Petrie III 8600 Leanne D'Arc Boulevard North

Environmental Impact Statement

110394936 Canada Inc.

CIMA+ file number: A001295

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December 2023 – Review 000

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Review and submission register			
Review No.	**Reviewed by**	**Date**	**Description of the change or submission**

Confidentiality and ownership

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List of Acronyms and Definitions

ANSI	Area of Natural and Scientific Interest
ASAR	Aquatic Species at Risk
BHA	Butternut Health Assessment
BHE	Butternut Health Expert
CC	Coefficient of Conservation
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
DBH	Diameter-at-breast Height
DFO	Fisheries and Oceans Canada
EIS	Environmental Impact Study
ELC	Ecological Land Classification
ESA	*Endangered Species Act, 2007*(Provincial)
FA	*Fisheries Act*
FWCA	*Fish and Wildlife Conservation Act, 1997* (Provincial)
GPS	Global Positioning System
NAD 83	North American Datum 1983
UTM	Universal Transverse Mercator
LIO	Land Information Ontario
NHA	Natural Heritage Assessment
NHIC	Natural Heritage Information Centre
NHRM	Natural Heritage Reference Manual
MBCA	*Migratory Bird Convention Act, 1994* (Federal)
MECP	Ministry of Environment, Conservation and Parks
MNRF	Ministry of Natural Resources and Forestry
MTO	Ministry of Transportation of Ontario
OMNR/MNRF/MNDMNRF	Ontario Ministry of Natural Resources (old name) Ministry of Natural Resources and Forestry (old name) Ministry of Northern Development, Mines, Natural Resources and Forestry
OBBA	Ontario Breeding Bird Atlas
NASAR	National Aquatic Species at Risk
OP	Official Plan
ORAA	Ontario Reptile and Amphibian Atlas
OSAP	Ontario Stream Assessment Protocol
OWES	Ontario Wetland Evaluation System
PSW	Provincially Significant Wetlands
ROW	Right of Way
RVCA	Rideau Valley Conservation Authority
SAR	Species at Risk (in this report they refer to species that are provincially or federally listed as endangered or threatened and receive protection under ESA or SARA)
SARA	*Species at Risk Act* (Federal)

SARO Species at Risk in Ontario
SWHTG Significant Wildlife Habitat Technical Guide

SRANK Definitions

S1 Critically Imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
S2 Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
S3 Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4 Apparently Secure; uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5 Secure; Common, widespread, and abundant in the nation or state/province.
? Inexact Numeric Rank—Denotes inexact numeric rank
SNA Not Applicable – A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
S#B Breeding
S#N Non-Breeding

SARA Status Definitions

END Endangered: a wildlife species facing imminent extirpation or extinction.
THR Threatened: a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
SC Special Concern: a wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.

SARO Status Definitions

END Endangered: A species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's ESA.
THR Threatened: A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
SC Special Concern: A species with characteristics that make it sensitive to human activities or natural events.

Coefficient of Conservatism Ranking Criteria

0 Obligate to ruderal areas.
1 Occurs more frequently in ruderal areas than natural areas.
2 Facultative to ruderal and natural areas.
3 Occurs less frequent in ruderal areas than natural areas.
4 Occurs much more frequently in natural areas than ruderal areas.
5 Obligate to natural areas (quality of area is low).

6 Weak affinities to high-quality natural areas.
7 Moderate affinity to high-quality natural areas.
8 High affinity to high-quality natural areas.
9 Very high affinity to high-quality natural areas.
10 Obligate to high-quality natural areas

1. INTRODUCTION

CIMA+ was retained by 110394936 Canada Inc., hereafter referred to as the proponent, to update the Environmental Impact Statement (EIS) prepared by Bowfin Environmental Consulting Inc. (Bowfin) for the development of a mixed-use commercial and residential area, Petrie's Landing III (the "Site"). Note that Bowfin merged its services with CIMA+ in 2022, and the file was transferred to CIMA+.

1.1 Project Description

The development proposal for the site consists of residential housing which will be fully serviced. Development will require the clearing of vegetation within the majority of the subject lands (approximately 7.5 ha). The development will connect to the City's water and sanitary systems, and the stormwater management water will be managed according to the Ministry of Environment, Conservation, and Parks (MECP) regulations. No stormwater management ponds are predicted for this site.

1.2 Project Location

The Site is situated at 8600 Jeanne d'Arc Boulevard North and consists of roughly 7.5 ha and is bordered by Jeanne D'Arc Boulevard North to the North and Regional Road 174 to the south. They are approximately 400 m west of Trim Road, immediately west of La Cité. It is situated in part of Lots 31 and 32, Concession 1 in the Geographic Township of Cumberland, City of Ottawa (UTM 18T 461807 m E; 5037977 m N, and Latitude 45.49410 Longitude -75.48884) (Figure 1). All work associated with the development is situated on the south side of Jeanne-D'Arc Boulevard N, with the exception of stormwater outlets. The stormwater from the Site will make use of a two existing stormwater culverts that outlet to the north side of the boulevard, north of the recreational pathway.

1.3 Purpose and Scope of Assessment

The purpose of this EIS is to collect and evaluate available information from background review and site investigations in order to make an informed decision as to whether the proposed works will have a negative impact on significant natural features and/or ecological functions present on the Site or adjacent lands. Using this data, the functions and values of the natural features within the site and its adjacent lands are assessed, followed by an evaluation of significance as per applicable legislative requirements and guidelines. The report concludes with recommendations on avoidance and mitigations to protect natural features and minimize negative impacts.

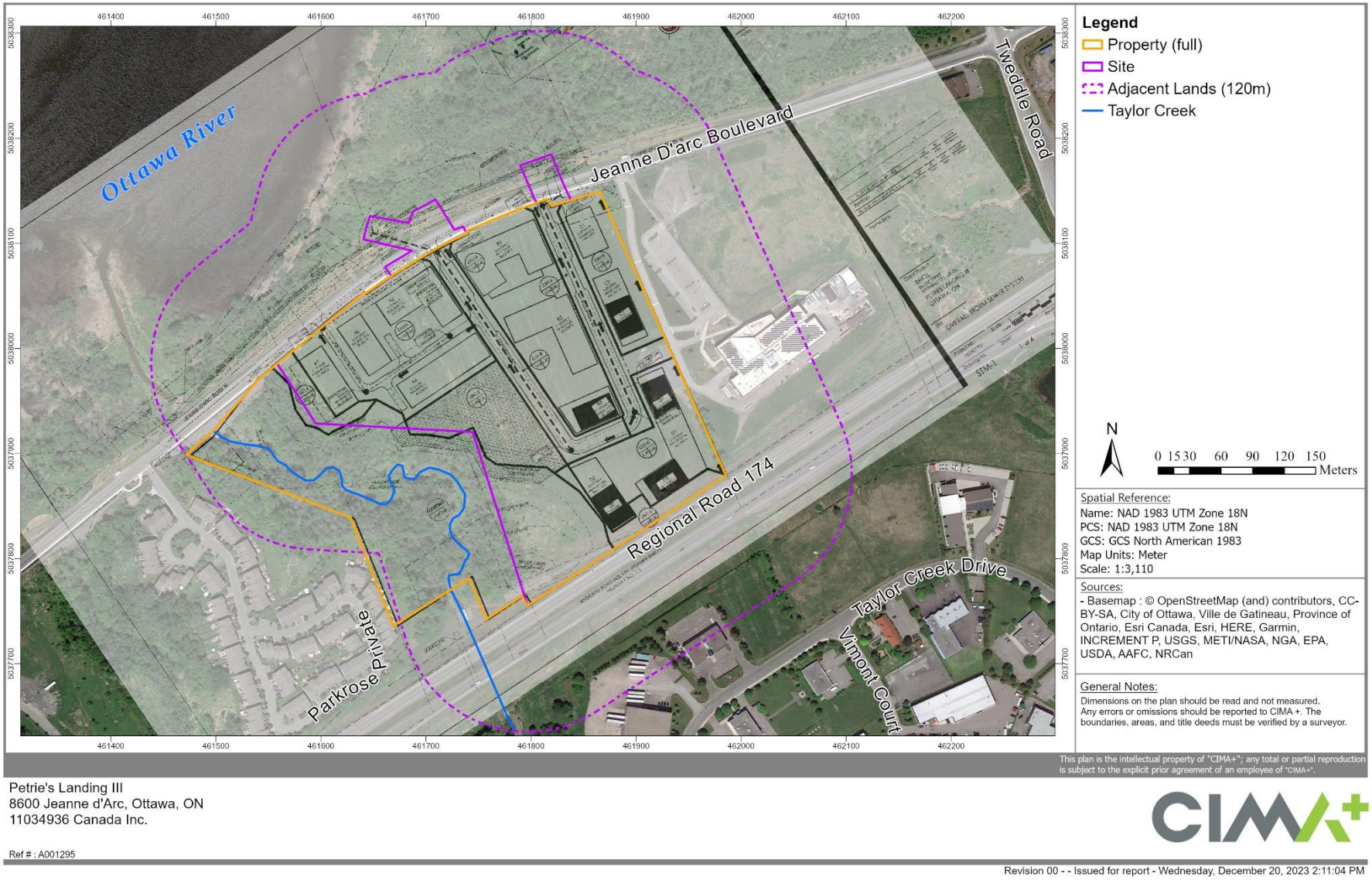


Figure 1: General Location of Site

2. LEGISLATIVE CONTEXT

2.1 Provincial – Official Plan

As per the 2021 OP, an EIS is required to determine if significant natural features have been designated in or adjacent to the site followed by an assessment of the potential impacts to any identified natural environment from the proposed development. The City's natural heritage features (NHF) are listed in Subsection 4.8.1 Policy 3 and summarized in Table 1 below. The City provides more significance to features that are **within** a Natural Heritage System (NHS) than those outside of its boundaries. The NHS includes both Core Natural Areas (CNA) and Natural Linkage Areas (NLAs). All of these are now found on Schedule C11. Note that, as per 5.6.4.1 Policy 2, the edge of the boundary would need to be verified on-site, as the OP only displays to a reasonable level of detail. Where identified, the boundaries of any significant features are noted and the potential for the development of the site to cause negative impacts is assessed. For features that may be negatively impacted, mitigation measures and compensation measures are recommended where appropriate. The various features are evaluated, when needed, following the appropriate reference document for this jurisdiction (Table 1).

This EIS follows the *City of Ottawa Environmental Impact Statement Guidelines* (City of Ottawa, 2023). The Tree Conservation Report is provided as a stand-alone document once the extent of the area to be graded is confirmed.

Table 1: Summary of Natural Heritage Features

Natural Heritage Feature	Reference for City of Ottawa (2021)
Significant habitat of Endangered and Threatened Species (SAR)	Site-specific basis as per provincial guidelines. OP Section 5.6.4.1 indicates that development or site alteration "shall maintain or enhance the integrity, biodiversity, and ecosystem services" and "not compromise the potential for long-term enhancement and restoration". Any proposed development or site alteration in or adjacent (120 m) to natural heritage features is subject to an EIS in accordance with the City's guidelines.
Significant wetlands	See Schedule C11 (wetland boundaries may need to be verified in the field). OP Section 4.8.1, Policy 5 states that development and site alteration are "prohibited" in provincially significant wetlands. Any proposed development or site alteration in or adjacent (120 m) to PSWs is subject to an EIS in accordance with the City's guidelines. Evaluated wetlands not deemed provincially significant are subject to a "no net loss approach", achieved through a variety of mechanisms in place by the City, including land use planning, development processes, and stewardship (OP Section 4.8.1,

Natural Heritage Feature	Reference for City of Ottawa (2021)
	Policy 5). In accordance with OP Section 4.9.3, Policy 6(f), minimum setback recommendations shall be established through OP Section 4.9.3, Policy 5 (headwater drainage features) for non-significant, hydrologically connected wetlands less than 0.5 ha in size. Minimum setbacks for other non-significant wetlands shall be determined through an EIS.
Significant valleylands	See Schedule C11. OP Section 5.6.4.1 indicates that development or site alteration "shall maintain or enhance the integrity, biodiversity, and ecosystem services" and "not compromise the potential for long-term enhancement and restoration". Any proposed development or site alteration in or adjacent to natural heritage features (120 m) is subject to an EIS in accordance with the City's guidelines.
Significant woodlands	See Schedule C11. OP Section 5.6.4.1 indicates that development or site alteration "shall maintain or enhance the integrity, biodiversity, and ecosystem services" and "not compromise the potential for long-term enhancement and restoration". Any proposed development or site alteration in or adjacent to natural heritage features is subject to an EIS in accordance with the City's guidelines.
Significant wildlife habitat	See Schedule C11. OP Section 5.6.4.1 indicates that development or site alteration "shall maintain or enhance the integrity, biodiversity, and ecosystem services" and "not compromise the potential for long-term enhancement and restoration". Any proposed development or site alteration in or adjacent (120 m) to natural heritage features is subject to an EIS in accordance with the City's guidelines.
Areas of Natural and Scientific Interest	See Schedule C11. OP Section 5.6.4.1 indicates that development or site alteration "shall maintain or enhance the integrity, biodiversity, and ecosystem services" and "not compromise the potential for long-term enhancement and restoration". Any proposed development or site alteration in or adjacent to natural heritage features is subject to an EIS in accordance with the City's guidelines. As per the NRHM, adjacent lands are 120 m for Life Science ANSIs and 50 m for Earth Science ANSIs.
Urban Natural Features	See Schedule C11. OP Section 5.6.4.1 indicates that development or site alteration "shall maintain or enhance the integrity, biodiversity, and ecosystem services" and "not compromise the potential for long-term enhancement and restoration". Any proposed development or site alteration in or adjacent to natural heritage features is subject to an EIS in accordance with the City's guidelines.

Natural Heritage Feature	Reference for City of Ottawa (2021)
Natural Environment Areas	See Schedule C11. OP Section 5.6.4.1 indicates that development or site alteration "shall maintain or enhance the integrity, biodiversity, and ecosystem services" and "not compromise the potential for long-term enhancement and restoration". Any proposed development or site alteration in or adjacent to natural heritage features is subject to an EIS in accordance with the City's guidelines.
Natural linkage features and corridors	See Schedule C11. OP Section 5.6.4.1 indicates that development or site alteration "shall maintain or enhance the integrity, biodiversity, and ecosystem services" and "not compromise the potential for long-term enhancement and restoration". Any proposed development or site alteration in or adjacent to natural heritage features is subject to an EIS in accordance with the City's guidelines.
Groundwater features	See Schedule C11. OP Section 4.9.4 indicates that development or site alteration "shall only be permitted in or near groundwater features where it has been demonstrated that these features and their related hydrologic functions shall be protected and, where possible improved and restored". Development and/or site alteration shall comply with approved hydrogeological and terrain analysis reports.
Surface water features, including Fish Habitat	See Schedule C11. OP Section 4.9.3, Policy 1 indicates that development or site alteration shall be subject to minimum setbacks as established by an approved watershed, sub-watershed, or environmental management plan. Where an approved management plan does not exist, minimum setback recommendations are as follows: 30 m from the top of bank, and 15 m from the existing stable top of slope. Where minimum setbacks cannot be achieved, additional studies and assessment of water features will be required (i.e., fish and fish habitat, riparian habitat). Site investigations of surface water features will be required, and findings may trigger the *Fisheries Act* (DFO).
Landform features	See Schedule C11. OP Section 5.6.4.1 indicates that development or site alteration "shall maintain or enhance the integrity, biodiversity, and ecosystem services" and "not compromise the potential for long-term enhancement and restoration". Any proposed development or site alteration in or adjacent to natural heritage features is subject to an EIS in accordance with the City's guidelines.

2.2 Provincial - Other Acts and Regulations

2.2.1 Endangered Species Act

The *Endangered Species Act, 2007* (ESA) prohibits killing or damaging the habitat of species that are listed on the SAR in Ontario list. 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 the factors threatening it. Note that species listed as special concern are not afforded protection under the Act.

The ESA is applicable on private and provincial lands. It can also sometimes be applicable to federal lands. The relevant sections to the project are:

- Prohibition on killing or harming of END or THR individuals (Section 9)
- Prohibition on damage to END or THR habitat (Section 10)

2.2.2 Conservation Act

This site is under the jurisdiction of the Rideau Valley Conservation Authority (RVCA): O. Reg. 174/06 Development, Interference with Wetlands and Alterations to Shorelines and Watercourses under the *Conservation Authorities Act* – Rideau Valley Conservation Authority. As this Act pertains to impacts to floodplains, hazardous lands, and hydrologic functions of wetlands, the evaluation of impacts under this Act is outside of the scope of this report.

2.2.3 Fish and Wildlife Conservation Act

In addition to the protections offered by the statutes and policies noted above, the Fish and Wildlife Conservation Act, 1997, administered by the Ministry of Natural Resources and Forestry (MNRF), needs to be considered. This Act imposes restrictions on the hunting, trapping, and fishing of wildlife, as well as the possession of animals (live or dead). These restrictions include the capturing or harassing of specially protected wildlife or any wild bird species (not a game bird and not listed as an exception) regardless of its live stage (egg, adult) (Part II 5 (1)). It also protects nests or eggs of wild bird species (other than American crow, brown-headed cowbird, common grackle, house sparrow, red-winged blackbird, or starling) (Part II 7(1)). In case of conflicting provisions with the Endangered Species Act, the Act providing greater protection for the animal, invertebrate, or fish in question will prevail.

2.3 Federal

2.3.1 Fisheries Act

The *Fisheries Act,* last amended on August 28, 2019, 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. The most relevant sections to works, undertakings and activities are:

- Prohibition of the Death of Fish (Section 34.4 (1));
- Prohibition of the Harmful alteration, disruption, or destruction of Fish Habitat (Section 35 (1)); and
- The provisional Ministerial powers to ensure the free passage of fish or the protection of fish or fish habitat with respect to existing obstructions (Section 34.3).

2.3.2 Migratory Birds Convention Act

The *Migratory Birds Convention Act, 1994* (MBCA) regulates the protection and conservation of migratory birds as populations and individuals. It also offers protection for nests containing a live bird or viable eggs for most migratory bird species. Schedule 1 under the Migratory Bird Regulations (2022) lists 18 species that may reuse nests and whose nests are protected year-round regardless of occupation, unless the nest has been reported and deemed abandoned after a waiting period. Species listed under Schedule 1 that occur in Ontario include great egret, great blue heron, cattle egret, green heron, snowy egret, black-crowned night heron, and pileated woodpecker. The Migratory Bird Regulations (2022) prohibits the disturbance, damage, or destruction of migratory bird nests or eggs. These prohibitions and regulations apply to any areas where migratory birds and their nests are found in Canada.

2.3.3 Species at Risk Act

Federally protected species are listed in 'Schedule 1' of the *Species at Risk Act* (SARA). The application of SARA varies depending on the species and the level of government with jurisdiction over the land. In general, the relevant sections are:

- Prohibition of killing, harming, harassment, capturing or taking of an individual listed as extirpated, endangered, or threatened (Section 32(1))
- Prohibition of possessing, collecting, buying, selling, or trading an individual listed as extirpated, endangered, or threatened (Section 32(2))
- Prohibition against the damaging or destruction of residences of species listed as endangered or threatened. For extirpated species, the recovery strategy must also recommend the reintroduction of the species into the wild in Canada (Section 33)

However, on lands that are not federal, Sections 32 and 33 do not apply except for aquatic species (those listed as "fish" under the *Fisheries Act* or a migratory bird as per the *Migratory Birds Convention Act, 1994* (MBCA), unless a federal order has been created.

3. METHODOLOGY

3.1 Study Area

The Site and adjacent natural heritage features were examined and analyzed by the review of available information from desktop research, and site investigations. For the most part, the OP calls for an evaluation of the areas to be impacted directly and the adjacent lands (120 m). This area is widened when analyzing the potential for species at risk (SAR) as their protected habitats vary with the species being considered.

3.2 Background Review

Where the OP indicated that the features to be considered were those identified on their schedules, these took precedence along with consultation comments from reviewing agencies. Other information collected from outside sources was used to help inform the functions of these features and to identify those not found on the schedules (i.e., endangered and threatened species habitat). Information from government websites, other consultants' reports, and personal knowledge has also been included as appropriate. The desktop review included a larger area (~5 km), and the data was reviewed and analyzed for applicable site-specific information. Data sources included:

- Official Plan of the City of Ottawa and applicable Schedules (2021)
- Geographic information from Land Information Ontario (LIO, 2021)
- The Ministry of Natural Resources and Forestry's (MNRF) Natural Heritage Information Center (NHIC) Make A Map for squares #18VR6137, #18VR6138, #18VR6038, #18VR6139, #18VR6540, #18VR6334, #18VR6335, #18VR6439, #18VR6033, #18VR6439, #18VR6033, #18VR5635– search was completed October 2023 (NHIC, 2023).
- Ontario Breeding Bird Atlas squares #18VR53, #18VR63, and #18VR64 (Atlas 2- 2001 - 2005)
- Atlas of the Mammals of Ontario (Dobbyn, 1994)
- iNaturalist (2022)
- eBird (2023)
- Rideau Valley Conservation Authority (RVCA)
- Fisheries and Oceans (DFO) Aquatic Species at Risk Mapping (DFO, 2023)
- Aerial/Satellite Imagery (ERIS, 2021)

3.3 Field Studies

3.3.1 Vegetation Descriptions and Flora Observations

Vegetation communities were mapped using satellite imagery and verified during field visits. Field studies were completed by systematically walking the site. Field investigations included a botanical inventory, and vegetation was characterized based on the appropriate methodologies: Ontario Wetland Evaluation System, Southern Manual (OWES) (MNRF, 2022) for wetland

habitats and the Ecological Land Classification for Southern Ontario (ELC) (Lee et al. 1998) for upland habitats. The MNRF's ELC and OWES definition of wetlands do not match one another. Since wetlands are to be evaluated following OWES, the determination of the presence/absence of wetland habitat was solely based on the OWES definition of wetland habitat:

> *"Lands that are seasonally or permanently flooded by shallow water as well as lands where the water table is close to the surface; in either case the presence of abundant water has caused the formation of hydric soils and has favored the dominance of either hydrophytic or water tolerant plants".* (MNRF, 2022)

The upland vegetation communities were characterized using ELC to classify and map ecological communities to the community class or lower. The ecological community boundaries were generally defined through the review of satellite imagery and further refined during field investigations. Like OWES, the ELC protocol recommends that a vegetation community be at least 0.5 hectares (ha) in size before it is defined. Based on the composition of vegetation communities within the Site, patches of vegetation less than 0.5 ha were described as inclusions (if required). The information was documented and classified according to species and locational data was gathered using a hand-held GPS.

Nomenclature used in this report follows the Southern Ontario Plant List (Bradley, 2010) for both common and scientific names which are based on Newmaster et al. (1998). Authorities for scientific names are given in Newmaster et al. (1998).

3.3.2 Bird Surveys, including SAR Birds

Information on bird use within the area was collected through a grassland breeding bird survey. This information serves primarily to determine the presence/absence of species at risk (endangered/threatened) but also serves to meet the requirements of other functions as applicable to the OP policies for the land and project (i.e., MBCA regulations, functions of woodlands and wetlands, significant wildlife habitat).

The MNRF grassland breeding bird survey protocol was used for grassland habitats, as described below:

- Two of the three grassland visits completed between June 1st and first week in July.
- Began no earlier than 30 minutes after dawn and completed by 0900 hours;
- Conducted on a day with no rain, little to no wind and good visibility;
- Included linear transects spaced 250 m apart with point counts every 250 m;
  - Point counts consisted of listening and observing for SAR species over a 10 min period recording the number heard/seen, their sex, location, behaviour and interactions with other birds (any species);
- While walking between points, any additional SAR observations was recorded; and
- A list of all birds observed was also compiled within the different habitats.
- Birds were identified by sound and/or sight.

Survey point locations are depicted on
Figure 2.

3.3.3 Species at Risk Plants, including Butternut Inventory

Specific attention was paid to locating species at risk (SAR) or species of conservation value listed as potentially occurring within the study area. If these species were observed, they would be photographed, and their coordinates recorded on a hand-held GPS using NAD83. Plants that could not be identified in the field were collected or photographed for a more detailed examination in the laboratory.

The Butternut Assessment Guidelines were followed (MECP, 2021). The requirements of this protocol are summarized below:

- Surveys to be completed by a Butternut Health Expert.
- Health assessment period is during the leaf-on season, which is considered to be between May 15-August 31.
- Information collected includes location (UTM coordinates using a GPS unit set at 18T NAD83), diameter-at-breast-height (dbh), tree height, canopy cover, and number of cankers.
- Each individual tree is to be assigned a number and identified (i.e., paint, preference for white) or flagged.

The inventory included the entire original site and the adjacent 50 m around the site (where access was possible). Any individuals noted were marked with white spray paint and flagging tape and numbered sequentially. Note that butternut inventories are valid for 2 years (until September 29, 2024).

3.3.4 Aquatic Habitat Descriptions

To assess the potential impacts to fish habitat, fish communities or fish species at risk (SAR), the aquatic habitats within the study area were assessed based on the point observation technique used by *Ontario Stream Assessment Protocol* (Stanfield, 2013) and the Ministry of Transportation of Ontario (MTO)'s *Environmental Guide for Fisheries* (MTO, 2020). This project included a description of the channel morphology using evenly spaced transects upon which data was recorded from evenly spaced observation points. The data collected included: channel width, wetted width, bankfull depth, water depth, substrate size, morphological units, temperature, pH, and in-stream cover. The locations of the stations described is provided in the results section.

3.3.5 Incidental Fauna Observations

During all visits, any wildlife observations were recorded. Incidental observations included observations of an individual, its tracks, burrows, feces and/or kill sights.

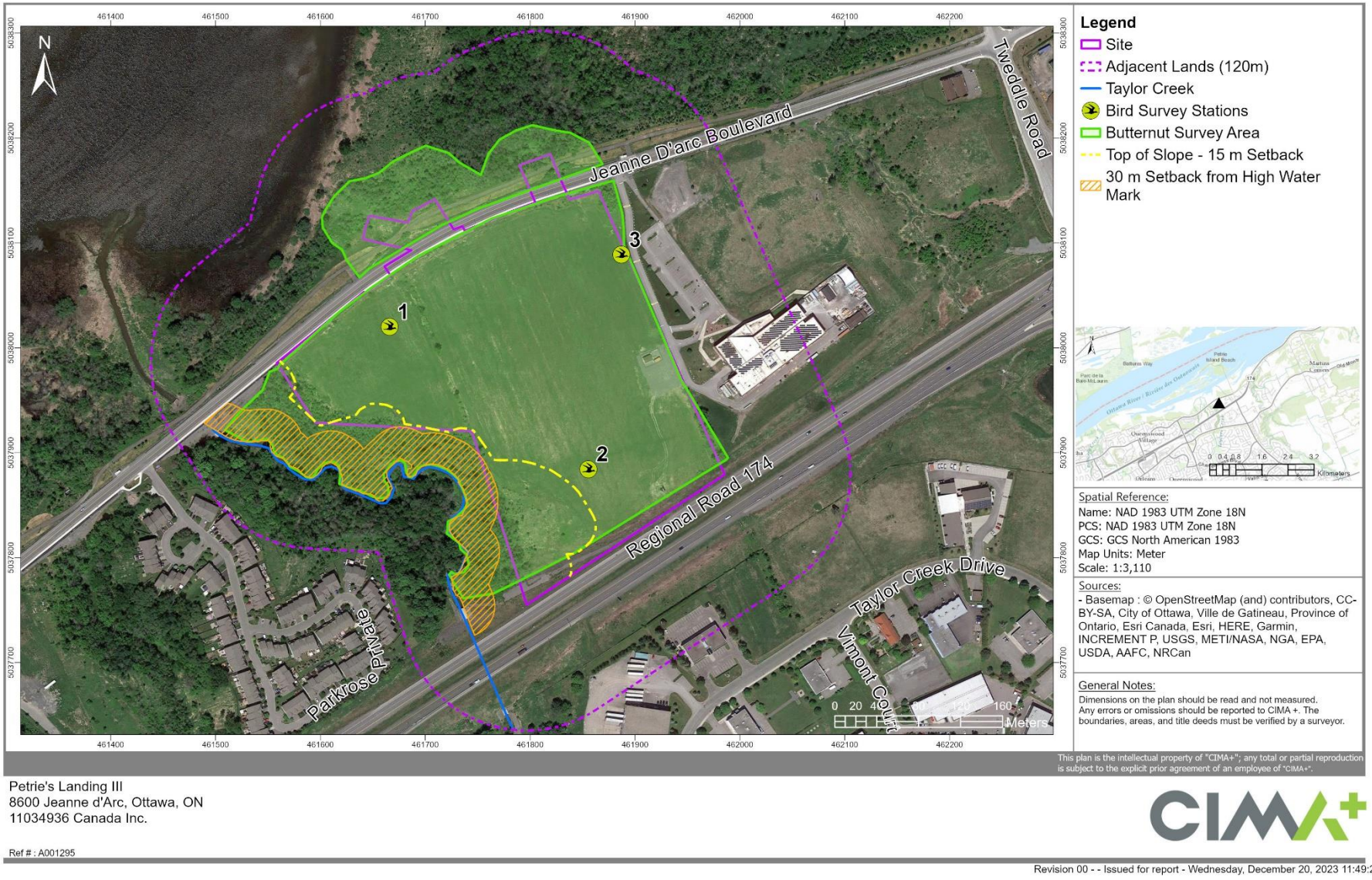


Figure 2: Daytime and Nighttime Breeding Bird Survey Points and Butternut Search Area

4. BACKGROUND

4.1 Summary of Known Natural Heritage Features

The site and adjacent 120 m are situated entirely within the OP of the City of Ottawa. It is bordered by the residential development to the west, large roads to the north and south, and development to the east. The land use designation is Neighbourhood. The schedules associated with the City of Ottawa's official plan identified a natural heritage feature on the western edge of site (associated with Taylor Creek) as well as an urban natural feature (Petrie Island PSW and ANSI) and fish habitat (Taylor Creek) within 120 m of the site. The Urban Natural Feature to the north is designated as a Natural Heritage system Core Area. The Natural heritage Features Overlay associated with Taylor Creek does not have any other designations (i.e., is not a NHS Core Area or Linkage Area).

Table 1: Summary of Available Background Information on Identified Natural Features

Natural Heritage Systems	Present within Site	Present within Adjacent Lands (120m) of Site	Comments
Provincially Significant Wetlands	None	Petrie Island situated 38m north of the Site	None
Areas of Natural and Scientific Interest (ANSIs)	Petrie Island, Candidate ANSI – Life Science		None
Significant habitat of Endangered and Threatened Species (SAR)	Potential for endangered or threatened species needs to be determined following assessment of the suitable habitats in or near the site. Preliminary review of the satellite images suggests that there is a potential for several species at risk such as Blanding's Turtle, Least Bittern, Eastern Meadowlark, Bobolink, Chimney Swift, Bats, Butternuts, and Black Ash.		Endangered species habitat is discussed in Section 5.3.1
Significant Woodlands	Natural heritage feature overlay is on site		LIO identifies woodlands on western side of site.
Significant Valleyland	None identified on Schedules	None identified on Schedules but Ottawa River valley and Taylor Creek Valley are in the adjacent lands and are candidate valleylands	None
Significant Wildlife Habitat	Settlement area and None present on the schedules	Located adjacent to NHF	None
Urban Natural Features	No	Petrie Island situated to the North (Petrie Island) (19m)	None
Natural Environment Areas	No	No	None
Groundwater Features	No		None
Natural Linkage Features and corridors	No		None

Natural Heritage Systems	Present within Site	Present within Adjacent Lands (120m) of Site	Comments
Fish Habitat/Surface Water Features	No	Ottawa River (60m) and Taylor Creek (28m)	Discussed in Section 5
Landform Features	No		None

4.2 Endangered and Threatened Species and their Habitat

Endangered and threatened Species at Risk (SAR) are protected under the provincial Endangered Species Act. The federal Species at Risk Act (SARA) applies only to fish species on private land. Most birds, including SAR, also receive protection from *Migratory Bird Convention Act* and/or *Fish and Wildlife Conservation Act*. Together, provincially, and federally protected species are referred, herein, to as SAR, herein. This site is situated on private lands and as such, the evaluation of presence was complete following the province's guidelines.

A list of potential Endangered and Threatened species was compiled using various sources. The NHIC database provides information available to the public on those SAR documented as occurring within the general area. It should be noted that not all information for all species is available to the public. Furthermore, the absence of a record does not necessarily indicate that the species is absent from the area. The purpose of the NHIC database is to help determine what species may occur within the project area. The background review included looking at the list of birds observed as part of the Ontario Breeding Bird Atlas (OBBA) and any SAR species listed on these lists were considered as potentially occurring within the subject lands. Added to this list were species that often occur within the general area based on personal experience or observations. The resulting list includes 18 SAR: 1 mollusc (hickorynut), 3 fish (lake sturgeon, American eel, channel darter), 1 reptile (Blanding's turtle), 7 birds (least bittern, eastern whip-poor-will, red-headed woodpecker, bank swallow, bobolink, and eastern meadowlark), 4 mammals (little brown myotis, northern myotis, eastern small-footed myotis, and the tri-colored bat), and 2 plants (butternut and black ash) (Table 2). Note that following site investigations, this list of species and potential occurrence of them or their habitat was reviewed and adjusted.

For some species, the federal and/or provincial governments provide guidelines on what habitats should receive automatic protection. This is usually based on distances from known sightings or suitable habitat. Federally, the habitat is typically classed based on function and provincially it is either regulated or general habitat. Regulated habitat has detailed description and is prescribed in an Ontario Regulation. General habitat often splits the habitat needs into categories, listed as Categories 1-3 with 1 being the most sensitive to disturbances. Note the exception with Butternuts, where Category 1 individuals are least sensitive. In the table below, the candidate SAR for the Site are listed along with their habitat needs. Where guidance is provided by the government, this is used to evaluate whether to bring the species forward to assessment. When there is no guidance available, the available literature is used to evaluate the suitability of the habitat on-site for that species. Additional information is provided for the species brought forward in the paragraphs following the table.

Table 2: List of Potential Endangered or Threatened Species and Identification of those Brought Forward

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat Guidelines	Evaluation	Brought Forward (Yes/No)
MOLLUSC							
Hickorynut	*Obovaria olivaria*	S1?	END	END	Found in large, wide, and deep (>2-3 m) rivers with moderate to strong water velocities and sandy bottom. The mandatory host species in Ontario is Lake Sturgeon. For the mussel to be present, the host species must have access to the area (COSEWIC, 2011).	No suitable watercourse is present on site. The nearest record was identified on NHIC (Square #18VR6038) on the Ottawa River, however the DFO mapping indicates all of the Ottawa River as potential habitat. The Ottawa River is approximately 70 m from the Site.	No
FISH							
Lake Sturgeon	*Acipenser fulvescens*	N	THR	No Status	Bottoms of lakes and large rivers. Adults are typically found in highly productive shoal areas of large rivers and large lakes. Preferred water temp. 15-17°C. (COSEWIC 2017)	No suitable watercourse is present on site on site. The nearest record is from the Ottawa River, 70 m north.	No
American Eel	*Anguilla rostrata*	S1?	END	No Status	Near cover over muddy bottoms in lakes, ponds, rivers, and creeks at depths <15 m; preferred water temperature range 16-19°C. (COSEWIC 2006)	Potential to occur in Taylor Creek as well as the Ottawa River, however at the current population levels, the species is mostly restricted to systems larger than Taylor Creek. Low potential to occur and a 30 m setback from Taylor Creek will prevent impacting this species' habitat.	No
Channel Darter	*Percina copelandi*	S2	SC	SC	Pools and the edges of riffles of small to medium rivers over sand and gravel substrate. Prefers sand or gravel beach habitat within lakes and pool or riffle areas within creeks.	No suitable watercourses on site. The closes record is from the Ottawa River 70 m north.	No

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat Guidelines	Evaluation	Brought Forward (Yes/No)
REPTILES							
Blanding's Turtle	*Emydoidea blandingii*	S3	THR	THR	Shallow water, large marshes, shallow lakes or similar such water bodies (COSEWIC, 2016). Federal guidelines use a 2 km distance and bases the automatic protection on the occupancy and suitability of the habitat for nesting, overwintering and functional habitat (ECCC, 2018). Provincial guidelines provide general habitat protection to suitable habitat within 2 km of an occurrence when certain conditions are met (MECP, 2019).	The setback from Taylor Creek will prevent impact to Category 2 habitat. Avoidance measures are provided below.	Yes
BIRDS							
Least Bittern	*Ixobrychus exilis*	S4B	THR	THR	Freshwater marsh habitat with dense vegetation (Sandilands, 2005; COSEWIC, 2009a). Nests are typically in cattail marshes, near edge or openings but they have been found in other emergents and occasionally in willow (Woodcliff, 2007). Recovery strategy states that the species must have permanent marsh/shrub swamps and a mosaic of tall and robust herbaceous or woody vegetated with open water areas and natural regime water levels (ECCC, 2014). The open water areas can be shallow (10-50cm) (OMNRF, 2016). Movements within this suitable habitat can extend within a 500m radius of the nest (ECCC, 2014). and are usually found in those that are larger than 5 ha (COSEWIC 2009; OMNRF, 2014). The province does not currently have any guidance on the general habitat requirements of this species.	Potentially suitable wetlands are present along the Ottawa River, north of Jeanne d'Arc Boulevard. The headwall installed north of the road will be over 30 m from marsh habitat.	Yes

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat Guidelines	Evaluation	Brought Forward (Yes/No)
Eastern Whip-poor-will	*Antrostomus vociferus*	S4B	THR	THR	Rock or sand barrens with scattered trees, savannahs, old burns, or other disturbed sites in a state of early to mid-forest succession, or open conifer plantations (COSEWIC, 2009). The province's General Habitat Description outlines Category 1-3 requirements, which are described in Section 6.1.4. Provincial guidelines provide general habitat protection to suitable habitat within 500 m of an occurrence when certain conditions are met (MECP 2019). The province adopted the federal recovery strategy (MECP, 2019).	No suitable woodlands on site. Woodlands on adjacent lands are protected by the setback from Taylor Creek.	No
Red-headed Woodpecker	*Melanerpes erythrocephalus*	S4B	END	END	Open deciduous woodland, woodland edges, and sparsely treed habitats. (COSEWIC, 2007; MECP, 2022). The province does not currently have guidance for the general habitat of this species, though critical habitat is identified (both federally and provincially) as the suitable habitat within a 200 m radius around a nest observation OR the 600 m around confirmed or probable breeding OR two possible breeding records within 600 m and 7 days of each other (MECP, 2022; ECCC, 2019). Observations must be from after 2021.	None were observed during bird surveys. Trees are protected by the setback from Taylor Creek.	No
Bank Swallow	*Riparia riparia*	S4B	THR	THR	This species nests within vertical banks, with a preference for sand-silt substrate. Nesting sites more likely near open upland habitats and at heights averaging 5.6m (1.2-10.8m) (COSEWIC 2013). Provincially, this species' protected habitat consists of the 50 m in front of a	Suitable banks present on site, but no nests were found and no individuals observed during breeding bird surveys. The 30 m setback from Taylor Creek will protect the banks of the valley.	Yes

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat Guidelines	Evaluation	Brought Forward (Yes/No)
					breeding colonies bank face and all suitable foraging habitat within 500 m (MECP 2015).		
Bobolink	*Dolichonyx oryzivorus*	S4B	THR	THR	Primarily in forage crops, and grassland habitat. It is sensitive to edge effects, size of habitat and areas with dense shrub vegetation or a litter layer deeper than a few centimeters (COSEWIC, 2010). Provincially, this species' protected habitat consists of the area extending 60 m from the nest as well as the 300 m of suitable habitat around the nest (MECP 2013).	The cultural meadow on site was suitable for this species. However none were observed during bird surveys.	Yes
Eastern Meadowlark	*Sturnella magna*	S4B	THR	THR	Typically require larger grasslands but have been known to breed in habitats that were 1 ha in the United States. Usually, this species' defended territories consist of 2.8-3.2 ha of uncut meadow or field (OMNR, 2014b). Personal observations of successful nesting habitat for this species in Eastern Ontario have not found any successful nesting pairs in habitats that were less than 5 ha, which is estimated to be this species' approximate area requirement (COSEWIC, 2011). The federal recovery strategy requires habitat to fall within 10x10 km squares of occupancy to be considered for critical habitat. Provincially, this species protected habitat is the area extending 100 m from the nest as well as the 300 m of suitable habitat around the nest (MECP 2013).	The cultural meadow on site was suitable for this species. However none were observed during bird surveys.	Yes
MAMMALS							
Little Brown Myotis	*Myotis lucifugus*	S4	END	END	Females establish summer maternity colonies, often in buildings or large-diameter trees.	MECP recommends the use of avoidance timing window for	Yes

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat Guidelines	Evaluation	Brought Forward (Yes/No)
					Foraging occurs over water, along waterways, and forest edges. Overwinter in cold and humid hibernacula (i.e., caves/mines) (COSEWIC, 2013). Critical habitat has not yet been defined by the province.	clearing of trees (>10 cm in diameter). If this can be accomplished, then no impacts to individuals are anticipated. General mitigation measures are brought forward for these species	
Northern Myotis	*Myotis septentrionalis*	S3	END	END	Older (late successional or primary forests) with large interior habitat and snags that are in the mid-stage of decay. They prefer intact interior habitat and are sensitive to edge habitats (Menzel et al. 2002, Broders et al. 2006, SWH 6E Ecoregion Criterion Schedule). Critical habitat has not yet been defined by the province.		
Eastern Small-footed Myotis	*Myotis leibii*	S2S3	END	No Status	Roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. The recovery strategy for the eastern small-footed myotis indicates that the preferred maternity habitat of this species consists of open rock habitats. In the winter, these bats hibernate, most often in caves and abandoned mines (Humphrey, 2017). Critical habitat has not yet been defined by the province.		
Tri-colored Bat	*Perimyotis subflavus*	S3?	END	END	Females establish summer maternity colonies, often in buildings or large-diameter trees. Foraging occurs over water, along waterways, and forest edges. Overwinter in cold and humid hibernacula (i.e., caves/mines) (COSEWIC, 2013). Critical habitat has not yet been defined by the province.		
VASCULAR PLANTS							

Common Name	Scientific Name	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Preferred Habitat Guidelines	Evaluation	Brought Forward (Yes/No)
Butternut	*Juglans cinerea*	S2?	END	END	Found in a variety of habitat types but grows best on well-drained fertile soils in shallow valleys and on gradual slopes (COSEWIC, 2017). The federal recovery strategy does not outline critical habitat for this species. Provincially, butternuts are assessed and categorized based on the amount of canker. These categories are outlined in Section 5.	None were observed during surveys. The butternut inventory is valid until September 29, 2024.	No
Black Ash	*Fraxinus nigra*		END (January 25, 2024)	No Status	Swamps, bogs, and riparian areas, occasionally poorly drained upland areas (COSEWIC 2018). Healthy black ash with diameters equal to or larger than 8cm at breast height in areas affected by the emerald ash borer are to be protected beginning on January 25, 2024.	Suitable habitat present and the site is within the municipalities listed as heavily affected by the emerald ash borer. Some were present in the areas to the north of Site above the walking path.	Yes

Species at Risk in Ottawa (June 2023)
Table Updated: September 2023

SRANK Definitions

S1 Critically Imperiled, Critically imperiled in the nation or state/province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.

S2 Imperiled, Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

S3 Vulnerable, Vulnerable in the nation or state/province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

S4 Apparently Secure, Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S#S# Range Rank, A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

? Inexact Numeric Rank—Denotes inexact numeric rank

4.3 Geology and Hydrologic Conditions

In general, the area is flat and cropped (hay). Based on the mapping from the *Characterization of Ottawa's Watershed: An Environment Foundation Document with Supporting Information Base* (March 2011), the area is identified as Limestone Plains. A summary of the information from the above-mentioned report and maps is provided in Table 3.

The information for the soils map shows the study area as having a Farmington Loam soil (*Soil Map of Carleton County*). However, the geotechnical report (Paterson Group, December 23, 2022) indicated that the site was asphalt with over 0.9-1.0 m of fill (brown silty sand with some gravel/clay) over interbedded grey limestone and black shale.

There were no watercourses, lakes, ponds, or groundwater seeps in the area.

Table 3: Summary of Soil and Geology

Map	Classification
Bedrock	Limestone with some shaly partings, some sandstone in basal part
Surficial Geology	St. Rosaline Clay
Physiography Unit	Limestone Plains
Permeability	Moderate
Overburden Depth	Medium: shallow
Hydrological Soil Group	D

4.4 Available Information on Fish Habitat and Communities Details

The only potential fish habitat on or adjacent to the site was Taylor Creek. This cool water system is largely piped. The open channel portion begins north of Princess Louise Drive (1km upstream of the proposed development) and continues approximately 2.6 km to the Ottawa River. The Rideau Valley Conservation Authority (RVCA) has created two reports for this Creek: a summary report from 2012 and a catchment report from 2018 (RVCA, 2012; RVCA, 2018). Fisheries information was available in both reports near the site. The 2012 report offered a list of 9 warm to cool water species (Table 4). The 2018 report offered a list of 4 warm to cool water species for this creek (Table 4). Of these, one was a sport fish (yellow perch) and two were pan fishes (rock bass, and pumpkinseed).

The DFO National Aquatic Species at Risk Mapping (NASAR) also indicated that there are no recordings of federal endangered, threatened, or special concern in this area (Appendix D).

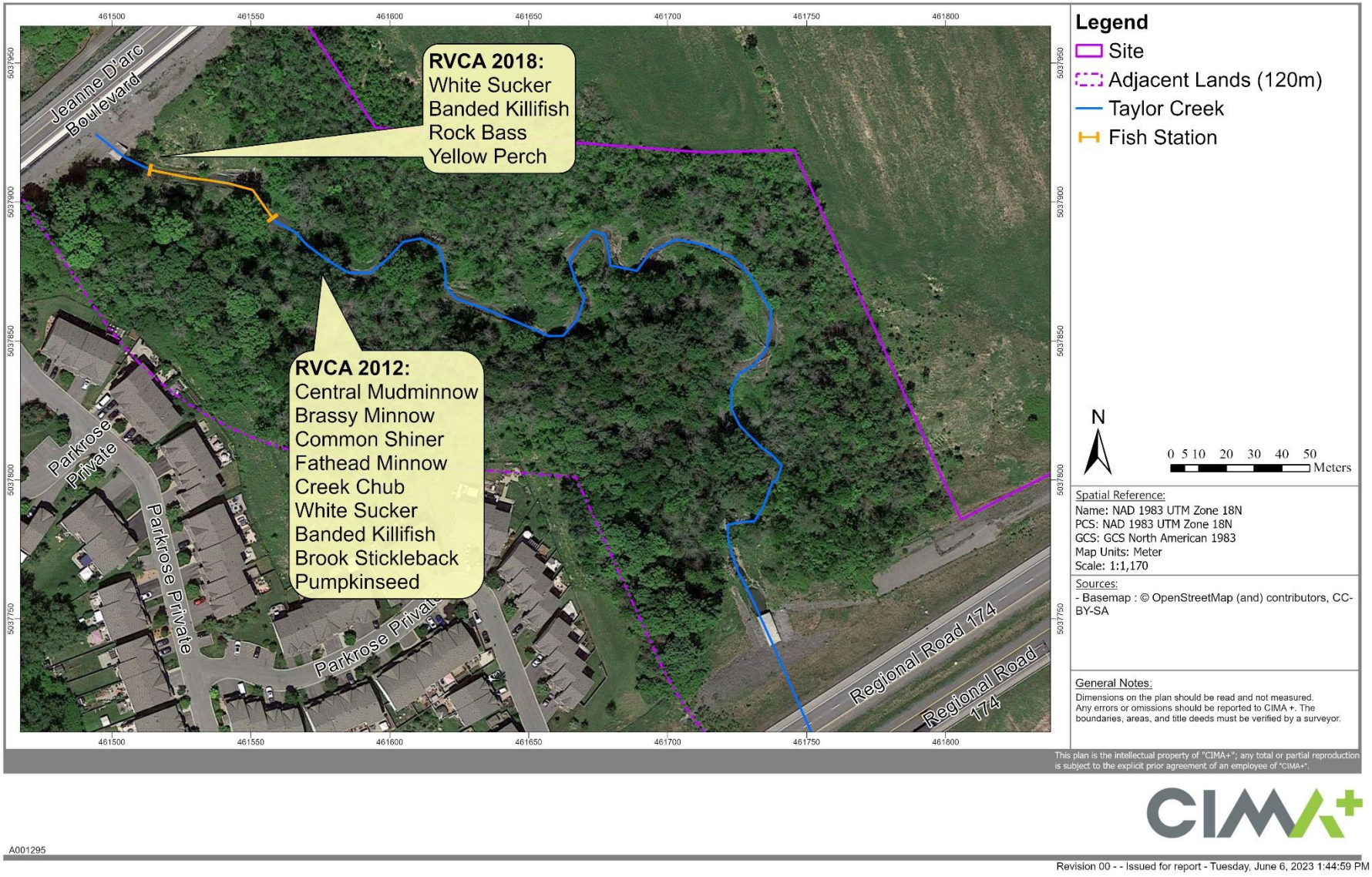


Figure 3: Summary of Background Fish Community Information

Table 4: Background Fish Community Information for Taylor Creek

Common Name	Scientific Name	Trophic Class*	Thermal Regime	SRank	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Central Mudminnow	*Umbra limi*	invertivore	cool	S5	none	none
Golden Shiner	*Notemigonus crysoleucas*	invertivore/herbivore	cool	S5	none	none
Fathead Minnow	*Pimephales promelas*	detritivore/ invertivore	warm	S5	none	none
Creek Chub	*Semotilus atromaculatus*	invertivore/ carnivore	cool	S5	none	none
White Sucker	*Catostomus commersonii*	insectivore / omnivore	cool	S5	none	none
Banded Killifish	*Fundulus diaphanus*	invertivore/planktivore	cool	S5	none	none
Brook Stickleback	*Culaea inconstans*	planktivore/invertivore	cool	S5	none	none
Rock Bass	*Ambloplites rupestris*	invertivore/carnivore	cool	S5	none	none
Pumpkinseed	*Lepomis gibbosus*	invertivore/carnivore	warm	S5	none	none
Yellow Perch	*Perca flavescens*	invertivore/ carnivore	cool	S5	none	none
Total Number of Species: 10						

(Bowfin 2021, DFO, 2019; Eakins, 2018, MNRF, 2017; MTO, 2006, RVCA, 2012, RVCA, 2018)
Table Updated: December 20, 2023

SRANK DEFINITIONS

S4 Apparently Secure, Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5 Secure, Common, widespread, and abundant in the nation or state/province.
SNA Not Applicable, A conservation status rank is not applicable because the species is not a suitable target for conservation activities

5. SITE INVESTIGATION

5.1 Site Visit Dates and Purpose

As mentioned above, several site visits were undertaken. A summary of the dates, times, ambient conditions, and purpose for the visits are provided in Table 5.

Table 5: Summary of Site Investigations

Date	Time (h)	Staff	Air Temperature °C* (Min-Max)	Cloud Cover (%) Beaufort Wind Scale [Descriptor (scale)]	Total Rainfall (mm) 7 days prior to visit*	Water Level Conditions **	Purpose
June 20, 2022	0630-0720	A. Quinsey	12.0 (7.5-25.2)	Mostly Cloudy Wind: Light Air (1)	n/a	n/a	- Grassland Bird Survey
June 28, 2022	0755-0845	A. Quinsey	18.0 (12.7-24.7)	Mostly Cloudy Wind: Light Breeze (2)	n/a	n/a	- Grassland Bird Survey
August 25, 2022	1015-1315	A. Quinsey	22.0 (16.4-23.8)	Mostly Cloudy Wind: Light Breeze (2)	n/a	n/a	-Vegetation Community Survey
September 29, 2022	1520-1705	C. Little	13.0 (3.4-13.6)	Few Clouds Wind: Gentle Breeze (3)	n/a	n/a	-Tree Inventory
October 27, 2022	0915-1100	S. Lafrance	8.0 (-1.9-8.8)	Partially Cloudy Wind: Light Breeze (2) to Gentle Breeze (3)	0.0	Normal	-Fish Habitat
November 1, 2023	1315-1400	A. Quinsey	0.0 (-3.4-1.2)	Few Clouds Wind: Gentle Breeze (3)	n/a	n/a	-Vegetation Community Survey

S. Lafrance – Sophie Lafrance – B.Sc. Biology and graduate diploma in Ecosystem Restoration
A. Quinsey – Al Quinsey – B.Sc. Environmental Biology
C. Little – Casey Little - Ecosystems Management Diploma
*Min-Max Temp Taken From: Environment Canada. National Climate Data and Information Archive. Ottawa International Airport. Available: http://climate.weatheroffice.gc.ca/ [October 28, 2022].
**Water Level Conditions taken from Rideau Valley Conservation Authority (RVCA): https://www.rvca.ca/

5.2 Vegetation Description and Butternut Survey Results

The site was primarily cultural meadow dominated by reed canary grass. To the east was developed lands and manicured lawn, to the south was regional road 174, to the west there was a forested area and Taylor Creek. A list of plant species that were recorded within the study area is provided in Appendix B.

All plants had a provincial SRank of S4, S5 or SNA signifying that the species recorded are apparently secure, uncommon but not rare (S4), secure, widespread and abundant in the nation or province (S5) or not applicable because the species is not a suitable target for conservation activities (i.e., non-native species) (SNA). Hackberry was the only species present with a coefficient of conservatism greater than 7.

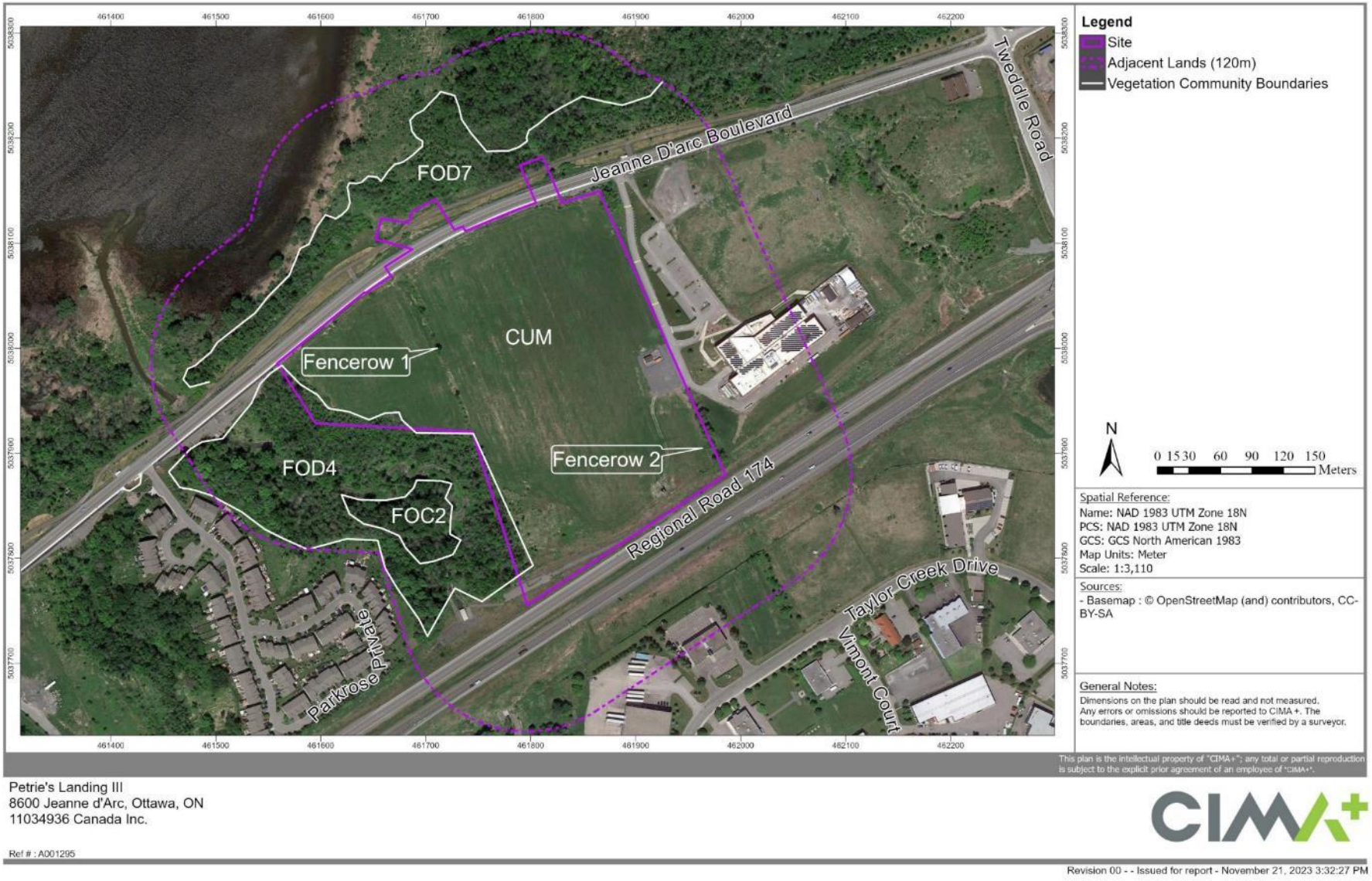


Figure 4: Vegetation Communities

Cultural Meadow (CUM)

The subject lands and some of the adjacent lands consisted of a Dry-Fresh Mixed Meadow community. Portions along la Cité were mowed. That within the subject lands was an old agricultural field and the ruts/depressions caused by machinery where still present.

The community was 8ha and extended further offsite. It was dominant layer was the ground cover which provided 100% cover and was dominated graminoids (reed canary grass and timothy grass) with some broadleaf species intermixed (tall and Canada goldenrod, and smooth bedstraw). Other species noted along the road ditches were common milkweed and narrow-leaved cattail. Some of the ruts/depressions supported plants with a higher affinity for moisture such as reed canary grass and red-osier dogwood. For the most part, there was a very limited woody vegetation layer (0.5 m tall; 1% cover) that consisted of white ash and scattered red-osier dogwood. One section of the community located near the ravine (southwest side of subject lands) contained 1-3 m tall woody vegetation that provided 10% cover. Here the woody vegetation species included: white ash, staghorn sumac along with some red-osier dogwood, meadowsweet, and bur oak. A few bur oaks were also noted on the north side of the property, along the North Service Road ditch. The ditch was dry during all visits.

Photo 1: Cultural Meadow (CUM) within Subject Lands, (August 25, 2022)

Photo 2: Patch of forbs on the south side of the meadow, (August 25, 2022)

Dry-Fresh Sugar Maple Deciduous Forest Ecosite (FOD4)

A Dry-Fresh Deciduous Forest community was situated along the ravine on the western side of the study area. The community was on a steep bank with a 45° slope and a small creek (Taylor Creek) running down the middle. The vegetation along the bank of the creek consisted of: Himalayan balsam, Canada goldenrod, tall goldenrod, and reed canary grass.

This community had 80% tree cover consisting of 85% deciduous trees and 15% coniferous trees. The overall DBH was 10-20 cm with a few large trees being present (American basswood DBH 60 cm, and white pines DBH range 55-60 cm).

The canopy was 10-12 m tall and provided 40% canopy cover. The canopy was patchy due to dead/dying white ash (25%, avg. DBH 25 cm). Other common species included American elm (15% avg DBH 12), sugar maple (15%, avg. DBH 25 cm), and basswood (5%, avg. DBH 15 cm), white cedar (5%, avg. DBH 20 cm) and white pine (5%, avg. DBH 45 cm). The sub-canopy (6 m tall; 50-60% cover) consisted primarily of white ash and sugar maple. There were also some American elm and white cedar in this layer. The understory (1-4 m tall; 30% cover) was characterized by white ash, common buckthorn, and wild black currant. The ground layer was sparse (5% cover) and included: northern lady fern, partridge berry and large-leaved aster).

Photo 3: Dry-Fresh Deciduous Forest (FOD4) (August 25, 2022)

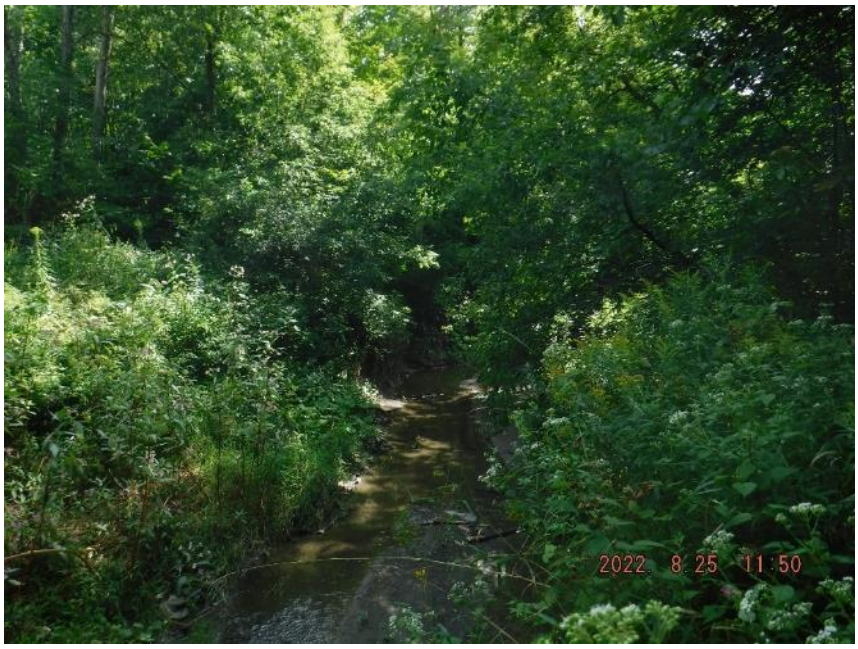


Photo 4: Taylor Creek and Riparian Habitat, (August 25, 2022)

Fresh-moist Lowland Deciduous Forest Type (FOD7)

A Dry-Fresh Deciduous Forest community was situated the north side of the walking path, north of Jeanne D'Arc Boulevard North. The community was on a slope descending towards the Ottawa River. The community had a patchy (60% cover) tree cover consisting of 90% deciduous trees and 10% coniferous trees. The open areas were typically shrubs dominated, but the area downstream of the eastern culvert was primarily reed canary grass with some cattails in the channel. The overall DBH was 10-30 cm with a few large trees being present (white pines DBH

range >50cm). The canopy was 10-14 m tall and provided 60% cover, it was primarily composed of green ash (8-32) with some unhealthy black ash (12-25), American elm (DBH 12-28), and white pine intermixed (10%, DBH 15-55 cm). There was no distinct sub canopy. The understory (0.5-8 m tall; 40% cover) was characterized by staghorn sumac, common buckthorn, and towards the bottom of the slope red osier dogwood. The ground layer was dense near the top of the slope (95% cover) and included: reed canary grass, smooth brome, wild parsnip, and cow vetch.

Photo 5: Dry-Fresh Deciduous Forest (FOD4) (November 1, 2023)

Dry-Fresh White Cedar Coniferous Forest (FOC2)

This community was found within the deciduous forest described above. Here the community differed in that it had 90% tree cover consisting of coniferous trees. There was only one layer, the canopy layer which was 6-10 m tall providing 90% cover, dominated by white cedar (avg. DBH 15 cm).

Photo 6: Dry-Fresh White Cedar Coniferous Forest (FOC2), (August, 25 2022)

Fencerows

There were two fencerows present within the subject lands. The first fencerow was found within the north central side of the study area. This community had 15% tree cover consisted of deciduous trees. The overall DBH was 10 cm. The canopy was 5 m tall and provided 15% canopy cover. The species noted were American elm (avg. DBH 12 cm), and white ash (avg. DBH 10 cm). The sub-canopy (3-4 m tall; 1% cover) contained white ash. The understory (1-2 m tall; 35% cover) included: nannyberry, wild red raspberry with some red-osier dogwood and prickly-ash. The ground layer (90% cover) was primarily Canada goldenrod with some timothy and reed canary grass.

The second fencerow was found within the southeastern side of the study area. This community consisted of a row of 10 bur oaks with common buckthorn and white ash regeneration beneath.

Photo 7: Fencerow (TAGM5) (August 25, 2022)

5.3 Bird Survey Results

5.3.1 Grassland Bird Survey Results

Due to the timing of the request, the breeding bird surveys included two visits on June 20 and June 28, 2022. These visits took place in the early morning as per the methods listed in Section 2 and on days with appropriate weather conditions.

The site provided habitat for many common breeding birds. In total 20 species of birds were observed on site and within the adjacent lands (Appendix B). Of these 8 species were found to likely be nesting on site or within the adjacent lands (Table 6). Most of the observations consisted of calling males, though some foraging individuals and females were noted. No species of conservation value or species at risk were observed.

Table 6: Probable or Confirmed Breeding Evidence

Common Name	Scientific Name	ABBO Category	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Breeding Evidence
American Robin	*Turdus migratorius*	Confirmed	S5B	no status	no status	T
European Starling	*Sturnus vulgaris*	Confirmed	SNA	no status	no status	T
Cedar Waxwing	*Bombycilla cedrorum*	Confirmed	S5B	no status	no status	T
Yellow Warbler	*Dendroica petechia*	Confirmed	S5B	no status	no status	T
Common Yellowthroat	*Geothlypis trichas*	Confirmed	S5B	no status	no status	T
Song Sparrow	*Melospiza melodia*	Confirmed	S5B	no status	no status	T
Red-winged Blackbird	*Agelaius phoeniceus*	Confirmed	S4	no status	no status	T
American Goldfinch	*Carduelis tristis*	Confirmed	S5B	no status	no status	T

T - Presumed Territory based on the presence of an adult bird (usually singing, but not necessarily so), in the same suitable nesting habitat patch on at least two visits, one week or more apart, during the species' breeding season.

5.4 Fish Habitat and Communities

As mentioned in Section 3, there was a single feature identified near the site: Taylor Creek. The section of the channel characterized for this project was located between the downstream end of the culvert flowing under Highway 174 and the upstream end of the culvert under Jeanne d'Arc Boulevard North. The channel then flowed 190 m downstream to the Ottawa River. No periods of rain occurred in the 7 days prior to the visit and the water level conditions were shown as "Normal" by RCVA. The entire length of the channel between the two culverts had water flowing through it.

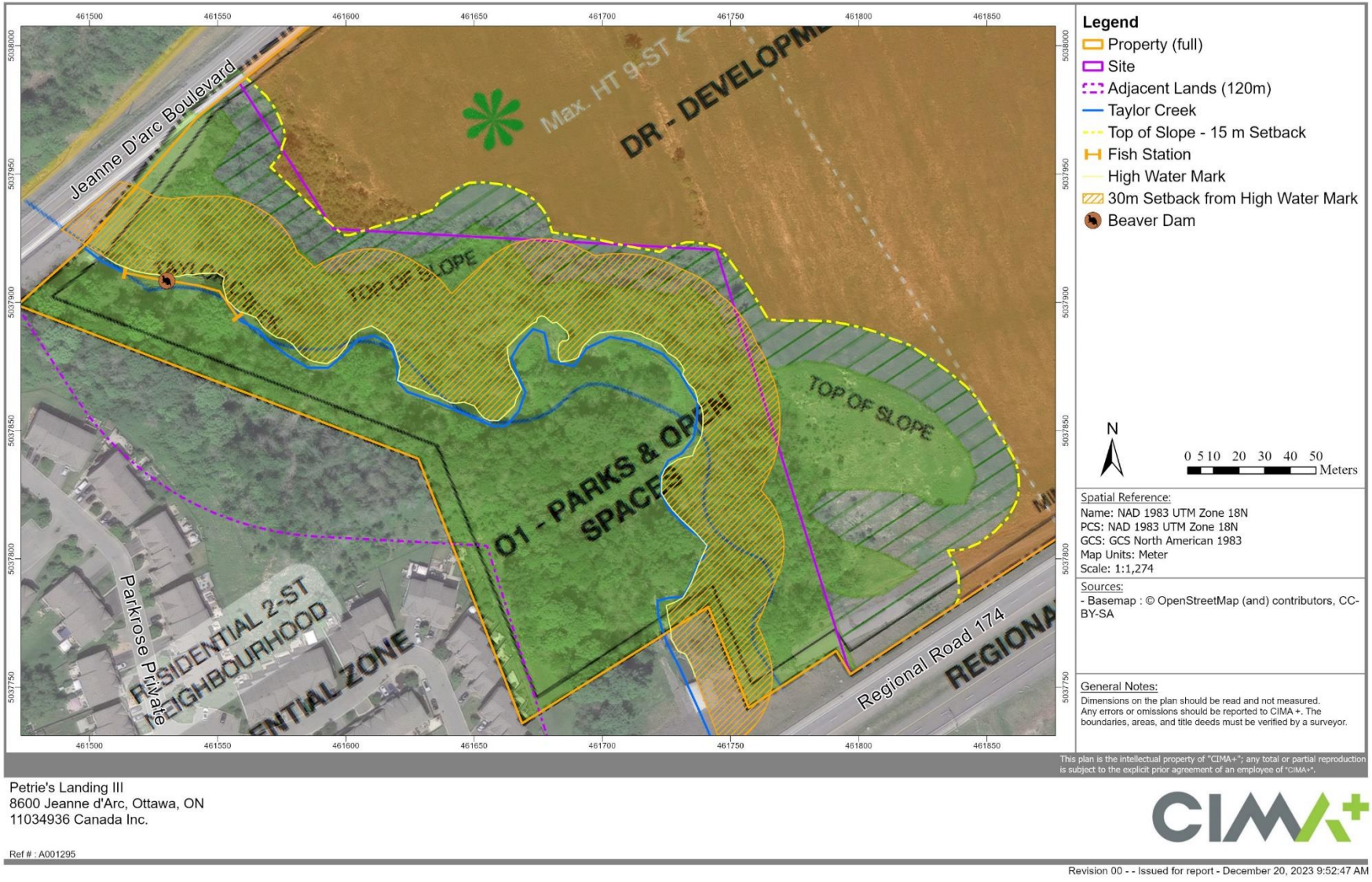


Figure 5: Fish Station and Habitat for Taylor Creek

5.4.1 Taylor Creek

While historically, Taylor Creek originated offsite in the subdivisions south of the site, all of that are is now piped until Princess Louise Drive, where it is in an open channel and flows north approximately 950 m to the Highway 174 culvert, reaching the area near the site. The remained of the channel was open, between Highway 174 and the culvert under Jeanne D'Arc Boulevard North. This portion of the creek was flowed northwest and was roughly 470 m. The riparian habitat was mostly composed of wooded areas, with some meadow habitat near the downstream end. The feature was permanent, with flowing water present all year long. This feature was well defined along its entire length, with some pooling near its downstream end due to an old beaver dam (Photo 8). Most of the substrate in the channel constituted of fines but some rocky areas were present near each culvert and near the center of the area. Erosion was present throughout its length except for the downstream end. A retaining wall existed near the center of its length between the two culverts. The channel was described at one station, located at its downstream end.

Photo 8: Taylor Creek downstream end, looking upstream at the beaver dam (October 27, 2022)

Photo 9: Taylor Creek downstream end, looking downstream at the culvert flowing under Jeanne d'Arc Boulevard North (October 27, 2022)

Photo 10: Taylor Creek near the center of its length, looking downstream, retaining wall present (October 27, 2022)

Photo 11: Taylor Creek near the center of its length, looking downstream at erosion and depositions on banks (October 27, 2022)

Photo 12: Taylor Creek near the upstream end, looking upstream at the culvert flowing under Highway 174 (October 27, 2022)

5.4.1.1 Fish Station

The station was situated approximately 10 m upstream of the downstream culvert and was 50 m in length. The beaver dam was located near the center of the station. The average channel width of the entire station was 6.2 m and the average bankfull depth was 42 cm (range: 5-91 cm). The average wetted width and depths in the fall were 4.1 m and 24 cm (range 1-65 cm), respectively. The habitat was a glide and riffle downstream of the beaver dam, a pool immediately upstream of it (91cm deep), and a glide again at the upstream end of the station. A run was situated just upstream of Jeanne d'Arc Boulevard North.

The substrate consisted of mostly fines and cobbles, with some gravel and boulders. The in-water cover was provided by cobble and boulders, terrestrial vegetation (reed canary grass, vetch, and grasses), aquatic vegetation (pondweed, algae, and reed canary grass), and pool habitats. This station was partially shaded by red-osier dogwood, speckled alder, common buckthorn, oaks, and ashes. Eroding slopes were noted near the upstream end of the station.

The tops of the banks were fully vegetated with herbaceous vegetation and woody species. The most common species were reed canary grass, vetch, grasses, red-osier dogwood, speckled alder, common buckthorn, oaks, and ashes.

No sampling took place as the feature was already documented by RVCA as being fish habitat. Fish were observed in the culvert downstream of the station.

Photo 13: Fish Station looking upstream from the downstream culvert (October 27, 2022)

Photo 14: Fish Station looking downstream from upstream (October 27, 2022)

5.5 Incidentals

During the site investigations, evidence of the presence of or observations of individuals were noted. Incidental observations included 9 insects (black swallowtail, monarch, mustard white, common green darner, Canada darner, eastern pondhawk, white-faced meadowhawk, autumn meadowhawk, and pale green assassin bug), 1 reptile (eastern garter snake), and 1 amphibian (leopard frog).

5.6 Potential and Known Natural Heritage Features Identified in Background Review and Site Investigations

Following the background review and the site investigations it was concluded that the vegetation communities and landscape on the site and its adjacent lands form part of are adjacent to provincially significant wetlands, candidate significant woodlands, candidate valleylands, Urban Natural Features, fish habitat, as well as the potential for endangered or threatened species and significant wildlife habitat.

6. EVALUATION OF SIGNIFICANCE AND ASSESSMENT OF IMPACTS

As per the conclusions of the background review and site investigations, potential or known natural heritage features were identified:

- Provincially Significant Wetland – Petrie Island in the adjacent lands to the north
- Habitat of endangered and threatened species
- Candidate Woodlands
- Candidate valleylands
- Candidate Significant Wildlife Habitat
- Urban Natural Features
    - Natural Heritage System Core Area – Petrie Island in the adjacent lands to the north
- Fish habitat (Taylor Creek and Ottawa River, both in adjacent lands)

The following section assess whether these features are significant based on the OP, or the *Natural Heritage Reference Manual* (OMNR, 2010), or other legislations, as applicable. Where it is determined that a significant natural heritage feature is present or is assumed to be present, the potential impacts are determined based on the understanding of project activities and the impact assessment methods. These methods are summarized below following by the evaluation for each feature.

6.1 Review of Project Activities

The project is a residential subdivision. The activities associated with each of these are listed below.

1. Construction of residential subdivision (both phases)
    a. Clearing of 7.2 ha of Cultural Meadow and 0.1 ha of the Dry-Fresh Sugar Maple Deciduous Forest. This 0.1 ha is also within the Natural Heritage Features Overlay (but is not a Core or Linkage Area). For the stormwater outlet an area in or near the Core that could be affected is <0.5 ha and consists of the edge habitat along the bike path
    b. Backfilling, and grading
    c. Replacement of existing western stormwater outlet, culvert, headwall on north side of Jeanne d'Arc Boulevard North
    d. The stormwater:
        i. No stormwater management facility is required on Site
        ii. Water leaving outlets is to be enhanced (80% TSS removal)
        iii. To avoid impacts from erosion

iv. To minimize impacts to the adjacent waterbodies by ensuring that the water quality and quantity downstream is similar pre- and post-development.
    - There is a slight change to Taylor Creek pre versus post development drainage area. Existing is catchment on site is estimated at 2.72ha and post would be 1.41ha. However the relative catchment for Taylor Creek from the existing site is estimated at less than 1% (catchment information estimated to be between 430ha (immediately upstream of site) to 1,035ha for Taylor Creek in total; provided by Stantec).

6.2 Impact Assessment Methods

The assessment of the potential impacts is completed by analyzing the impact of various activities associated with the project. The significance of the potential impacts is measured using four different criteria:

1. Area affected may be:
    a. local in extent signifying that the impacts will be localized within the project area
    b. regional signifying that the impacts may extend beyond the immediate project area.

2. Nature of Impact:
    a. negative or positive
    b. direct or indirect
    c. Risk (certainty, understanding of impacts)

3. Duration of the impact may be rated as:
    a. short term (1-2 years)
    b. medium term (>2years)
    c. long term (>7 years).
    d. permanent

4. Magnitude of the impact may be:
    a. negligible signifying that the impact is not noticeable
    b. minor signifying that the project's impacts are perceivable and require mitigation
    c. moderate signifying that the project's impacts are perceivable and require mitigation as well as monitoring and/or compensation
    d. major signifying that the project's impacts would destroy the environmental component within the project area.

Where identified, the boundaries of any significant features are noted and the potential for the development to cause negative impacts is assessed. For those features which may be negatively impacted, avoidance and mitigation measures are recommended, as appropriate. The PPS (MMHA, 2020) states that a negative impact signifies:

"a) in regard to policy 2.2, degradation to the quality and quantity of water, sensitive surface water features and sensitive ground water features, and their related hydrologic functions, due to single, multiple or successive development or site alteration activities;

c) in regard to fish habitat, any permanent alteration to, or destruction of fish habitat, except where, in conjunction with the appropriate authorities, it has been authorized under the Fisheries Act;

d) in regard to other natural heritage features and areas, degradation that threatens the health and integrity of the natural features or ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities." (MMAH, 2020)

6.3 Evaluation of Potential Impacts

6.3.1 Provincially Significant Wetland / Area of Natural and Scientific Interest / Natural Heritage System Core Area

6.3.1.1 Evaluation of Significance Methods and Results

The Petrie Island PSW is situated to the north of the recreational bike path, north of the Jeanne d'Arc Boulevard North. It does not include any habitat within the Site. The nearest distance between the PSW and the site is 38 m but at this narrow point it is separated by Jeanne d'Arc Boulevard. This area also forms part of the ANSI which LIO shows overlapping with the small area to be cleared for the stormwater drain, and Urban Natural Feature and is identified as Natural Heritage System Core Area.

- Petrie Island Wetland will not be directly impacted as there is no wetland habitat on site. There will be a minimum distance of approximately 53 m of vegetated land in the area not separated by roadway between the north edge of development and the south edge of the PSW habitat.
- Potential indirect impacts on the wetland habitat are also minimized as all works aside from two stormwater upgrades will occur on the south of the Jeanne d'Arc Boulevard.
- It is noted that Taylor Creek may provide a path for sediment-laden water to travel from the subject lands during construction to the wetland. The potential for poor water quality to leave the site can be mitigated through common best management practices listed below.
- Any physical impact to the lands on the north side are limited to the small area associated with the improvements to the west stormwater outlet. It is possible that a few trees will need to be removed.
- The stormwater management will be designed to meet MECP's requirements and will consider the presence of the PSW on the north side of the Jeanne d'Arc Boulevard North and the potential for water leaving the site to reach the PSW via Bellevue Ravine.

- Thre is already a recreational pathway along the PSW and as such there is no potential for its development to increase human presence on the wetland habitat to the north.

6.3.1.1 Analysis of Impacts

The City of Ottawa OP calls for no impacts to a PSW and for the maintaining of the integrity, biodiversity, ecosystem and ensuring that the integrity of other features (i.e., Core, UNF, ANSIs) are not compromised. It also notes that outside of the PSW (whose boundary are available on provincial databases), the areas depicted on the Schedules is not exact and needs to be field fit. To this end, it is felt that the natural functions of the UNF/Core/ANSI is situated to the north of the already disturbed areas of the bike path and existing stormwater outlet and headwall. This proposal has meet this intention by:

- The Petrie Island Wetland is a Provincially Significant Wetland, and an ANSI however these attributes are located 38 m from the proposed development of Petrie III. Jeanne d'Arc Boulevard North and the recreational path separate the proposed development from the wetland aside from the stormwater upgrades.
  - There is no potential for direct impacts to the PSW wetland.
  - Indirect impacts could occur because of change in water supply or quality, sediment/erosion to the forested slope on Taylor Creek which drains to the wetland. Mitigation measures for this is provided below. Note that the overall hydrology of the PSW is controlled by the Ottawa River levels.
- There is a potential for temporary and permanent impacts to the Urban Natural Feature and the Natural Heritage System Core Area as a result of the extension of the stormwater outlet. This is anticipated to result in permanent change of a longer outlet and headwall with some erosion protection for a new length of ±15m and width 0.9m. In addition, during construction another 5m around the work area may need to be disturbed. Avoidance and mitigation measures will be require to minimize the indirect impacts to the UNF/Core Area and to the ANSI and PSW.

6.3.2 Endangered and Threatened Species

Endangered and threatened Species at Risk (SAR) are protected under provincial Endangered Species Act. The federal Species at Risk Act (SARA) applies to only fish species on private land. Most birds, including SAR, also receive protection from *Migratory Bird Convention Act* and/or *Fish and Wildlife Conservation Act*. Together, provincially and/or federally protected species are, herein, referred to as SAR. This site is situated on private lands and as such, evaluation of species presence was completed following the province's guidelines.

Background review identified a potential of seventeen endangered or threatened species to occur within the general area. These are: hickorynut, lake sturgeon, American eel, channel darter, Blanding's turtle, least bittern, eastern whip-poor-will, red-headed woodpecker, bank swallow, barn swallow, bobolink, eastern meadowlark, little brown myotis (bat), northern myotis (bat),

eastern small-footed myotis (bat), tri-colored bat, butternut, and black ash. As discussed in Table 2, the habitat requirements for most of these species was not present. Those that were present, potentially present or that should be highlighted for avoidance during construction are discussed further in the paragraphs below.

Blanding's Turtle

Blanding's turtle is associated with a variety of shallow slow aquatic habitats with submergent and emergent plants and soft substrate (COSEWIC, 2016). Their preferred aquatic habitat is less than <2 m deep (ECCA, 2018). To err on the side of caution, depths up to 4.5 m are considered habitat for this species (ECCA, 2018). These turtles require basking sites located near the water such as exposed rocks or partially submerged logs. The nesting sites are located within areas of loose substrates varying from sand to cobblestone and may occur along roadways as far as 400 m away. Marsh habitat is important for the juveniles for protection from predators. The species overwinters within permanent water bodies (COSEWIC, 2016). This species can migrate far distances of up to 6 km (OMNR, 2013b). Migration routes can include overland movement. However, some habitats such as: active agricultural croplands, sand pits, large waterbodies, fast-flowing systems, and high use highways are not considered suitable habitat (ECCA, 2018). They also note that heavily developed urban areas without aquatic or wetland habitats are considered unsuitable (ECCA, 2018).

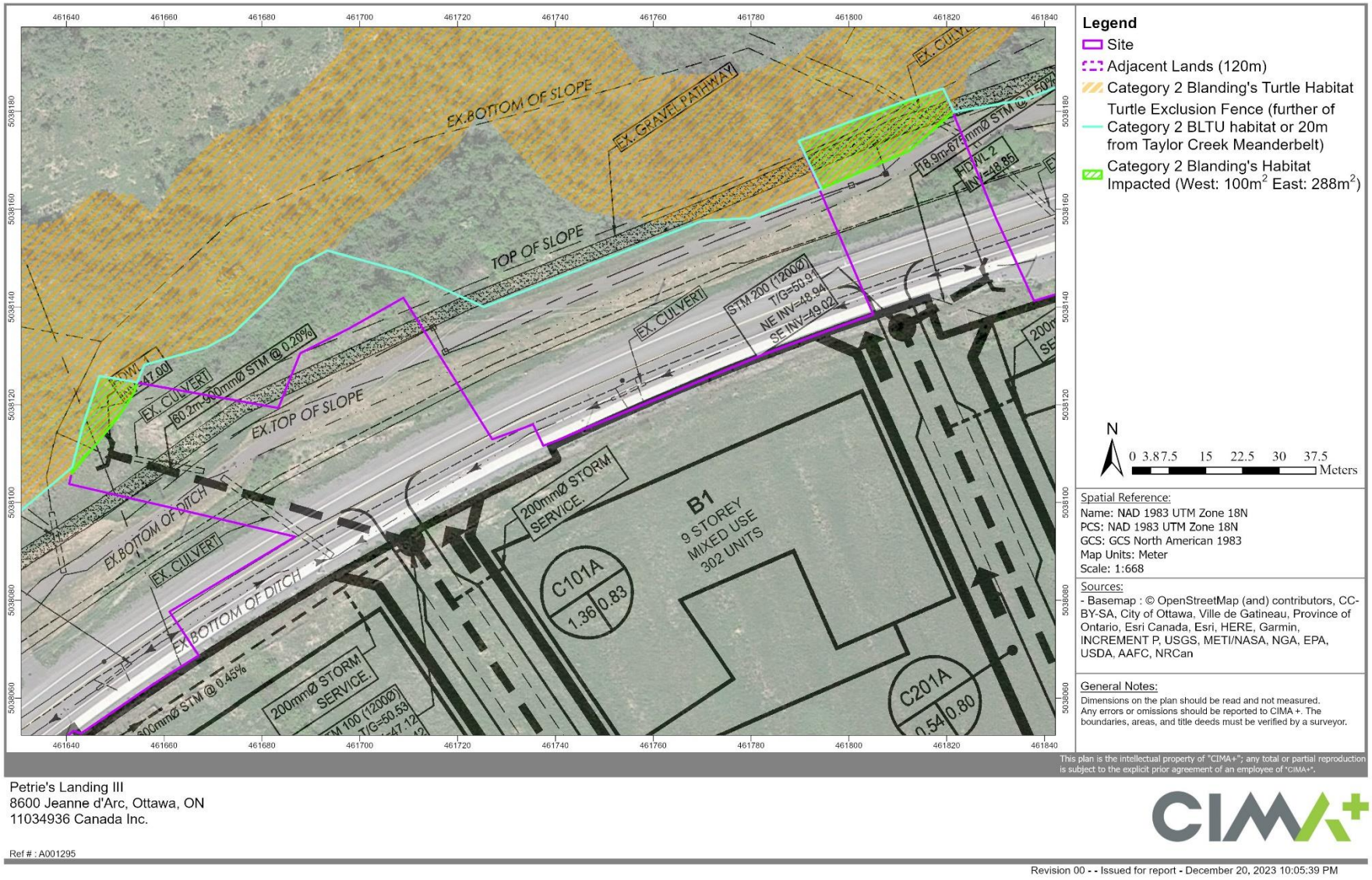
The habitat guidelines for Blanding's turtle provide protection to the areas surrounding a nest, or perceived nest area. The level of protection varies with the distance from the nest and has been categorized by MNRF into three categories. These, along with their protection level are:

Category 1	Nest and the area within 30 m or Overwintering sites and the area within 30 m
Category 2	The wetland complex (i.e., all suitable wetlands or waterbodies within 500 m of each other) that extends up to 2 km from an occurrence, and the area within 30 m around those suitable wetlands or waterbodies
Category 3	Area between 30 m and 250 m around suitable wetlands/waterbodies identified in Category 2, within 2 km of an occurrence

The 30 m area surrounding Taylor Creek and the wetland along the Ottawa River is Category 2 habitat, mapped due to the occurrence in the Ottawa River. There are no nesting areas. The site plans have taken this habitat into consideration and all but the work activities associated with the stormwater outlet has avoided this work area. The impacts to Category 2 habitat (temporary and permanent combined) for the extension of the west outlet are measured at 100 m^2. It is unknown if any work would need to take place on the north side of Jeanne d'Arc Boulevard North for the east outlet, but if so, they anticipated to be temporary and would not exceed 288 m^2. These works are not anticipated to result in any significant impacts to the ability of Blanding's Turtle to carry out life functions or utilize the habitats. These areas are depicted on the figure below. MECP will need to be contacted. Impacts for both the stormwater works and the development could include accidental harm or killing of an individual should it be present and impacted by machinery. The construction and operation of both activities is an not expected to delay any turtle movement

through the area. Indirect impacts would be limited to sensory disturbances during construction (light/noise). Overall, there are few Blanding's Turtle sightings in this area and the movement corridor of Taylor Creek itself is poor. As it does not lead the turtles to any suitable nesting or overwintering habitat (apart from the temporary potential overwintering habitat created by the beaver dam). Avoidance and mitigation measures will be included in Section 7. Following discussions with MECP, these would be updated if necessary.

Prior to Avoidance and Mitigation Measures – Blanding's Turtle				
Area	**Nature**	**Duration**	**Magnitude**	**Findings**
Local	Negative Direct to Indirect	Temporary	Negligible to Moderate	Avoidance and mitigation measures required to reduce accidental harm.



Petrie's Landing III
8600 Jeanne d'Arc, Ottawa, ON
11034936 Canada Inc.

Ref # : A001295

Revision 00 - - Issued for report - December 20, 2023 10:05:39 PM

Figure 6: Blanding's Turtle Habitat Impacted

Birds

Least Bittern

The least bittern is a threatened species protected both provincially and federally. It is a secretive species that requires marsh habitats with dense vegetation (Sandilands, 2005; COSEWIC, 2009a). This species tends to prefer to nest within cattail marshes usually along the edge or near openings (Woodliffe, 2007). However, they have also been found to nest in bulrushes, grasses, horsetails and willow (Woodliffe, 2007). The COSEWIC report for this species indicates that they must have emergent marsh communities with open water areas and stable water levels (COSEWIC, 2009a).

The wetland north of the walking trail has potential to be used by this species. No direct impacts are anticipated to occur in this wetland as the site is 38 m away at its closest point, which is separated by Jeanne d'Arc Boulevard. The stormwater work north of the walking trail will require minimal clearing and is 58 m away from suitable wetland habitat for this species. Avoidance and mitigation measures will be required to avoid any potential indirect to this species should it be present. These are presented in Section 7.

Bank Swallow

The protection afforded by the ESA includes measures to both the individual birds and their habitat. The Bank Swallow General Habitat Description (MECP, 2022) indicates that the protected habitat for this species includes three categories:

Category 1	The Bank Swallow breeding colony, including the congregation of burrows and the substrate between and around them.
Category 2	The area within 50 m in front of the breeding colony bank face (i.e., the vertical face that is directly associated with and supports, the Category 1 habitat) to allow Bank Swallows to enter and exit burrows.
Category 3	The area of suitable foraging habitat within 500 m of the outer edge of the breeding colony.

Bank swallows are insectivorous songbirds with an extensive range across Canada (COSEWIC, 2013). In Ontario, bank swallows occur on the shores of lakes and rivers with steep banks, and in aggregate extraction pits (Falconer et al., 2016; OMNRF, 2017). Though they were historically abundant, bank swallows have shown a severe decline in recent years (COSEWIC, 2013). The reasons for their decline are not well-understood but may be related to a reduction in prey availability due to pesticide use (and other related activities), loss of nesting, foraging, and breeding habitat due to land use changes, erosion control measures, and impacts of climate change (OMNRF, 2017). None were observed during the breeding bird surveys and no nests were present in the banks, which were lower than those usually inhabited by this species. However there have been some instances of bank swallows using banks as low as 0.5m (COSEWIC 2013), and as such there is potential for this species to use some sections of exposed

banks along Taylor Creek. Avoidance and mitigation measures will be required to avoid any potential indirect to this species should it be present. These are presented in Section 7.

Bobolink

This species is grassland-breeding-bird typically requiring a minimum of 4 ha of uncut meadow or field (McCracken, 2013). It is described as area-sensitive in the general habitat guidelines (MECP, 2021). That same publication also notes that its defended territory tends to be between 1.2-6.1 ha, but it prefers larger tracks of grassland. The Bobolink General Habitat Description (MECP, 2021) indicates that the protected habitat for this species includes three categories:

Category 1	known nests and 10 m of the nest
Category 2	the area between 10 m and 60 m from the nest or the approximate centre of the defended territory
Category 3	the area of continuous suitable habitat between 60 m and 300 m of the nest or approximate centre of the defended territory

None were present in the 2022 bird surveys; however, the cultural meadow is suitable habitat and they have been observed in this field in past years. Avoidance and mitigation measures will be required to avoid any potential indirect to this species should it be present. These are presented in Section 7.

Eastern Meadowlark

Like the bobolink, this species is grassland-breeding-bird that typically requires a minimum of 4 ha of uncut meadow or field (McCracken, 2013). The general Habitat Description for the Eastern Meadowlark (OMNRF, 2018) indicates that the protected habitat for this species includes three categories:

Category 1	known nests and 10 m of the nest
Category 2	the area between 10 m and 100 m from the nest or the approximate centre of the defended territory
Category 3	the area of continuous suitable habitat between 100 m and 300 m of the nest or approximate centre of the defended territory

None were observed during the 2022 bird surveys but the cultural meadow on site does provide suitable habitat. Avoidance and mitigation measures will be required to avoid any potential indirect to this species should it be present. These are presented in Section 7.

Impacts to SAR Birds: For this project there are no direct impacts to any known SAR habitat ((i.e., the cultural meadow did not contain any individuals during the breeding season, the banks (while of low quality for Bank Swallows) will still be protected by ensuring that the valley slopes are not impacted directly or indirectly), the habitat of least bittern (if present) would be on the north side in the PSW and this area will be protected by any indirect impacts to that habitat). The nature of bird species and this project is that there is usually no potential to accidentally harm an individual (no nesting habitat was identified) and timing windows can be applied to avoid nestlings

(if they were present). The potential for indirect disturbances (i.e., sensory) can be avoided through typical avoidance and mitigation measures including the MECP guidance on timing windows for SAR birds.

Prior to Avoidance and Mitigation Measures – SAR Birds				
Area	**Nature**	**Duration**	**Magnitude**	**Findings**
Local	Negative Indirect	Temporary	Negligible to Minor	Avoidance and mitigation measures required to reduce accidental harm.

Bats

The potential SAR bats within the general area are little brown myotis, northern myotis, eastern small-footed myotis and tri-colored. There are three types of habitats required by bats: hibernation, maternity sites, and day-roost sites. The latter is not considered critical habitat.

These four bat species prefer to hibernate in caves or mines. They can hibernate in buildings but that is rare for these species (COSEWIC, 2013). No caves or mines were present.

The recovery strategy for the eastern small-footed myotis indicates that the preferred maternity habitat of this species consists of open rock habitats and that it rarely uses old buildings as roosting/maternity sites (Humphrey, 2017). There have only been two reports of maternity colonies in Ontario, one historical report in Renfrew County in 1953 and another in Hamilton in 2016 (MNRF 2017). There was no rocky habitat present and no old buildings within the site. Based on this information, this species' maternity sites are considered absent.

The Atlas of Mammals of Ontario (Dobbyn, 1994) suggests that the tri-colored bat is present in low numbers within this part of Ontario however, the NatureServe mapping in the COSSARO (2015) includes all southeastern Ontario. The Recovery Strategy notes that it tends to prefer older forests with snags and to forage in closed canopies (ECCC, 2018). Some studies have shown a preference for roosting in dead leaves and tree lichens and have been shown to roost in barns (ECCC, 2018). Based on this information, and the open young nature of the forest on-site, this species is considered to have a very low potential of occurring.

The northern myotis tends to prefer larger expanses of older forests (late successional or primary forests) and choose maternity sites in snags that are in the mid-stage of decay. They prefer habitat with intact interior habitat and is shown to be negatively correlated with edge habitat (Menzel et al., 2002; Broders et al., 2006; Yates et al., 2006; OMNRF, 2015). The preferred habitat is not present, so this species is considered unlikely to have maternity sites on site.

The little brown myotis is one of the few bat species that can use anthropogenic structures as maternity sites. Potential suitable structures can include buildings, bridges, barns, and bat boxes. The little brown myotis can also use tall, large cavity trees that are in the early to mid-stages of

decay as maternity roosts, as well as loose/raised tree bark, and/or crevices in cliffs (ECCC, 2018). This bat species occurs in higher densities in mature deciduous and/or mixed forests due to increased opportunities for large snags. However, unlike the northern myotis, the little brown myotis does not exclusively require mature forest stands to find appropriate maternity roosts (COSEWIC, 2013a). This commonly observed species could establish maternity roosts in this area however, MECP guidelines provide advice on avoiding impacts to this species.

There is also potential for bats to use the cavity tree in the adjacent lands for day-roosting. While the removal of day-roosts is a direct and long-term to permanent impact, these are not considered critical habitat and impacts to the bats can be minimized by removing the trees outside of the day-use period. The loss of individual trees that are 10cm or larger in diameter is also direct, however, MECP has provided guidelines for the removal of these and if followed, then MECP does not need to be contacted. The potential for indirect impacts (sensory) during construction can be avoided and minimized. Avoidance and mitigation measures will be included in Section 7.

Prior to Avoidance and Mitigation Measures - Bats				
Area	**Nature**	**Duration**	**Magnitude**	**Findings**
Local	Negative Direct to Indirect	Temporary to Permanent	Negligible to Minor	Avoidance and Mitigation Measures required to avoid critical periods

Black Ash

Black ash (*Fraxinus nigra*) is listed as an endangered species provincially. This species is not yet listed federally, though it is currently under consideration to be listed as threatened. Black ash is a facultative wetland species found primarily in swamps, fens, floodplain forests, and shorelines, with occasional occurrences in upland habitat (Catling et al., 2022). Protection for black ash is suspended until January 25, 2024. When the suspension lifts, it is expected that individuals within a defined geographic area which are in good health *and* over 8 cm in diameter at breast height will be protected along with the surrounding 30 m habitat. The site is within this defined area and black ash individuals are present to the north of the walking trail, near the stormwater outlet work. None were found on the residential development side. Impacts to these trees could be direct (if one needs to be removed or is accidentally harmed) or indirect is their habitat is impacted (i.e., compaction of soil, hardening of area, pooling of water, dust). The appropriate MECP procedure will be followed once known and the protection is active. Typical avoidance and mitigation measures for the protection of trees to be retained (including those in the woodland section) are anticipated to minimize the impact to this species.

Prior to Avoidance and Mitigation Measures – Black Ash				
Area	**Nature**	**Duration**	**Magnitude**	**Findings**
Local	Negative Direct to Indirect	Short-term to Permanent	Negligible to Moderate	Avoidance and Mitigation Measures required

6.3.3 Significant Woodlands / Urban Natural Feature

6.3.3.1 Evaluation of Significance Methods and Results

This report makes use of the City of Ottawa's recently released Significant Woodlands Guidelines that notes that in the Urban Area a woodland that is at least 60 years old and 0.8 ha or larger is significant. The woodland is 4.0ha, of which 2.9ha is older than 60 years and is therefore significant. However, the 0.1ha section to be impacted is under 60 years of age (Figure 7) and, as such, is not considered significant.

6.3.3.2 Analysis of Impacts

No significant woodland will be cleared as all woodlands >60 years in age are outside of the 15 m setback from the top or slope. Potential for indirect impacts could occur as a result of dust, impacts to soil (i.e., compaction), changes in gradient that results in pooling, and/or accidentally harming trees scheduled to be retained. Indirect impacts could also stem from impacting the sensory of wildlife using the woodlands, this is covered under the significant wildlife habitat and mitigation measures in section 7 under woodland, significant wildlife and other (the other section includes protection measures for wildlife in general).

Potential Impacts PRIOR to Avoidance and Mitigation Measures – Significant Woodland				
Feature	**Nature**	**Duration**	**Magnitude**	**Findings**
Local	Indirect	Temporary to Permanent	Negligible to Minor	Avoidance and Mitigation Measures required

6.3.4 Significant Wildlife Habitat / Urban Natural Feature

6.3.4.1 Evaluation of Significance Methods and Results

The PPS indicates that no development or site alteration is permitted within significant wildlife habitat unless it has been demonstrated that there will be no negative impacts on the natural feature or its ecological functions. It defines wildlife habitat as:

> *"Areas where plants, animals and other organisms live and find adequate amounts of food, water, shelter, and space needed to sustain their populations. Specific wildlife habitat of concern may include areas where species concentrate at a vulnerable point in their annual or life cycle; and areas which are important to migratory or non-migratory species."*

The City of Ottawa OP calls for the maintaining of the integrity, biodiversity, ecosystem and ensuring that the integrity of other features (i.e., UNF, Woodlands, Valleyland, SWH) are not

compromised. It also notes that the areas depicted on the Schedules is not exact and needs to be field fit. To this end, it is felt that the natural functions of the UNF of Taylor Creek would be restricted to the lands needed to ensure: valley stability, and in this instance ±30m from the edge of the high-water mark. This proposal has meet this intention by:
The ELC communities on Site and in adjacent lands were assessed as per the MNRF's Significant Wildlife Habitat Criteria Schedules 6E (2015), as displayed in **Appendix D**. Those that were deemed candidate SWH are discussed in the table below. A few items deserve to be highlighted:

- Both Taylor Creek and the Ottawa River may provide turtle overwintering habitat
- Large trees are present in close proximity to the Ottawa River and an osprey was observed during the breeding bird surveys. No Osprey nest was found.
- Petrie Island PSW may provide amphibian breeding habitat

6.3.4.2 Analysis of Impacts

All of the significant wildlife habitat identified above as potentially occurring, are associated with habitat outside of the area to be developed. There is little potential for direct impacts apart from accidental harm to individuals during construction. The small direct footprint change at the stormwater outlet on the north side is considered unlikely to alter any form or functions provided that appropriate avoidance and mitigation measures are installed (see Section 7). Indirect impacts can stem from accidentally affecting the water quality during construction or significantly reducing water depths during overwintering (i.e., turtle overwintering area, amphibian habitat), sensory disturbances during construction (i.e., light / noise). It is noted that the potential for overwintering turtles in Taylor Creek (outside of the downstream portion that is regulated by the water levels on the Ottawa River), was artificially enhanced by the beaver dam. If there was no beaver dams, then the candidate overwintering habitat would likely be restricted to the habitats downstream of Jeanne d'Arc Boulevard North. With respect to the loss of potential perching trees for the Osprey, the trees to be removed north of the bike path are of small diameter (not preferred perching) and most trees will be retained in the Site. Between, perching in the Site south of Jeanne d'Arc and along the Ottawa River, it is felt that these raptors would prefer the larger trees along the Ottawa River. Overall, the permanent removal of trees in this location is considered negligible.

Potential Impacts PRIOR to Avoidance and Mitigation Measures – Significant Wildlife Habitat					
Feature	**Area**	**Nature**	**Duration**	**Magnitude**	**Findings**
Turtle wintering areas	Local	Negative Indirect	Temporary	None to Minor	Pre and Post water quantities are very similar. Potential impacts associated with water quality would be the result of accident or malfunction.

Potential Impacts PRIOR to Avoidance and Mitigation Measures – Significant Wildlife Habitat					
Feature	**Area**	**Nature**	**Duration**	**Magnitude**	**Findings**
					Avoidance and Mitigation Measures required
Bald Eagle and Osprey nesting, foraging and perching habitat		Negative Indirect	Temporary to Permanent	None to Minor	Majority of large trees retained using the 15m setback from top of the slope. Perching habitat for Osprey should remain suitable.
Amphibian breeding habitat (woodland and wetlands)		Negative Indirect	Temporary	None to Minor	Pre and Post water quantities are very similar. Potential impacts associated with water quality would be the result of accident or malfunction. Avoidance and Mitigation Measures required

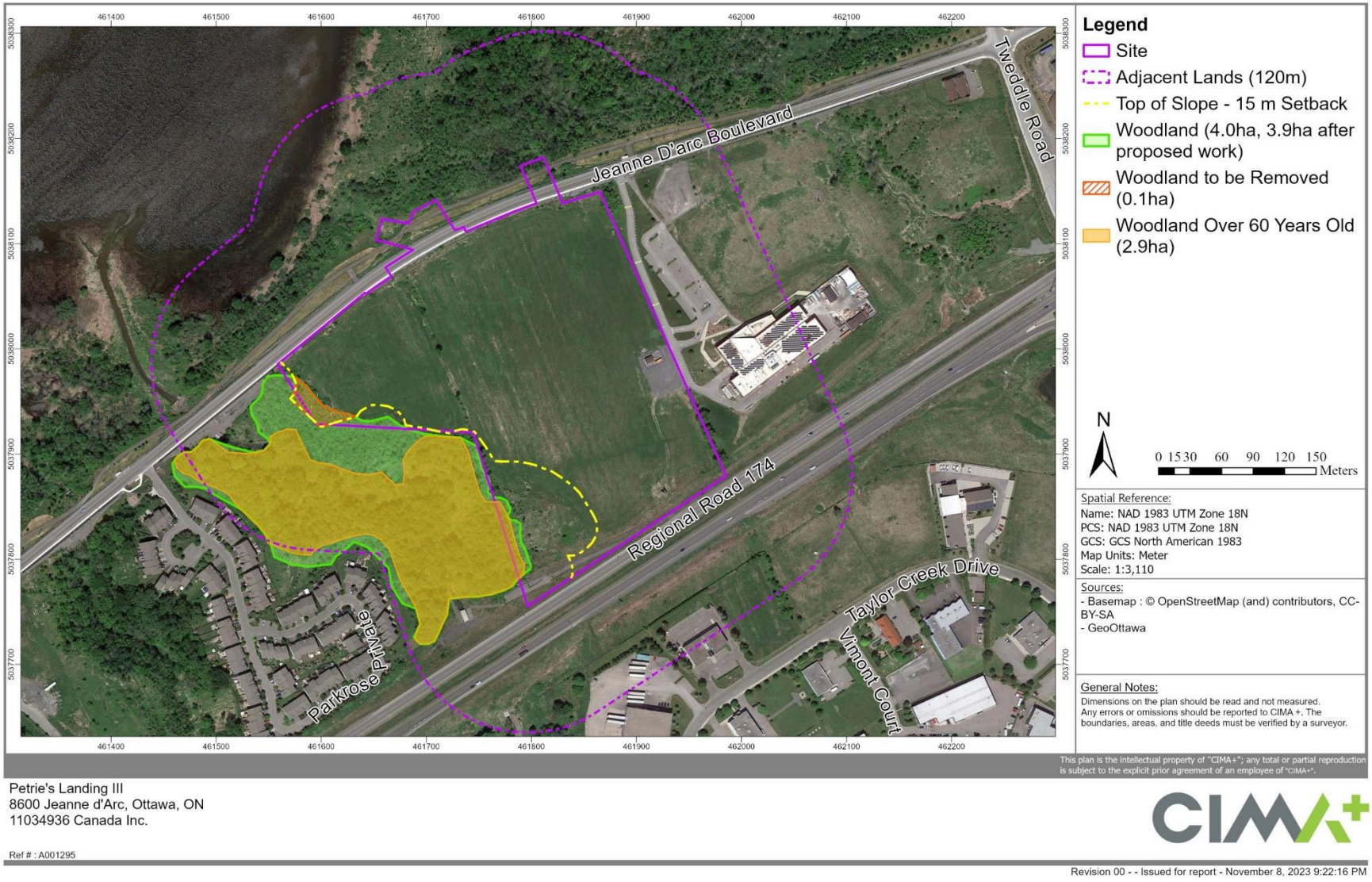


Figure 7: Woodland Analysis

6.3.5 Valleyland / Urban Natural Feature

6.3.5.1 Evaluation of Significance Methods and Results

Within the City of Ottawa, Significant Valleylands are defined as valleylands with slopes more than 15% and a length of more than 50 m, with water present for some period of the year, excluding man-made features (City of Ottawa 2023). Both Taylor Creek and the Ottawa River meet the criteria for significance as valleylands.

6.3.5.2 Analysis of Impacts

The proposed project will include potential for indirect impacts to these significant valleylands. For the Ottawa River valleyland the work will take place within 120 m but will not result in any major changes to the identified significant features. From what was observed in the field, the works would take place on the table lands and not the valley. The natural vegetation will have minor impacts (5m clearing around stormwater drains at the top of valley) and the existing water quantity will not change post-construction. The potential to impact the valley through erosion of the slope will need to be considered by the contractor and avoided/mitigated. The design will need to ensure that appropriate erosion and sediment controls for the operation of the outlet are included. With respect to the significant valleyland associated with Taylor Creek, there will be no direct impact as no work will occur within 15m of the top of slope. It is predicted that the form and functions of the valley will be maintained through the use of typical avoidance and mitigation measures. These are included in Section 7 below under both the valley and the fish subsection.

Prior to Avoidance and Mitigation Measures - Valleylands					
Feature	**Area**	**Nature**	**Duration**	**Magnitude**	**Findings**
Ottawa River Valley	Local	Negative Direct	Permanent to temporary	Minor - Clearing of shrubs within 5m of stormwater drains north of walking trail Unlikely to occur but could be Negligible to Major – impacts associated with accidents or malfunctions	Avoidance and Mitigation measures required to avoid exceeding predicted impacts
Taylor Creek Valley			Temporary	Unlikely to occur but could be Negligible to Major – impacts associated with accidents or malfunctions	

6.3.6 Fish and Fish Habitat / Urban Natural Feature

6.3.6.1 Evaluation of Significance Methods and Results

The evaluation of impacts to fish and fish habitat are assessment based on guidelines and direction from Fisheries and Oceans Canada (DFO). The Ottawa River and Taylor Creek are known to provide permanent direct fish habitat for a variety of species. Activities below the high-water mark and/or within any regulated or critical habitat associated with mussels or fish would require review from DFO along with any works that could indirectly affect the function of the fish habitat (i.e., changes to water quality or quantity or impacts to fish passage).

6.3.6.2 Analysis of Impacts

The proposed works do not include any activities below the high-water mark of either watercourse. For this project/site, there is no regulated or critical habitat extending above the high-water mark. There is no direct impact to fish and fish habitat. The potential for indirect impacts can stem from erosion of the banks, removal of riparian vegetation, transportation of sediment-laden water to fish bearing areas, accidental release of other deleterious substances, or sensory disturbance (lighting of fish habitat during construction) as well as changes to the quantity of water reaching a feature. The Ottawa River is a large controlled system and no change to the catchment areas on this project would impact this feature. As mentioned in the description of activities, the pre to post- contributions to the water quantity to the Ottawa River will be the same and that to Taylor Creek will remain very similar. The slight change to stormwater runoff to Taylor Creek will be brought to DFO for review. List of avoidance and mitigation measures is included in Section 7.

Prior to Avoidance and Mitigation Measures					
Feature	**Area**	**Nature**	**Duration**	**Magnitude**	**Findings**
Taylor Creek	Local	Indirect	Permanent	Negligible to Major	DFO consultation required and Avoidance and Mitigation Measures needed
Ottawa River	Local to Regional	Indirect	Temporary	Negligible to Major	Unlikely but if occur could be Negligible to Major Impact would only occur if accident or malfunction during construction

6.3.7 Other

As mentioned at the start, in addition to the natural heritage features identified herein, there are other regulations that need to be considered. For this project, this would be for the general protection of birds (under the *Fish and Wildlife Conservation Act*, and the *Migratory Bird Convention Act*) and for turtles (all are protected under the *Fish and Wildlife Conservation Act*). Avoidance and mitigation measures are provided.

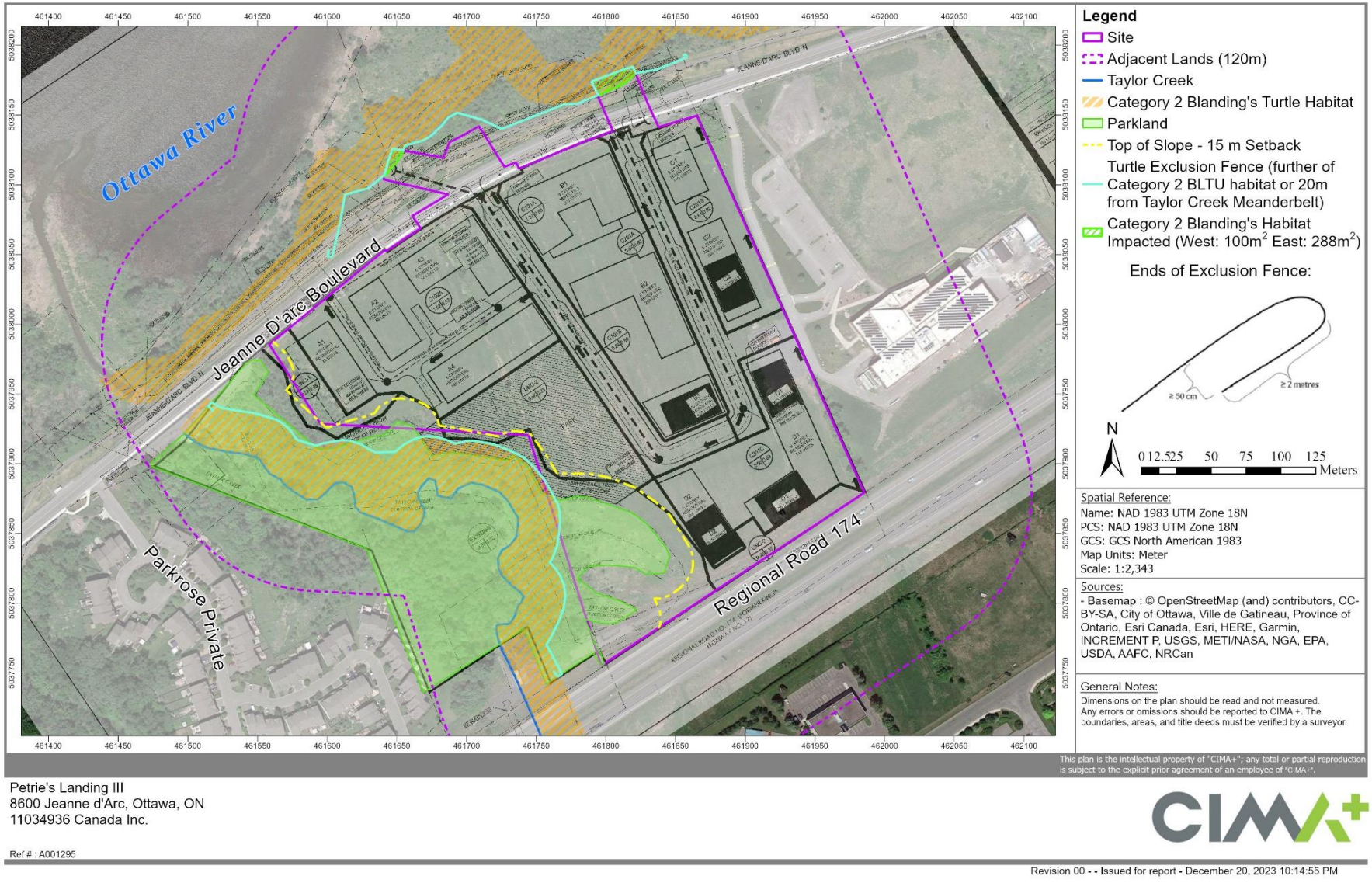


Figure 8: Natural Heritage Constraints

7. AVOIDANCE AND MITIGATION MEASURES

Following a review of the background information, site investigations and evaluation of the potential natural heritage features, the following features were identified for avoidance and or mitigation measures:

- Provincially Significant Wetland/Area of Natural and Scientific Interest /Core Area

- Species at Risk Habitat
  - Potential for Blanding's Turtle
  - Presence of Least Bittern
  - Potential for Bank Swallow
  - Potential for Bobolink
  - Potential for Eastern Meadowlark
  - Potential for Bats
  - Presence of Black Ash

- Woodlands / Urban Natural Feature
  - Present in adjacent lands (western portion)

- Significant Wildlife Habitat / Urban Natural Feature
  - Potential for Turtle Wintering Areas
  - Potential for Osprey Habitat
  - Potential for Amphibian Breeding Habitat

- Significant Valleylands / Urban Natural Feature
  - Ottawa River Valley
  - Taylor Creek Valley

- Fish Habitat / Urban Natural Feature
  - Taylor Creek (permanent direct fish habitat within 120 m adjacent lands)
  - Ottawa River (permanent direct fish habitat within 120 m adjacent lands)

- Other
  - Species protected by FWCA or MBCA

NOTE: There are several features whose avoidance and mitigation measures are included under various subsections as the same measures will protect various functions and several of the Urban Natural Features, Core Areas, PSW type features and their functions are already considered under such items as valley, fish habitat, SAR and/or Significant wildlife habitat. As such, it is important to read through all measures.

7.1 Species at Risk

The recommended avoidance and mitigations measures proposed in 7.6 to protect general wildlife should also be implemented to protect SAR herpetofauna, and SAR bats. To ensure compliance under Section 9 and/or Section 10 of the ESA, and to protect SAR and SAR habitat during project construction, the following general mitigation measures are also recommended:

General

- Endangered and threatened species are protected and cannot be harmed, harassed, or killed and in some cases their habitats are also protected. These individuals will only be handled by qualified person and only if the individual is in imminent threat of harm. An authorization under the ESA 2007 would be required to handle individuals that are not in imminent threat of harm.
- If a SAR enters the work area during the construction period, any work that may harm the individual is to stop immediately and the supervisor will be contacted. No work will continue until the individual has left the area.
- Should an individual be harmed or killed then work will stop, and the Ministry of Environment, Conservation and Parks (MECP) will be contacted immediately.
- Educate staff and contractors on the potential for SAR, with a particular emphasis on seven (7) SAR identified as potentially occurring on Site or in adjacent lands; 1 reptile (Blanding's turtle), 3 birds (eastern whip-poor-will, bobolink, eastern meadowlark), 4 mammals (little brown myotis, northern myotis, eastern small-footed myotis, and the tri-colored bat), and 2 plants (butternut, black ash)
- If a SAR is encountered, this information will be provided to the Natural Heritage Information Centre (Report rare species (animals and plants) | Ontario.ca).

Turtles

There is a low potential for Blanding's Turtles to occur in the Site. The potential interactions would be with accidental harm to individuals should they be present at the time of construction or accidental release of deleterious substances that affect water quality in their potential habitat downstream (i.e., Taylor Creek/Ottawa River).

- **MECP will be contacted with respect to the project's activities.**
- Implement a strict speed limit of <15 km/h during construction.
- Minimize clearing of vegetation.
- Clearing of vegetation should take place during the turtle inactive season when they are hibernating which typically occurs between **October 31 - April 1** (weather dependent). Otherwise, additional surveys (sweeps for turtles by fish and wildlife technician or biologist familiar with the species are needed).
- If works cannot take place during the inactive turtle season (October 31 – April 1), sediment fencing along the edge of the area to be cleared can be used for temporary exclusion during construction. These will be properly countersunk and maintained to ensure that any turtles cannot get into the Site. This sediment fencing is, at a minimum, to include the eastern edge of the Site closest to the creek. *Reptile and Amphibian*

Exclusion Fencing: Best Practices (OMNRF, 2013) should be followed for exclusion fence design and installation and will include the j-hook turn-arounds.

+ If working during turtle active season (April 1-October 31) then stockpiles that might provide suitable nesting substrate (i.e., gravel, soil) will be provided with additional sediment fencing to prevent turtles from nesting in the work area. Note that should turtles nest on-site, then all work would be stopped until the appropriate process is followed.
+ Contractor is to perform daily sweeps during the active season (approximately April 1 to October 31, subject to weather conditions). Note required if under freeze-up conditions.
+ If an individual is found:
  - It is not to be harmed or harassed.
  - Work that puts the individual in danger will cease (i.e., moving machinery), and the individual will be watched from far to document where and when it leaves the site for a minimum of 2 hours. If it does not leave, then it may need to be relocated. Contact a biologist experienced with this species to relocate the individual.
  - Contractor is to perform daily sweeps during the active season (approximately April 1 to October 31, subject to weather conditions). Note required if under freeze-up conditions.
+ If a turtle nest is suspected, then flag a 10 m buffer to protect the nest. Contact project biologist for immediate assistance, and/or, MECP (for Endangered or Threatened species) and MNRF (all other species, including those listed as special concern).
+ Erosion and sediment control measures to be put in place to prevent impacts to water quality downstream of the work area. See Fish Section for more details.
+ Minimize sensory impacts to turtles by working during the day, and ensuring that equipment and vehicles have the appropriate mufflers and implement a no idling policy. If working at night ensure that only the lighting needed to perform the work safely is installed and this lighting is focused on the work area (minimize lighting of sky or of natural features).

FOLLOWING to Avoidance and Mitigation Measures – Blanding's Turtle				
Area	**Nature**	**Duration**	**Magnitude**	**Findings**
Local	Negative Direct to Indirect	Temporary	Negligible	Effectively minimized MECP will be consulted

Least Bittern

It is understood that vegetation will be cleared within 5m of the stormwater drains around 58m from the Petrie Island PSW. There is a very low potential to impact least bittern during the clearing. Potential impacts would stem from sensory disturbances.

Bank Swallow

The habitat within the valley was not preferred and the species was absent. Clearing outside of the 15m setback from the top of the slope will mitigate all direct impacts to this species habitat. Indirect impacts should an individual be present would stem from sensory disturbances.

Bobolink and Eastern Meadowlark

It is understood that approximately 7 ha of meadow vegetation will be removed from the site. The potential to impact Bobolink and Eastern Meadowlark is low as none were present during the 2022 surveys.

During Construction:

- If the clearing of vegetation does not take place within the next 5 years, then the surveys should be repeated (i.e., prior to 2027 nesting season).
- Clearing of vegetation will take place between September 1 and March 30 (no clearing is permitted during what is considered the active season – March 31 to August 31, inclusive) to protect impacts to individuals. **Note that the timing constraint for tree removal for bats is more restrictive (clearing between October 1 and March 31, inclusive).**
- Educate construction workers that several SAR bird species could be present and that these and their habitats are protected under the provincial *Endangered Species Act* and must be protected from harm, harassment and injury.
- If a SAR bird is observed, then all work that may harm the individual must stop and the worker should notify their supervisor. Try to take a photograph or record the call, but do not chase the bird to do so. The supervisor is to inform the client who would then communicate with MECP.
- If an individual has been harmed, the supervisor should contact MECP (and if applicable the project biologist) immediately.
- Minimize sensory impacts to birds by working during the day, and ensuring that equipment and vehicles have the appropriate mufflers and implement a no idling policy. If working at night ensure that only the lighting needed to perform the work safely is installed and this lighting is focused on the work area (minimize lighting of sky or of natural features).

FOLLOWING to Avoidance and Mitigation Measures – SAR Birds				
Area	**Nature**	**Duration**	**Magnitude**	**Findings**
Local	Negative Direct to Indirect	Temporary	Negligible	Effectively minimized through

FOLLOWING to Avoidance and Mitigation Measures – SAR Birds				
Area	**Nature**	**Duration**	**Magnitude**	**Findings**
				reduced area of impact and use of timing windows

Bats

There were no hibernacula, or Eastern Small-footed Bat Maternity Sites. The woodland tree removal timelines will be sufficient to effectively minimized impacts.

- **Remove all trees that are 10 cm in diameter at breast height or larger between October 1 and March 31** (Bat active season is currently assumed to be April 1 to September 30).
  - If this is not possible, conduct an exit survey prior to cutting them down. If the exit survey identifies bats, contact MECP or biologist for additional guidance.
- Educate contractors by informing them that most bats in Ontario are protected.
- Minimize sensory impacts to bats by ensuring that equipment and vehicles have the appropriate mufflers and implement a no idling policy. If working at night ensure that only the lighting needed to perform the work safely is installed and this lighting is focused on the work area (minimize lighting of sky or of natural features).

FOLLOWING to Avoidance and Mitigation Measures - Bats				
Area	**Nature**	**Duration**	**Magnitude**	**Findings**
Local	Negative Direct (if individual present and harmed) Indirect (sensory disturbances)	Temporary to Permanent	Negligible	Effectively Minimized

Black Ash and Butternuts

Black Ash are present within the property, after January 25, 2024 Black Ash is anticipated to be protected under the ESA. It is expected that clearing of healthy individuals greater than 8 cm in dbh will be prohibited. Prior to January 25, 2024:

- Follow guidance on clearing of trees from the bats and birds and wildlife in general sections.
- Vegetation removal will be minimized and clearly delineated on construction drawings.
- Anticipate the need to complete an inventory for this species prior to clearing of vegetation following provincial guidelines (not available at this time).
- No butternuts were found during any of the surveys on this property. These surveys are valid for 2-years. Butternut inventory would be required if the vegetation clearing is not completed prior to August 31, 2024.

- If a Butternut is found, no impacts to it or its habitat (assume the habitat is 50m) until the appropriate process is completed by a Butternut Health Assessor.

FOLLOWING to Avoidance and Mitigation Measures – Black Ash				
Area	**Nature**	**Duration**	**Magnitude**	**Findings**
Local	Negative Direct (if individuals to be removed) Indirect (reduction in black ash habitat)	Temporary to Permanent	Unknown until provincial guidelines are provided	

7.2 Woodlands / PSW / ANSI / UNF/ Core Area

The vegetation to be removed is not part of the significant woodland, or PSW. There is a small part of the urban natural area to be cleared for the outlet and the residential subdivision. To ensure that impacts are limited to those considered herein, the following will be applied:

- Ensure that the vegetation to be removed is clearly defined on construction drawings and marked in the field with sturdy fencing (with signs indicating the purpose of the fencing).
- Existing trails, roads or cut lines should be used to avoid disturbance to vegetation and prevent soil compaction.
- The root system, trunk or branches of any tree not designated for removal will be protected from damage.
- In the event of accidental damage to trees, or unexpected vegetation removal, vegetation shall be replaced / restored with native species.
- Construction vehicles will have designated access routes from and to the construction area.
- Material or equipment will not be placed within the critical root zone of any tree (which is 10x the dbh).
- The existing grade will not be raised/lowered within the critical root zone without approval.
- Signs, notices, or posters will not be attached to any tree; and
- Exhaust fumes from equipment will not be directed towards any tree's canopy.
- All equipment and vehicles will be equipped with dust collectors as appropriate.
- Water will be applied, as required, to disturbed surface areas to minimize visible emissions of fugitive dust.
- Machinery must be cleaned prior to arriving on-site to prevent the potential spread of invasive species. Invasive species on site (i.e., Common Reed, buckthorn, honeysuckle) should be removed as appropriate for the species.
    - See Ontario Invasive Plants website for guidance https://www.ontarioinvasiveplants.ca/

  - See http://www.invadingspecies.com/invaders/aquatic-plants/
+ If any invasive plant species are to be disturbed, excavated, or cut on site, best management practices must be followed where available: https://www.ontarioinvasiveplants.ca/resources/best-management-practices.
+ Minimize sensory impacts to wildlife by working during the day, and ensuring that equipment and vehicles have the appropriate mufflers and implement a no idling policy. If working at night ensure that only the lighting needed to perform the work safely is installed and this lighting is focused on the work area (minimize lighting of sky or of natural features).

FOLLOWING to Avoidance and Mitigation Measures - Woodlands				
Area	**Nature**	**Duration**	**Magnitude**	**Findings**
Local	Negative Direct to Indirect	Permanent Temporary	Negligible	Effectively minimized

7.3 Significant Wildlife Habitat / Urban Natural Features

Mitigation measures outlined in other sections (SARA, PSW) will adequately protect the candidate significant wildlife habitat (i.e., turtle overwintering habitat, Osprey nesting and perching habitat, as well as amphibian breeding habitat).

+ Ensure that contractors receive information on the sensitivities of the habitat in the two Nurban Natural Features (i.e. PSW, ANSI, Core Area, UNF, SWH, Fish Habitat).
+ Ensure that the areas of disturbance are clearly defined on construction drawings and marked in the field with sturdy fencing (with signs indicating the purpose of the fencing).
+ Avoid removing larger diameter trees to the extent feasible. If any need to be removed, ensure no active or inactive raptor nests.

FOLLOWING to Avoidance and Mitigation Measures – Significant Wildlife Habitat				
Area	**Nature**	**Duration**	**Magnitude**	**Findings**
Local	Negative Indirect	Temporary	Negligible	Effectively minimized

7.4 Valleylands

There are two valleylands that are assumed significant, the Ottawa River Valley and Taylor Creek Valley. Setbacks from the top of slope for Taylor Creek and Petrie Island PSW for the Ottawa River will prevent direct impacts to these valleylands aside from the clearing of vegetation in the 5m area around the stormwater drains at the top of the slope of the Ottawa River valley. Indirect impacts could occur as a result of accident or malfunction.

+ Ensure that the 15m setback from top of valley is clearly defined on construction drawings and marked in the field with sturdy fencing (with signs indicating the purpose of the fencing).
+ Minimize clearing of woody vegetation. Where opportunities are present natural vegetation will be restored.
+ Ensure that appropriate implementation and monitoring of erosion and sediment control measures are implemented (see Fish section).
+ See erosion protection measures under fish.

Prior to Avoidance and Mitigation Measures - Valleylands					
Feature	**Area**	**Nature**	**Duration**	**Magnitude**	**Findings**
Taylor Creek Valley	Local	Negative Indirect	Temporary	Negligible	Effectively minimized
Ottawa River Valley		Negative Indirect	Permanent to temporary		

7.5 Fish and Fish Habitat

There are no direct impacts to fish and fish habitat associated with this project as all works will be above the high-water marks. The minor change in contributing catchment area to Taylor Creek is anticipated to be negligible, but there are no models for the area to confirm. The proposed change is <1%. The following mitigation measures are proposed to avoid or mitigate impacts to fish and fish habitat and will be provided to DFO. This section will be updated as needed should additional measures be required by DFO.

Planning

+ Contact DFO early to ensure that the slight change in catchment area to Taylor Creek is acceptable.
+ Minimize the change in pre and post catchment areas.
+ Site instruction will be provided to contractor to highlight that both Ottawa River and Taylor Creek provide fish habitat and, that any road ditches that drain to these could transport sediment-laden water to permanent fish habitat.
+ Minimize clearing of woody vegetation.

Erosion and Sediment Control

+ An erosion and sediment control plan will be developed by contractor and implemented prior to any work within 30 m of the watercourse:
  - Provide regular maintenance to the erosion and sediment control measures during construction. Contractor shall be responsible for ensuring that the erosion and sediment control measures are maintained and will monitor the water clarity

downstream of the work site throughout the day and during rain events. Water quality is to meet the *Canadian Water Quality Guidelines for the Protection of Aquatic Life*. Monitoring for visible plumes outside of the work area is to be undertaken;
  - At a minimum, the erosion and sediment control plan will include the installation of a turbidity curtain downstream; and
  - Additional materials (i.e., rip rap, filter cloth and silt fencing) will be readily available in case they are needed promptly for erosion and/or sediment control.
- Suspend activities that cause muddy environments during periods of heavy rains.
- Construction and removal of cofferdam dams can create a plume.
- Any stockpiles of soil or fill material will be stored as far as possible from the channel and protected by silt fencing (minimum 30 m).
- The erosion control measures will not be removed until the bank is stabilized (i.e., <20% exposed soil).
- Outside of the areas to be backfilled, any disturbed banks will be returned to pre-construction conditions and contours.
- Water from dewatering will be treated prior to returning it to the system (i.e., straw bale settling ponds covered by geotextiles or sediment sock on the end of hose and situated on top of well vegetated slopes).
- Any disturbed bank, along the section to remain, will be returned to pre-construction conditions, including revegetation, as necessary, with native vegetation appropriate for site conditions.
- Where banks/riparian area (area within 30 m of channel) have been stabilized monitor the site until stable (<20% bare soil).
- Any riprap or river stone will consist of clean rock free of fines.
- Where possible, limit clearing of vegetation to trimming and leave the stump and lower 60 cm of the tree trunk in place (for shoreline stabilization).

Fish Protection

- Minimize sensory impacts to fish by working during the day. If working at night ensure that only the lighting needed to perform the work safely is installed and this lighting is focused on the work area (minimize lighting of natural features).

General Contaminant and Spill Management

- There will be no use of herbicides in clearing of vegetation;
- All equipment working near the water should be well maintained, clean and free of leaks. Maintenance on construction equipment such as refueling, oil changes or lubrication would only be permitted in designated area located at a minimum of 30 m from the shoreline in an area where sediment erosion control measures and all precautions have been made to prevent oil, grease, antifreeze, or other materials from inadvertently entering the ground or the surface water flow;
- Emergency spill kits will be located on site. The crew will be fully trained on the use of clean-up materials to minimize impacts of any accidental spills. The area would be

monitored for leakage and in the unlikely event of a minor spillage the project manager would halt the activity and corrective measures would be implemented;

+ If a spill occurs:
  - Stop all work;
  - Spills are to be immediately reported to the MECP Spills Action Centre (1800 268-6060). Note that under the Fisheries Act deleterious substance includes sediments;
  - Clean-up measures are to be appropriate and are not to result in further harm to fish/fish habitat;
  - Sediment-laden water will be removed and disposed of appropriately.
+ Following the completion of construction, all construction materials will be removed from site.
+ If removal of existing stormwater outlet requires concrete removal or pours then:
  - Concrete particles and pours can affect the pH of any water that comes into contact with the material. Measures are to be put in place to capture all concrete dust and particles and wastewater generated during the repairs (i.e., chipping, saw cutting, blasting etc.).
  - During the concrete works (removal and any pours), all water outside of work area is to meet the minimum requirements established by CCME for the protection of aquatic life. Monitoring is to be completed by the contractor and records provided to the Owner.
    - The pH outside of the temporary work area is to be keep with the CCME guidelines (between 6.5-9.0 pH units).
    - Monitoring of water temperature is to be completed until any new concrete is cured.

FOLLOWING to Avoidance and Mitigation Measures					
Feature	**Area**	**Nature**	**Duration**	**Magnitude**	**Findings**
Ottawa River	Local	Indirect	Temporary	Negligible	DFO consulted and Letter of Advice received
Taylor Creek		Indirect	Permanent		

7.6 Other

As mentioned at the start, in addition to the natural heritage features identified herein, there are other regulations that need to be considered. For this project, this would be for the general protection of birds (under the *Fish and Wildlife Conservation Act*, and the *Migratory Bird Convention Act*), and for wildlife (all are protected under the *Fish and Wildlife Conservation Act*).

7.6.1 Wildlife

+ Removal of any woody vegetation and/or existing infrastructure will occur during the breeding turtle/bird/bat inactive season from **between October 31 and March 31** inclusive.
+ If this timing window cannot be followed, then:
  - A turtle exclusion fence is required as per the SAR Section (turtle active season is April 1 to October 31).
  - Almost all breeding birds are protected under the MBCA and/or FWCA. The only species not protected are: American crow, brown-headed cowbird, common grackle, house sparrow, red-winged blackbird, and starling. It is prohibited to destroy or disturb an active nest of other birds, or to take or handle nests, eggs, or nestlings. Because of the potential for SAR Birds, the SAR Bird timing window must be applied to this project and no clearing of vegetation can take place between April 12 and August 28 in nesting Zone C3/C4 (ECCC 2023), inclusive. Outside of this timing window, it is considered unlikely that birds would be nesting. Note, there are some birds (birds of prey, herons etc.) that do begin nesting earlier in the year. It should also be noted, that if an active nest is present before or after the above dates that it is still protected.
  - Qualified biologist would conduct bat exit surveys no earlier than 2 days prior to the removal of trees with a dbh of 10 cm or larger during bat active season (April 1 to September 30, inclusive).
+ Removal of natural vegetation will be minimized and clearly delineated on construction drawings.
+ Almost all reptiles are protected by the FWCA. If a turtle nest is suspected, then flag a 10 m buffer to protect the nest. Contact project biologist and/or MECP (for Endangered or Threatened species) and MNRF (all other species, including those listed as special concern).
+ Harassment and/or harm to wildlife during construction is prohibited.
+ No hunting or fishing is permitted on construction sites.
+ 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.

Table 7: Summary of Impacts, Mitigation Measures and Residual Effects

Activity	Natural Heritage Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
Construction				
Vegetation Clearing and removal of buildings in preparation for development Construction of houses, infrastructure	Breeding bird Habitat (MBCA) Indirect Fish Habitat Potential for Species at Risk – Blanding's Turtle, Least Bittern, Bank Swallow, Bobolink, Eastern Meadowlark, Bats, and Black Ash.	Removal of vegetation would destroy (permanently) breeding habitat. Indirect impacts to vegetation not scheduled to be removed. Introduction of non-native vegetation. Potential to injure or kill wildlife during construction as a result of collisions. Potential impacts from noise or lights Potential impacts to the water quantity or quality flowing towards the downstream fish habitat.	+ Machinery should be cleaned prior to arriving on-site to prevent the potential spread of invasive species. + Contractors to be educated for potential for Species at Risk (Blanding's Turtle, Least Bittern, Bank Swallow, Bobolink, Eastern Meadowlark, Bats, and Black Ash.). + If a SAR enters the work area during the construction period, any work that may harm the individual is to stop immediately and the supervisor will be contacted. No work will continue until the individual has left the area. These sightings will be reported to MECP and NHIC. + Should an individual be harmed or killed then work will stop and MECP will be contacted immediately. + Avoid clearing of vegetation during the sensitive times of the year for local wildlife (i.e., spring to early summer) when animals are bearing and nursing their young. + Vegetation removal will be minimized and clearly delineated on construction drawings. + If a SAR is encountered, this information will be provided to the Natural Heritage Information Centre (Report rare species (animals and plants) | Ontario.ca) + Strict speed limit of <15 km/h during construction to allow workers opportunity to avoid harming/killing of wildlife with machinery.	Loss of all vegetation within the site outside of the 15m setback from the Taylor Creek top of slope. Potential impacts to SAR can be avoided or have been offset.

Activity	Natural Heritage Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
		Potential to impact day-roots or bat maternity sites (little brown) Potential for additional Butternuts to be present (i.e., if missed during inventory or new seedlings grow)	+ All vegetation clearing should occur outside of sensitive timing windows. The preferred period would be from October 1 to March 31 (this would avoid: breeding bird season, and active bat season). Additional measures required if work is to be completed during the various sensitive windows: - Between April 1 and September 30 (active bat season) any removal of buildings or trees that are more than 10 cm in diameter would require a bat exit survey. Repeated every 2 days until clearing of building/trees is completed. - Breeding bird survey for removal of any type of vegetation or removal of any building between April 12 and August 28 by a fish, wildlife or environmental technician or biologist with experience with birds. Within 2 days of the area being cleared. + During clearing of vegetation, contractors are to be informed that they should keep a look out for wildlife and if any are observed, they should be given the opportunity to leave the area. + There will be no use of herbicides for clearing of vegetation. + Work during the daytime hours to prevent light disturbances. + Ensure that all equipment have the appropriate mufflers to reduce noise disturbances. + There is a high potential for ground nesting birds (i.e., killdeer) to be present. These prefer to nest on bare soil or gravel areas. Perform regular walks of the cleared areas	

Activity	Natural Heritage Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
			looking for ground nesters. If any are present, the contact a biologist for guidance. + If a turtle nest is suspected, then flag a 10 m buffer to protect the nest. Contact MECP (for SAR) and MNRF (all other species). + Do not flag bird nests as it attracts predators. + Delineation of the disturbance limits within work areas will be clearly defined on drawings and on the site prior to construction.	
Accidents or Malfunctions	Downstream Fish Habitat in Phase B	Spills or accidents during construction could impact the quality of fish habitat downstream	+ Follow all guidance provided by geotechnical experts on erosion and sediment control measures to ensure protection of the banks. + Educate contractors that water flowing off of the site must not impact the water quality of the fish habitat. It is a contravention of the *Fisheries Act* to release deleterious substances (including sediment) into fish bearing watercourses. + All equipment working in or near the water should be well maintained, clean and free of leaks. Maintenance on construction equipment such as refueling, oil changes or lubrication would only be permitted in designated area located at a minimum of 30 m from the shoreline in an area where sediment erosion control measures and all precautions have been made to prevent oil, grease, antifreeze, or other materials from inadvertently entering the ground or the surface water flow.	Unlikely

Activity	Natural Heritage Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
			+ Emergency spill kits will be located on site. The crew will be fully trained on the use of clean-up materials to minimize impacts of any accidental spills. The area would be monitored for leakage and in the unlikely event of a minor spillage the project manager would halt the activity and corrective measures would be implemented. + All construction materials will be removed from site after completion of construction. + If a spill occurs: - Stop all work - Spills are to be immediately reported to the MECP Spills Action Centre (1800 268-6060). Note that under the *Fisheries Act* deleterious substance includes sediments. - Clean-up measures are to be appropriate and are not to result in further harm to fish/fish habitat. - Sediment-laden water will be removed and disposed of appropriately.	
Operations	Fish Habitat	Potential for impacts to water quality.	+ Indirect impacts could occur as a result of change in water supply or quality, sediment/erosion. - The stormwater management strategy will ensure that water flow from the site is directed to the appropriate area and is treated to not impact the water quality of the receiving waterbodies. It is to be designed to prevent erosion.	None provided properly designed and installed.

Activity	Natural Heritage Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect

			+ An erosion and sediment control plan will be developed by contractor and implemented prior to any work within 30 m of the watercourse:
			  - Provide regular maintenance to the erosion and sediment control measures during construction. Contractor shall be responsible for ensuring that the erosion and sediment control measures are maintained and will monitor the water clarity downstream of the work site.
			  - At a minimum, the erosion and sediment control plan will include the installation of a turbidity curtain downstream; and additional materials (i.e., rip rap, filter cloth and silt fencing) will be readily available in case they are needed.
			+ Suspend activities that cause muddy environments during periods of heavy rains.
			+ Construction and removal of cofferdam dams can create a plume.
			+ Any stockpiles of soil or fill material will be stored as far as possible from the channel and protected by silt fencing (minimum 30 m).
			+ The erosion control measures will not be removed until the bank is stabilized (i.e., <20% exposed soil).
			+ Outside of the areas to be backfilled, any disturbed banks will be returned to pre-construction conditions and contours.
			+ Water from dewatering will be treated prior to returning it to the system.	

Activity	Natural Heritage Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
			+ Any disturbed bank, along the section to remain, will be returned to pre-construction conditions, including revegetation with appropriate native vegetation. + Where banks/riparian area (area within 30 m of channel) have been stabilized monitor the site until stable. + Any riprap or river stone will consist of clean rock free of fines. + Monitor quality of water leaving the site during construction, recording changes to pH, turbidity, and temperature.	

8. CONCLUSION

The proponent would like to develop the Petrie III. The natural constraints are primarily situated within the adjacent lands. The minor disturbance needed to construct the larger stormwater outlet is not anticipated to result in any negative impacts to the Natural heritage Feature/Core Area.

- Communications with MECP with respect to Blanding's Turtle
- Potential need to comply with anticipated new guidelines for Black Ash
- Submission of Request for Review to DFO and completion of any subsequent requirements to DFO's satisfaction

Provided that the avoidance and mitigation measures can be implemented appropriately, and pending review by DFO and MECP the site development could proceed as planned.

I trust that this report will meet your requirements. Should you have any questions or comments, please contact Michelle Lavictoire at Michelle.Lavictoire@cima.ca.

9. 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.

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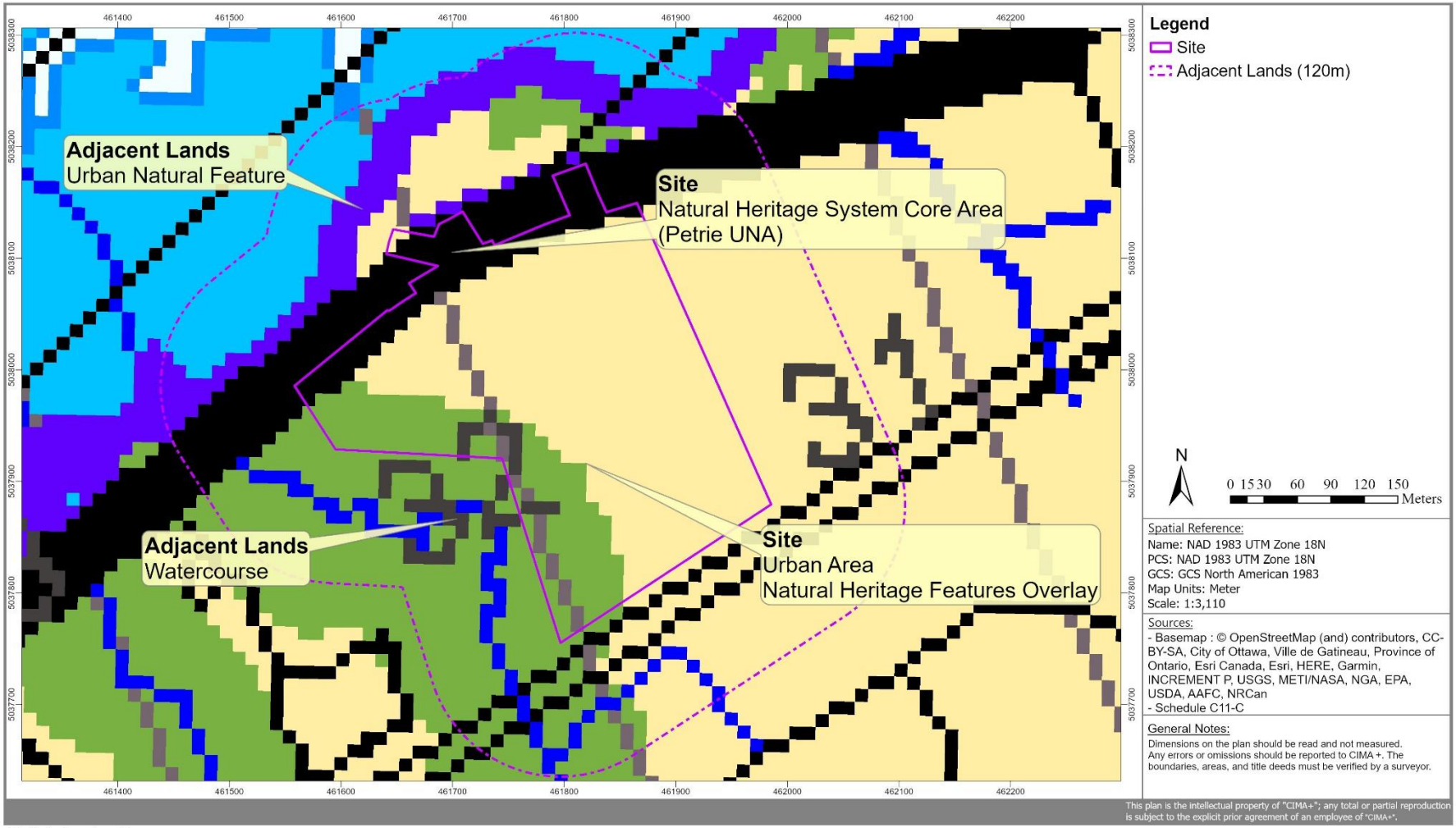
A

Appendix A
Background Information



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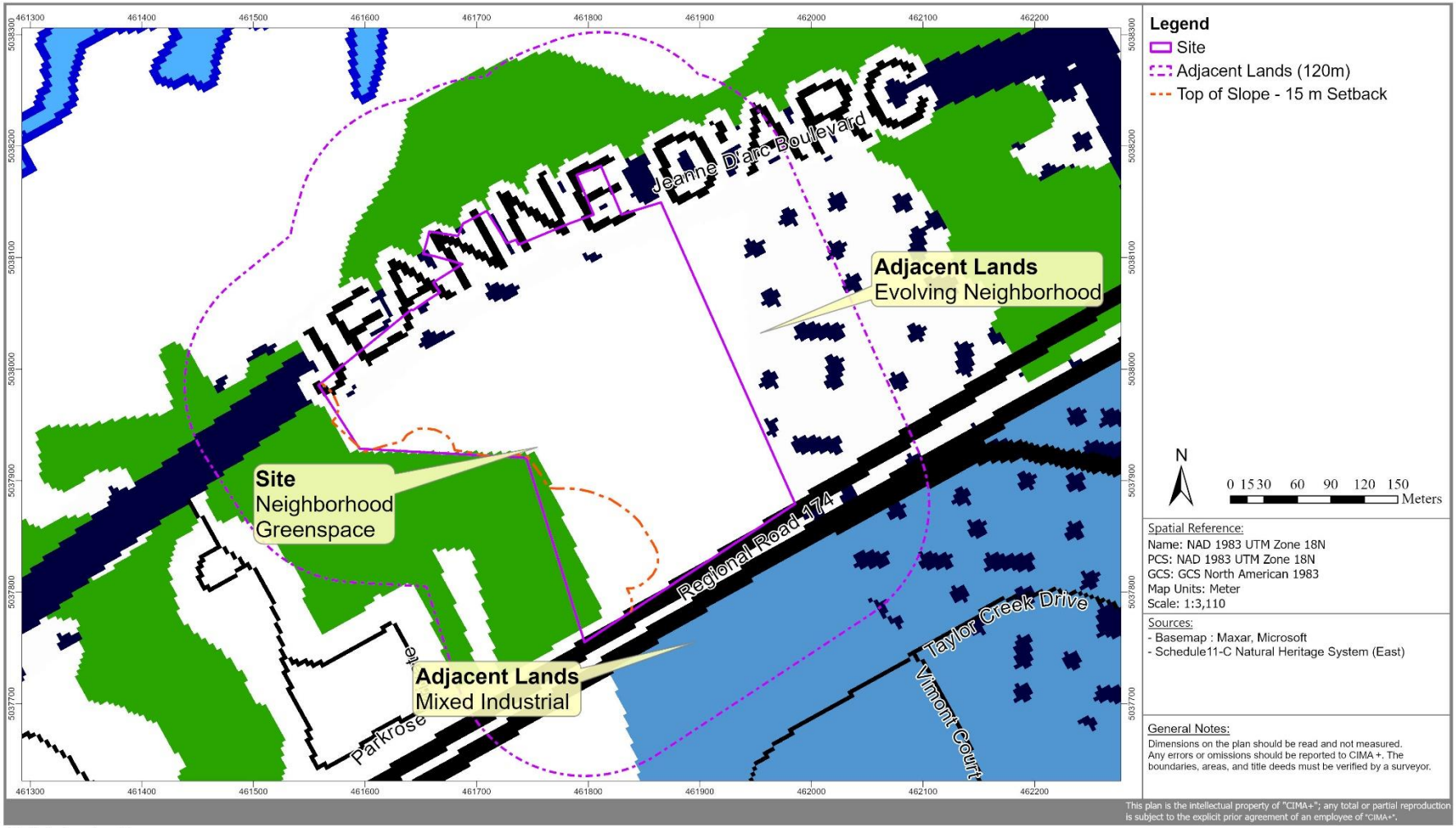

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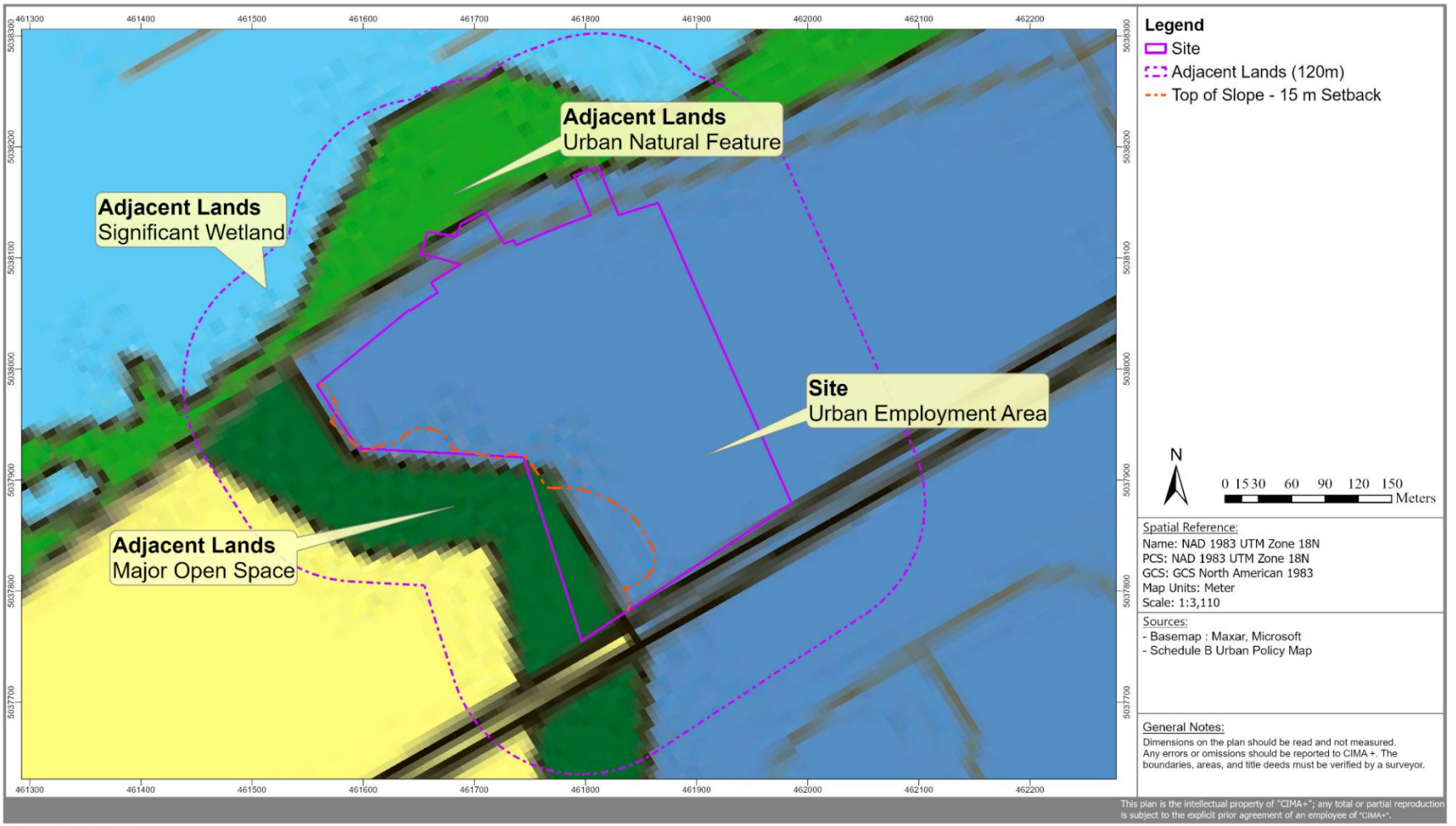
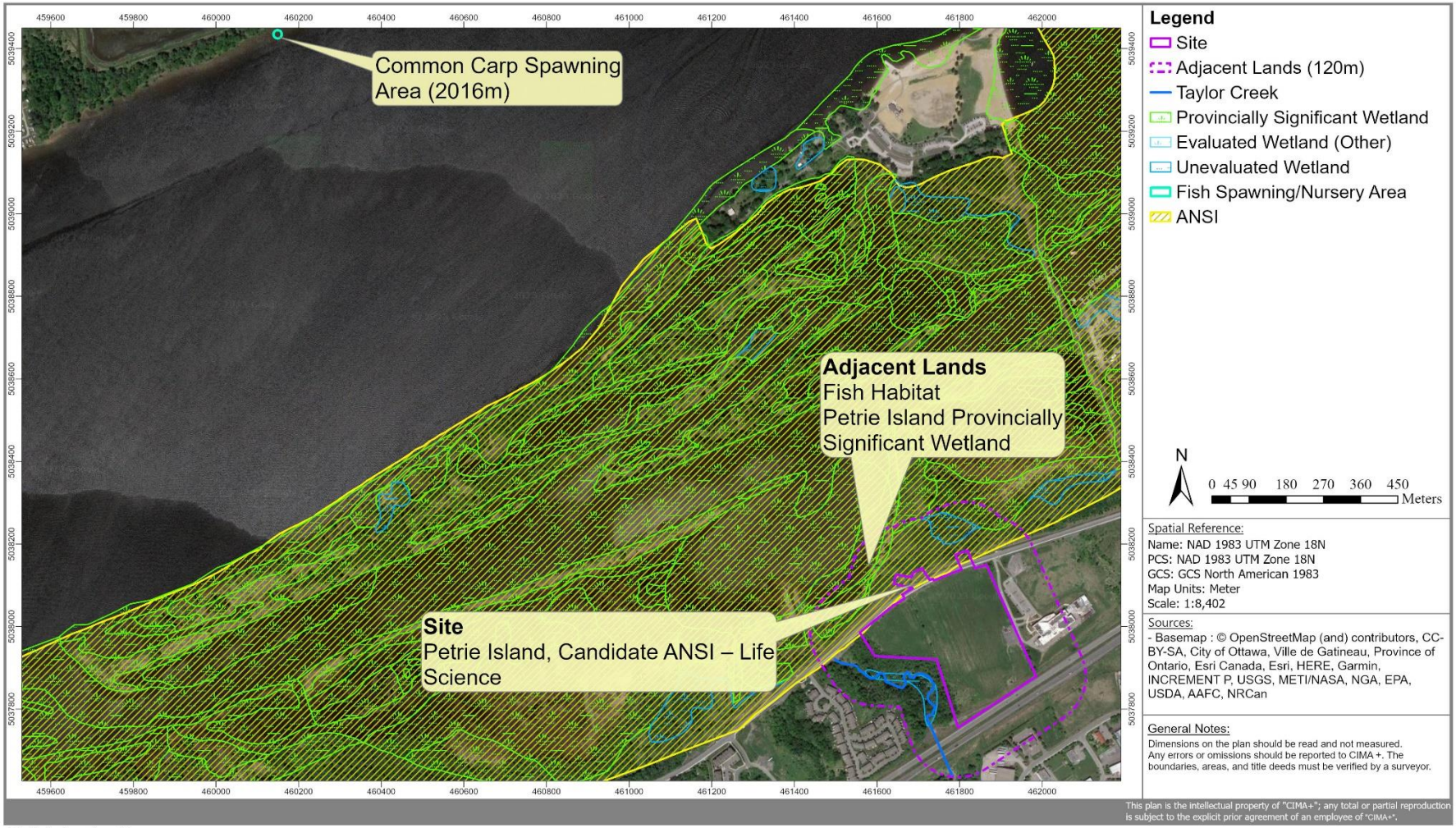


Schedule B Urban Policy Plan

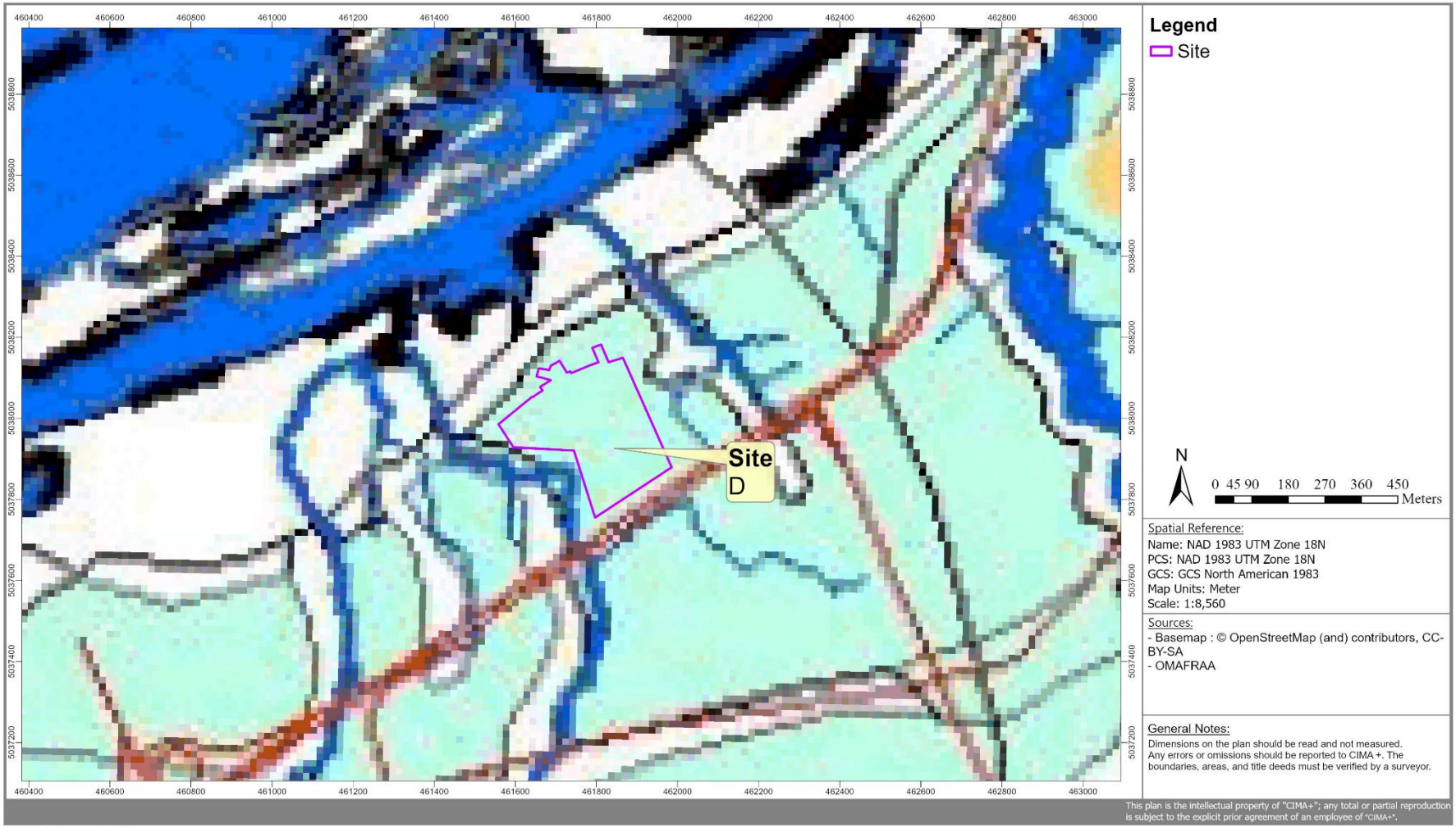


Petrie's Landing III
8600 Jeanne d'Arc, Ottawa, ON
11034936 Canada Inc.

Ref # : A001295

Revision 00 - - Issued for report - December 20, 2023 10:25:06 PM

Background Mapping – Land Information Ontario



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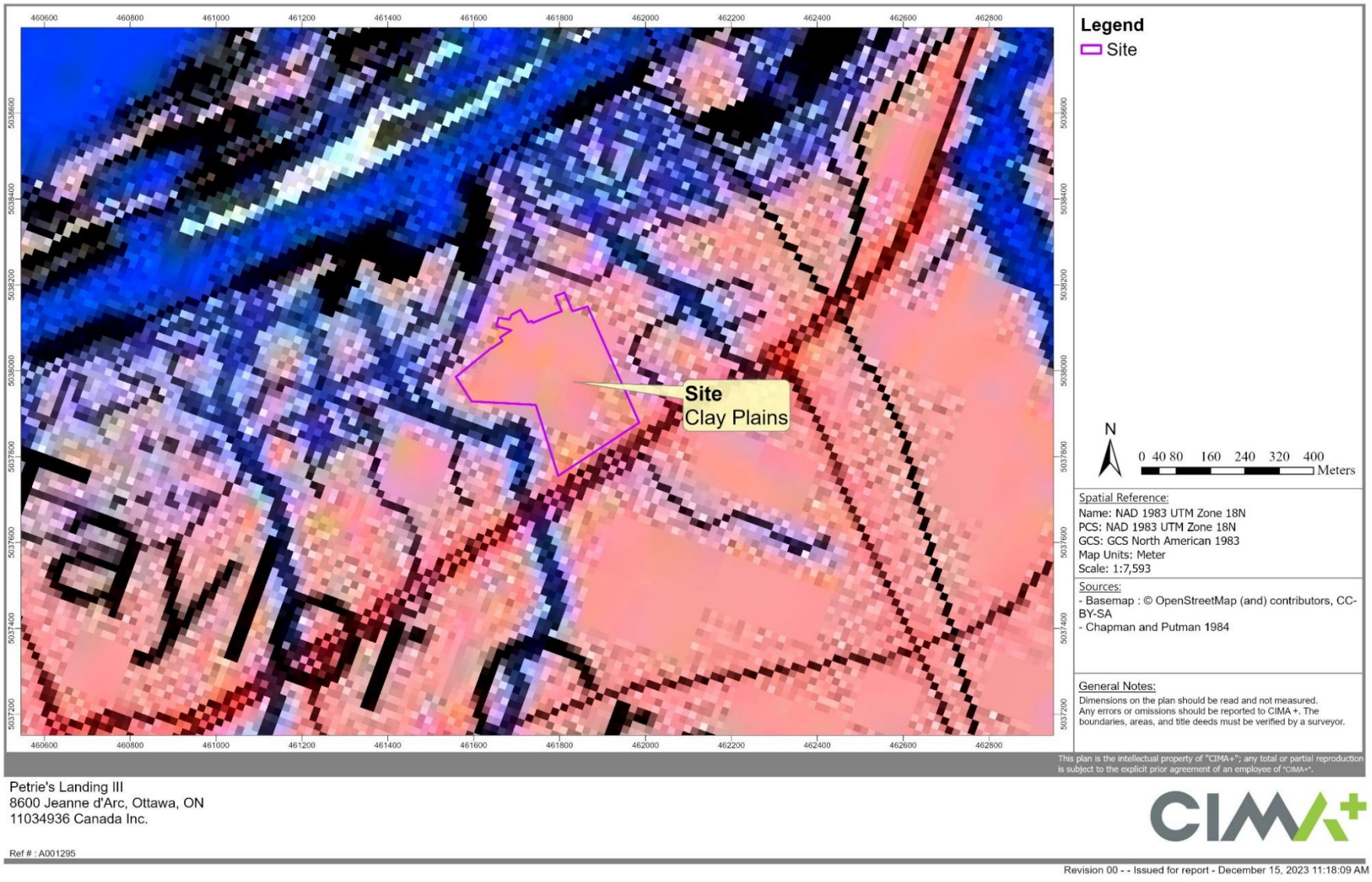

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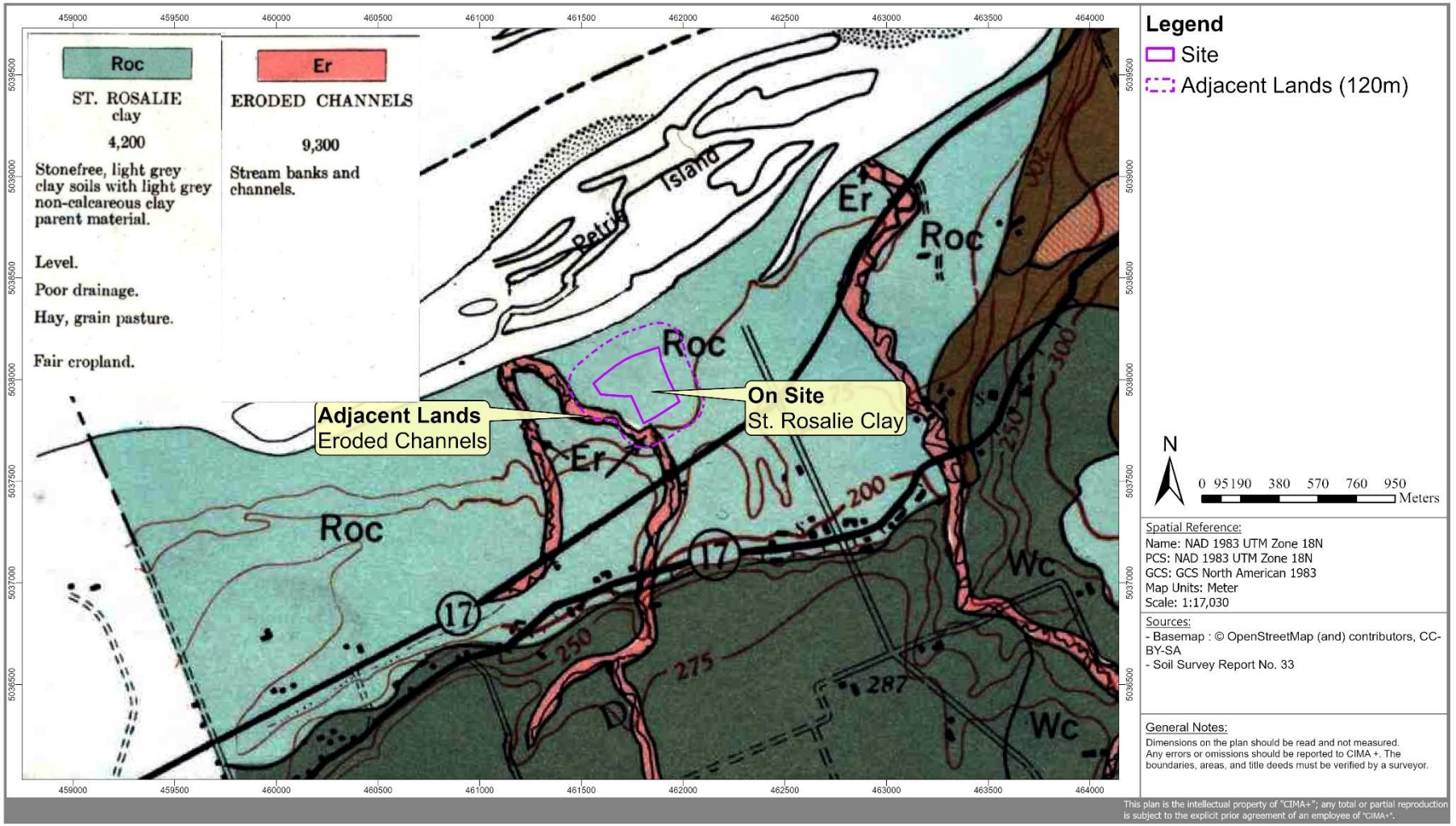

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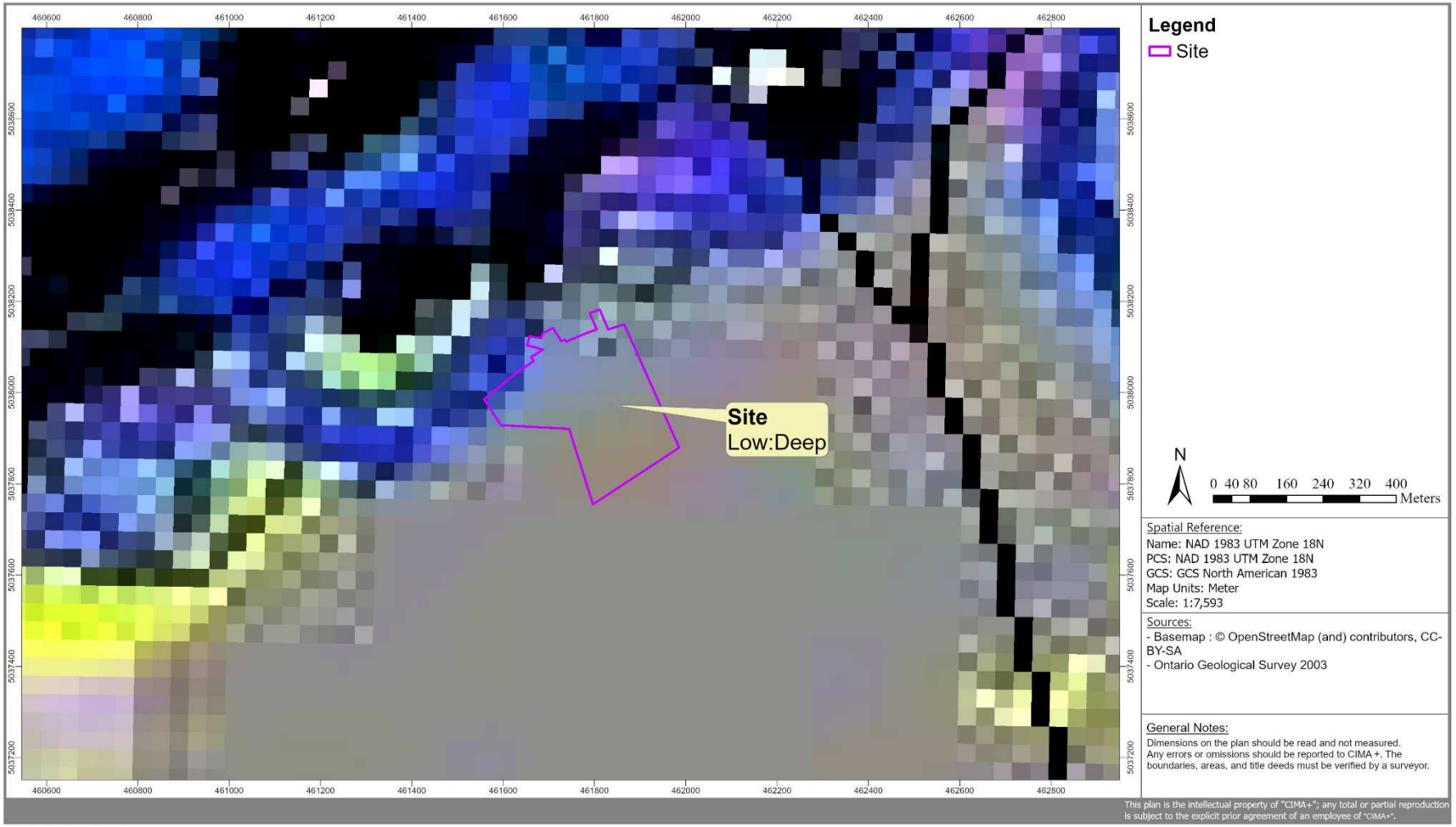
Soils of the Regional Municipality of Ottawa-Carleton - Soil Survey Report 58



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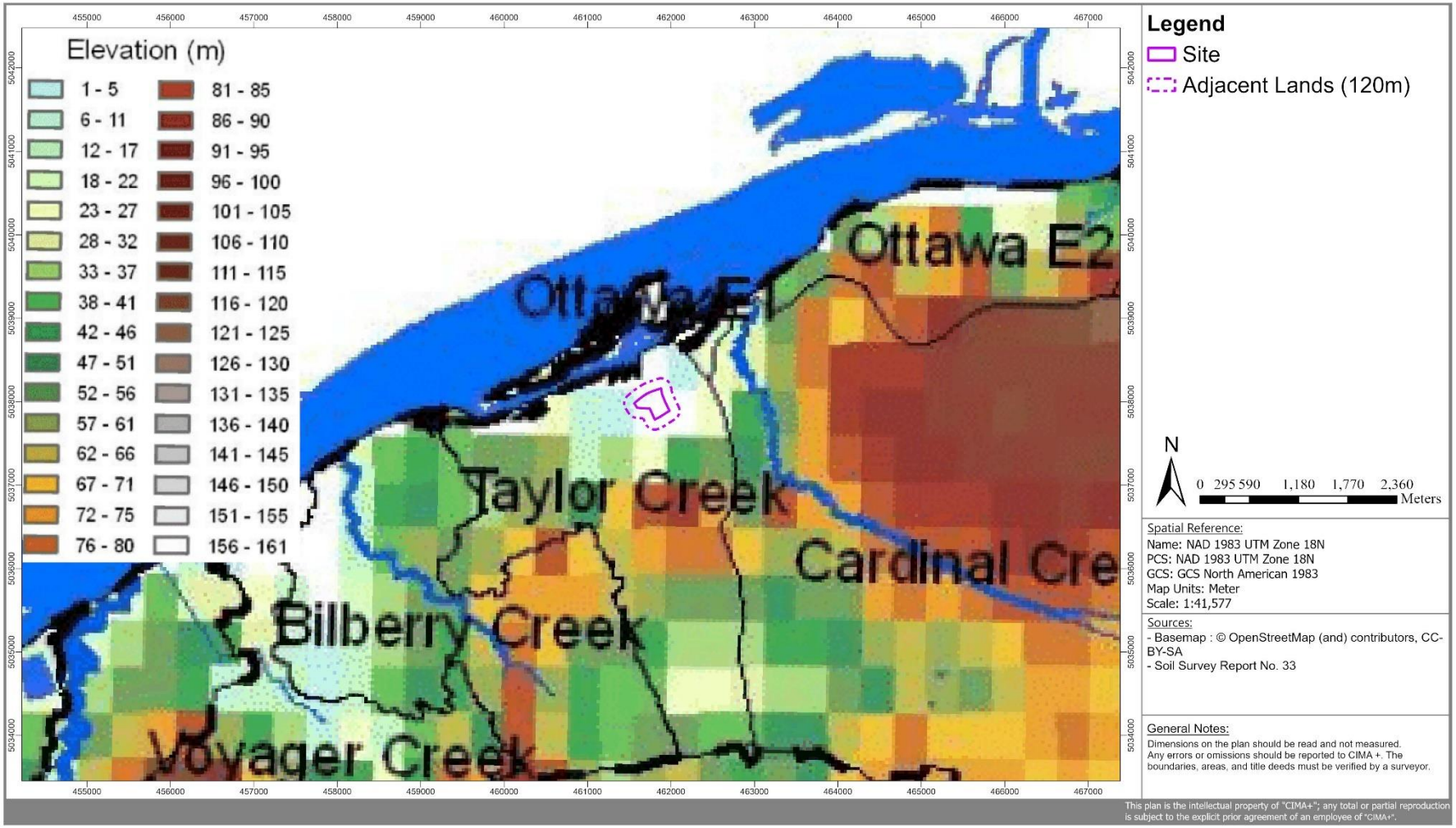

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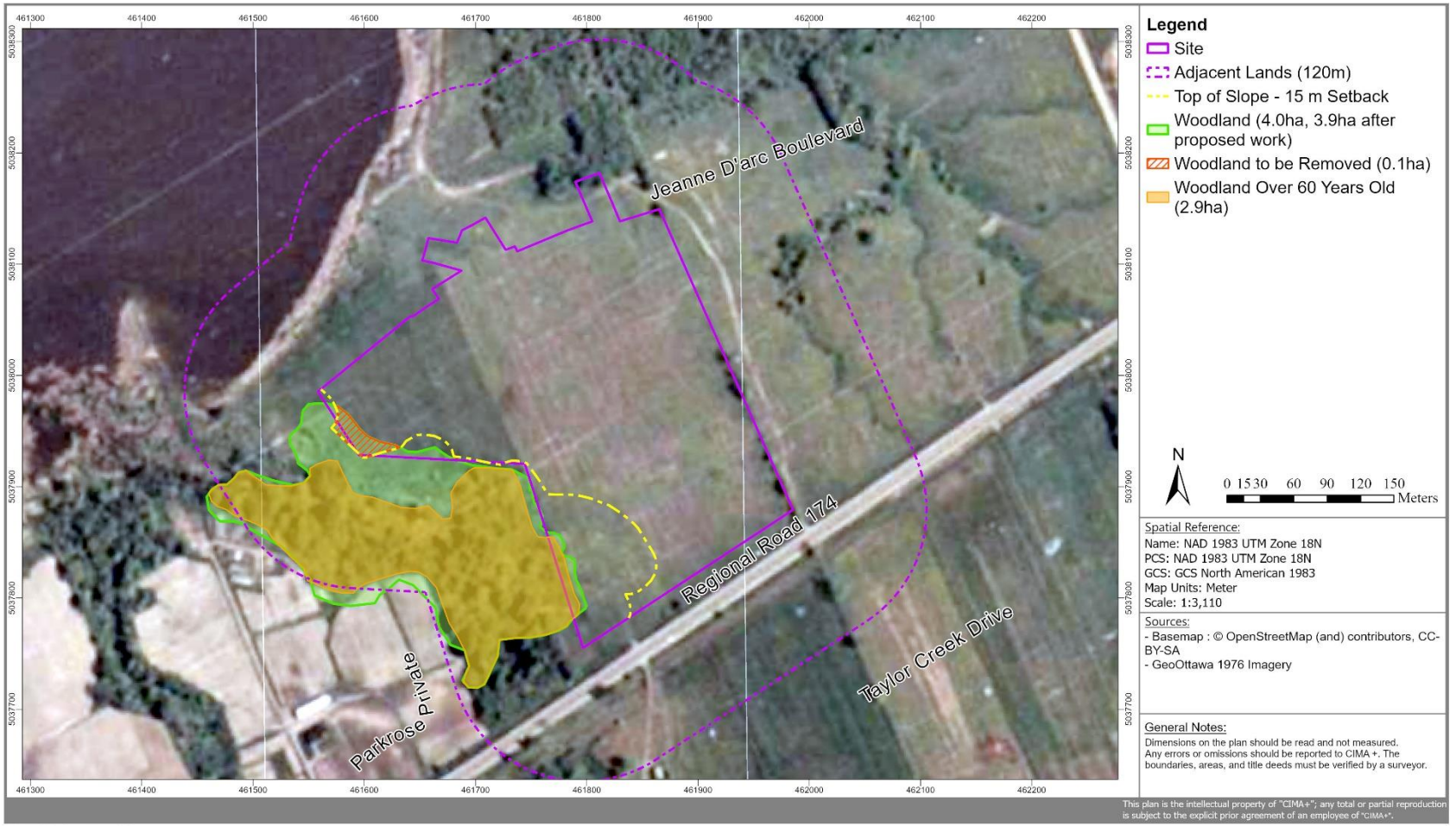


Woodland Age – GeoOttawa 1976

Atlas of the Breeding Birds of Ontario
Squares: 18VR63, 18VR64, 18VR53

Common Name	Scientific Name	ABBO Category	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Canada Goose	*Branta canadensis*	Confirmed	S5	no status	no status
Wood Duck	*Aix sponsa*	Confirmed	S5	no status	no status
American Black Duck	*Anas rubripes*	Confirmed	S4	no status	no status
Mallard	*Anas platyrhynchos*	Confirmed	S5	no status	no status
Northern Shoveler	*Anas clypeata*	Probable	S4	no status	no status
Northern Pintail	*Anas acuta*	Possible	S5	no status	no status
Green-winged Teal	*Anas crecca*	Probable	S4	no status	no status
Blue-winged Teal	*Anas discors*	Probable	S4	no status	no status
Ring-necked Duck	*Aythya collaris*	Possible	S5	no status	no status
Lesser Scaup	*Aythya affinis*	Probable	S4	no status	no status
Common Merganser	*Mergus merganser*	Probable	S5B,S5N	no status	no status
Gray Partridge	*Perdix perdix*	Possible	SNA	no status	no status
Ruffed Grouse	*Bonasa umbellus*	Confirmed	S4	no status	no status
Wild Turkey	*Meleagris gallopava*	Probable	S5	no status	no status
Pied-billed Grebe	*Podilymbus podiceps*	Confirmed	S4B, S4N	no status	no status
American Bittern	*Botaurus lentiginosus*	Probable	S4B	no status	no status
Great Blue Heron	*Ardea herodias*	Confirmed	S4	no status	no status
Green Heron	*Butorides virescens*	Probable	S4B	no status	no status
Turkey Vulture	*Cathartes aura*	Possible	S5B	no status	no status

Common Name	Scientific Name	ABBO Category	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Osprey	*Pandion haliaetus*	Confirmed	S5B	no status	no status
Northern Harrier	*Circus cyaneus*	Confirmed	S4B	no status	no status
Cooper's Hawk	*Accipiter cooperii*	Confirmed	S4	no status	no status
Broad-winged Hawk	*Buteo platypterus*	Possible	S5B	no status	no status
Red-tailed Hawk	*Buteo jamaicensis*	Probable	S5	no status	no status
American Kestrel	*Falco sparverius*	Probable	S4	no status	no status
Merlin	*Falco columbarius*	Confirmed	S5B	no status	no status
Virginia Rail	*Rallus limicola*	Probable	S5B	no status	no status
Sora	*Porzana carolina*	Confirmed	S4B	no status	no status
American Coot	*Fulica americana*	Possible	S4B	no status	no status
Killdeer	*Charadrius vociferus*	Confirmed	S5B, S5N	no status	no status
Spotted Sandpiper	*Actitis macularia*	Confirmed	S5	no status	no status
Upland Sandpiper	*Bartramia longicauda*	Possible	S4B	no status	no status
Common Snipe	*Gallinago delicata*	Probable	S5B	no status	no status
American Woodcock	*Scolopax minor*	Probable	S4B	no status	no status
Black Tern	*Chlidonias niger*	Confirmed	S3B	SC	no status
Rock Pigeon	*Columba livia*	Confirmed	SNA	no status	no status
Mourning Dove	*Zenaida macroura*	Confirmed	S5	no status	no status
Black-billed Cuckoo	*Coccyzus erythropthalmus*	Confirmed	S5B	no status	no status
Eastern Screech-Owl	*Megascops asio*	Possible	S4	no status	no status
Great Horned Owl	*Bubo virginianus*	Confirmed	S4	no status	no status

Common Name	Scientific Name	ABBO Category	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Short-eared Owl	*Asio flammeus*	Confirmed	S2N, S4B	SC	SC
Chimney Swift	*Chaetura pelagica*	Probable	S4B, S4N	THR	THR
Ruby-throated Hummingbird	*Archilochus colubris*	Probable	S5B	no status	no status
Belted Kingfisher	*Ceryle alcyon*	Confirmed	S4B	no status	no status
Yellow-bellied Sapsucker	*Sphyrapicus varius*	Confirmed	S5B	no status	no status
Downy Woodpecker	*Picoides pubescens*	Confirmed	S5	no status	no status
Hairy Woodpecker	*Picoides villosus*	Confirmed	S5	no status	no status
Northern Flicker	*Colaptes auratus*	Confirmed	S4B	no status	no status
Pileated Woodpecker	*Dryocopus pileatus*	Confirmed	S5	no status	no status
Eastern Wood-Pewee	*Contopus virens*	Confirmed	S4B	SC	SC
Alder Flycatcher	*Empidonax alnorum*	Probable	S5B	no status	no status
Willow Flycatcher	*Empidonax traillii*	Probable	S5B	no status	no status
Least Flycatcher	*Empidonax minimus*	Confirmed	S4B	no status	no status
Eastern Phoebe	*Sayornis phoebe*	Confirmed	S5B	no status	no status
Great Crested Flycatcher	*Myiarchus crinitus*	Confirmed	S4B	no status	no status
Eastern Kingbird	*Tyrannus tyrannus*	Confirmed	S4B	no status	no status
Blue-headed Vireo	*Vireo solitarius*	Possible	S5B	no status	no status
Blue-gray Gnatcatcher	*Polioptila caerulea*	Confirmed	S4B	no status	no status
Warbling Vireo	*Vireo gilvus*	Confirmed	S5B	no status	no status
Red-eyed Vireo	*Vireo olivaceus*	Confirmed	S5B	no status	no status
Blue Jay	*Cyanocitta cristata*	Confirmed	S5	no status	no status
American Crow	*Corvus brachyrhynchos*	Confirmed	S5B	no status	no status

Common Name	Scientific Name	ABBO Category	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Common Raven	*Corvus corax*	Confirmed	S5	no status	no status
Horned Lark	*Eremophila alpestris*	Probable	S5B	no status	no status
Purple Martin	*Progne subis*	Confirmed	S3S4B	no status	no status
Tree Swallow	*Tachycineta bicolor*	Confirmed	S4B	no status	no status
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Possible	S4B	no status	no status
Bank Swallow	*Riparia riparia*	Confirmed	S4B	THR	THR
Cliff Swallow	*Petrochelidon pyrrhonota*	Confirmed	S4B	no status	no status
Barn Swallow	*Hirundo rustica*	Confirmed	S4B	THR	THR
Black-capped Chickadee	*Poecile atricapilla*	Confirmed	S5	no status	no status
Red-breasted Nuthatch	*Sitta canadensis*	Probable	S5	no status	no status
White-breasted Nuthatch	*Sitta carolinensis*	Confirmed	S5	no status	no status
Brown Creeper	*Certhia familiaris*	Probable	S5B	no status	no status
Carolina Wren	*Thryothorus ludovicianus*	Possible	S4	no status	no status
House Wren	*Troglodytes aedon*	Confirmed	S5B	no status	no status
Winter Wren	*Troglodytes troglodytes*	Probable	S5B	no status	no status
Marsh Wren	*Cistothorus palustris*	Confirmed	S4B	no status	no status
Golden-crowned Kinglet	*Regulus satrapa*	Possible	S5B	no status	no status
Eastern Bluebird	*Sialia sialis*	Confirmed	S5B	no status	no status
Veery	*Catharus fuscescens*	Probable	S4B	no status	no status
Hermit Thrush	*Catharus guttatus*	Possible	S5B	no status	no status
Wood Thrush	*Hylocichla mustelina*	Probable	S4B	SC	THR
American Robin	*Turdus migratorius*	Confirmed	S5B	no status	no status

Common Name	Scientific Name	ABBO Category	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Gray Catbird	*Dumetella carolinensis*	Confirmed	S4B	no status	no status
Brown Thrasher	*Toxostoma rufum*	Confirmed	S4B	no status	no status
European Starling	*Sturnus vulgaris*	Confirmed	SNA	no status	no status
Cedar Waxwing	*Bombycilla cedrorum*	Confirmed	S5B	no status	no status
Nashville Warbler	*Vermivora ruficapilla*	Confirmed	S5B	no status	no status
Yellow Warbler	*Dendroica petechia*	Confirmed	S5B	no status	no status
Chestnut-sided Warbler	*Dendroica pensylvanica*	Confirmed	S5B	no status	no status
Magnolia Warbler	*Dendroica magnolia*	Possible	S5B	no status	no status
Yellow-rumped Warbler	*Dendroica coronata*	Probable	S5B	no status	no status
Black-throated Green Warbler	*Dendroica virens*	Probable	S5B	no status	no status
Pine Warbler	*Dendroica pinus*	Probable	S5B	no status	no status
Black-and-white Warbler	*Mniotilta varia*	Probable	S5B	no status	no status
American Redstart	*Setophaga ruticilla*	Confirmed	S5B	no status	no status
Ovenbird	*Seiurus aurocapillus*	Probable	S4B	no status	no status
Northern Waterthrush	*Seiurus noveboracensis*	Possible	S5B	no status	no status
Mourning Warbler	*Oporornis philadelphia*	Confirmed	S4B	no status	no status
Common Yellowthroat	*Geothlypis trichas*	Confirmed	S5B	no status	no status
Canada Warbler	*Wilsonia canadensis*	Possible	S4B	SC	THR
Chipping Sparrow	*Spizella passerina*	Confirmed	S5B	no status	no status
Clay-colored Sparrow	*Spizella pallida*	Probable	S4B	no status	no status
Field Sparrow	*Spizella pusilla*	Possible	S4B	no status	no status

Common Name	Scientific Name	ABBO Category	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status
Vesper Sparrow	*Pooecetes gramineus*	Possible	S4B	no status	no status
Savannah Sparrow	*Passerculus sandwichensis*	Confirmed	S4B	no status	no status
Song Sparrow	*Melospiza melodia*	Confirmed	S5B	no status	no status
Swamp Sparrow	*Melospiza georgiana*	Confirmed	S5B	no status	no status
White-throated Sparrow	*Zonotrichia albicollis*	Confirmed	S5B	no status	no status
Dark-eyed Junco	*Junco hyemalis*	Possible	S5B	no status	no status
Scarlet Tanager	*Piranga olivacea*	Confirmed	S4B	no status	no status
Northern Cardinal	*Cardinalis cardinalis*	Confirmed	S5	no status	no status
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	Confirmed	S4B	no status	no status
Indigo Bunting	*Passerina cyanea*	Probable	S4B	no status	no status
Bobolink	*Dolichonyx oryzivorus*	Confirmed	S4B	THR	THR
Red-winged Blackbird	*Agelaius phoeniceus*	Confirmed	S4	no status	no status
Eastern Meadowlark	*Sturnella magna*	Confirmed	S4B	THR	THR
Common Grackle	*Quiscalus quiscula*	Confirmed	S5B	no status	no status
Brown-headed Cowbird	*Molothrus ater*	Confirmed	S4B	no status	no status
Baltimore Oriole	*Icterus galbula*	Confirmed	S4B	no status	no status
Purple Finch	*Carpodacus purpureus*	Probable	S4B	no status	no status
House Finch	*Carpodacus mexicanus*	Confirmed	SNA	no status	no status
Pine Siskin	*Carduelis pinus*	Possible	S4B	no status	no status
American Goldfinch	*Carduelis tristis*	Confirmed	S5B	no status	no status
House Sparrow	*Passer domesticus*	Confirmed	SNA	no status	no status

Status Updated March 25, 2021

SRANK DEFINITIONS

S4 Apparently Secure, Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 Secure, Common, widespread, and abundant in the nation or state/province.

SNA Not Applicable, A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

S#S# Range Rank, A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

S#B Breeding

S#N Non-Breeding

SARO Status Definitions

THR Threatened: A species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.

SC Special Concern: A species with characteristics that make it sensitive to human activities or natural events.

SARA Status Definitions

THR Threatened, a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.

SC Special Concern, a wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.

B

Appendix B
Bird Survey Results and Observed Plant List

Survey Point	1		2		3	
Visit	1	2	1	2	1	2
Common Name						
American Bittern						1
Great Egret					3Fly	
Osprey		1fly				
Yellow-bellied Sapsucker				1		
Black-capped Chickadee					1	
Red-eyed Vireo						1
Blue Jay					1	
American Crow		5	1			1
American Robin	1	1				
Brown Thrasher	1					
Gray Catbird			1			
European Starling					5	2p
Cedar Waxwing	1	2p			1	
Yellow Warbler		2			1	1
Common Yellowthroat	1	1		1	1	1
Song Sparrow	3	2	3	4	2	2
Rose-breasted Grosbeak		1				
Red-winged Blackbird	1	9 p	8	10p	11	5p
Common Grackle	3					
American Goldfinch	1		1	2p	1	3

Common Name (Number of individuals heard during the point count)

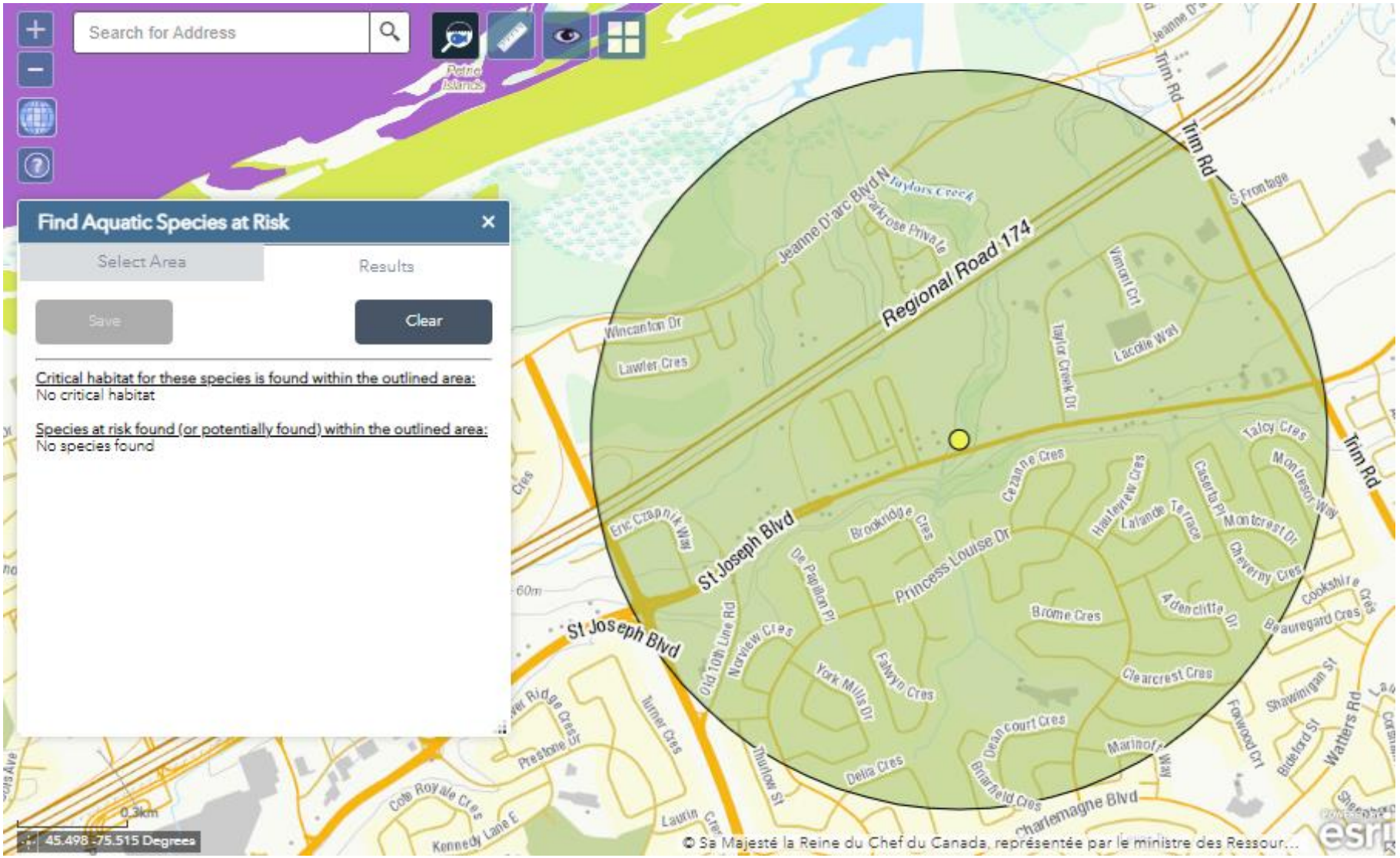
Common Name	Scientific Name	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Coefficient of Conservatism
Eastern Bracken Fern	*Pteridium aquilinum var. latiusculum*	S5			2
Northern Lady Fern	*Athyrium filix-femina var. angustum*	S5			4
Sensitive Fern	Onoclea sensibilis	S5			4
Field Horsetail	*Equisetum arvense*	S5			0
Eastern White Cedar	*Thuja occidentalis*	S5			4
Balsam Fir	Abies balsamea	S5			5
White Pine	*Pinus strobus*	S5			4
Manitoba Maple	*Acer negundo*	S5			0
Red Maple	*Acer rubrum*	S5			4
Sugar Maple	*Acer saccharum*	S5			4
Freeman's Maple	*Acer X freemanii*	SNR			
Western Poison-ivy	*Rhus radicans ssp. rydbergii*	S5			0
Staghorn Sumac	*Rhus typhina*	S5			1
Wild Carrot	*Daucus carota*	SNA			
Common Milkweed	*Asclepias syriaca*	S5			0
Annual Ragweed	Ambrosia artemisiifolia var. elatior	S5			0
Woodland Burdock	Arctium minus	SE?			0
Large-leaved Aster	*Aster macrophyllus*	S5			5
New England Aster	Aster novae-angliae	S5			2
Devil's Beggar-ticks	Bidens frondosa	S5			3
Ox-eye Daisy	*Chrysanthemum leucanthemum*	SNA			
Chicory	*Cichorium intybus*	SNA			
Canada Thistle	Cirsium arvense	SNA			
Bull Thistle	Cirsium vulgare	SNA			
Daisy Fleabane	*Erigeron annuus*	S5			0
White Snakeroot	Eupatorium rugosum	S5			5
Spotted Joe-pye-weed	*Eupatorium maculatum ssp. maculatum*	S5			3
Grass-leaved Goldenrod	*Euthamia graminifolia*	S5			2
Field Hawkweed	*Hieracium caespitosum ssp. caespitosum*	SNA			
Elecampane	*Inula helenium*	SNA			
Goldenrod sp.	*Solidago sp.*				
Canada Goldenrod	*Solidago canadensis*	S5			1
Giant Goldenrod	*Solidago gigantea*	S5			4
Rough Goldenrod	Solidago rugosa ssp. rugosa	S5			4
Field Sow-thistle	*Sonchus arvensis*	SNA			
Spotted Jewel-weed	*Impatiens capensis*	S5			4
Coltsfoot	Tussilago farfara	SNA			
Glandular Touch-me-not	Impatiens glandulifera	SE4			
White Birch	*Betula papyrifera*	S5			

Common Name	Scientific Name	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Coefficient of Conservatism
Garlic Mustard	Alliaria petiolata	SNA			0
Common Elderberry	Sambucus canadensis	S5			5
Nannyberry	*Viburnum lentago*	S5			4
Bladder Campion	*Silene latifolia*	SNA			
Alternate-leaved Dogwood	*Cornus alternifolia*	S5			6
Red-osier Dogwood	*Cornus stolonifera*	S5			2
Bird's-foot Trefoil	*Lotus corniculatus*	SNA			
Black Medick	*Medicago lupulina*	SNA			
White Sweet-clover	*Melilotus alba*	SNA			
Red Clover	*Trifolium pratense*	SNA			
White Clover	*Trifolium repens*	SNA			
Cow Vetch	*Vicia cracca*	SNA			
American Beech	*Fagus grandifolia*	S4			6
Bur Oak	*Quercus macrocarpa*	S5			5
Wild Black Currant	*Ribes americanum*	S5			4
Swamp Loosestrife	*Decodon verticillatus*	S5			7
Purple Loosestrife	Lythrum salicaria	SNA			
Moonseed	Menispermum canadense	S4			7
White Ash	*Fraxinus americana*	S5			4
Black Ash	Fraxinus nigra	S4			7
Canada Enchanter's Nightshade	*Circaea lutetiana ssp. canadensis*	S5			3
Common Plantain	*Plantago major*	SNA			
Pale Smartweed	Polygonum lapathifolium	S5			2
Curly Dock	*Rumex crispus*	SNA			
Canada Anemone	*Anemone canadensis*	S5			3
Marsh Marigold	*Caltha palustris*	S5			5
Tall Buttercup	*Ranunculus acris*	SNA			
Common Buckthorn	*Rhamnus cathartica*	SNA			
Glossy Buckthorn	Rhamnus frangula	SNA			
Tall Agrimony	Agrimonia gryposepala	S5			2
Hawthorn sp.	*Crataegus sp.*				
Woodland Strawberry	Fragaria vesca ssp. americana	S5			4
Common Strawberry	*Fragaria virginiana ssp. virginiana*	S5			2
Yellow Avens	*Geum aleppicum*	S5			2
Rough-fruited Cinquefoil	*Potentilla recta*	SNA			
Pin Cherry	Prunus pensylvanica	S5			3
Black Cherry	*Prunus serotina*	S5			3
Choke Cherry	Prunus virginiana ssp. virginiana	S5			2
Common Blackberry	Rubus allegheniensis	S5			2
Wild Red Raspberry	*Rubus idaeus ssp. strigosus*	S5			0

Common Name	Scientific Name	SRANK	ESA Reg. 230/08 SARO List Status	SARA Schedule 1 List of Wildlife SAR Status	Coefficient of Conservatism
Purple Flowering Raspberry	*Rubus odoratus*	S5			3
Smooth Bedstraw	*Galium mollugo*	SNA			
Partridge Berry	*Mitchella repens*	S5			6
Prickly-ash	*Zanthoxylum americanum*	S5			3
Eastern Cottonwood	*Populus deltoides ssp. deltoides*	SU			4
Trembling Aspen	*Populus tremuloides*	S5			
Bittersweet Nightshade	Solanum dulcamara	SNA			
American Basswood	*Tilia americana*	S5			4
Common Hackberry	Celtis occidentalis	S4			8
American Elm	*Ulmus americana*	S5			3
False Nettle	*Boehmeria cylindrica*	S5			4
Wood Nettle	Laportea canadensis	S5			6
Violet sp.	*Viola sp.*				
Virginia Creeper	*Parthenocissus inserta*	S5			3
Riverbank Grape	*Vitis riparia*	S5			0
Bebb's Sedge	*Carex bebbii*	S5			3
Awl-fruited Sedge	*Carex stipata*	S5			3
Wool-grass	Scirpus cyperinus	S5			4
Softstem Bulrush	Scirpus validus	S5			5
Red Trillium	*Trillium erectum*	S5			6
Grass Family	*Poaceae*				
Oats sp.	*Avena sp.*				
Smooth Brome	Bromus inermis ssp. inermis	SNA			
Quack Grass	Elymus repens	SNA			
European Common Reed	Phragmites australis ssp. australis	SNA			
Kentucky Bluegrass	Poa pratensis	S5			0
Fowl Glyceria	*Glyceria striata*	S4S5			3
Foxtail Barley	*Hordeum jubatum ssp. intermedium*	S5			
Reed Canary Grass	*Phalaris arundinacea*	S5			0
Timothy	*Phleum pratense*	SNA			
Narrow-leaved Cattail	*Typha angustifolia*	SNA			3

C

Appendix C
Aquatic Species at Risk Map



Accessed Januray 19, 2023

D

Appendix D
Significant Wildlife Habitat

Significant Wildlife Habitat	Candidate SWH		Confirmed SWM		Comments
	ELC Codes	Additional Criteria Summary	In Site	In Adjacent Lands	
Seasonal Concentration Areas of Animals					
Waterfowl stopover and staging areas (terrestrial)	Certain cultural meadow or thicket Plus evidence of annual spring flooding	Fields flooded from mid-March to May	No fields present with annual spring flooding.		Not Present; Not discussed further
Waterfowl stopover and staging areas (aquatic)	Specific aquatic habitat types (marsh, swamps)	Ponds, marshes, lakes, bays, coastal inlets and watercourses used for migration. Stormwater and sewage management facilities are not included.	Petrie Island Wetland to the north may provide stopover area. But the open aquatic habitat is far enough from the project that it will not be impacted.		Not discussed further
Shorebird migratory stopover area	Beach/Bar Sand Dunes Meadow marsh	Shorelines used in May -t mid-June and early July to October. Stormwater and sewage management facilities are not included.	No shorelines, beaches, bars, dunes, or meadow marshes within the area to be impacted.		Not Present; Not discussed further
Raptor wintering area	Requires combination of forest (deciduous, mixed or coniferous) and upland (cultural meadow, cultural thickets, cultural savannahs or cultural woodlands)	Combination of habitats must >20 ha and the field portion must be wind swept with little accumulation of snow. Where site is for eagles, open water and large trees and snags must be available.	No suitably large forests are present.		Not Present; Not discussed further
Bat hibernacula	Crevices and caves	Active mines are not to be included. Buildings are not included.	No crevices or caves present.		Not Present; Not discussed further
Bat maternity colonies	Deciduous, or mixed forests Deciduous or mixed Swamps (>5m tall)	>10/ha large diameter (>25 cm diameter at breast height) Snag trees in the decay classes 1-3 are preferred.	Some clearing of trees within hedgerows on site, near the stormwater drains, and 0.1ha of young forest on the west side of site. These areas do not possess sufficient large trees for significance and MECP timing windows will prevent harm to individuals if they are using this lower quality habitat.		Not Present; Not discussed further
Turtle wintering areas	Swamps, marshes, open water, shallow water, open fen or open bog	Water that is deep enough not to freeze solid with soft bottoms.	Taylor Creek and the PSW provide areas deep enough for overwintering.		Present; discussed above.

Significant Wildlife Habitat	Candidate SWH		Confirmed SWM		Comments
	ELC Codes	Additional Criteria Summary	In Site	In Adjacent Lands	
		Must be permanent waterbody (or wetlands with adequate dissolved oxygen)			
Reptile hibernaculum	Any habitat except very wetlands Talus, rock barren, cave and alvar	For snakes – needs to be below frost lines.	Site primarily consists of previous agricultural lands, no rocky habitat or rock piles present.		Not Present; Not discussed further
Colonially – Nesting bird breeding habitat (Bank and Cliff Swallow)	Exposed sandy slopes of banks or piles. Cliff faces or structures (bridges, silos etc.…)	Does not include licensed aggregate areas. Does not include man-made structures or recently (within 2 years) disturbed soil	Exposed banks present, but no nests or individuals observed during surveys.		Not Present; Not discussed further
Colonially – Nesting bird breeding habitat (Trees/Shrubs)	Swamps – deciduous or mixed (trees >5m) Treed fen	Typically requires tall trees as nests are usually 11-15m from ground but shrubs and emergent vegetation could be used.	Swamp present north of site but no indicator species present.		Not Present; Not discussed further
Colonially – Nesting bird breeding habitat (Ground)	Any rocky island or peninsula on lake or large river. For Brewer's Blackbird – near watercourses in open fields, pastures		No rocky islands, or peninsulas were present. No suitable habitat for Brewer's Blackbird were present.		Not Present; Not discussed further
Migratory butterfly stopover area	Not applicable to Ottawa Area – must be within 5 km of Lake Ontario				
Landbird migratory stopover area					
Deer yarding areas	Mixed or coniferous forests or swamps (>5m tall trees) Can include plantations, cultural thickets, or dry-fresh poplar-white birch deciduous forest	These are mapped by OMNRF	None mapped by MNRF for this area		Not Present; Not discussed further

Significant Wildlife Habitat	Candidate SWH		Confirmed SWM		Comments
	ELC Codes	Additional Criteria Summary	In Site	In Adjacent Lands	
Deer winter congregation area	All forest and wetland habitats and small conifer plantations	These are mapped by OMNRF (typically >100ha in size)			Not Present; Not discussed further
Rare Vegetation Communities or Specialized Habitat for Wildlife					
Cliffs and talus slopes	Near vertical face that is >3m in height (cliff or talus)	Typically in Niagara Escarpment	Cliffs and talus slope habitat were not present		Not Present; Not discussed further
Sand barren	Sand barrens various types but tree cover is always ≤ 60%	Must be >0.5ha	Sand barrens not present		Not Present; Not discussed further
Alvar	Alvar, Coniferous forest, cultural meadow, cultural savannah, cultural thickets and cultural woodlands	Must have at least 4 indicator species with substantial cover (must not have large amounts of exotic or introduced species) Must be >0.5ha	Alvar habitat is typically flat and mostly unfractured calcareous bedrock. Not present		Not Present; Not discussed further
Old growth forest	Any forest or treed (>5 m) swamp	Must be at least 30 ha with at least 10 ha of interior habitat (edge considered 100 m) Have specific characteristics (snags, mosaic of gaps, multi-layered canopy)	Forest present smaller than 30ha.		Not Present; Not discussed further
Savannah	Tallgrass prairie savannah and cultural savannah	Must have indicator species	No savannah present		Not Present; Not discussed further
Tallgrass prairie	Tallgrass prairie (open prairie - <25% tree cover)	No minimum size	No tallgrass prairie were present. All area is manicured for multi-use pathway		Not Present; Not discussed further

Significant Wildlife Habitat	Candidate SWH		Confirmed SWM		Comments
	ELC Codes	Additional Criteria Summary	In Site	In Adjacent Lands	
Other rare vegetation communities	Provincially rare S1-S3 communities as described in Appendix M of the SWHTG		None of the communities listed for the Ottawa-Carleton Area in Appendix M were present.		Not Present; Not discussed further
Specialised Habitat for Wildlife					
Waterfowl nesting area	Shallow marsh, meadow marsh, thicket swamp or deciduous (treed >5 m tall) swamps	Wetland must be 0.5 ha or consist of up to 3 smaller wetlands within 120 m of each other if known nesting is occurring.	Marsh habitat to the north may provide waterfowl nesting habitat but it is outside of the development area and will not be impacted by this project. Indirect impacts from sensory disturbances already included for SAR birds.		Not discussed further
Bald Eagle and Osprey nesting, foraging and perching habitat	Any forest or swamp (trees >5m) type of habitat that is immediately next to rivers, lakes, ponds or wetlands	Nests on man-made structures are not included.	Large trees present within the riparian area of Taylor Creek in close proximity to the Ottawa River. Osprey observed during bird surveys.		Present, discussed above
Woodland raptor nesting habitat	Any forest habitat or treed swamp (>5m tall) or coniferous plantation	Stand must be > 30 ha with >10 ha of interior habitat (edge is 200 m)	Does not meet the minimum requirements.		Not Present; Not discussed further
Turtle nesting areas	Shallow marsh, shallow water, open bog	Close to water but away from roads. It must provide sand and gravel that turtles can dig through and be in open sunny areas. Areas on the sides of municipal or provincial roads are not included.	Wetland present but no sand or gravel area away from roads, pathway is paved.		Not Present; Not discussed further
Seeps and springs	Any forested community could have a seep/spring	Forest area with <25% meadow/pasture in the headwaters of a stream.	None present		Not Present; Not discussed further
Amphibian breeding habitat (woodland)	Any forest or treed swamp (>5m tall trees)	Wetland, pond or vernal pool must be > 500 m^2	No vernal pools present within the area to be impacted. PSW to the north may provide suitable habitat.		Possible, discussed above

Significant Wildlife Habitat	Candidate SWH		Confirmed SWM		Comments
	ELC Codes	Additional Criteria Summary	In Site	In Adjacent Lands	
		Those with water until mid-July (during most years) are better candidates			
Amphibian breeding habitat (wetlands)	Swamps, marsh, fen, bog, open water or shallow water	Unless it's a larger wetland, must be >120 m from woodlands Must be > 500 m^2	PSW to the north within the adjacent lands may provide amphibian breeding habitat.		Possible, discussed above
Woodland area-sensitive bird breeding habitat	Any forest or treed swamp (>5 m tall)	Interior habitat (200m edge used) in mature (>60 years) large (>30 ha) stand	No forest interior habitat present		Not Present; Not discussed further
Habitat for Species of Conservation Concern (not including Endangered or Threatened Species)					
Marsh bird breeding habitat	Meadow marsh, shallow water, fen or open bog		No marshes, shallow water or bogs present		Not Present; Not discussed further
Open country bird breeding habitat	Cultural meadows	Must be large grasslands (>30 ha) Agricultural class 1 and 2 are not included Agricultural lands planted in row crop or intensive hay, or pastures (within past 5 years) not included.	No large grassland habitat present. Cultural meadow on site ~8ha and adjacent areas are mowed.		Not Present; Not discussed further
Shrub/early successional bird breeding habitat	Cultural thickets or woodlands	Must be > 10 ha Agricultural class 1 and 2 are not included Agricultural lands planted in row crop or intensive hay, or pastures (within past 5 years) not included	No thickets or woodlands are present		Not Present; Not discussed further
Terrestrial crayfish	Not present in Ottawa Area				

Significant Wildlife Habitat	Candidate SWH		Confirmed SWM		Comments
	ELC Codes	Additional Criteria Summary	In Site	In Adjacent Lands	
Special concern and rare wildlife species	All special concern or species ranked as S1-S3, SH (plants or animals)	Habitat depends on the species. There is a potential for Snapping Turtle and Monarch.	No special concern wildlife observed.		Not Present; Not discussed further
Animal Movement Corridors					
Amphibian movement corridor	Any habitat but amphibian breeding wetland habitat must be identified		Corridors need link habitats; upstream of this ravine is fully developed		Not Present; Not discussed further
Deer movement corridor	All forests but project must be in Stratum II Deer Wintering Area and Deer Wintering Habitat must be confirmed.		Not applicable – no Deer Wintering Areas or Habitat identified by OMNRF for area.		Not Present; Not discussed further