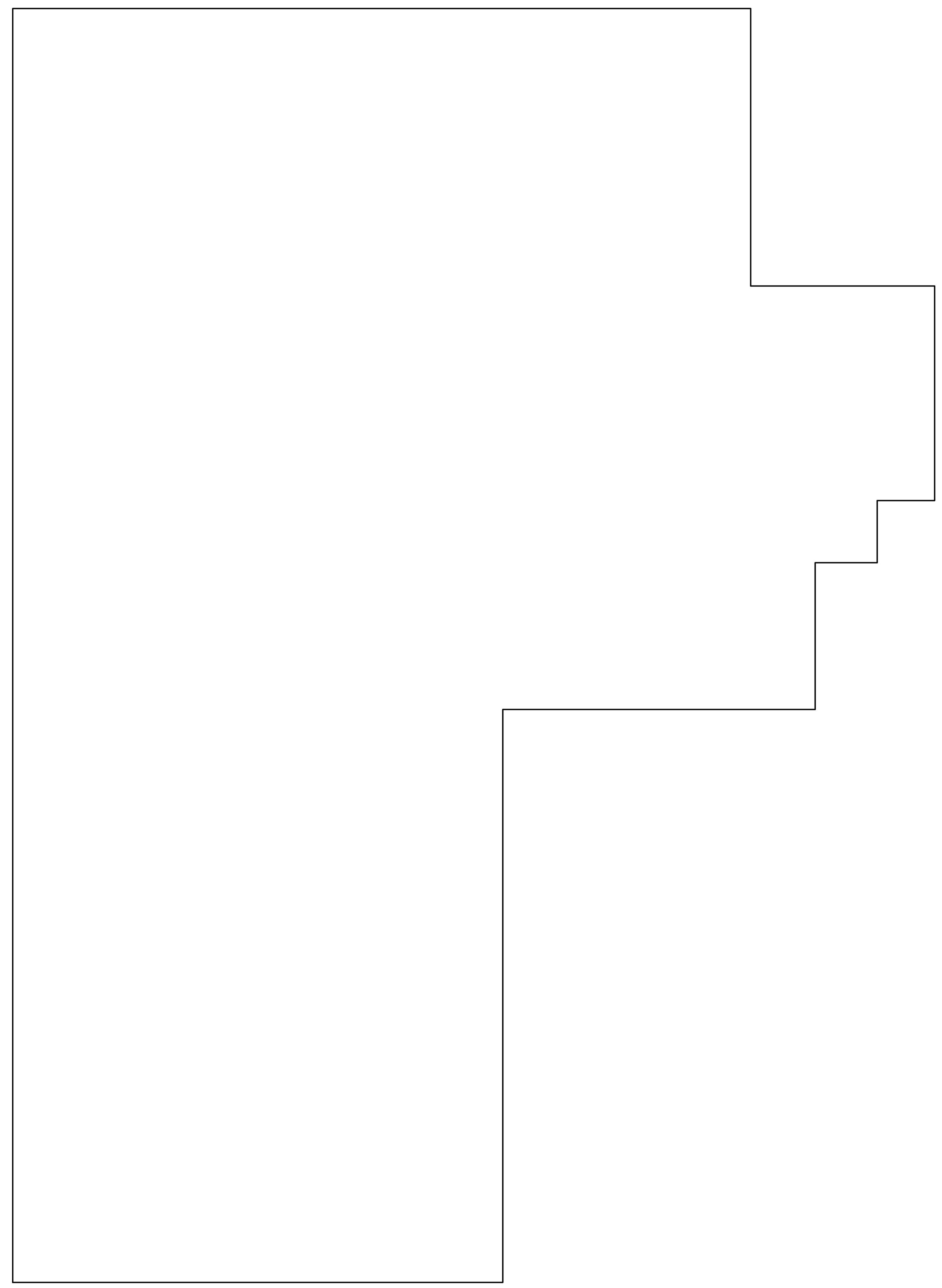

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uOttawa

200 Lees Campus

SCALE: 1 : 300

08/14/2020

INDICATIVE DESIGN - Level 02

A02

IN PROGRESS

LEGEND

- 3
- Instructional Activity
- Interdisciplinary School of Health Sciences
- School of Human Kinetics
- School of Nursing
- School of Nutrition Sciences
- School of Rehabilitation Sciences
- FHS Collaborative Research Facility
- FHS Administrative and Service Units
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- Interdisiplinary Faculty Office Space

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200 Lees Campus

SCALE: 1 : 300

08/14/2020

INDICATIVE DESIGN - Level 03

A03

IN PROGRESS

LEGEND

- 3
- Instructional Activity
- Interdisciplinary School of Health Sciences
- School of Human Kinetics
- School of Nursing
- School of Nutrition Sciences
- School of Rehabilitation Sciences
- FHS Collaborative Research Facility
- FHS Administrative and Service Units
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- Lees Campus Library
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- Circulation Area
- Building Support
- Research Office Space
- Interdisiplinary Faculty Office Space

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SCALE: 1 : 300

08/14/2020

INDICATIVE DESIGN - Level 04

A04

IN PROGRESS

LEGEND

- 3
- Instructional Activity
- Interdisciplinary School of Health Sciences
- School of Human Kinetics
- School of Nursing
- School of Nutrition Sciences
- School of Rehabilitation Sciences
- FHS Collaborative Research Facility
- FHS Administrative and Service Units
- CNFS (External Org)
- Lees Campus Library
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- Information Technology
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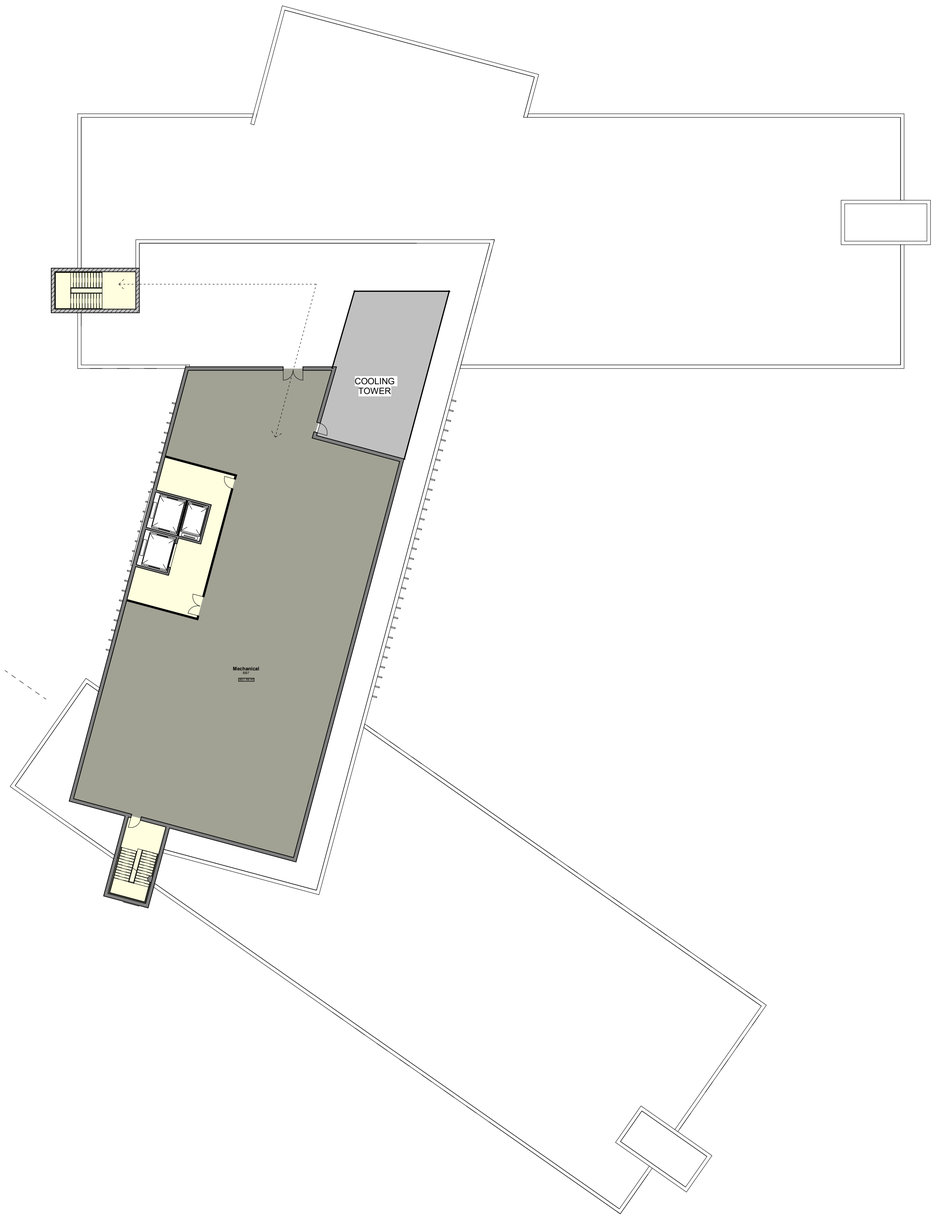
SCALE: 1 : 300

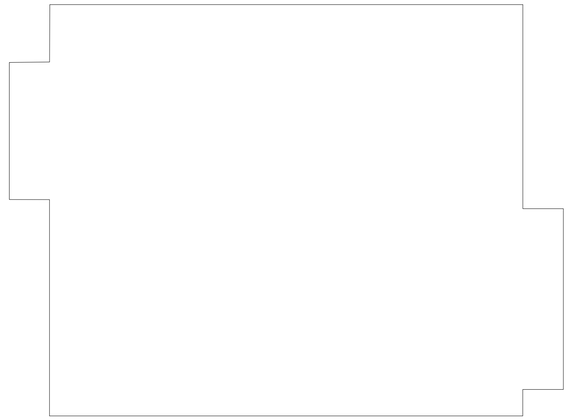
08/14/2020

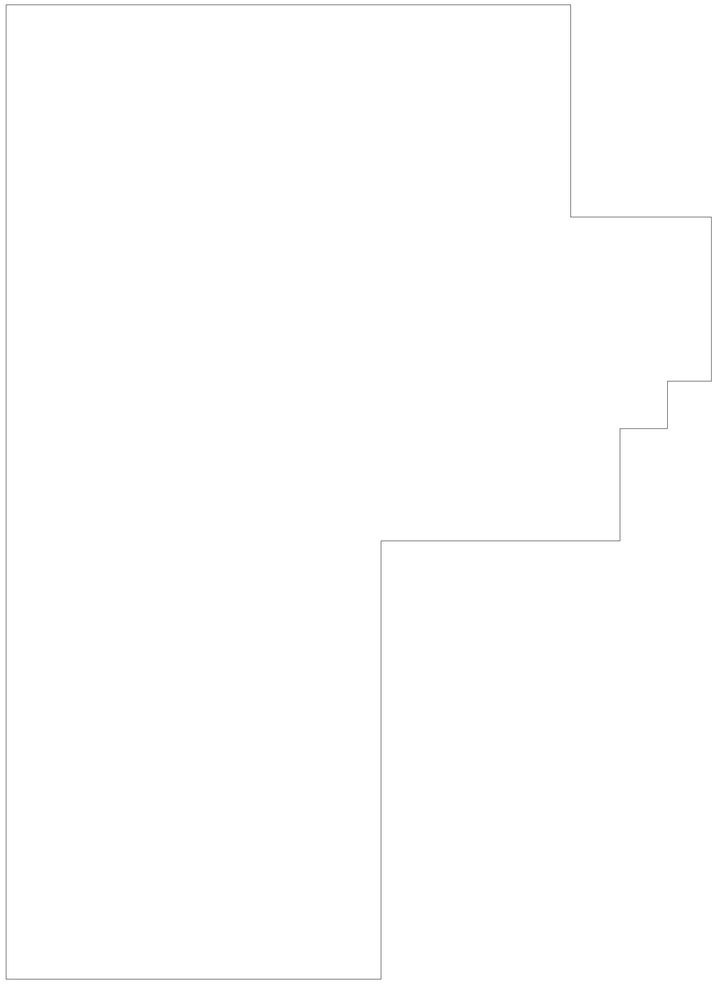
INDICATIVE DESIGN - Level 05

A05

IN PROGRESS







LEGEND

- 3
- Instructional Activity
- Interdisciplinary School of Health Sciences
- School of Human Kinetics
- School of Nursing
- School of Nutrition Sciences
- School of Rehabilitation Sciences
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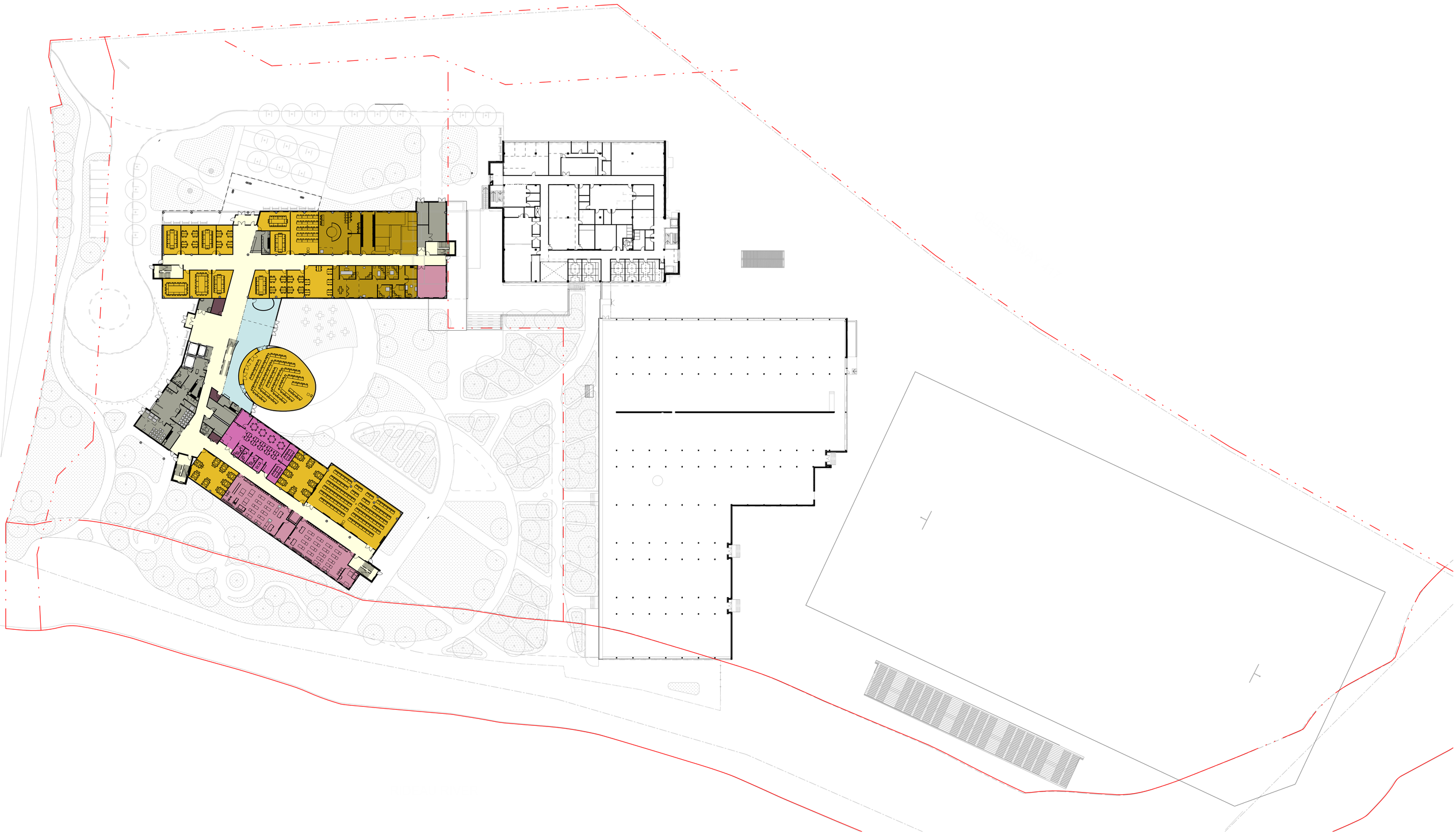
SCALE: 1 : 300

08/14/2020

INDICATIVE DESIGN - Level 06

A06

IN PROGRESS



INDICATIVE DESIGN - Site Plan

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200 Lees Campus

SCALE: 1 : 500

08/14/2020

AS01

C

Appendix C
Consultation & Correspondence

Jamieson-Lee Scott

Subject: FW: A001049 - Information Request - 200 Lees Avenue

From: Van Es, Corey <Corey.VanEs@ottawa.ca>
Sent: July 21, 2020 11:36 AM
To: Jamieson-Lee Scott <Jamieson-Lee.Scott@cima.ca>
Subject: RE: A001049 - Information Request - 200 Lees Avenue

Hi Jamieson-Lee,

I have heard back from our planner, who mentioned that the NHIC does have some records in the general area for species at risk. We know that there are snapping turtles, that have been found on the pathway and the sportsfield. I have also found out that the Ontario Nature herp atlas has wrapped up. They are directing people to use iNaturalist now, which includes all of the atlas data (NHIC should also have all the atlas data but I'm not sure if they've uploaded it all yet).

Regards,
Corey

Corey Van Es,
Operational Systems & Information Coordinator

City of Ottawa
Public Works and Environmental Services Department
Parks, Forestry and Storm Water Services
Stormwater Management Services

Robert O. Pickard Environmental Centre, 655 Shefford Rd | Gloucester, Ontario K1J 8G8
(613) 580-2424 ext 20132 | corey.vanes@ottawa.ca | www.ottawa.ca | Mail Code 27-65

From: Van Es, Corey
Sent: July 16, 2020 1:46 PM
To: Jamieson-Lee Scott <Jamieson-Lee.Scott@cima.ca>
Subject: RE: A001049 - Information Request - 200 Lees Avenue

Hello Jamieson-Lee,

I have forwarded your request to one of our Natural Systems planners to see if any species at risk (SAR) may be present, and I will let you know once I hear back. I would encourage you to check with the following agencies for SAR as well:

Natural Heritage Information Centre (NHIC):
https://www.ontario.ca/page/natural-heritage-information-centre

Department of Fisheries and Oceans (can also check for non-SAR species):
https://www.dfo-mpo.gc.ca/species-especes/sara-lep/index-eng.html

Ontario Reptile and Amphibian Atlas (SAR and non-SAR species):
https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas/

These are just a few sources to check. You can find more within the city's EIS Guidelines:
EIS Guidelines

As for floodplain boundaries or high water marks for the Rideau River please check with the Rideau Valley Conservation Authority. They may also have fish and SAR information as well.
https://www.rvca.ca/

If you have any further questions please do not hesitate to contact me. As noted above, I will contact you again to let you know about any city info regarding species at risk.

Regards,
Corey

From: Jamieson-Lee Scott <Jamieson-Lee.Scott@cima.ca>
Sent: July 14, 2020 2:23 PM
To: WEPP <WEPP@ottawa.ca>
Subject: RE: A001049 - Information Request - 200 Lees Avenue

CIMA+ has been contracted by the University of Ottawa (uOttawa) to prepare an Environmental Impact Statement (EIS) with Tree Conservation Report (TCR) for the property at 200 Lees Avenue in the City of Ottawa (see red outline in attached image). uOttawa is currently developing a concept for the redevelopment of the campus at 200 Lees which will include the demolition of three buildings (see blue shaded portion in image attached) and the construction of a new building(s) on the campus as well as the associated grading and landscaping.

The legal description and geographical coordinates for the property are:
- Lot G, Concession D, Rideau Front, Geographic Township of Nepean, City of Ottawa with approximate coordinates (Latitude: 45.415696°; Longitude: -75.668422°)

We are contacting you to obtain information on environmental features and/or conditions for and adjacent (within 120 meters) of the property including, but not limited to:

- Floodplain boundaries/high water mark along the Rideau River; and
- Stream health data for fish and invertebrates

Do not hesitate to contact me should you want to discuss this request or require further information.

Respectfully,

JAMIESON-LEE SCOTT
Technologist / Environnement et urbanisme
Technologiste / Environnement et urbanisme
CIMA Info inc.

T 613-860-2462 ext. 6662 **M** 343-961-3309 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

Notice to our customers on the COVID-19

'

'

Jamieson-Lee Scott

From: Species at Risk (MECP) <SAROntario@ontario.ca>
Sent: July 8, 2020 9:41 AM
To: Jamieson-Lee Scott
Subject: FW: A001049 - Information Request - 200 Lees Avenue
Attachments: Site_Map_Tentative.jpg; Client Guide to Preliminary Screening-May 2019.pdf

Hello Jamieson-Lee.

Thank you for your message. Please find attached for your use MECP's Draft Client's Guide to Preliminary Screening for Species at Risk. Once you have completed your preliminary screening please email us your results (SAROntario@ontario.ca), along with this original message and attachment, and your file will be assigned to a Management Biologist for triaged review.

Please Note: We are currently experiencing a large volume of requests at this time and as such your patience is greatly appreciated.

Thanks again,
Kristina

Kristina Hubert
Species at Risk Specialist
Permissions and Compliance Section
Species at Risk Branch
Ontario Ministry of the Environment, Conservation and Parks

From: Jamieson-Lee Scott <Jamieson-Lee.Scott@cima.ca>
Sent: July-07-20 10:59 AM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Subject: RE: A001049 - Information Request - 200 Lees Avenue

Good morning,

CIMA+ has been contracted by the University of Ottawa (uOttawa) to prepare an Environmental Impact Statement (EIS) with Tree Conservation Report (TCR) for the property at 200 Lees Avenue in the City of Ottawa (see red outline in attached image). uOttawa is currently developing a concept for the redevelopment of the campus at 200 Lees which will include the demolition of three buildings (see blue shaded portion in image attached) and the construction of a new building(s) on the campus as well as the associated grading and landscaping.

The legal description and geographical coordinates for the property are:

- Lot G, Concession D, Rideau Front, Geographic Township of Nepean, City of Ottawa with approximate coordinates (Latitude: 45.415696°; Longitude: -75.668422°)

We are contacting you to obtain information on environmental features and/or conditions for and adjacent (within 120 meters) of the property including, but not limited to:

- Species at Risk and their habitats and/or potential habitats

Do not hesitate to contact me should you want to discuss this request or require further information.

Respectfully,

JAMIESON-LEE SCOTT
Technologist / Environnement et urbanisme
Technologiste / Environnement et urbanisme
CIMA Info inc.

T 613-860-2462 ext. 6662 **M** 343-961-3309 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

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From: Inforequest, Kemptville (MNRF) <Kemptville.Inforequest@ontario.ca>
Sent: July 8, 2020 7:44 AM
To: Jamieson-Lee Scott; Inforequest, Kemptville (MNRF)
Cc: Cote, Joff (MNRF)
Subject: RE: A001049 - Information Request - 200 Lees Avenue
Attachments: InformationRequest-Response_Letter 2019_04_08.pdf; KVD_In_Water_Work_Timing_Guidelines_2018-02-27.pdf; NHGuide_MNRF_2019-04-01.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good Morning Jamieson-Lee,

Please see attached.

Regards,

Joffre Côté
Management Biologist / Biologiste, gestion des ressources
Ontario Ministry of Natural Resources and Forestry / Ministère des Richesses naturelles et des Forêts de l'Ontario
Kemptville District / District de Kemptville
10-1 Campus Drive / 10-1 Promenade Campus
Kemptville, ON K0G 1J0 / Kemptville ON KOG 1J0
613-258-8214

From: Jamieson-Lee Scott <Jamieson-Lee.Scott@cima.ca>
Sent: July-07-20 11:16 AM
To: Inforequest, Kemptville (MNRF) <Kemptville.Inforequest@ontario.ca>
Subject: RE: A001049 - Information Request - 200 Lees Avenue

Good morning,

CIMA+ has been contracted by the University of Ottawa (uOttawa) to prepare an Environmental Impact Statement (EIS) with Tree Conservation Report (TCR) for the property at 200 Lees Avenue in the City of Ottawa (see red outline in attached image). uOttawa is currently developing a concept for the redevelopment of the campus at 200 Lees which will include the demolition of three buildings (see blue shaded portion in image attached) and the construction of a new building(s) on the campus as well as the associated grading and landscaping.

The legal description and geographical coordinates for the property are:

- Lot G, Concession D, Rideau Front, Geographic Township of Nepean, City of Ottawa with approximate coordinates (Latitude: 45.415696°; Longitude: -75.668422°)

We are contacting you to obtain information on environmental features and/or conditions for and adjacent (within 120 meters) of the property including, but not limited to:

-ANSI and Significant Wildlife Habitats; and
-Woodland and Wetlands

Do not hesitate to contact me should you want to discuss this request or require further information.

Respectfully,

JAMIESON-LEE SCOTT
Technologist / Environnement et urbanisme
Technologiste / Environnement et urbanisme
CIMA Info inc.

T 613-860-2462 ext. 6662 **M** 343-961-3309 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

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Jamieson-Lee Scott

From: Matt Jokiel <matt.jokiel@rvca.ca>
Sent: July 10, 2020 10:49 AM
To: Jamieson-Lee Scott
Cc: Eric Lalande; Jennifer Lamoureux
Subject: RE: A001049 - Information Request - 200 Lees Avenue
Attachments: 200 Lees Ave.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hello Jamieson-Lee,

Thank you for your email regarding the property noted as 200 Lees Ave., Ottawa. I have included a copy of RVCA's mapping for 200 Lees Avenue your reference (note: map may not be to scale). Please notify our office if the highlighted parcel does not represent the correct parcel. Additionally, please note that the attached mapping may not show the exact property dimensions.

Please consider the following information regarding this lot:

- Our mapping, attached, indicates that the property appears to be partially within RVCA's Regulation Limit (indicated by the black/orange dashed line). The Regulation Limit is the area to which the Conservation Authority is required to review development and alteration applications under the Conservation Authorities Act (O.Reg. 174/06). A permit is required from our office for development proposals within the Regulation Limit. Development outside of the Regulation Limit does not require approval from our office.
    - The property is located within the RVCA's Regulation Limit because the following hazards have been identified in our mapping:
        - A **slope/soil stability hazard** has been identified on the property:
            - It must be demonstrated that any development proposal is acceptable from a geotechnical perspective. As required, the scope of the geotechnical analysis required by a Professional Engineer will depend on the proposal (see section 2.6 Slope and Soil Instability in RVCA's policies – link below).
        - Development on the property is also regulated because the property is located partially within the 1:100 year floodplain limits of the Rideau River (shown as the blue line in attached mapping).
            - 1:100 Year Floodplain Elevation: 58.17 geodetic
    - Additionally, new development is to be setback a minimum of 30 metres from the normal high water mark of a watercourse. Municipalities may impose greater setbacks.
        - For information regarding setback requirements on this property, I would recommend contacting Eric Lalande, RVCA Planner (cc'ed) for further consultation.
- For information regarding fish communities and species within this study area, I would recommend contacting Jennifer Lamoureux, Aquatic and Fish Habitat Biologist (cc'ed).

- For SAR information, please refer to the following website: https://www.ontario.ca/page/species-risk

Applications submitted to the RVCA must demonstrate that the development proposal meets RVCA policies. The applicable policies are found at the following link: https://www.rvca.ca/media/k2/attachments/Development__Interference_Regs_MASTER_policy_doc_Feb_2018_extended.pdf

If a submitted application does not meet the RVCA's Development Policies, approval cannot be granted <u>at a staff level</u>. Any application that does not meet RVCA policies would require a hearing before the Executive Committee. The onus would be on the applicant to demonstrate to the Committee why an exception should be granted to the RVCA's Policies.

Please refer to the following documents when preparing an application for the RVCA to review:

- RVCA Application Form: https://www.rvca.ca/media/k2/attachments/Application_for_Development_FILLABLE_1.pdf
- Fee Schedule: https://www.rvca.ca/media/k2/attachments/2020_Fee_Schedule_(NOVEMBER_2019).pdf
- Minimum Application Requirements: https://www.rvca.ca/media/k2/attachments/RVCA_minimum_requirements_application.pdf

If you have any further questions, please contact our office.

Regards,

Matt Jokiel
Resource Specialist
matt.jokiel@rvca.ca, ext. 1193

RVCA COVID-19 UPDATE: The health, safety and well-being of our clients and staff is our top priority. Our offices and facilities are closed to clients. Staff are working remotely and we do not anticipate any service disruptions. Visit www.rvca.ca/covid-19 for more.

Rideau Valley Conservation Authority
3889 Rideau Valley Drive
PO Box 599, Manotick ON K4M 1A5
T 613-692-3571 | 1-800-267-3504 F 613-692-0831 | www.rvca.ca

From: LRC Info <info@lrconline.com>
Sent: Tuesday, July 7, 2020 3:53 PM
To: Matt Jokiel <matt.jokiel@rvca.ca>
Subject: FW: A001049 - Information Request - 200 Lees Avenue

From: RVCA Info <info@rvca.ca>
Sent: Tuesday, July 7, 2020 10:54 AM
To: LRC Info <info@lrconline.com>
Subject: FW: A001049 - Information Request - 200 Lees Avenue

From: Jamieson-Lee Scott <Jamieson-Lee.Scott@cima.ca>
Sent: Tuesday, July 07, 2020 10:52 AM
To: RVCA Info <info@rvca.ca>
Subject: RE: A001049 - Information Request - 200 Lees Avenue

Good morning,

CIMA+ has been contracted by the University of Ottawa (uOttawa) to prepare an Environmental Impact Statement (EIS) with Tree Conservation Report (TCR) for the property at 200 Lees Avenue in the City of Ottawa (see red outline in attached image). uOttawa is currently developing a concept for the redevelopment of the campus at 200 Lees which will include the demolition of three buildings (see blue shaded portion in image attached) and the construction of a new building(s) on the campus as well as the associated grading and landscaping.

The legal description and geographical coordinates for the property are:

- Lot G, Concession D, Rideau Front, Geographic Township of Nepean, City of Ottawa with approximate coordinates (Latitude: 45.415696°; Longitude: -75.668422°)

We are contacting you to obtain information on environmental features and/or conditions for and adjacent (within 120 meters) of the property including, but not limited to:

-Floodplain boundaries/high water mark along the Rideau River;
-RVCA regulatory limit;
-Fisheries and species specific inventories; and
-Available SAR information

Do not hesitate to contact me should you want to discuss this request or require further information.

Respectfully,

JAMIESON-LEE SCOTT
Technologist / Environnement et urbanisme
Technologiste / Environnement et urbanisme
CIMA Info inc.

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110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

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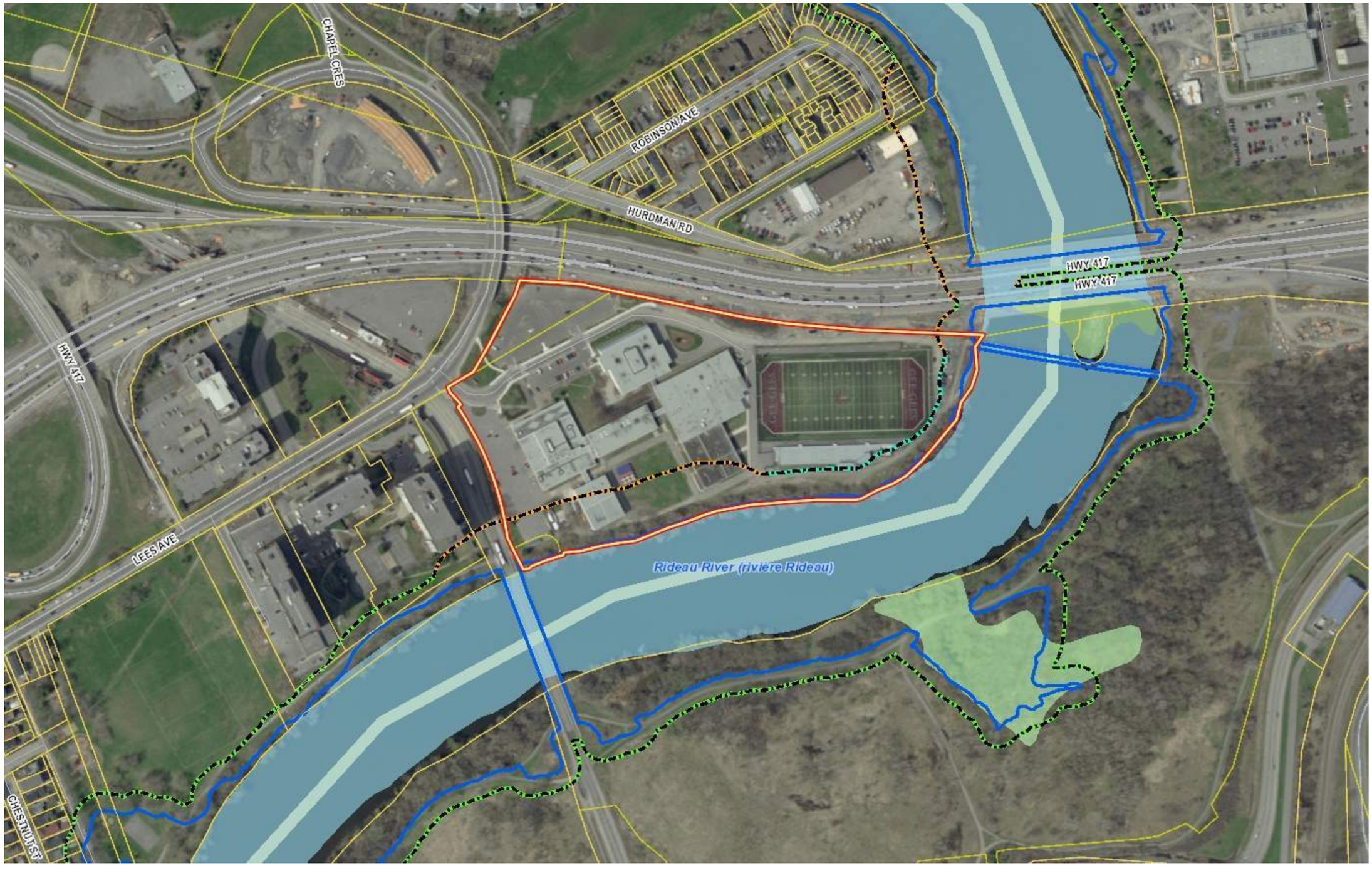
KINCENTRIC Best Employer CANADA 2019

RIDEAU VALLEY CONSERVATION AUTHORITY

RVCA Regulations Limit Map
200 Lees Ave., Ottawa 0614 0316 0133 7200 0000



Legend

- Parcel - Assesment
- Area of Reduced Flood Risk
- Regulation Limit
- 100yr Floodline
  - Floodplain
  - Area of Reduced Flood Risk
  - Area of Shallow Flooding
- Reg Limit Dominant Hazard
  - Floodplain
  - Geo-technical Hazard Limit
  - Meander Belt
  - Spill Line
  - Stable-Toe Slope
  - Top of Slope
  - Unstable-Toe Slope
  - Wetland
- Regulated Wetlands
- RVCA Sub-Watersheds
- RVCA Catchments
- MNRF Wetlands
  - Evaluated-Provincial (PSW)
  - non-PSW Wetlands
- Waterbody

1: 3,192

WGS_1984_Web_Mercator_Auxiliary_Sphere

Notes

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162.1 0 81.07 162.1 Meters

Map created: 7/10/2020

This map tool is for information screening purposes only. In all cases, please contact RVCA Planning Staff for confirmation: 613.692.3571 or info@lrconline.com

From: Jennifer Lamoureux <jennifer.lamoureux@rvca.ca>
Sent: July 13, 2020 11:41 AM
To: Jamieson-Lee Scott
Cc: Eric Lalande; Matt Jokiel
Subject: RE: A001049 - Information Request - 200 Lees Avenue
Attachments: Rideau River - Rideau Falls Catchment Report.pdf

Good Morning Jamieson-Lee,
Further to the information that Matt has provided below, I have attached our latest catchment report, which has additional background information that you may require.

I am unsure if this has been provided so I thought I would send it along just to be sure.
Jennifer

Jennifer Lamoureux
Aquatic and Fish Habitat Biologist
Ext. 1108

Rideau Valley Conservation Authority
3889 Rideau Valley Drive
PO Box 599, Manotick ON K4M 1A5
T 613-692-3571 | 1-800-267-3504 F 613-692-0831 | www.rvca.ca

RVCA COVID-19 UPDATE: The health, safety and well-being of our clients and staff is our top priority. Our offices and facilities are closed to clients. Staff are working remotely and we do not anticipate any service disruptions. Visit www.rvca.ca/covid-19 for more.

From: Matt Jokiel <matt.jokiel@rvca.ca>
Sent: Friday, July 10, 2020 10:49 AM
To: 'Jamieson-Lee.Scott@cima.ca' <Jamieson-Lee.Scott@cima.ca>
Cc: Eric Lalande <eric.lalande@rvca.ca>; Jennifer Lamoureux <jennifer.lamoureux@rvca.ca>
Subject: RE: A001049 - Information Request - 200 Lees Avenue

Hello Jamieson-Lee,

Thank you for your email regarding the property noted as 200 Lees Ave., Ottawa. I have included a copy of RVCA's mapping for 200 Lees Avenue your reference (note: map may not be to scale). Please notify our office if the highlighted parcel does not represent the correct parcel. Additionally, please note that the attached mapping may not show the exact property dimensions.

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    - The property is located within the RVCA's Regulation Limit because the following hazards have been identified in our mapping:
        - A **slope/soil stability hazard** has been identified on the property:
            - It must be demonstrated that any development proposal is acceptable from a geotechnical perspective. As required, the scope of the geotechnical analysis required by a Professional Engineer will depend on the proposal (see section 2.6 Slope and Soil Instability in RVCA's policies – link below).
        - Development on the property is also regulated because the property is located partially within the 1:100 year floodplain limits of the Rideau River (shown as the blue line in attached mapping).
            - 1:100 Year Floodplain Elevation: 58.17 geodetic
    - Additionally, new development is to be setback a minimum of 30 metres from the normal high water mark of a watercourse. Municipalities may impose greater setbacks.
        - For information regarding setback requirements on this property, I would recommend contacting Eric Lalande, RVCA Planner (cc'ed) for further consultation.
- For information regarding fish communities and species within this study area, I would recommend contacting Jennifer Lamoureux, Aquatic and Fish Habitat Biologist (cc'ed).
- For SAR information, please refer to the following website: https://www.ontario.ca/page/species-risk

Applications submitted to the RVCA must demonstrate that the development proposal meets RVCA policies. The applicable policies are found at the following link: https://www.rvca.ca/media/k2/attachments/Development__Interference_Regs_MASTER_policy_doc_Feb_2018_extended.pdf

If a submitted application does not meet the RVCA's Development Policies, approval cannot be granted at a staff level. Any application that does not meet RVCA policies would require a hearing before the Executive Committee. The onus would be on the applicant to demonstrate to the Committee why an exception should be granted to the RVCA's Policies.

Please refer to the following documents when preparing an application for the RVCA to review:

- RVCA Application Form: https://www.rvca.ca/media/k2/attachments/Application_for_Development_FILLABLE_1.pdf
- Fee Schedule: https://www.rvca.ca/media/k2/attachments/2020_Fee_Schedule_(NOVEMBER_2019).pdf
- Minimum Application Requirements: https://www.rvca.ca/media/k2/attachments/RVCA_minimum_requirements_application.pdf

If you have any further questions, please contact our office.

Regards,

Matt Jokiel
Resource Specialist
matt.jokiel@rvca.ca, ext. 1193

RVCA COVID-19 UPDATE: The health, safety and well-being of our clients and staff is our top priority. Our offices and facilities are closed to clients. Staff are working remotely and we do not anticipate any service disruptions. Visit www.rvca.ca/covid-19 for more.

Rideau Valley Conservation Authority
3889 Rideau Valley Drive
PO Box 599, Manotick ON K4M 1A5
T 613-692-3571 | 1-800-267-3504 F 613-692-0831 | www.rvca.ca

From: LRC Info <info@lrconline.com>
Sent: Tuesday, July 7, 2020 3:53 PM
To: Matt Jokiel <matt.jokiel@rvca.ca>
Subject: FW: A001049 - Information Request - 200 Lees Avenue

From: RVCA Info <info@rvca.ca>
Sent: Tuesday, July 7, 2020 10:54 AM
To: LRC Info <info@lrconline.com>
Subject: FW: A001049 - Information Request - 200 Lees Avenue

From: Jamieson-Lee Scott <Jamieson-Lee.Scott@cima.ca>
Sent: Tuesday, July 07, 2020 10:52 AM
To: RVCA Info <info@rvca.ca>
Subject: RE: A001049 - Information Request - 200 Lees Avenue

Good morning,

CIMA+ has been contracted by the University of Ottawa (uOttawa) to prepare an Environmental Impact Statement (EIS) with Tree Conservation Report (TCR) for the property at 200 Lees Avenue in the City of Ottawa (see red outline in attached image). uOttawa is currently developing a concept for the redevelopment of the campus at 200 Lees which will include the demolition of three buildings (see blue shaded portion in image attached) and the construction of a new building(s) on the campus as well as the associated grading and landscaping.

The legal description and geographical coordinates for the property are:

- Lot G, Concession D, Rideau Front, Geographic Township of Nepean, City of Ottawa with approximate coordinates (Latitude: 45.415696°; Longitude: -75.668422°)

We are contacting you to obtain information on environmental features and/or conditions for and adjacent (within 120 meters) of the property including, but not limited to:

-Floodplain boundaries/high water mark along the Rideau River;
-RVCA regulatory limit;
-Fisheries and species specific inventories; and
-Available SAR information

Do not hesitate to contact me should you want to discuss this request or require further information.

Respectfully,

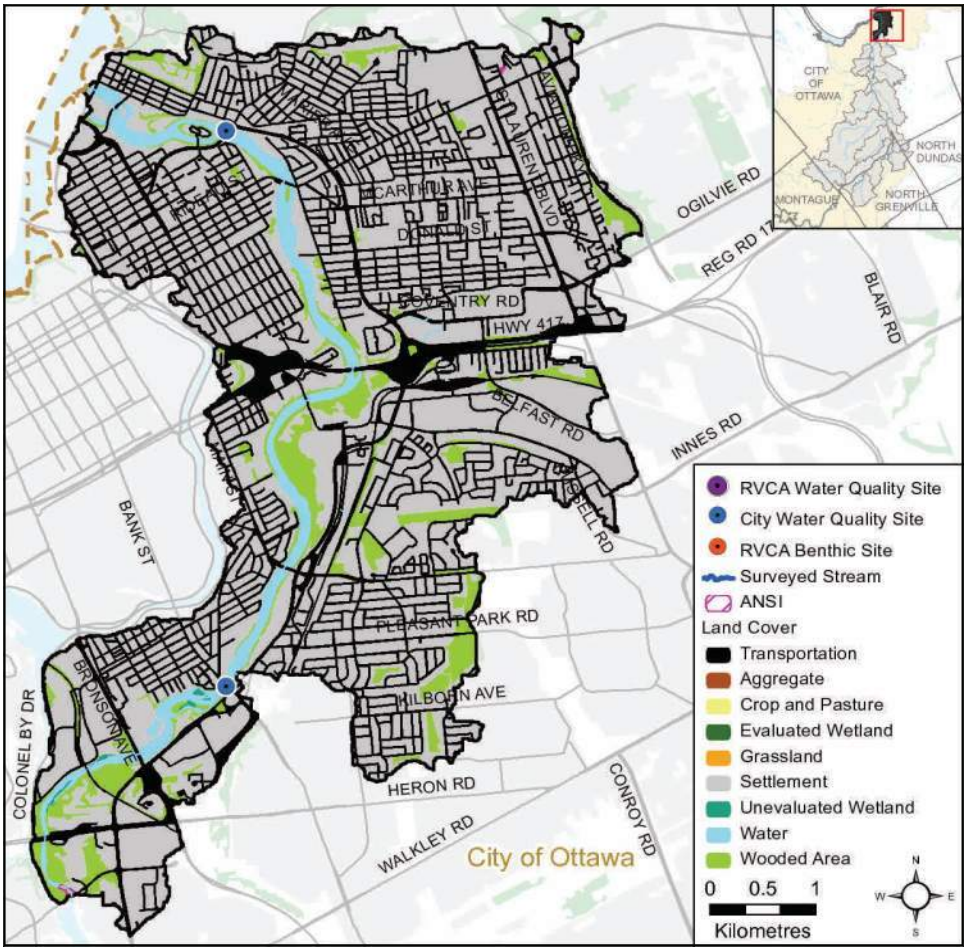
JAMIESON-LEE SCOTT
Technologist / Environnement et urbanisme
Technologiste / Environnement et urbanisme
CIMA Info inc.

T 613-860-2462 ext. 6662 **M** 343-961-3309 **F** 613-860-1870
110–240 Catherine Street, Ottawa, ON K2P 2G8 CANADA

RIDEAU RIVER - RIDEAU FALLS CATCHMENT

LOWER RIDEAU RIVER SUBWATERSHED REPORT 2012

RIDEAU VALLEY CONSERVATION AUTHORITY



The RVCA produces individual reports for 16 catchments in the Lower Rideau subwatershed. Using data collected and analysed by the RVCA through its watershed monitoring and land cover classification programs, surface water quality conditions are reported for the Rideau River along with a summary of environmental conditions for the surrounding countryside every six years.

This information is used to help better understand the effects of human activity on our water resources, allows us to better track environmental change over time and helps focus watershed management actions where they are needed the most.

The following pages of this report are a compilation of that work. For other Lower Rideau catchments and Lower Rideau Subwatershed Report, please visit the RVCA website at www.rvca.ca.

Inside

Catchment Facts

- An intensively, urbanized reach within the City of Ottawa with some large expanses of green space found along the river corridor; the only reach in the Lower Rideau that remains in its riverine form, without having been substantially altered for navigation
- Although the Rideau River remains largely in a natural state along this reach, most of the tributaries have been eliminated and replaced by storm sewers. Sawmill Creek is the only remaining tributary
- Development has been generally set back from the river and the banks along much of this reach are in public ownership. However, there are many areas where historic development, (including trail systems and former landfills) and transportation and utility corridors have encroached on the riparian zone
- Rideau Falls is a natural barrier that falls between the Rideau and Ottawa River; a dam at this location maintains operating head at Rideau Falls Generating Station and controls water levels upstream to Cummings Bridge at Montreal Road; summer low flows are somewhat augmented by releases from upstream storage reservoirs (for maintenance of navigation levels on the Rideau Waterway)
- Flood vulnerable communities include portions of New Edinburgh, Vanier (Kingsview Park), Old Ottawa East and Old Ottawa South
- Risk of ice jam-induced flooding at spring break-up throughout the entire reach, but most notably at the Minto Bridges (Green Island), Cummings Bridge, near Highway 417 and near Billings Bridge. Annual preventive ice management operations include ice control boom at Strathcona Rapids and ice sheet removal before the spring freshet
- Flood control dykes with associated storm water pump stations protect communities in Old Ottawa South (Brewer Park, Windsor Park, Rideau River Lane)
- Drains 28 sq. km of land or 3.7% of the Lower Rideau Subwatershed and 0.7% of the Rideau Valley Watershed
- Dominant land cover is settlement (60%), followed by transportation (29%), woodland (7%) and water (4%)
- Riparian buffer (30 m. wide along both sides of the Rideau River and its tributaries) is comprised of woodland (41%), settlement (38%), transportation (18%) and wetland (3%)
- Contains a warm/cool water recreational and baitfish fishery with 40 fish species
- Water quality rating along the Rideau River is fair at Billings Bridge, over a six year reporting period (2006-2011). At the Cummings Bridge (in Vanier), the water quality rating is fair with no change observed over a 12 year reporting period (2000-2005 vs. 2006-2011)
- Woodland cover has increased by 2 percent (54 ha.) from 2002 to 2008
- Flood plain mapping has been available for the entire reach since 1972; last updated in 1984. Flood forecasting and warning services aim to give residents and municipality 48 hours notice prior to onset of flooding (“flood stage” based on elevation of access roads), enabling mobilization of emergency response measures, and evasive action to minimize damages and losses
- Major studies completed include: A Multidisciplinary, Community-Based Study of the Environmental Health of the Rideau River: Final Report. 2001 (Canadian Museum of Nature); Lower Rideau Watershed Strategy, Final Report. 2005 (Robinson Consultants for RVCA)
- Rideau River designated a UNESCO World Heritage Site

1) Surface Water Quality

Assessment of streams in the Lower Rideau is based on 24 parameters including nutrients (total phosphorus, total Kjeldahl nitrogen, nitrates), E. coli, metals (like aluminum and copper) and additional chemical/physical parameters (such as alkalinity, chlorides pH and total suspended solids). Each parameter is evaluated against established guidelines to determine water quality conditions. Those parameters that frequently exceed guidelines are presented below.

The assessment of water quality throughout the Lower Rideau Subwatershed also looks at water quality targets that are presented in the 2005 Lower Rideau Watershed Strategy (LRWS), to see if they are being met. The LRWS identifies improving water quality as a priority concern; specifically reducing the levels of nutrients, bacteria and contaminants in the Lower Rideau.

1) a. Rideau River-Rideau Falls

Surface water quality conditions in Rideau River-Rideau Falls catchment are monitored through the City of Ottawa's Baseline Water Quality Program (RRS-108C upstream side of Bank Street bridge, RRS-103C St Patrick Street bridge) (See Fig. 1 for their locations).

The water quality rating for Rideau River-Rideau Falls is "Fair" as determined by the CCME Water Quality Index (CCME WQI); analysis of the data has been broken into two periods 2000-2005 and 2006-2011, to examine if conditions have changed in this timeframe. Table 1 outlines the WQI scores and their corresponding ratings For more information on the CCME WQI please see the Lower Rideau Subwatershed Report.

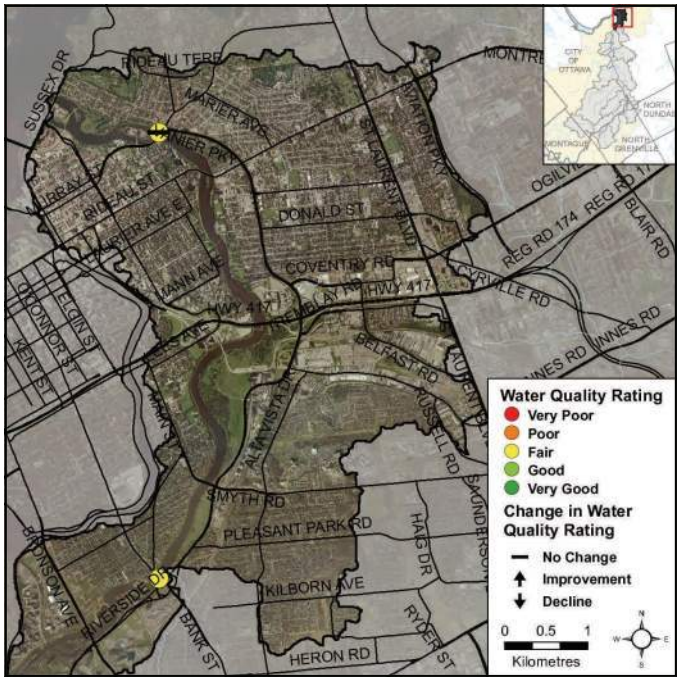


Figure 1. Sampling sites on Rideau River-Rideau Falls

Table 1. WQI Ratings and corresponding index scores (RVCA terminology, original WQI category names in brackets).

Rating	Index Score
Very good (Excellent)	95-100
Good	80-94
Fair	65-79
Poor (Marginal)	45-64
Very poor (Poor)	0-44

Rideau River-Rideau Falls Nutrients

Total phosphorus (TP) is used as a primary indicator of excessive nutrient loading and may contribute to abundant aquatic vegetation growth and depleted dissolved oxygen levels. The Provincial Water Quality Objectives (PWQO) of 0.030mg/l is used as the TP Guideline. Concentrations greater than 0.030 mg/l indicate an excessive amount of TP. Rideau River-Rideau Falls TP results are shown in Figures 2a and 2b. In addition to the TP guideline, the Lower Rideau Watershed Strategy set a target for TP concentration of 0.030 mg/l at the 85th percentile for the main channel of the Rideau River. Percentile plots of TP data are shown for two time periods 2000-2005 (Fig. 3a) and 2006-2011 (Fig. 3b). Any point to the left of the 85th percentile line (vertical) and above the guideline (horizontal line) have failed to reach the LRWS target.

Total Kjeldahl nitrogen (TKN) is used as a secondary indicator of nutrient loading; RVCA uses a guideline of 0.500 mg/l (TKN Guideline) to assess TKN concentrations. Rideau River-Rideau Falls TKN results are shown in Figures 4a and 4b.

Tables 2 and 3 summarize average nutrient concentrations at monitored sites on Rideau River-Rideau Falls and shows the proportion of samples that meet guidelines. Highlighted values indicate averages that have exceeded the guidelines.

Table 2 Summary of total phosphorous results for Rideau River -Rideau Falls from 2000-2005 and 2006-2011

Total Phosphorus 2000-2005			
Site	Average (mg/l)	% Below	No. Samples
RRS-108C			
RRS-103C	0.046	25	57
Total Phosphorus 2006-2011			
Site	Average (mg/l)	% Below	No. Samples
RRS-108C	0.038	47	70
RRS-103C	0.040	37	62

Table 3. Summary of total Kjeldahl nitrogen results for Rideau River-Rideau Falls from 2000-2005 and 2006-2011

Total Kjeldahl Nitrogen 2000-2005			
Site	Average (mg/l)	% Below	No. Samples
RRS-108C			
RRS-103C	0.648	4	57
Total Kjeldahl Nitrogen 2006-2011			
Site	Average (mg/l)	% Below	No. Samples
RRS-108C	0.597	23	70
RRS-103C	0.611	13	62

Rideau River-Rideau Falls Nutrients: Site RRS-108C

The majority of samples at site RRS-108C exceeded the TP guideline of 0.030mg/l in the 2006-2011 time period (Fig. 2b), forty-seven percent of samples were below the guideline and average TP concentration exceeded the guideline at 0.046. Percentile plots of TP data shows that the target of a TP concentration of 0.030mg/l at the 85th percentile has not been achieved at this site, as concentration at the 85th equaled 0.050 mg/l (Fig. 3b) TKN is used as a secondary indicatory of nutrient enrichment. Figure 4b shows that the majority of results exceeded the TKN guideline of 0.500 mg/l. Twenty three percent of samples are below the guideline and the average concentration is 0.597 mg/l.

Rideau River-Rideau Falls Nutrients: Site RRS-103C

The majority of samples at site RRS-103C were above the TP guideline of 0.030mg/l for both time periods (Fig. 2a, 2000-2005 and 2b, 2006-2011), twenty-five percent of samples were below the guideline in the 2000-2005

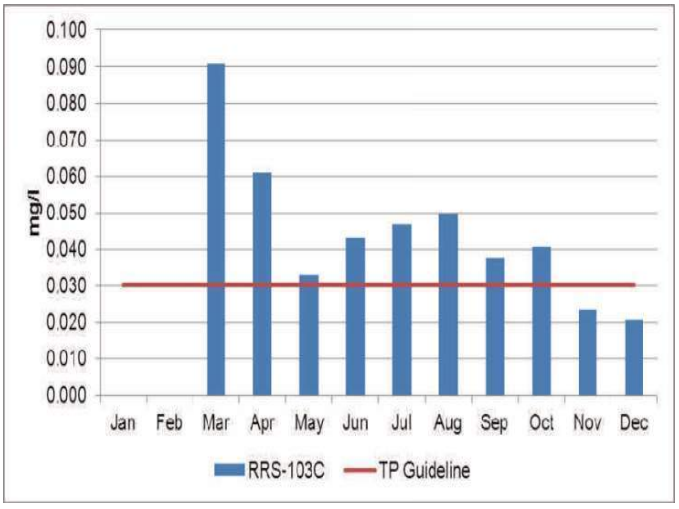


Figure 2a. Total phosphorous concentrations in Rider River-Rideau Falls from 2000-2005

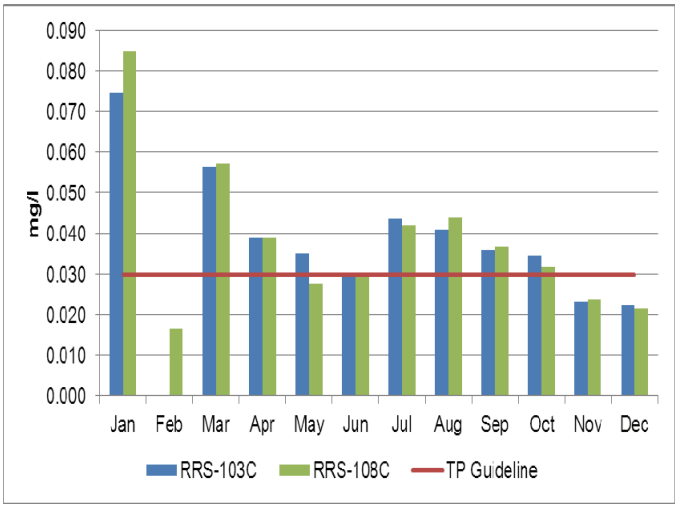


Figure 2b. Total phosphorous concentrations in Rideau River-Rideau Falls from 2006-2011

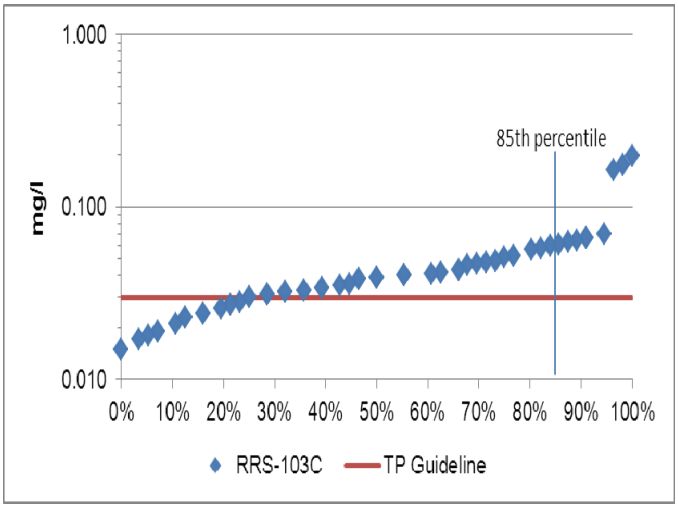


Figure 3a. Percentile plots of total phosphorous for Rideau River-Rideau Falls from 2000-2005

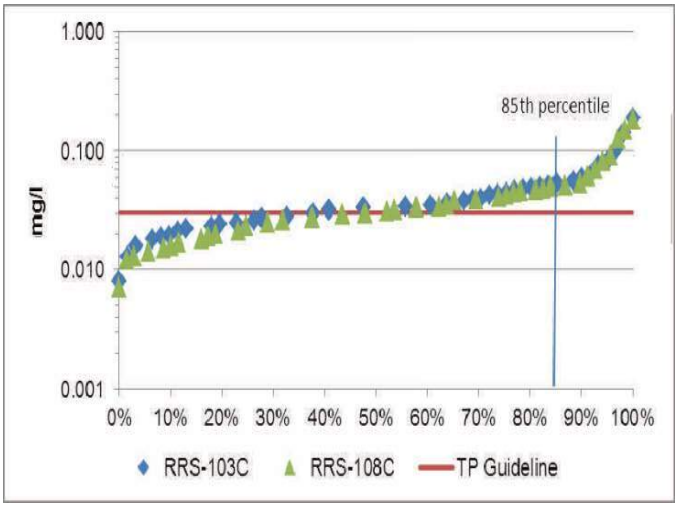


Figure 3b. Percentile plots of total phosphorous for Rideau River-Rideau Falls from 2006-2011

period and improved to thirty-seven percent of samples in the 2006-2011 period. Average TP concentration decreased slightly from 0.046 mg/l (2000-2005) to 0.040 mg/l (2006-2011).

TKN results show that the bulk of results exceeded the TKN guideline of 0.500 mg/l (Fig. 4a, 2000-2005 and Fig. 4b, 2006-2011), only four percent of samples were below the guideline in the 2000-2005 period and improved to thirteen percent in the 2006-2011 period. The average concentration decreased from 0.648 mg/l to 0.611 mg/l.

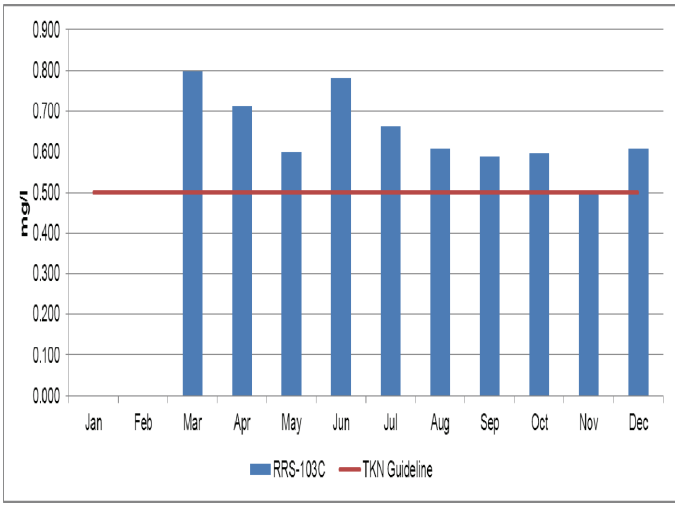


Figure 4a. Total Kjeldahl nitrogen concentrations in Rideau River-Rideau Falls from 2000-2005

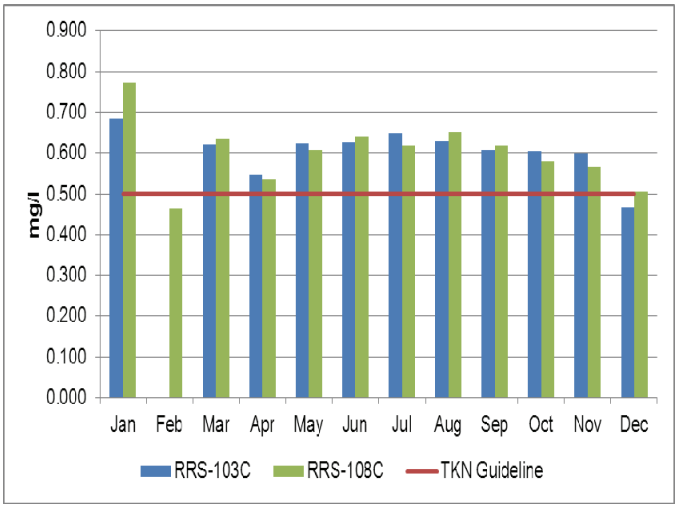


Figure 4b. Total Kjeldahl nitrogen concentrations in Rideau River-Rideau Falls from 2006-2011

Rideau River-Rideau Falls Nutrients Summary

Overall the data suggest that nutrient loading continues to be a problem at both these monitored sites. Efforts should be made to reduce sources of excess nutrients to the river wherever possible to improve water quality, habitat conditions and the aesthetics of this stretch of the Rideau River.

Rideau River-Rideau Falls E. coli

E. coli is used as an indicator of bacterial pollution from human or animal waste; in elevated concentrations it can pose a risk to human health. The PWQO Objectives of 100 colony forming units/100 millilitres is used. E. coli counts greater than this guideline indicate that bacterial contamination may be a problem within a waterbody. In addition to achieving the E. coli guideline, the LRWS also set a target of having no samples exceed a count of 500 CFU/100ml.

Table 5 summarizes the geometric mean at monitored sites on Rideau River-Rideau Falls and shows the proportion of samples that meet the E. coli guideline of 100 CFU/100ml.

Figure 5 shows the results of the geometric mean with respect to the guideline for the two periods 2000-2005 (Fig. 5a) and 2006-2011 (Fig 5b). Figures 6a and 6b show percentile plots of the data for the two time periods of interest 2000-2005 (Fig. 6a) and 2006-2011 (Fig. 6b). Any point to the left of the 80th percentile line (vertical) and above the guideline (horizontal line) have failed to reach the LRWS target

Table 4. Summary of E. coli results for Rideau River-Rideau Falls

E. coli 2000-2005			
Site	Geometric Mean (CFU/100ml)	% Below Guideline	No. Samples
RRS-108C	-	-	-
RRS-103C	38	79	57
E. coli 2006-2011			
Site	Geometric Mean (CFU/100ml)	% Below Guideline	No. Samples
RRS-108C	36	83	70
RRS-103C	44	87	54

Rideau River-Rideau Falls E. coli: Site RRS-108C

E. coli counts above the guideline of 100 colony forming units per 100 mL (CFU/100mL) infrequent at site RRS-108C. Eighty-three percent of samples were below the guideline and the count at the geometric mean was 38 CFU/100ml in the 2006-2011 period (Fig. 5b). In addition to achieving the E. coli guideline the LRWS also set a target of having no samples exceed a count of 500 CFU/100ml. Figure 6b shows that only two samples exceeded this threshold at this site.

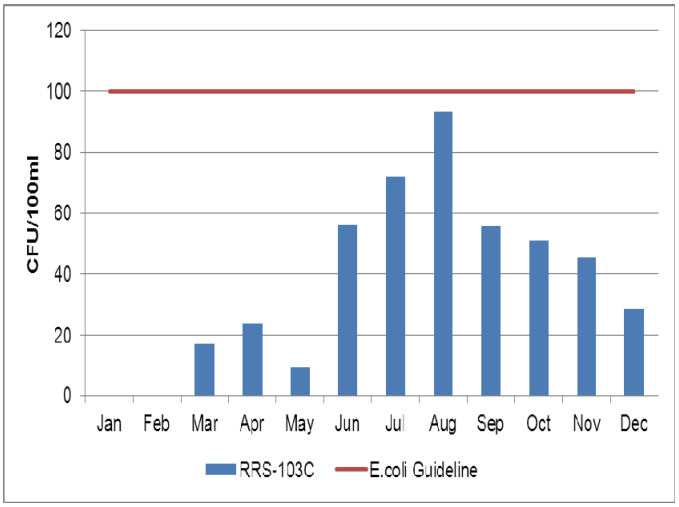


Figure 5a. E. coli concentrations in Rideau River-Rideau Falls from 2000-2005

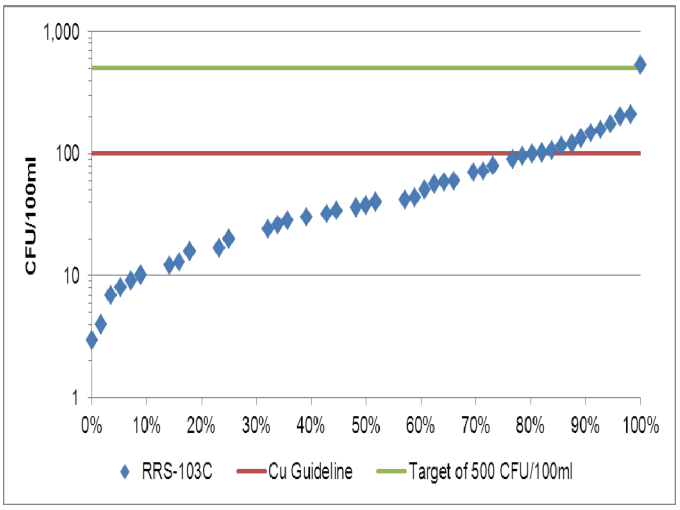


Figure 6a. Percentile plots of E. coli in Rideau River-Rideau Falls from 2000-2005

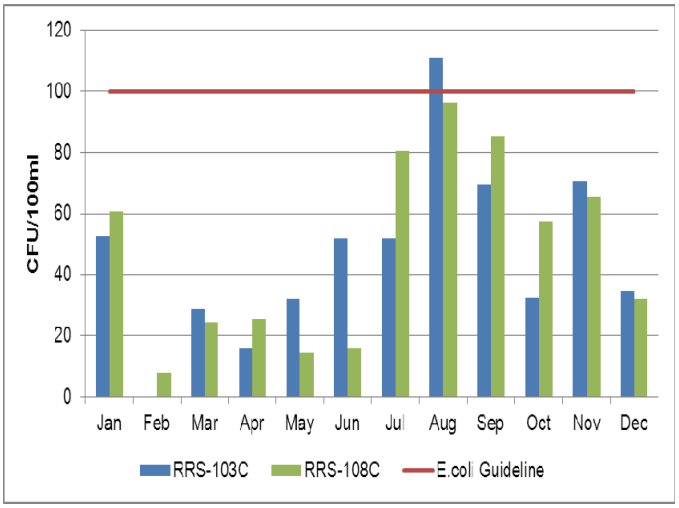


Figure 5b. E. coli concentrations in Rideau River-Rideau Falls from 2006-2011

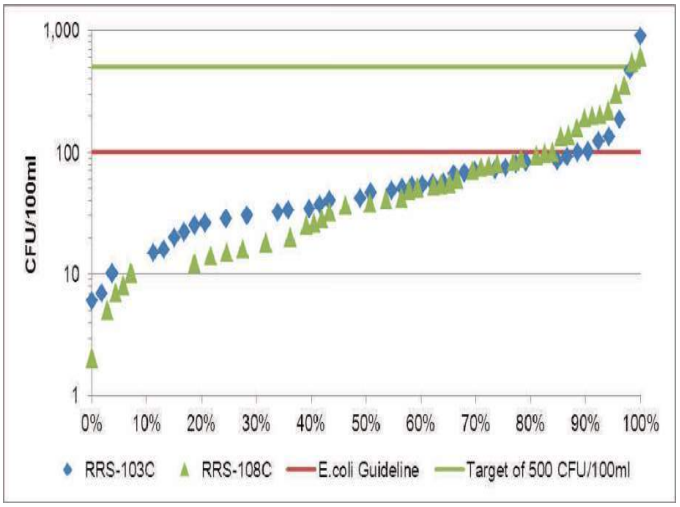


Figure 6b. Percentile plots of E. coli in Rideau River-Rideau Falls from 2006-2011

Rideau River-Rideau Falls E. coli: Site RRS-103C

Site RRS-103C is located downstream of RRS-108C. The majority of samples were below the guideline at RRS-103C and this proportion improved from seventy-nine percent (Fig. 5a) to eighty-three percent between the two time periods (Fig. 5b).The count at the geometric mean was also low though did increase from 38 CFU/100 ml to 44 CFU/100 ml. In comparing the distribution of sample results in the percentile plots (Figures 6a and 6b) it can be observed that only one sample exceed the maximum target of 500 CFU/100 ml in both time periods.

Rideau River-Rideau Falls E. coli Summary

These statistics indicated that bacterial counts are typically below guidelines at site RRS-108C however efforts should be made to reduce any possible sources of contamination protect and improve water quality conditions.

Similarly the data show that bacterial counts have increased at site RRS-103C though the majority of results are below the target of 100 CFU/100ml. Efforts should be continued to reduce any additional sources of contamination to the creek to protect overall water quality and aquatic life.

Rideau River-Rideau Falls Metals

Of the metals routinely monitored in Rideau River-Rideau Falls, aluminum (Al) and copper (Cu) were metals that occasionally reported concentrations above their respective PWQO. In elevated concentrations these metals can have toxic effects on sensitive aquatic species.

Table 5 summarizes average metal concentrations at monitored sites on Rideau River-Rideau Falls and shows the proportion of samples that meet guidelines. Highlighted values indicate averages that have exceeded the guideline.

Figures 7 and 8 show the results for each site with respect to guidelines for the two periods 2000-2005 (Figures 7a and 8a) and 2006-2011 (Figures 7b and 8b). The guidelines for each metal as stated by the PWQO are Al 0.075 mg/l, and Cu 0.005 mg/l. The Lower Rideau Watershed Strategy set a target for Cu concentration of 0.005 mg/l (Cu guideline) at the 75th percentile for reaches of the Rideau River. Percentile plots of Cu data are shown for the 2000-2005 (Fig. 9a) and 2006-2011 (Fig. 9b) time periods. Any point to the left of the 75th percentile line (vertical) and above the guideline (horizontal line) have failed to reach the LRWS target.

Table 5. Summary of metal concentrations in Rideau River-Rideau Falls.

Aluminum 2000-2005			
Site	Average (mg/l)	% Below	No. Samples
RRS-108C			
RRS-103C	0.166	61	57
Aluminum 2006-2011			
Site	Average (mg/l)	% Below	No. Samples
RRS-108C	0.189	53	70
RRS-103C	0.172	53	62
Copper 2000-2005			
Site	Average (mg/l)	% Below	No. Samples
RRS-108C			
RRS-103C	0.002	89	57
Copper 2006-2011			
Site	Average (mg/l)	% Below	No. Samples
RRS-108C	0.005	74	70
RRS-103C	0.004	79	62

Rideau River-Rideau Falls Metals: Site RRS-108C

Results for Al were generally below the guideline of 0.075 mg/l, fifty-three percent of samples were less than the guideline and average concentration was 0.189 mg/l in the 2006-2011 period (Fig. 7b).

Results for Cu concentrations were also occasionally above the guideline of 0.005 mg/l. In the 2006-2011 period seventy-four percent of samples were below and the average concentration was 0.005 mg/l (Fig. 8b). Percentile plots of Cu data are shown for the 2006-2011 (Fig. 9b) time period. The concentration at the 80th percentile was equal to the target at this site.

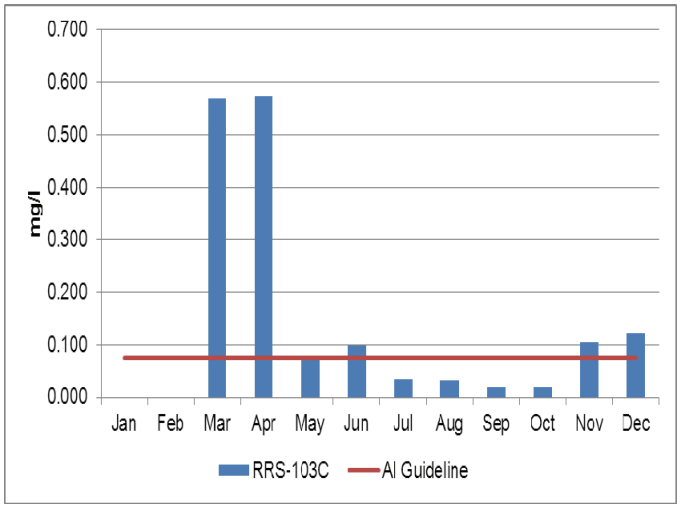


Figure 7a. Aluminum concentrations in Rideau River-Rideau Falls from 2000-2005

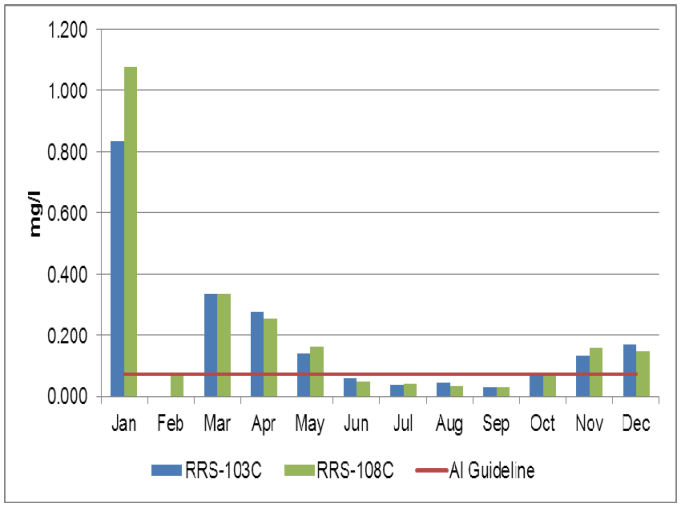


Figure 7b. Aluminum concentrations in Rideau River-Rideau Falls from 2006-2011

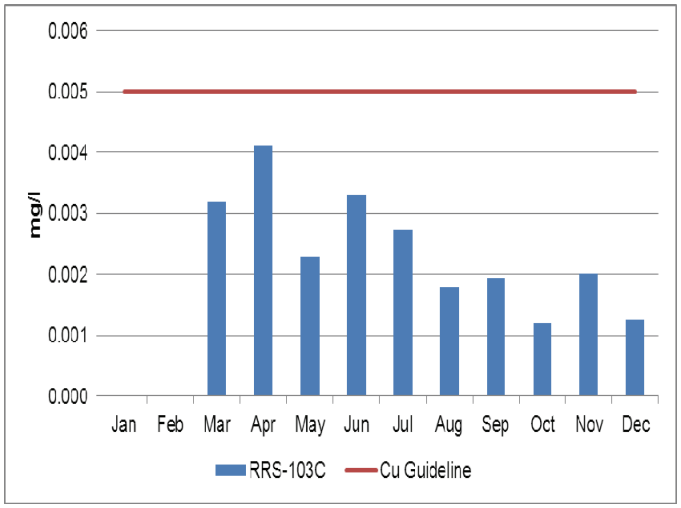


Figure 8a. Copper concentrations in Rideau River-Rideau Falls from 2000-2005

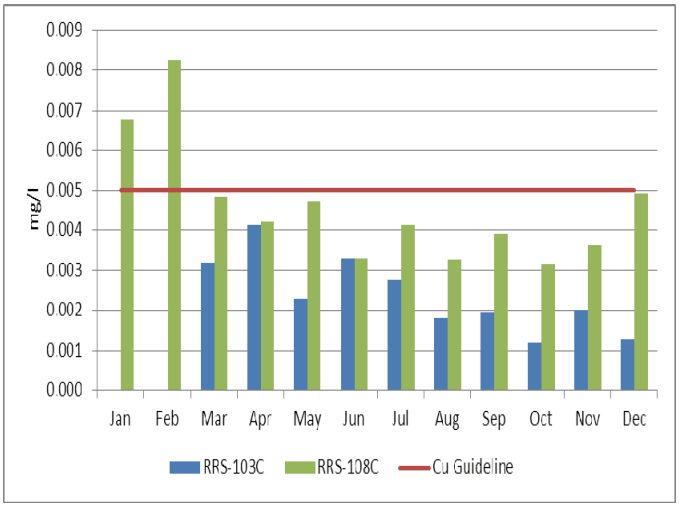


Figure 8b. Copper concentrations in Rideau River-Rideau Falls from 2006-2011

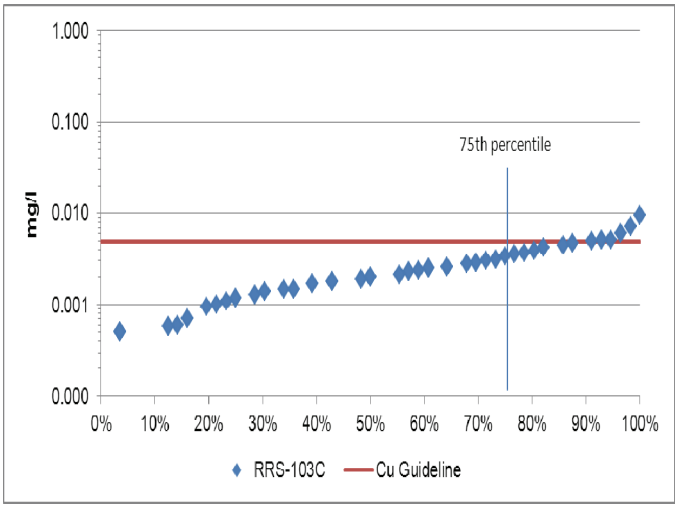


Figure 9a. Percentile plots of copper in Rideau river-Rideau Falls from 2000-2005

Rideau River-Rideau Falls Metals: Site RRS-103C

Results for Al were generally below the guideline at RRS-103C, sixty-one percent of samples were below the guideline in the 2000-2005 period and declined to fifty-three percent in the 2006-2011 period. There was a slight increase in the average Al concentration from 0.166 mg/l (Fig. 7a, 2000-2005) to 0.172 mg/l (Fig. 7b, 2006-2011).

Results for Cu concentrations were rarely above the guideline of 0.005 mg/l though exceedances did occur. The proportion of samples below the guideline decreased slightly from eighty-nine percent (Fig. 8a, 2000-2005) to seventy-nine percent (Fig. 8b, 2006-2011), the average concentration increased from 0.002 mg/l to 0.004 mg/l. Percentile plots of Cu data show that the target of a Cu concentration of 0.005 mg/l at the 75th percentile was achieved at this site, the concentration at the 75th percentile increased from 0.003 mg/l (2000-2005, Fig. 9a) to 0.005 mg/l (2006-2011, Fig. 9b) to just meet the target.

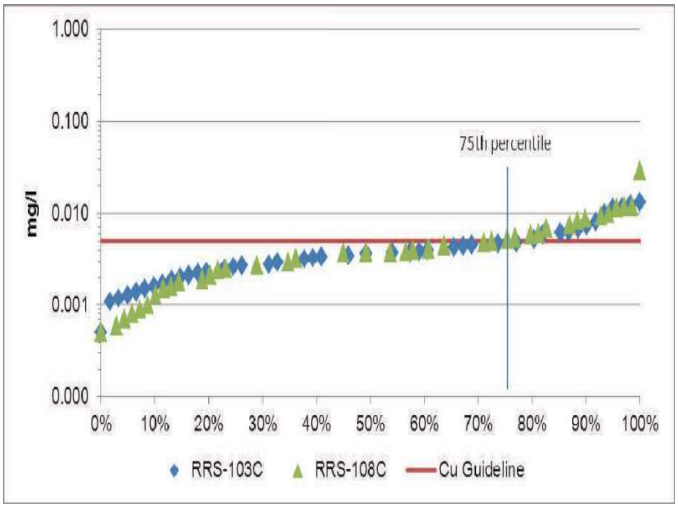


Figure 9b. Percentile plots of copper in Rideau River-Rideau Falls from 2006-2011

Rideau River-Rideau Falls Metals Summary

Overall the data shows that metal pollution may be present in this stretch of the river and efforts should be made to reduce concentrations wherever possible to improve water quality.

2) a. Overbank Zone

Riparian Buffer along the Rideau Falls Reach of the Rideau River and Tributaries

The riparian or shoreline zone is that special area where the land meets the water. Well-vegetated shorelines are critically important in protecting water quality and creating healthy aquatic habitats, lakes and rivers. Natural shorelines intercept sediments and contaminants that could impact water quality conditions and harm fish habitat in streams. Well established buffers protect the banks against erosion, improve habitat for fish by shading and cooling the water and provide protection for birds and other wildlife that feed and rear young near water. A recommended target (from Environment Canada's Guideline: How Much Habitat is Enough?) is to maintain a minimum 30 metre wide vegetated buffer along at least 75 percent of the length of both sides of rivers, creeks and streams.

Figure 10 shows the extent of the naturally vegetated riparian zone in the catchment, 30 metres on either side of all waterbodies and watercourses. Results from the RVCA's Land Cover Classification Program show that 44 percent of streams and creeks are buffered with woodland and wetland; the remaining 56 percent of the riparian buffer is occupied by settlement and transportation.

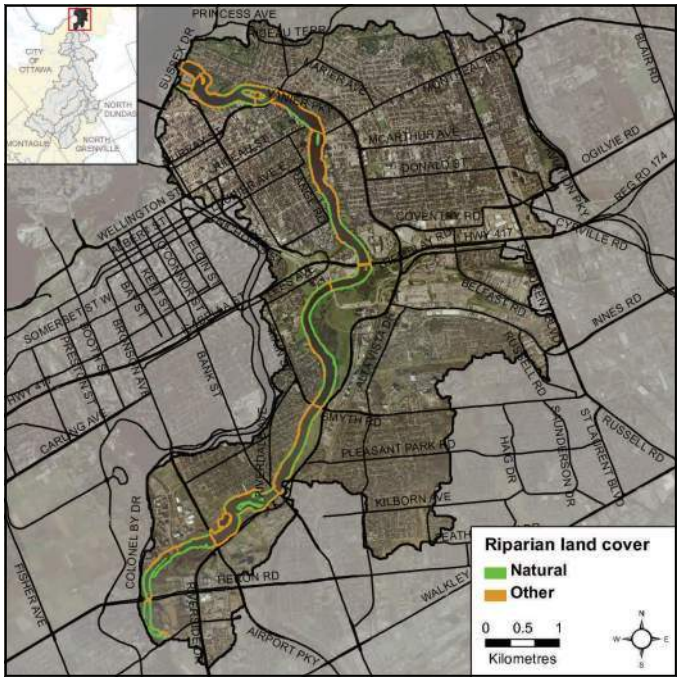


Figure 10. Catchment land cover in the riparian zone

Fish Sampling

Fish sampling sites located along Rideau Falls reach are shown in Figure 11. The provincial fish codes shown on the following map are listed (in Table 6) beside the common name of those fish species identified in the Rideau Falls reach of the Rideau River.

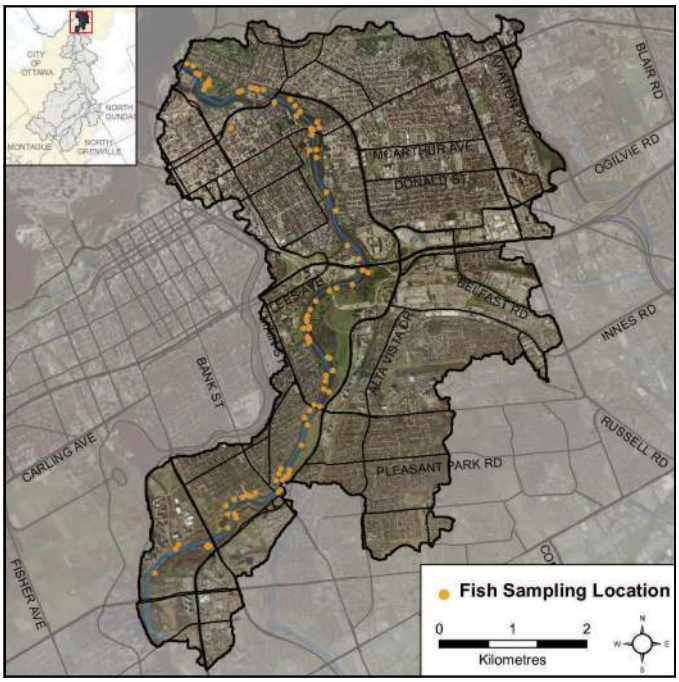


Figure 11. Fish sampling location along the Rideau Falls reach

Table 6. Fish species observed in the Rideau Falls reach

Wall **walleye**	NoPik **northern pike**	Muske **muskel-lunge**	Hy502 **tiger muskel-lunge**	ceMud **central mud minnow**	CoCar **common carp**
ESMin **eastern silvery minnow**	CoShi **common shiner**	GoShi **golden shiner**	EmShi **emerald shiner**	BcShi **blackchin shiner**	BnShi **blacknose shiner**
SpShi **spottail shiner**	MiShi **mimic shiner**	BnMin **bluntnose minnow**	Fallf **fallfish**	WhSuc **white sucker**	SiRed **silver redhorse sucker**
ShRed **shorthead redhorse sucker**	GrRed **greater redhorse sucker**	Redsp **redhorse sucker species**	BrBul **brown bullhead**	YeBul **yellow bullhead**	ChCat **channel catfish**
TaMad **tadpole madtom**	BaKil **banded killifish**	BrSil **brook silverside**	BrSti **brook stickleback**	MoScu **mottled sculpin**	RoBas **rock bass**
Pump **pump-inseed**	Blue **bluegill**	SmBas **smallmouth bass**	LmBas **largemouth bass**	BlCra **black crappie**	JoDar **johnny darter**
YePer **yellow perch**	LoPer **log perch**	TeDar **tesselated darter**			

3) Land Cover

Settlement is the dominant land cover types in the catchment as shown in Table 7 and displayed on the front cover of the report.

Table 7. Catchment land cover type

Cover Type	Area (ha)	Area (% of Cover)
Settlement	1706	60
Transportation	812	29
Woodland	203	7
Water	120	4

Woodland Cover

The Rideau River-Rideau Falls catchment contains 203 hectares of woodland (Fig.12) that occupies seven percent of the drainage area. This figure is less than the 30 percent of woodland area required to sustain forest birds, according to Environment Canada's Guideline: "How much habitat is enough?" When woodland cover declines below 30 percent, forest birds tend to disappear as breeders across the landscape.

Fifty-seven (56%) of the 101 woodland patches in the catchment are very small, being less than one hectare in size. Another 43 (43%) the wooded patches ranging from one to less than 20 hectares in size tend to be dominated by edge-tolerant bird species. One woodland patch exceeds 20 hectares (at 22 ha.) and may support a few area-sensitive species and some edge intolerant species, but will be dominated by edge tolerant species.

No patch tops 100 hectares, which according to the Environment Canada Guideline will support 60 percent of edge-intolerant forest bird species (including most area sensitive species) that prefer interior forest habitat conditions.

Forest Interior

The same 101 woodlands contain 4 forest interior patches (Fig.12) that occupy less than one percent (2 ha.) of the catchment land area. This is below the ten percent figure referred to in the Environment Canada Guideline that is considered to be the minimum threshold for supporting edge intolerant bird species and other forest dwelling species in the landscape.

Three of these patches contain less than one hectare of interior forest habitat and the fourth patch is slightly larger than one hectare in size (at 1.2 ha.).

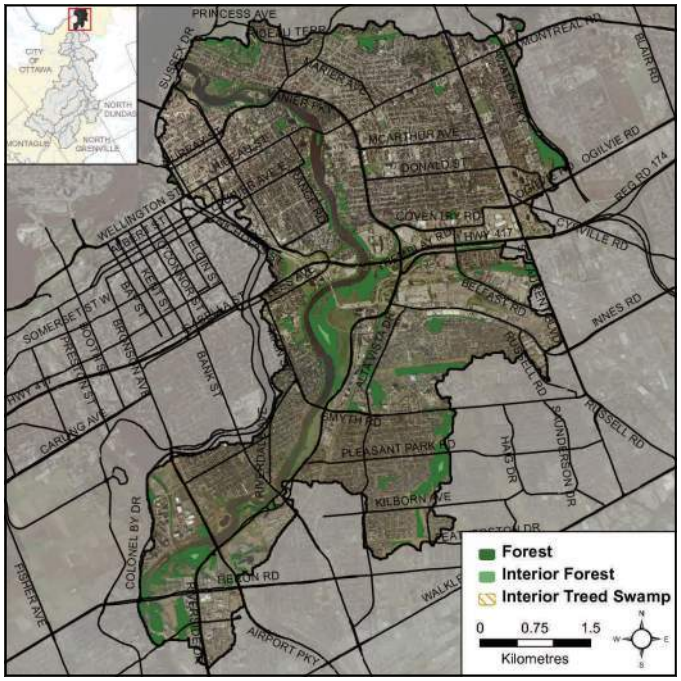


Figure 12. Catchment woodland cover and forest interior

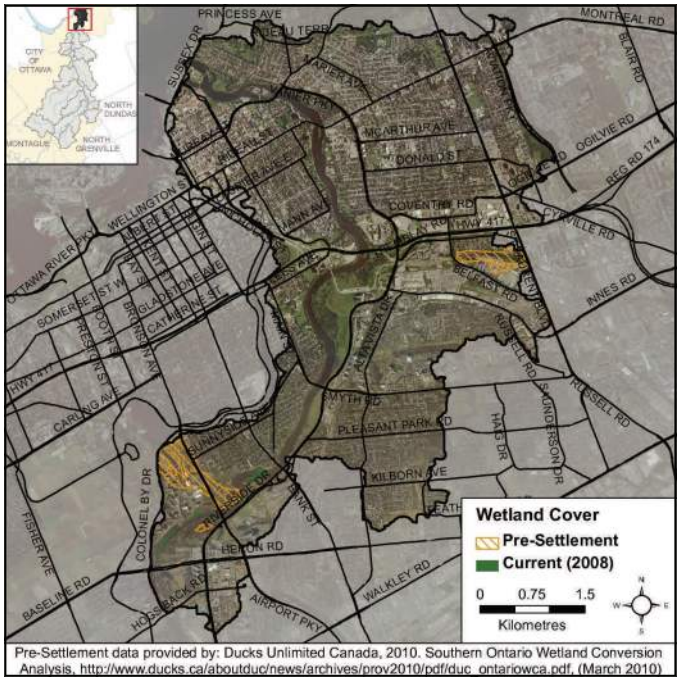


Figure 13. Pre-settlement and current wetland cover

4) Watershed Protection

Valley, Stream, Wetland and Hazard Land Regulation

Three square kilometres or 12 percent of the catchment drainage area is within the regulation limit of Ontario Regulation 174/06 (Fig. 14), giving protection to wetland areas and river or stream valleys that are affected by flooding and erosion hazards.

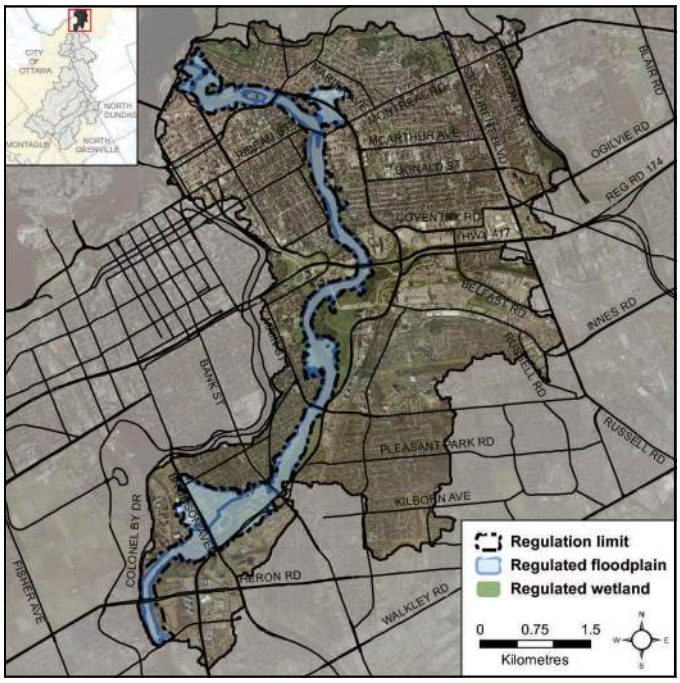


Figure 14. RVCA regulation limits

Natural features within the regulation limit include 11.7 kilometres of watercourse (representing 100 percent of all watercourses in the catchment).

Within the regulation limit, “development” and “site alteration” require RVCA permission, as do any proposed works to alter a watercourse, which are subject to the “alteration to waterways” provision of Ontario Regulation 174/06.

5) Issues

- Loss and channelization of most tributaries in this reach due to historic urban drainage practices (that have been replaced by storm sewers)
- Most urban areas within the catchment predate modern stormwater management practices
- Many stormwater outfalls to the Rideau River are untreated and during extreme storm events, overflows may occur from combined sewers
- Removal of natural riparian vegetation along the shoreline of the Rideau River and remaining tributaries
- Reduced biodiversity
- Loss of most wetland and forest habitat due to urbanization

6) Opportunities for Action

- The City of Ottawa is implementing combined sewer separation and flow management measures to reduce or eliminate stormwater overflows to the Rideau River through its municipal infrastructure renewal program
- Educate landowners about appropriate best management practices for lawn maintenance and yard waste disposal practices adjacent to the riparian corridor of the river and its tributaries
- Engage community associations and other interested groups and individuals in river and tributary clean up, invasive species removal and riparian planting

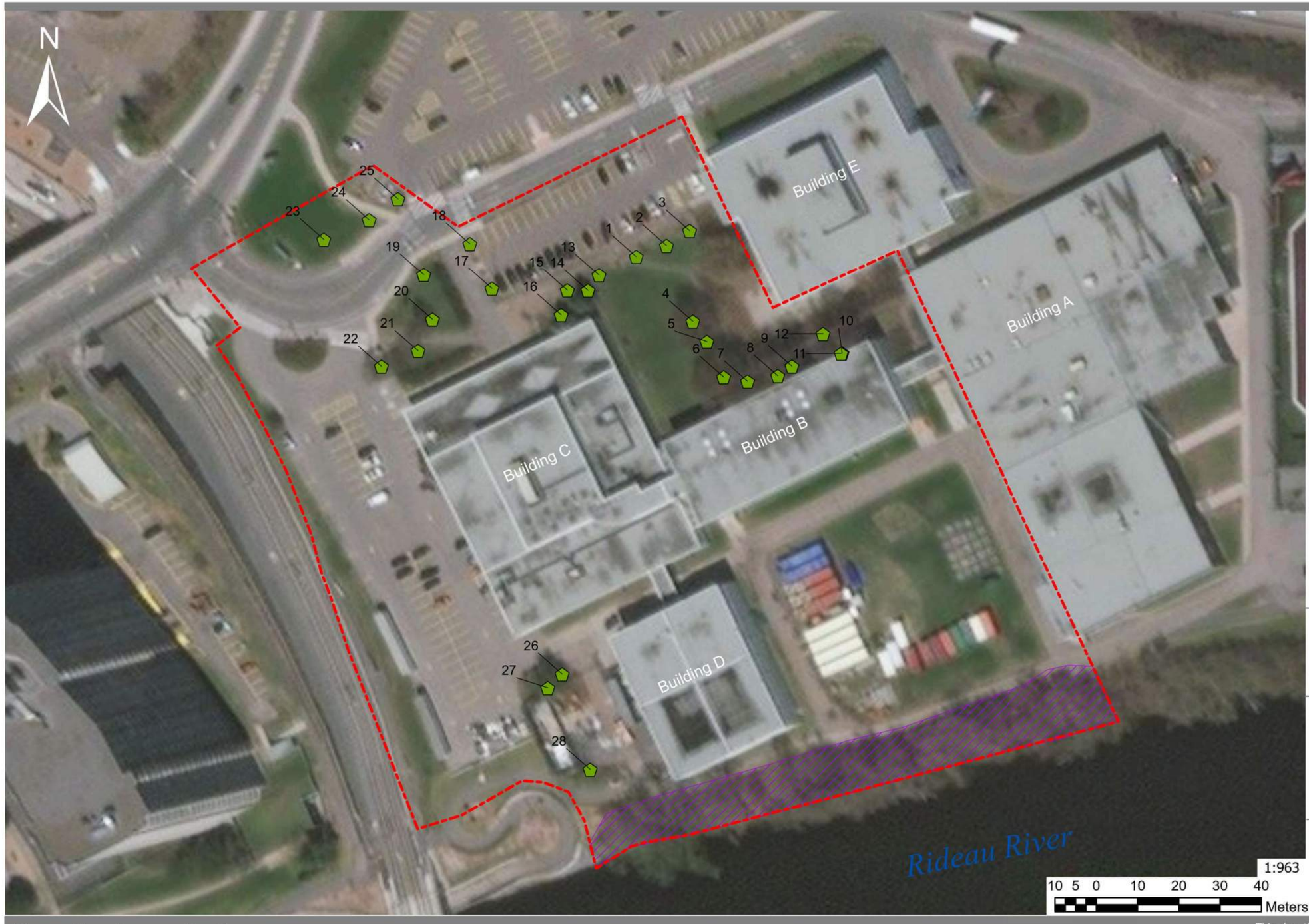
D

Appendix D
Vegetation Inventory

Common Name	Scientific Name
Bull Thistle	Cirsium vulgare
Garlic Mustard	Alliaria petiolata
Dame's Rocket	Hesperis matronalis
American Basswood	Tilia americana
Little-leaf Linden	Tilia cordata
Japanese Knotweed	Reynoutria japonica
Common Buckthorn	Rhamnus cathartica
Black Willow	Salix nigra
Manitoba Maple	Acer negundo
Norway Maple	Acer platanoides
Silver Maple	Acer saccharinum
Sugar Maple	Acer saccharum
(Acer rubrum X Acer saccharinum)	Acer x freemanii
Staghorn Sumac	Rhus typhina
Japanese Tree Lilac	Syringa reticulata ssp. reticulata
Common Hackberry	Celtis occidentalis
Siberian Elm	Ulmus pumila
American Larch	Larix laricina
White Spruce	Picea glauca
Blue Spruce	Picea pungens

E

Appendix E
Tree Conservation



Site boundary

Surveyed Tree

Dense Riparian Forest (Black Willow, Manitoba Maple, and European Buckthorn)

1:963

10 5 0 10 20 30 40

Meters

Spatial Reference
Name: WGS 1984 UTM Zone 18N
PCS: WGS 1984 UTM Zone 18N
GCS: GCS WGS 1984
Datum: WGS 1984

Sources:
- Terrestrial Survey, 2020
- Topo. Plan, Annis, O'Sullivan, Vollebekk Ltd., 2020
- Basemap : Esri, HERE, Garmin, INCREMENT P, NGA, USGS, NRCan, GeoEye, Maxar

General Notes:

Dimensions on the plan should be read and not measured. Any errors or omissions should be reported to CIMA +. The boundaries, areas and title deeds must be verified by a surveyor.

Figure - Tree Conservation Survey

Environmental Impact Statement with Tree Conservation Report
200 Lees Avenue Ottawa, Ontario
University of Ottawa

Ref # : C10-A001049-080-110

Survey by : J. Scott
Figure by : J. Scott
Concept by : J. Scott
Verified by : K. Markvorsen

Revision 00 - - Issued for report - 31 July 2020

I.D.	Species	Height (m)	DBH (cm)	CRZ (m)	Comments	General Health
1	Acer saccharinum	12	50	5		Healthy
2	Acer saccharinum	8	7	0.7		Healthy
3	Acer saccharinum	13	13	1.3	Severe mechanical damage	Healthy
4	Tilia cordata	18	56	5.6	Closed cavity	Healthy
5	Tilia cordata	18	38	3.8		Healthy
6	Tilia americana	21	91	9.1		Healthy
7	Tilia americana	21	47	4.7		Healthy
8	Tilia cordata	21	45	4.5		Healthy
9	Tilia cordata	21	53	5.3		Healthy
10	Tilia cordata	21	40	4	Pruning	Healthy
11	Tilia cordata	21	44	4.4		Healthy
12	Acer x freemanii	6	7	0.7		Healthy
13	Acer x freemanii	6	7	0.7		Healthy
14	Picea pungens	14	42	4.2		Healthy
15	Acer x freemanii	8	14	1.4		Healthy
16	Picea pungens	14	27	2.7		Healthy
17	Syringa reticulata	3	4	0.4		Healthy
18	Syringa reticulata	3	4	0.4		Healthy
19	Celtis	10	15	1.5		Healthy
20	Quercus	13	36	3.6	rust	Fair
21	Acer saccharum	9	29	2.9		Healthy
22	Ulmus pumila	9	24	2.4		Healthy
23	Ginkgo	6	8	0.8		Healthy
24	Celtis	7	13	1.3		Healthy
25	Celtis	5	9	0.9		Healthy
26	Picea glauca	13	38	3.8		Healthy
27	Larix laricina	13	23	2.3		Healthy
28	Acer platanoides	13	44	4.4	Severe pruning, dead branches, chancres	Poor

[1] Visual approximation
[2] Diameter at breast height (1.4 metres)
[3] Critical Root Zone (Calculation: DBH x 10)