VUZE Construction

1015 TWEDDLE ROAD

Z0018492

Environmental Impact Statement

CIMA+ file number: Z0018492
30 May 2025 – Review 000

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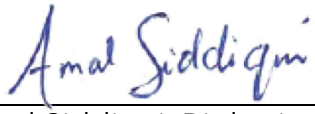
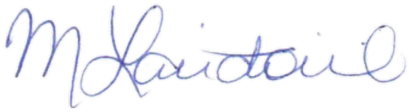
Prepared by:



Amal Siddiqui, Biologist

Verified by:



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Confidentiality and ownership

Table of involved resources

The following individuals have been involved in the study and writing of the report as technical experts within the project team:

Name	Discipline
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Al Quinsey	Biologist (B.Sc.), Reporting
Amal Siddiqui	Biologist (B.Sc., M.F.C), Terrestrial Field Work & Reporting
Jake Zientek	Junior Technician (GDipFW Tech), Terrestrial Field Work

Revision History			
Revision #	Reviewed by	Date	Description of the review

Table of Contents

List of Tables

List of Figures

List of Appendices

Glossary of Terms

Property	1015 Tweddle Road
Development Area	The portion of the Property to be developed
Adjacent Lands	The 120 m surrounding the area to be disturbed

List of Acronyms

BHE	Butternut Health Expert
CASAR	Canadian Aquatic Species at Risk
DBH	Diameter-at-breast Height
DFO	Fisheries and Oceans Canada
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
MBR	Migratory Bird Regulations
NHIC	Natural Heritage Information Centre
MBCA	Migratory Bird Convention Act, 1994 (Federal)
MECP	Ministry of Environment, Conservation and Parks
MNRF	Ministry of Natural Resources and Forestry
OP	Official Plan
ORAA	Ontario Reptile and Amphibian Atlas
O.Reg.	Ontario Regulation
OSAP	Ontario Stream Assessment Protocol
OWES	Ontario Wetland Evaluation System
PSW	Provincially Significant Wetland
SAR	Species at Risk (in this report, refers 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)
ARA	Aquatic Resource Area

List of Definitions

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

VUZE Construction, hereafter referred to as the proponent, intends to develop the property at 1015 Tweddle Road (the "Property"), situated at the northeast corner of the intersection at Tweddle Road and Jeanne d'Arc Boulevard North (Figure 1). This project underwent a zoning by-law amendment and site investigations were carried out for the Property by Bowfin Environmental Consulting (Bowfin) between 2020-2022. During that time, consultations were undertaken to identify a Developable Area and lands to be restored to a natural state. The extent of the wetlands were delineated and a 30 m setback established to protect the identified natural heritage features (Provincially Significant Wetland (PSW), Area of Natural and Scientific Interest (ANSI), Urban Natural Area (UNA), and Natural Heritage System (NHS)). A small Wooded Area was identified by the City of Ottawa (City) and its removal and a general concept for the offset were approved. A small headwater feature was also identified and its removal and offsets approved by City and Rideau Valley Conservation Authority (RVCA). These offsets form part of the commitment to rehabilitate the 30 m setback. Phase 1 (creation of new wetland) was reviewed and completed in 2022. The Phase 2 is the removal of fill and creation of a naturalized upland habitat in the 30 m setback. This area is to include at least 0.22 ha of woodland. Phase 2 forms part of the area to be disturbed for the Project. Finally, the proposed Development Area, setback and rehabilitation concept was also shared with the Ministry of Environment, conservation and Parks (MECP) who reviewed the proposal from the perspective of the *Endangered Species Act* (ESA). Fisheries and Oceans Canada (DFO), RVCA and City all reviewed and approved the works undertaken for the Phase 1 activities (completed in 2022).

This updated EIS report serves to confirm that the findings from the previous EIS (Bowfin and CIMA+, 2022) remain applicable to the proposed activities, to document any new information collected since 2022, and provided the opportunity to revise the list of avoidance and mitigation measures to reflect any changes to best management practices or legislation. It is noted that Bowfin merged its serves with CIMA+ in 2022.

For the purposes of this report, the following terminology is applied:

- Project: Construction of the 4 towers.
- Development Area: The development area (1.1 ha) was determined during the zoning amendment phase. It represents the area where permanent footprints of development can occur. This footprint has not been altered since the previous EIS (Bowfin/CIMA, 2022).
- Property: 1015 Tweddle Road Property, approximately 3.3 ha and includes the Development Area.
- Adjacent lands: The surrounding lands within 120 m of the Development Area, unless a larger distance is required to satisfy other legislations (i.e., *Endangered Species Act*).

The review of the potential impacts from the clearing of terrestrial vegetation, excavation, grading, backfilling, construction of buildings and infrastructure and the revegetation of the buffer to the Ottawa River based on the following plans (referred to collectively as the "Plans"):

- Landscaping (Projet Paysage, Neuf Architects , 2025)
- Grading (EXP Services Inc, 2025)
- Site Servicing and Stormwater Management Report (EXP Services Inc, dated May 29, 2025)

1.1 Summary of Project and Existing Environmental Commitments

The Project plans have been reviewed and the area of permanent development for the towers has been restricted to the original Development Area as agreed upon during the zoning by-law amendment. The area to be disturbed extends into the setback, however this was anticipated and the Phase 2 rehabilitation works will ensure that the rehabilitation of this area meets to original commitments. The Projet Paysage landscaping shows two wooded areas (to have at least 60% tree cover) and the remaining area naturalized. The vegetation selected for the setback are native. The existing culvert that enters the Property will be directed to the culvert to the east of the Property. During the headwater investigations of 2020, no flow was documented from this culvert. There was only standing water in late April 2020. It is understood from EXP, that the culvert to the east will receive a 20-40% increase in flow. The details of this design will be developed during detailed design. The increase in flows must not cause erosion or sediment control issues in the receiving waterbody or negatively affect the watercourse. Finally, as part of the redevelopment of the Property, Tweddle Road will be regraded. The regrading will normalize the average grade of the right-of-way, allowing for improved active transportation. The extent will also be determined during final design. Most of the changes will be restricted to the existing right-of-way and any minor grading on the west side of the existing road will be restricted (tie in to existing) and will be very minimal.

The main findings from the original EIS by Bowfin/CIMA+ (last updated in June 2022) are summarized below in Table 1. The table confirms whether the details listed in the plans and reports listed in the section above continue to meet the commitments made in the original EIS, including restricting permanent footprints of the project to the Development Area. The updated natural heritage constraints is provided in Figure 2.

Table 1: Summary of Findings from Original Environmental Impact Study, Updated with 2025 Plans

Natural Heritage Feature	Development Area	Adjacent Lands	Comments / Conclusions
Provincially significant wetland (PSW)	None	▪ Petrie Island PSW is present on the Property, outside of the Development, and its boundary was verified by an OWES-certified evaluator. ▪ The portion of PSW within the adjacent lands consists of marsh communities, which are lower in sensitivity than the areas of high ecological significance west of Tweddle Road and north of North Service Road. ▪ PSW areas of high ecological significance are outside the area of to be disturbed (i.e., alluvial island complex, Petrie Island swamps).	▪ No change; Plans restricted work to the Development Area as per the previous EIS commitments. ▪ The fill required as part of the road grade adjustments is outside of the PSW and is to be evaluated at detailed design.
Unevaluated wetland	▪ An unevaluated wetland was identified on LIO to be within the Development Area; however, field investigations found this area to be filled and comprising cultural meadow community. This was confirmed with MNR during the confirmation of the PSW line on Site.		▪ No change
Habitat of endangered and/or threatened species	▪ Category 2 Blanding's Turtle habitat is present in the PSW and extends within the 30 m setback from the PSW. No Category 2 or 3 habitat for this species was identified within the Development Area. ▪ Surveys completed in 2020 did not identify any other Endangered or Threatened species at risk. ▪ Exit surveys in 2020 did not find any bats using the site for roosting habitat. ▪ EIS (Bowfin/Cima, 2022) identified the need to review the SAR list and complete additional surveys as required during subsequent phases of the Project.		▪ Project was reviewed with MECP and appropriate mitigation measures for turtles (including turtle exclusion fencing). These remain appropriate for the Property. ▪ Potential SAR was reviewed and updated in 2024 and 2025. Additional surveys triggered and completed in 2024. Need to continue to monitor ESA remains

Natural Heritage Feature	Development Area	Adjacent Lands	Comments / Conclusions
			for detailed design phase (see Appendix A). • SAR Flora completed in 2024 (see Section 4 below).
Significant woodlands	• The City of Ottawa identified a 0.11 ha Urban Woodlot in the Development Parcel as noted in the introduction its removal and offsetting requirements were approved in 2022. The compensation area (0.22 ha of wooded habitat) will be situated between the setback and represents the Phase 2 of the rehabilitation works. The details form part of the Project Paysage Landscaping Plans (2025).		• No change; Development Area footprint is respected. • An updated Tree Conservation Report is provided under a separate cover (CIMA, 2025). • The Landscaping Plans include a minimum of 0.22 ha of wooded areas where a minimum coverage of 60% by native trees has been detailed. The remainder of the area is being naturalized with native species with a lower height to allow for views of the river.
Significant valleyland	None identified in the OP		• No change
Significant wildlife habitat (SWH)	• Species-specific field investigations and assessment of SWH based on the *Significant Wildlife Habitat Ecoregion Criteria Schedule for 6E* were completed. • No SWH was identified in the Development Area or the Site.		• Reviewed; No change
Area of natural and scientific interest (ANSI)	• The Petrie Island ANSI is the same feature as the Petrie Island PSW. Discussed above. As noted in the introduction, the EIS during zoning by-law amendment phase addressed this concern.		• No change; Development Area footprint is respected.

Natural Heritage Feature	Development Area	Adjacent Lands	Comments / Conclusions
Urban Natural Features	▪ The Site formed part of Urban Natural Area (UNA) #92 – Petrie Islands and Mainland based on the previous City of Ottawa OP; in the new Schedule C-11, the Site was not part of the Natural Heritage System (NHS) Core Area. ▪ As noted in the introduction, the EIS during zoning by-law amendment phase addressed this concern.		▪ No change; Development Area footprint is respected.
Natural Environment Areas	None	▪ NHS Core Area surrounds the Site based on Schedule C-11. As noted in the introduction, the EIS during zoning by-law amendment phase addressed this concern.	▪ No change; Development Area footprint is respected.
Natural linkages and corridors	▪ Ottawa River was identified as a Linkage Area on Schedule C-11. As noted in the introduction, the EIS during zoning by-law amendment phase addressed this concern.		▪ No change; Development Area footprint is respected.
Groundwater features	None identified.		▪ No change
Fish habitat / Surface water features	None	▪ Aquatic habitats included Ottawa River within 20 m of the Site and the marsh habitat adjacent to the fill. ▪ Ottawa River is permanent and direct fish habitat. ▪ The portion of marsh habitat on-Site was limited in its potential for fish usage, as it was thick with no channels and no culvert linking to Petrie Island.	▪ Development Area footprint is respected. ▪ The additional flow being directed to the east culvert from the Project is small and will be reviewed to ensure fish habitat is protected, at the detailed design phase.
Landform features	None		▪ No change

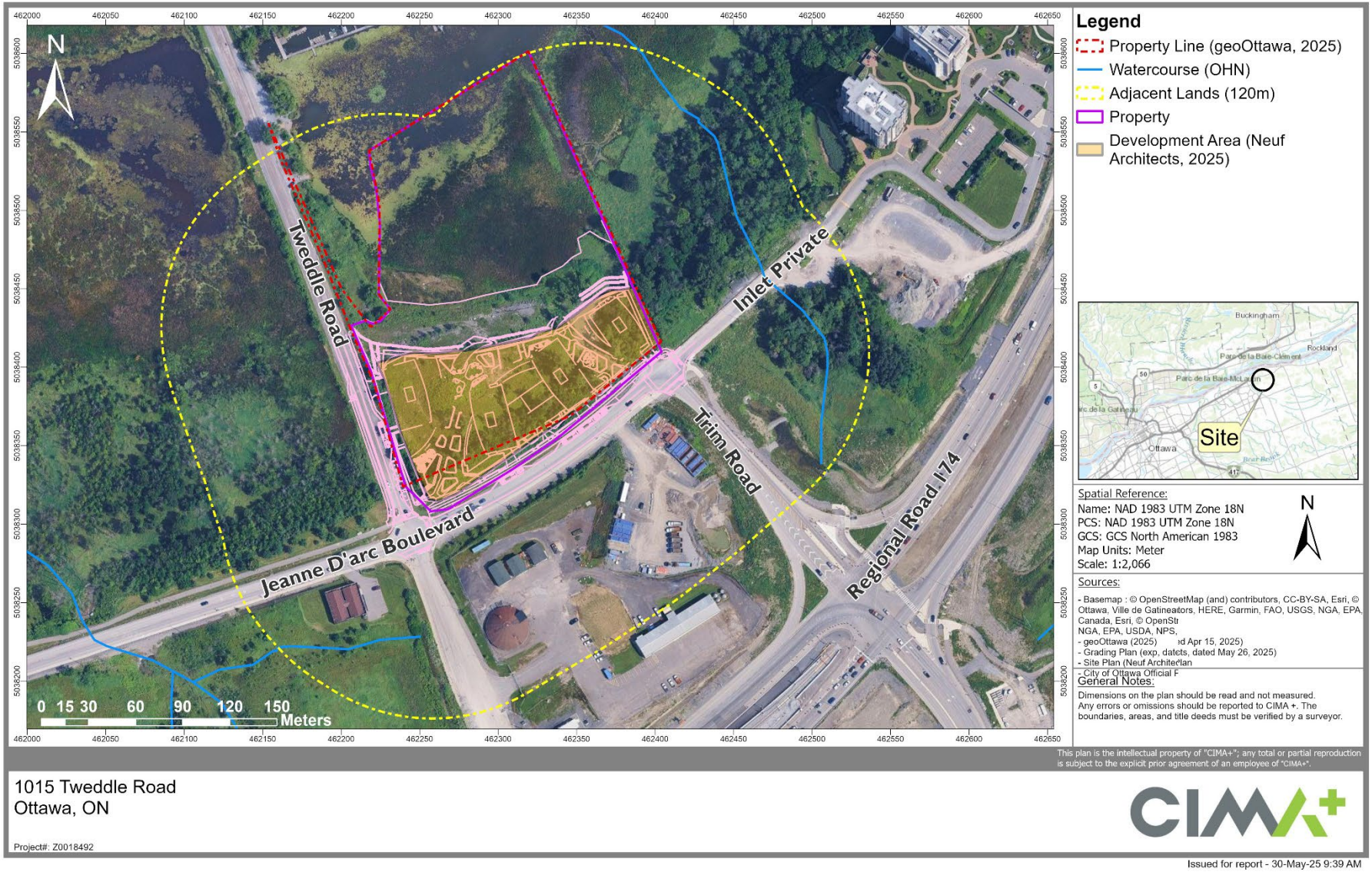

Figure 1: General Property Location

2. Legislation Review

There have been no changes to the City of Ottawa's Official Plan or guiding documents, *Fisheries Act, Species at Risk Act, or Fish and Wildlife Conservation Act* since the previous EIS in 2022 by CIMA+. Changes to species protected as SAR under *Endangered Species Act* (ESA) and their habitat are documented in Appendix A. This triggered additional site investigations in 2024 (see Section 4).

With respect to the federal *Migratory Bird Convention Act*, the new *Migratory Bird Regulations* came into effect as of July 30, 2022; this is described in the sub-section below. This triggered additional site investigations in 2024 (see Section 4).

2.1 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* (MBR) (2022) list 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 MBR (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.

3. Background Review

Information on known natural heritage features was collected through a background review. When completing desktop reviews, a larger area (~5 km) was applied to obtain a better understanding for the local characteristics and occurrences of SAR. The data was then reviewed and analyzed for applicable site-specific information. Information from government websites and personal knowledge has also been included as appropriate. Data sources included:

- City of Ottawa Official Plan (2021);
- Geographic information and data from the provincial database, Land Information Ontario (LIO);
- Ministry of Natural Resources (MNR) Natural Heritage Information Center (NHIC) Make A Map tool (MNRF, 2025);
- Ontario Breeding Bird Atlas (OBBA) (Cadman *et al.,* 2007);

- Atlas of the Mammals of Ontario (Dobbyn, 1994);
- Ontario Reptile and Amphibian ATLAS (ORAA) (Ontario Nature, 2019);
- iNaturalist (2025);
- eBird (eBird, 2025);
- Important Bird and Biodiversity Areas (IBA, 2025);
- Global Biodiversity Information Facility (GBIF) (2025);
- Fisheries and Oceans (DFO) Canadian Aquatic SAR Mapping (CASAR) (DFO, 2025);
- Aerial/Satellite Imagery (ESRI, 2021).

4. Site Investigations

As per the recommendations of the EIS from the zoning by-law amendment, additional site investigations were anticipated to be required to address any changes in legislation and/or changes to the list of Endangered or Threatened Species or species considered as Significant as Significant Wildlife Habitat (i.e., new species listed as Special Concern or whose provincial ranking changed to one that is S1, S2 or S3 since the previous EIS). As noted above there was one regulation change, the MBR. A review of new Endangered or Threatened species or Significant Wildlife Species identified:

- New Endangered or Threatened Species
  - Silver-haired Bat
  - Eastern Red Bat
  - Hoary Bat
  - Black Ash
- Downlisted Endangered or Threatened Species.
  - Eastern Whip-poor-will
  - Barn Swallow
- New SWH Species
  - Eastern Whip-poor-will and Barn Swallow are now listed as Special Concern, but as these species were addressed in 2022 as SAR, no additional work was required. The evaluation in the previous EIS remains applicable (Bowfin/CIMA, 2022).

Based on the above the following surveys were completed:

1. Pileated Woodpecker nesting cavities
2. SAR Flora
   a. Butternut
   b. Black ash

While there are now additional bat species, and the Minister of Environment, Conservation and Parks (MECP) is now requesting leaf-off surveys, these were completed along with exit surveys in June 2020 which confirmed the lack of use of any cavity trees on Site and meet the protocols outlined in *Bats and bat habitats: guidelines for wind power projects* (MNR 2019). As there are anticipated changes, ESA will be reviewed at detailed design, and any additional work or consultation will be addressed at that time.

4.1 Methodology

4.1.1 Migratory Bird Regulation Species

The presence/absence of nests protected by the MBR (i.e., Pileated Woodpecker or herons) was determined through the completion of nest surveys during the leaf-off period. Transects spaced 15 m apart were walked in suitable habitat. With respect to Pileated Woodpecker nest cavities, trees larger than 25 cm dbh were scanned with binoculars for cavities. Suitable nests are round to teardrop-shaped, ±12 cm high, and ±9 cm wide (ECCC, 2023). If more than one such hole is present in a decaying tree, it will be considered a roosting cavity. A photograph was taken along with notes on cavity size, tree species, and tree health.

4.1.2 Butternut Inventory

The recently updated Butternut Assessment Guidelines (BAG) were followed (MECP, 2021). These protocols indicate the following:

- Surveys are to be completed by a Butternut Health Expert
- Acceptable survey period is during the leaf-on season and is considered to be between May 15-August 31.
- Each individual tree is to be assigned a number and identified (i.e., paint, preference for white) or flagged. Their UTMs, using a GPS unit set at NAD83, was be recorded
- The classification of the health into Categories 1, 2 or 3 is to be completed as per the Butternut Data Collection Form.
- Butternut Health Export Report Template is to be used when submitting data to the province.

4.1.3 Black Ash Inventory

The Black Ash survey and assessment were based on the recently published *Black Ash Assessment Guidelines* (MECP, 2024), which indicate the following:

- Inventories are to be completed by a qualified individual who can identify Black Ash at any stage of development (i.e., seedings and mature trees).

- Health assessment period for Black Ash to be completed during the leaf-on season (June 1 to October 1).
- Information collected includes location (UTM coordinates using a high-precision GPS unit (Arrow 100® Submeter GNSS Receiver) set at 18T NAD83), diameter-at-breast height (dbh), tree height, canopy cover/condition, as well as the presence and severity of Emerald Ash Borer (EAB) infestation.
- Each individual was assigned a number and flagged with orange tape.

This inventory was completed by a qualified professional capable of identifying EAB infestations and determining overall tree health. The inventory included the Site and the 30 m surrounding area. Where the 30 m extended into neighbouring lands, inventory was assessed over the fence, except in the park area, which was walked.

4.2 Site Visits

Additional site investigations completed since the previous EIS (CIMA+, 2022) are described in the table below, with results following.

Table 2: Summary of Dates, Times, Conditions, and Purpose of Site Investigations

Date	Time (h)	Staff	Air Temperature (Min-Max) °C*	Cloud Cover (%) Beaufort Wind Scale [Descriptor (scale)]	Purpose
August 30 2024	1100-1400	J. Zientek	18.0 (16.5-22.9)	Clear (0) Wind: Light Air (1)	Butternut Survey & Assessment
September 24 2024	1030-1130	A. Siddiqui J. Zientek	15.0 (12.2-20.8)	Mainly Clear (25) Wind: Light Breeze (2)	Tree Inventory Update; Black Ash Survey & Assessment
November 13 2024	0900-1200	J. Zientek	7.0 (-5.2-3.9)	Mainly Clear (25) Wind: Light Air (1)	Leaf-off Nest Surveys (MBR Species)

A. Siddiqui – Amal Siddiqui – B.Sc. Biology, M.F.C Forestry, ISA Certified Arborist
J. Zientek – Jake Zientek – Fish and Wildlife Technology Diploma
**Min-Max Temp Taken From: Environment Canada. National Climate Data and Information Archive. Ottawa International Airport. Available https://climate.weather.gc.ca/ [November 25, 2024].

4.3 Results

4.3.1 Migratory Bird Regulation Nest Surveys

The search for nests belonging to MBR protected species was completed was completed on November 13, 2024, under appropriate conditions during the leaf-off period.

Ten (10) trees were flagged as potential cavity trees; however, none of these met all the dimension criteria provided by ECCC (2023) (entrance 10-13 cm high, 7-10 cm wide, and at least 20 cm deep). As such, these cavities were attributed to smaller woodpecker species.

One Pileated Woodpecker was observed and heard calling from a green ash with a single cavity; however, there was no evidence of foraging use (no marks identifying foraging), and, again, the cavity did not meet the stated criteria. Further, the observation took place outside of the breeding season. In conclusion:

- No herons nests were found
- No active or inactive pileated woodpecker nests were found
- No pileated woodpecker roosts were found

4.3.2 Butternut Inventory

The butternut survey was conducted on August 30, 2024, under appropriate conditions and during the survey period outlined in the protocol. No live individuals were found, as in the previous inventory undertaken by Bowfin in 2022. Note that butternut inventories are valid for 2 years (in this case, until August 30, 2026).

4.3.3 Black Ash Inventory

The Black Ash survey and assessment were conducted on September 24, 2024, under appropriate conditions and during the leaf-on period.

Black ash was present on-Site. The total number of black ash in the survey area was estimated at 51 individuals. Eight individuals with a dbh of 8 cm or more were found, all of which were deemed unhealthy.

Trees with a dbh of less than 8 cm were also present, with the majority consisting of seedlings. One individual had a dbh of 5-7 cm.

A Black Ash Health Assessment was submitted to MECP. Until confirmation of the CIMA+ findings, a 30 m protection area has been added to the natural heritage constrains (and is also included on the TCR (CIMA+, 2025).

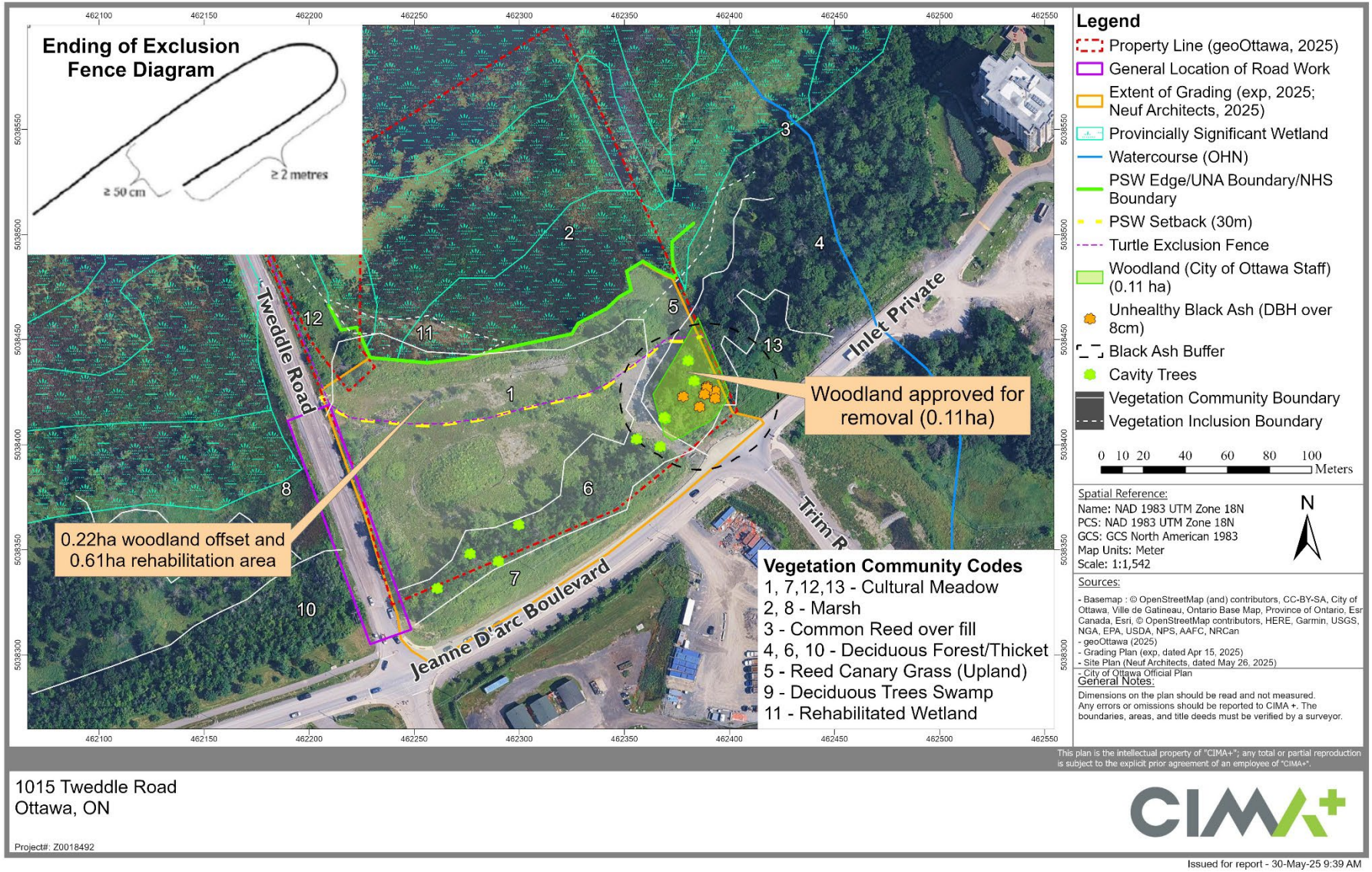

Figure 2: Updated Natural Heritage Constraints

5. Impact Assessment

Following the updated background review and site investigations it is confirmed that:

- The natural heritage features remain the same as those in the zoning by-law amendment EIS (Bowfin/CIMA+, 2022) except:
  - No butternuts were identified in 2024.
  - Black ash were identified. These were assessed as not protected under ESA and the health assessment has been sent to MECP for confirmation. A new constraint of a 30 m buffer to these individuals is in place until MECP confirms the findings. The black ash requirements are provided in Section 5.1 below.
- The Project respected the established Development Area and the 30 m setback
- Project adhered to its commitments to the rehabilitation of this setback to create a natural riparian area and offset the removal of the 0.11 ha woodland.
- There were no nests found that are protected under the MBR
- Detailed design will continue to require review in terms of natural heritage.

5.1 Black Ash

The potential for black ash protected under the Endangered Species Act was reviewed as per the MECP protocols (MECP 2024). The guidelines provide direction in determining whether ESA section 9(1)(a) prohibitions apply to a Black Ash individual in Ontario and where reporting is required, which are summarized below.

- LIVE tree in an area identified in Schedule 1 of O.Reg. 6/24
  - If a **healthy** individual with **dbh ≥ 8 cm** is present, then prohibitions will apply.
    - A registration or authorization under the *Endangered Species Act* will be required if trees or their protected habitat (30 m as per O.Reg. 832/21) are to be impacted. A report must be submitted to MECP.
    - Where there is no impact to any healthy individuals, no reporting is required.
  - If an **unhealthy** individual with **dbh ≥ 8 cm** is present, then prohibitions will not apply provided that:
    - A report is submitted to MECP by a qualified professional. This report must include an assessment of ALL trees (healthy and unhealthy)*.
  - If an individual has a dbh < 8 cm, then prohibitions do not apply.
    - *Where a report to MECP is required in the above conditions, a **count of all trees with dbh < 8 cm** to be impacted must be included.
- LIVE tree in an area not identified in Schedule 1 of O.Reg. 6/24
  - Prohibitions do not apply. No reporting required.

- DEAD tree, anywhere in Ontario
  - Prohibitions do not apply. No reporting required.

Discussion

Eight (8) individuals were identified on site and deemed unhealthy, but living and large enough (dbh ≥ 8 cm) to warrant a report to MECP.

6. Avoidance and Mitigation Measures

The following list of avoidance and mitigation measures follows current best practices, and are based on the updated understanding of the Project as outlined in Section 1.1. 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 described below. A summary if this evaluation is found in Table 3.

- Area affected may be:
  - local in extent signifying that the impacts will occur within the area to be disturbed
  - regional signifying that the impacts may extend beyond the immediate area to be disturbed.
- Nature of Impact:
  - negative or positive.
  - direct or indirect.
  - risk (certainty, understanding of impacts).
- Duration of the impact may be:
  - short term (construction phase (i.e., 1-2 years)).
  - medium term (>2years).
  - long term (>7 years).
  - permanent.
- Magnitude of the impact may be:
  - negligible signifying that the impact is not noticeable
  - minor signifying that the Project's impacts are perceivable and require mitigation.
  - moderate signifying that the Project's impacts are perceivable and require mitigation as well as monitoring and/or compensation.
  - 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 features which may be negatively impacted, avoidance and mitigation measures are recommended as appropriate. The PPS (MMAH, 2024) 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."*

6.1 Species at Risk

SAR 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 Blanding's Turtle, Bats, and Black Ash to be in the area and their significance.
- Mitigation measures listed elsewhere in this report are also applicable to this section.
- 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: No Blanding's Turtles were observed in the surveys conducted by Bowfin (Bowfin/CIMA, 2022) however, the Ottawa River and the PSW are identified as Category 2 habitat. Commitments made to MECP remain applicable and are listed here.

- During construction, temporary turtle exclusion fencing will be installed around the west, north and south sides with turnarounds along both ends. *Reptile and Amphibian Exclusion Fencing: Best Practices* (MNRF) will be followed for exclusion fence design. Note that the following website is updated from time to time and can be consulted at detailed design: https://www.ontario.ca/page/reptile-and-amphibian-exclusion-fencing.
- The temporary fencing can consist of sediment fencing that is properly countersunk and maintained.
- Install the exclusion fence and clearing vegetation outside of the active turtle season [i.e., clear after October 31 (or freeze up) and before April 1 (or spring thaw)]. Note that the timing constraint for tree removal is more restrictive as it follows the bat window (no clearing between April 1 and September 30, inclusive).
- Ensure to inform workers that there is a potential for the Blanding's Turtle to occur in this area and that it is known to migrate long-distances over land.
- A speed limit of 15 km/h will be posted.
- Additional fencing is recommended around any stockpiles that might provide suitable nesting substrate (i.e., gravel, soil) to help prevent turtles from nesting in the work area. Note that should suspected turtle nesting occur, the work that could impact this habitat is to be shut down and consultation with a biologist would be required for guidance. It is imperative that the temporary exclusion fence and this additional fencing be maintained to prevent use of areas disturbed by construction, for nesting.
- Contractor is to perform daily sweeps during the active season (April 1 to October 31).
- If a turtle is observed, then all work that may harm the individual must stop and the worker should notify their supervisor. Try to take a photograph but do not chase the turtle to do so. Individual will be watched from far to document its location and monitor it leaving the work area. If after 2 hours, it does not leave on its own, then it may need to be relocated by a Qualified Professional trained to handle SAR turtles.
- Recommend clearing from west to east direction to allow wildlife the opportunity to leave the work area into the natural areas that are to remain.
- Final design includes a permanent turtle barrier that has a vertical face of at least 60 cm as per MECP (Reptile and amphibian exclusion fencing | ontario.ca).

SAR Birds Based on the surveys and evaluation in the previous EIS (CIMA+, 2022), no SAR birds were identified as occurring or likely to occur.

- No impacts to provincial SAR bird nests or their eggs is permitted under the provincial *Endangered Species Act*. If a provincially listed bird species at risk is encountered, then work must stop and MECP contacted (sarontario@ontario.ca).
- No impacts to federal SAR bird nests, or their eggs is permitted under the federal *Species at Risk Act*. If a federally listed bird species at risk nest is encountered, then work must stop until the young have fledged. If the nest/young have been harmed, then Environment Canada must be notified immediately for guidance.
- Should a nest be discovered, stop all work that may disturb the birds (i.e., that cause the adults to fly off the nest) and contact a biologist or MECP or Environment Canada, as appropriate for the species.
- Note that timing windows for bird species in general and for bats are included further below (both of these are more restrictive). Should a SAR bird be identified, then the newer MECP active seasons should be respected. Currently this is from April 1 to August 31 in Southern and Central Ontario (no impacts to SAR birds at this time) (MECP, 2022).

Bats: It is understood that all vegetation will be removed from the Development Area as well as much of the setback. The potential to impact SAR bats will be evaluated at detailed design.

- Follow appropriate guidelines for removal of trees with respect to woodland bats, as applicable at construction.
- Remove all trees that are 10 cm in diameter at breast height or larger (in the fencerows or forest) between October 1 and March 31 (Bat active season is currently assumed to be April 1 to September 30 in southern Ontario when Eastern Small-footed Myotis is not anticipated to be present). If this is not possible, conduct an exit survey prior to tree removal. If the exit survey identifies bats, contact MECP or a biologist for additional guidance.

SAR Flora:

Butternut

- No Butternuts were found during the inventory in 2024, which is valid till August 30, 2026, after which a new survey would be required.
- Should any new butternuts be identified (i.e., if they were missed or have grown since the inventory), the individual and its habitat (the surrounding 50 m) are to be protected until it can be assessed.
- Butternut assessments for any new individuals are to be conducted during the green-leaf period (typically mid-May to late August).
- Follow guidance on tree removal from the Bats, Birds, and General Wildlife sections.

Black Ash

- Black Ash was present on-Site, and a Black Ash Assessment Report shall be submitted to MECP. Once approval is obtained from MECP, the trees can be removed. No work is anticipated until MECP's review of the assessment is completed.
- Should any new Black Ash be identified (i.e., if they were missed or have grown since the inventory), the individual and its habitat (the surrounding 30 m) are to be protected until it can be assessed. No work shall take place within 30 m of the individual until it is assessed during the green-leaf period (typically mid-May to late August).
- Black ash assessments for any individuals should be conducted during the green-leaf period (typically June 1 to October 1); however, health assessments may be completed in the leaf-off seasons provided that it is possible to determine the health status of the tree as per provincial guidelines.
- Follow guidance on tree removal from the Bats, Birds, and Other sections.

6.2 Wetlands/ANSI/NHS/UNA

There are several overlapping natural heritage constraints whose edges were delineated during the zoning by-law amendment EIS scope (Bowfin/CIMA, 2022). To ensure that these areas remain protected the following measures are provided:

- No direct impacts to the wetlands/
- The 30 m setback will be respected and only impacted for the Phase 2 rehabilitation phase. This includes grading and revegetation.
- Work within the setback will avoid periods of high runoff volumes (i.e., spring and fall periods) as well as periods of high rain events.
- Stormwater management facilities include rip rap swale that respects the wetland and minimizes impacts.
- Stormwater management is to ensure appropriate level of treatment.
- Erosion and sediment control measures will be developed (see Section 6.3 below).
- The landscaping plans have not provided additional access to this sensitive area (as per the previous recommendations (Bowfin/CIMA, 2022)).
- To the extent feasible, limit construction to daytime to minimize noise and light impacts to wildlife.
  - Ensure that machinery and vehicles are in good condition with appropriate mufflers etc.
  - Minimize lighting and when required, ensure that lights do not illuminate the night sky or the wetland/river.
- Plantings in the setback are native species.

6.3 Fish and Fish Habitat

Planning

- Detailed design will be reviewed in terms of potential impacts to fish and fish habitat. Any work that occurs below the below the high-water mark or that could affect fish habitat would be submitted to DFO to review as applicable.
- Site instruction will be provided to contractor to highlight that Ottawa River provides permanent fish habitat.
- Minimize clearing of woody vegetation. Where possible, cut trees leaving behind a 60 cm stump or more, and cut shrubs down instead of grubbing.
- Suspend activities that cause muddy environments during periods of heavy rains.
- Erosion and sediment control measures will be installed prior to the clearing of vegetation within 30 m of a watercourse.

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 sediment fencing along the top of banks where vegetation clearing and/or soil disturbance will occur within 30 m of any channel prior to the removal of vegetation.
- 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.
- Any stockpiles of soil or fill material will be stored as far as possible from the channel (minimum 30 m and protected by silt fencing).
- The sediment fencing will not be removed until the bank is stabilized (<20% bare soil).
- Where banks/riparian area (area within 30 m of channel) have been stabilized by seeding and/or planting, monitor the revegetation to ensure that the vegetation becomes fully established.
- Any riprap or rock protection will consist of clean rock free of fines.
- Where possible, limit clearing of vegetation to trimming and leave the lower 60 cm of the tree trunk in place (for bank stabilization).
- Suspend activities that cause muddy environments during periods of heavy rains.

- Effectiveness of the erosion and sediment control measures will be evaluated throughout the construction period and until the area is stabilized.

Contaminants and Spill Management

- All machinery and equipment will be free of mud and plant material when arriving on-site to minimize the transport of invasive species.
- 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 PSW 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 surface water.
- 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. Machinery would be monitored for leaks 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 substances 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.
- No construction debris will be allowed to enter the watercourse.
- After construction is completed, all construction materials will be removed from Site.

6.4 Woodlands

Tree Protection: The most typical construction damage to trees is root damage from compaction and severance. While the drip line of a tree's canopy is typically thought to be associated with the root area, the root zones can extend significantly beyond the drip line of the tree, sometimes up to 2 or 3 times the height of the tree. To effectively mitigate impacts to trees, the following series of mitigation measures is recommended. These are also provided in the accompanying Tree Conservation Report (TCR).

- Follow appropriate timing windows for tree removal to avoid impacts to other natural heritage features (i.e., bird nests, species at risk and their habitat)
- The edge of the property and the extent of construction/grading should be clearly defined on the site plans and in the field.

- All trees within the work area/area to be graded will be removed. When clearing near trees next to neighbouring lands, mitigation measures to prevent harm to the root systems of trees adjacent to the proposed works will be implemented to protect them from indirect harm:
- Sturdy fencing will be installed outside of the Critical Root Zone (CRZ) (defined as 10x the DBH) of the trunk of the closest trees to the work area. Fencing will be retained until construction activities have been completed.
- No grading or activities that may cause soil compaction (such as heavy machinery and stockpiling of materials) will be allowed within the fenced area.
- No machinery maintenance or refueling or stockpiling is permitted within 5 m of the outer edge of this fencing.
- Exhaust fumes from all equipment will be directed away from the canopy of the trees to be retained.
- If roots of trees on adjacent lands become exposed during site alterations, they will be buried immediately with soil or covered with filter cloth or woodchips and kept moist until the roots can be buried permanently.
- Any roots that must be cut will be cut cleanly to allow for healing.
- Do not place any material or equipment within the CRZ of a tree to be retained.
- Do not raise or lower the existing grade within the CRZ of a tree to be retained.
- Do not extend any hard surface or significantly change landscaping within the CRZ of a tree to be retained.
- If the construction will have to encroach into a tree's minimum CRZ, installing a temporary layer of 150 mm deep partially composed wood chips mulch over the root zone can help to protect roots from compaction damage, and conserve soil moisture levels.
- Ensure that exhaust fumes from all equipment are not directed towards any tree's canopy.
- No signs, notices or posters should be attached to any trees;
- Ensure that no damage comes to the root system, trunk, or branches of a tree.
- Any landscape plans will include native species as much as possible. Exceptions would only be made based on the advice of the landscape consultant. It is our understanding that the plantings of native trees and shrubs is typically not an issue, but that herbaceous vegetation can often not withstand the pressures from road maintenance, etc.

<u>Tree and Root Pruning</u>

- If, during excavation, any roots are encountered while working outside the CRZ, they should be cut off cleanly with sharp pruning tools rather than allow them to be torn by large equipment; clean cuts will help to minimize decay and entry points for disease.
- Do not damage the root system, trunk, or branches of any tree.

- All exposed roots of trees to be retained should be covered in a minimum of 5 cm of firm soil within 24 hours of exposure.
- If root pruning is implemented, the crown of the tree should be reduced proportionately under the direction of a Certified Arborist or Registered Forester to decrease wind sail. Pruning should be kept to thinning cuts (no major limb removal), crowns should be monitored, and maintenance carried out for two (2) years after root pruning to remove any dieback under the direction of a Certified Arborist or Registered Forester.
- Where branches are likely to hang in the way of passing equipment, the branches should be pruned by a Certified Arborist or Registered Forester to avoid tearing and undue injury to the tree.
- All pruning work must be performed under the supervision and guidance of a qualified tree professional in accordance with the latest ANSI A300 Pruning Standards and best management practices identified by the International Society of Arboriculture.

6.5 Significant Wildlife Habitat

In addition to the items listed above, it is important to note that other Acts and regulations may apply, and the following measures serve to provide additional information on avoidance and mitigation (i.e., for items not identified on the Official Plan).

- 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. In this part of Ontario, the current standard nesting period is between April 5 to August 28 however the more restrictive SAR window will be followed April 1 to August 31. Outside of this timing window, it is considered unlikely that birds would be nesting. Note that 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.
- 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 looking for ground nesters. If any are present, the contact a biologist for guidance.
- Work during the daytime hours to prevent light disturbances.
- Ensure that all equipment have the appropriate mufflers to reduce noise disturbances.
- Do not flag bird nests as it attracts predators.
- Several painted turtled were observed in the PSW northeast of the Development Area, outside the adjacent lands. Most turtles are protected under the FWCA. If a turtle nest is suspected, flag a 10 m buffer to protect the nest. Contact MECP (for SAR) and MNRF (all other species) for guidance.

6.6 Invasive species

- Machinery should 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 Plant Council website.

Table 3: Summary of Impacts, Mitigation Measures and Residual Effects

Activity	Natural Heritage Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
Construction				
Vegetation Clearing in preparation development	Breeding bird and urban wildlife habitat Urban Woodlot on private land. Working near PSW (marsh habitat, and fish habitat)	Removal of vegetation would destroy (temporarily or 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.	▪ Machinery will be cleaned prior to arriving on-site to prevent the potential spread of invasive species. ▪ Machinery should 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 Plant Council website. ▪ Development Area minimizes impacts and provides ±30m setback from natural features except for the Urban Woodland. ▪ Any landscape plans in the setback consists of native species. Various species could be used including red maple, sugar maple, hickory, bur oak or nannyberry. Where possible the woody vegetation should be planted in groupings to maximize wildlife benefit. ▪ All vegetation clearing should occur outside of breeding bird season and the day-roost period for bats (**no clearing between April 1 and October 31**). If this is not possible, then have a biologist complete a bird nest surveys a maximum of 2 days prior to clearing between April 1 and August 31. Take precautions for bats between April 1 and October 31. Precaution for bats can include bat exit survey prior to cutting them down. The bat timing window applies to trees that are 10 cm or larger. ▪ If an individual is found, 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, them it may need to be relocated. Contact a biologist experienced with this species to relocate the individual. ▪ 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.	Positive following offset Loss of small portion of Urban Woodlot (0.1 ha) to be offset with roughly 0.22 ha of new woodland along the shoreline. The total enhancement area included 0.83ha of which 0.13 ha has already been constructed as wetland.

Activity	Natural Heritage Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
			▪ Recommend clearing from west to east direction to allow wildlife the opportunity to leave the site into the natural areas that are to remain. ▪ Contractor is to perform daily sweeps during the active season (approximately April 1 to October 31, subject to weather conditions). ▪ Sediment fencing shall be installed on three sides of the work area (north, east and west), and this will include the enhancement area during its rehabilitation. The fence will be designed to serve for erosion and sediment control and for temporary turtle exclusion. This fence should be installed prior to May 1 (to minimize potential for nesting turtles). ▪ The Development Area is a minimum of 30 m from the PSW boundary. ▪ Workers will be educated on the potential for SAR. ▪ 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. ▪ If a SAR is encountered, this information will be provided to the Natural Heritage Information Centre (Report rare species (animals and plants) | Ontario.ca) ▪ Contractor is to refer to the City of Ottawa Protocol for Wildlife Protection during Construction (August 2015). ▪ No signs, notices or posters should be attached to any trees. ▪ The removal of trees greater than 10 cm in diameter would require a permit from the City. ▪ Any trees to be retained will be protected through the installation of study snow fencing outside of their critical root zone (10x their	

Activity	Natural Heritage Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
			diameter at breast height) to minimize harm to the root systems of trees adjacent to the proposed works will be implemented to protect them from indirect harm. These include: - Sturdy fencing (i.e., snow fencing) will be installed on the edge of the area to be protected and the CRZ will be delineated with stakes. This sturdy fence will remain in place until final grading and seeding takes place. - Monitoring of the fencing listed above will be completed by the proponent or their consultants during construction. - Monitoring of the clearing of any vegetation within the CRZ will be monitored by the proponent or their consultants. - Only clear trees where it is needed. - No grading or activities that may cause soil compaction (such as heavy machinery and stockpiling of materials) will be allowed in the CRZ. - Ensure that the grades are matched at the limit of the natural feature or to the edge of any buffer. - Furthermore, no machinery maintenance or refueling or stockpiling is permitted within 5 m of the outer edge of this fencing. - Exhaust fumes from all equipment will be directed away from the canopy of the trees to be retained. - If roots of trees to be retained become exposed during site alterations, they will be buried immediately with soil or covered with filter cloth or woodchips and kept moist until the roots can be buried permanently. - Any roots that must be cut will be cut cleanly to allow for healing	
Construction of infrastructure, buildings, and Grading	PSW (marsh habitat, fish habitat) Woodland to be retained (breeding bird and urban wildlife habitat, shoreline stabilization)	Negative impacts to: quality of wetland habitat or its functions (wildlife and fish habitat), because of erosion or sedimentation of wetlands or aquatic habitats.	- Machinery will be cleaned prior to arriving on-site to prevent the potential spread of invasive species. - There is no work planed for below the high-water mark within the Property or for the culvert to the east. Should this change, then DFO will need to be consulted. - The work within 30 m of the high-water mark is for rehabilitation and avoidance measures (i.e., turtle fencing).	Development Area: None provided that mitigation measures are properly implemented and maintained. Stormwater management and Tweddle Road

Activity	Natural Heritage Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
	Fish habitat in tributary to Ottawa River (east of Property) and Ottawa River	Stormwater management introduction of additional flow to culvert to the east of Property and/or the construction of rip rap swales directing flow towards the wetland/Ottawa River could cause erosion or sediment control issues in watercourses. Noise from machinery may also cause a disturbance to wildlife in the UNA and/or wetland. Permanent structure could cause slope instability. Introduction of non-native vegetation. Potential to injure or kill wildlife during construction as a result of collisions.	▪ Water quality and erosion and sediment control will be finalized in detailed design to avoid impacting fish or fish habitat. Depending on design may need review by RVCA and/or DFO. ▪ Site instruction will be provided to contractor to highlight that the Ottawa River provides permanent fish habitat. ▪ Erosion and sediment control measures will be installed prior to the clearing of vegetation within 30 m of a watercourse. ▪ Suspend activities that cause muddy environments during periods of heavy rains. ▪ 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 sediment fencing along the east, west and north sides. Properly keyed in to prevent turbidity from reaching wetland or river. – Any fence situated at the base of the fill, within the area that floods during periods of high water, must be removed before spring freshet and other suitable measures put in place (above the area that floods). – 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. ▪ 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).	Regrading: None provided that appropriate measures are incorporated during detailed design and that the design is reviewed as appropriate (i.e., may need to be reviewed by RVCA, DFO, MECP).

Activity	Natural Heritage Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
			■ The sediment fencing will not be removed until the bank is stabilized (<20% bare soil). ■ Where banks/riparian area (area within 30 m of channel) have been stabilized by seeding and/or planting, monitor the revegetation to ensure that the vegetation becomes fully established. ■ Only work outside of limit of Development Area on the Property is for the rehabilitation and potentially for the Tweddle Road regarding. ■ Work during the daytime hours to prevent light disturbances. ■ Ensure that all equipment have the appropriate mufflers to reduce noise disturbances. ■ Any slope stability measures provided by geotechnical experts will be adhered to. ■ Construction staff will be informed of the SAR in the area (Appendix A). ■ 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 looking for ground nesters. If any are present, the contact a biologist for guidance. ■ Work during the daytime hours to prevent light disturbances. ■ Ensure that all equipment have the appropriate mufflers to reduce noise disturbances. ■ 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.	
Accidents or Malfunctions	UNA, PSW (marsh and fish habitat).	Spills or accidents during construction could impact the quality of wetland habitat or its functions (wildlife and fish habitat), could cause slope failure of the banks of the Ottawa River or impact the habitat of the UNA (wetland).	■ All equipment working in or near the water must 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. ▪ If a spill occurs: o 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. ▪ No construction debris will be allowed to enter the watercourse. ▪ Following the completion of construction, all construction materials will be removed from site.	
Operations				
Operations	Wetland and Urban Woodland (breeding bird, urban wildlife, fish habitat)	Potential for noise and lighting impacts to natural heritage affecting fauna use. Potential for impacts to water quality.	▪ Indirect impacts could occur as a result of change in water supply or quality, sediment/erosion of the wetland. – The stormwater management facilities will outlet to the river, following treatment. They will be designed and constructed to not impact the water quality within the wetland or within the small tributary downstream of the culvert east of the Property. They will also be designed to prevent erosion. – Water quantity will not be impacted as the water levels are controlled by waterpower on the Ottawa River. – Appropriate measures will be implemented along the slopes to ensure that no slope failure occurs (slope failure could result in the transportation of soil down into the wetland). ▪ Lighting will be required to focus on the site itself, as is typical for development in Ottawa. This would be addressed through the site plan review and approval process	None provided properly designed and installed.

7. Urban Woodlot Offset Plan

A draft Urban Woodlot Offset Plan was provided in the zoning by-law amendment EIS (Bowfin/CIMA, 2022). The Projet Paysage Landscaping Plan adhered to this Woodlot Offset Plan. The following is from the previous EIS and has been updated as necessary:

- The overall area available for enhancements is calculated at ±0.83 ha of which 0.13 ha has already been rehabilitated in a wetland during Phase 1 rehabilitation works (in 2022).
- The intent is to create habitat that consists of a mosaic of native meadow, marsh/tall shrub swamp, shrub, and treed habitats.
- The portion of wetland habitat created was restricted to 30 m from the edge of the permanent footprint of this development.
- The option to transplant some of the woody vegetation from the proposed development lands to the enhancement area will be evaluated by the landscaper.
- The proponent will consider using potted stock for at least a portion of the wooded species. This would improve the speed at which the enhancement area becomes functional.
- The treed areas also need to allow for viewing from terraces, Tweddle Road and the walking trail. The goal of reaching 0.22 ha wooded area has been met.

Other Factors

- Timing of Phase 2:
  - The intent is to complete the habitat enhancement works concurrently with the excavation activities in its entirety if possible. However, it is noted that access to native vegetation may be problematic. If issues arise, then an annual cover crop would be sown, and the plantings completed as soon as possible.
- Public Access
  - A public viewing area is available from the Development Lands.

A discussion of urban criteria is provided in Table below.

Table 4: Discussion of Urban Criteria for Offset/Habitat Enhancement Area

Criteria	Comments
Air, Water Cycle and Climate	**Existing trees** are: • Young (average diameter 3-12 cm) and covers over an area of 0.11 ha. But because >50% are dead or dying its total canopy cover is poor. Further many species are those susceptible to disease (ash, elm) its total canopy at maturity may never reach its full capacity. • Within 250m of high-rise towers. • Are not accessible to the public. • High percentage of dead/dying trees which do not provide any benefits in terms of air, water cycle or climate.

Criteria	Comments
	■ The lack of herbaceous ground cover and presence of bare soil on slope indicates that it is not assisting in run-off storage. **Proposed offset** will: ■ Provide greater total canopy cover (goal of reaching 0.22 ha in the enhancement) and will be planted with species other than ashes and elms in an effort to avoid those species that are presently susceptible to disease. This will create more total canopy cover at maturity, equating to more benefits (removal of pollutants, reduction of urban heat, and carbon storage. This does not consider the remainder of the enhancement area that will also include individual trees and shrubs and native meadows/wetlands. ■ Have an enhancement area that is graded to minimize erosion and improve run-off storage. ■ Will include potted stock plantings and possibly transplanting from the site to reduce the lag time of the new area in providing the benefits. ■ Will remain within 250 m of high-rise towers (already built by others) ■ Will become readily accessible.
Green Infrastructure	**Existing trees:** ■ Are on bare slope (little herbaceous cover) and signs of erosion. ■ Do not offer high run-off capturing capabilities. ■ Much of the proposed development area and the enhancement area is currently rock fill or clay fill with little run-off capabilities. **Proponent is considering:** ■ Development is considering reflective (white) roofing for the towers and vegetated terraces for podium roof levels for outdoor amenity areas. ■ Plantings, strategically placed, within the development to reduce heat and stormwater runoff. ■ Landscape architect will review opportunities for tree retention. ■ The enhancement area is currently rock fill with little run-off capture capabilities. Enhancement area (0.83 ha) will see a large improvement. A portion of the enhancements have already been completed, allowing benefits to begin sooner.
Disease Regulation	While woodlands can create an area where disease can be communicated, this will be minimized at this location by/because: ■ Low population of deer in the area (lower number of ticks) ■ Native meadows and vegetation will be planted to reduce the amount of wild parsnip and other invasive species that impact human health. ■ Education panels are being considered to provide walkers information on dangerous plants and on ticks.
Pollination	The proposal includes an increase in area of native plants (including trees), which constitutes a vast improvement over the current rock fill.
Socio-cultural **Recreation, heritage, tourism**	**Existing area:** ■ Has no public access (is entirely on private land), ■ Has no opportunities for recreational, educational, or cultural interactions.

Criteria	Comments
	Proposed enhancement area: ■ Will provide a new viewing point of the river and PSW not currently available. ■ Will create ±0.83 ha of greenspace. ■ Will provide an opportunity to create educational panels for the public. ■ New area to offer relief from extreme heat events, to view nature and relax/spiritual contemplation. ■ The viewing platforms will offer opportunities for birdwatching in the PSW and the remainder of the enhancement area for birdwatching of more common terrestrial breeders. ■ The viewing platform will be named after the Grandmaître family (previous owners of the property).
Habitat	■ Surveys did not identify any unusual characteristics, or significant wildlife habitat. ■ New area will provide a better buffer to the PSW (naturalized instead of the existing rock fill). The existing wooded area is over 30 m from the PSW and most of it is more than 50 m from the PSW. The new area will be within 30 m-50 m of the PSW. ■ New area will be vegetated with native species.

8. Update to Conclusions of Environmental Impact Study (June 2022)

As noted in the introduction, the Development Area was established during the zoning by-law phases with the goal of protecting the identified natural heritage features. The current plans have adhered to the commitments in the EIS prepared by Bowfin/CIMA in 2022 and this includes limiting the footprints to the Development Area and completing the offsets within the setback. At the final design stage, the potential to consult, and/or adjust avoidance and mitigation measures to respect fish and fish habitat and ESA will be reviewed.

Provided that the recommendation herein are followed, then the proposed development can be accepted as planned. I trust that this report will meet your requirements. Should you have any questions or comments, please contact Michelle Lavictoire (michelle.Lavictoire@cima.ca).

9. Study Limitations and Constraints

CIMA+ completed diligent and reasonable research in conducting this evaluation with respect to recognized laws and standards of practice. The facts presented in this report are strictly limited to the period of investigation. Conclusions are based on available information and documents, observations made during site investigations, and communications with various contacts. Interpretation is therefore 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 legal advice.

10. References

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A

Appendix A
List of Potential Endangered or Threatened Species

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)
MOLLUSCS							
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). Provincially, this species receives only general habitat protection.	No waterbodies in the Development Area; setbacks will prevent impacts to the Ottawa River.	No
FISH							
Lake Sturgeon	*Acipenser fulvescens*	S2	END	No Status	Bottoms of lakes and large rivers. Adults are typically found in highly productive shoal areas of large rivers and large lakes. (COSEWIC, 2017). Provincially, this species receives only general habitat protection.	No waterbodies in the Development Area; setbacks will prevent impacts to the Ottawa River.	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)	No waterbodies in the Development Area t; setbacks will prevent impacts to the Ottawa River.	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 waterbodies in the Development Area; setbacks will prevent impacts to the Ottawa River.	No
REPTILES							
Blanding's Turtle	*Emydoidea blandingii*	SNR	THR	END	Shallow water, large marshes, shallow lakes or similar such water bodies. General habitat protection is provided for suitable habitat that is within 2 km of an occurrence when certain conditions are met (COSEWIC, 2016).	Suitable habitat is present adjacent to the Site. Species-specific surveys were completed, and advice was sought from MECP during the study design and following results. While none were found, the	Yes – but no change from the EIS 2022 commitments.

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)
						species is assumed to be present in the wetland and Ottawa River. Was submitted to MECP for review who determined that there was no contravention to ESA provided that the measures outlined in that report are adhered to. Plans adhere to these restrictions.	
BIRDS							
Least Bittern	*Ixobrychus exilis*	S4B	THR	THR	Freshwater marshes habitat with dense vegetation (Sandilands, 2005; COSEWIC, 2009). Nests are typically in cattail marshes, near edge or openings but they have been found in other emergents and occasionally in willow (Woodcliff, 2007), COSEWIC states that the species must have emergent marsh with open water areas and stable water levels and are usually found in those that are larger than 5 ha (COSEWIC, 2009). Provincially, this species receives only general habitat protection.	Suitable habitat is present adjacent to the Site. This species was not heard calling or observed during field investigations by Bowfin staff. Was submitted to MECP for review who determined that there was no contravention to ESA provided that the measures outlined in that report are adhered to. Plans adhere to these restrictions.	Yes – but no change from the EIS 2022 commitments.
Eastern Whip-poor-will	*Antrostomus vociferus*	S4B	SC	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 5.2.2. Provincial guidelines provide general habitat protection to suitable habitat within 500 m of an occurrence when certain conditions are met (MECP 2019). The province	This species has been downlisted provincially since the last EIS. The forest habitat on-Site is not likely to be suitable for this species. This species is considered absent.	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)
					adopted the federal recovery strategy (MECP, 2019). The federal recovery strategy identifies the habitat occupancy as a 10x10 km atlas squares with one confirmed breeding record, or two probable breeding records (ECCC, 2018). Possible breeding records only trigger federal review when there are at least two records from a single year and at least one from another your or five possible records from one or more years (ECCC, 2018). The federal recovery strategy provides details on habitat functions with nesting habitat necessitating dense forest AND sparse shrub/herbaceous ground cover AND well-drained soils (ECCC, 2018).		
Chimney Swift	*Chaeutura pelagica*	S4B, S4N	THR	THR	Cities, towns, villages, rural, and wooded areas. This species rarely utilizes trees; they prefer trees greater than 50 cm in diameter and that are within 1 km of waterbodies (COSEWIC 2007). Provincially, this species' protected habitat consists of Category 1 habitat, which is a human-made nesting/roosting feature or natural nesting/roosting tree cavity, as well as the area within 90 m of the natural tree cavity (MECP, 2013). No Category 2 or 3 habitats are outlined for this species (MECP, 2013).	Man-made structures are absent on-Site, but large trees are present and may be suitable; No individuals were observed during the breeding bird surveys and only a single 50cm+ cavity tree is present on Site. MECP timing windows for clearing will be followed.	Yes – but no change from the EIS 2022 commitments.
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. (COSEWIC, 2013). Provincially, the species GHD includes the 50 m in front of a breeding colony's bank face and all suitable foraging habitat within 500 m (MECP, 2024).	No suitable banks on-Site or within adjacent lands. No individuals were observed. This species is considered absent.	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)
Bobolink	*Dolichonyx oryzivorus*	S4B	THR	THR	Grasslands, wet meadows, hayfields, old fields, and pastures. This species is sensitive to edge effects, and prefers areas with few shrubs as well as a litter layer deeper than a couple of centimetres (COSEWIC, 2022). Provincially, the GHD for this species protects 60m from a nest and 300m of suitable habitat around a nesting site.	No grassland habitat on-Site or the adjacent lands. None were heard or observed during daytime breeding bird surveys. This species is considered absent.	No
Eastern Meadowlark	*Sturnella magna*	S4B	THR	THR	This is a grassland breeding bird, typically requiring larger habitats but have been known to breed in habitats that were 1 ha in the United States. Usually, their defended territories are of 2.8-3.2 ha of uncut meadow or field (McCracken et al, 2013). Personal observations of successful nesting habitat for this species in Eastern Ontario has not found any successful nesting pairs in habitats that were less than 5 ha. (COSEWIC, 2011). Provincially. the GHD for this species protects 100m from a nest and 300m of suitable habitat around a nesting site.	No grassland habitat on-Site or the adjacent lands. None were heard or observed during daytime breeding bird surveys. This species is considered absent.	No
MAMMALS							
Little Brown Myotis	*Myotis lucifugus*	S4	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 (caves/mines) (COSEWIC, 2013). Critical habitat has not yet been defined. Provincially, this hibernacula have a buffer of 200m. Buffers for maternity sites have not been established.	Several cavity trees over 10cm (including several over 25cm) in diameter are present on site. This species maternity habitat is brought forward.	Yes
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	No suitable older, larger forests were present; as such, there was a	

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)
					sensitive to edge habitats (Menzel et al., 2002; Broders et al., 2006). Critical habitat has not yet been defined. Provincially, this hibernacula have a buffer of 200m. Buffers for maternity sites have not been established.	lack of suitable maternity habitat for this species.	
Eastern Small-footed Myotis	*Myotis leibii*	S2S3	END		Roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. 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). Provincially, this hibernacula have a buffer of 200m. Buffers for maternity sites have not been established.	No rocky habitat was present for hibernacula (any species) or for Eastern Small-footed Myotis maternity habitat.	
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 (caves/mines). (COSEWIC, 2013).	Potential for day-roosts and maternity habitat within trees over 10 cm in diameter is brought forward.	
Silver-haired Bat	*Lasionycteris noctivagans*	S4	END (*as of 2025*)	No Status	Females establish summer maternity colonies in large diameter trees (COSEWIC 2023). They also use buildings as roosting sites. Critical habitat has not yet been defined. Provincially, hibernacula have a buffer of 200m. Buffers for maternity sites have not been established.	No suitable hibernacula habitat. Several cavity trees over 10cm in diameter are present on site. These species maternity habitat is brought forward.	Yes
Eastern Red Bat	*Lasiurus borealis*	S4	END (*as of 2025)*	No Status	Day roosts can be in a variety of deciduous and coniferous forest types, usually in trees but occasionally shrubs. Trees used as maternity roosts by		

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)
Hoary Bat	*Lasiurus cinereus*	*S4*	*END (as of 2025)*	No Status	both species tend to be large diameter and tall (COSEWIC 2023). Both migrate south to hibernate in the southern United States (COSEWIC 2023).		
VASCULAR PLANTS							
Butternut	*Juglans cinerea*	S2?	END	END	Variety of sites. Butternut grows best on well-drained fertile soils in shallow valleys and on gradual slopes (COSEWIC, 2003). Provincially, this species' habitat is described as up to 50 m from the stem (depending on the size and classification of the individual).	Butternut surveys were conducted on August 30, 2024, and none were found. This species is considered absent. Note that this survey is valid for a 2-year period.	No
Black Ash	*Fraxinus nigra*	S4	END	No Status	Swamps, bogs, and riparian areas, occasionally poorly drained upland areas (COSEWIC, 2018). Provincially, this species' habitat is described to include 30 m from the stem.	Black ash survey and assessment were conducted on September 24, 2024, and 8 individuals with a dbh > 8 cm were found. This species is present on-Site. MECP will be contacted.	Yes

Table Updated: January 2025

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

S#B Breeding

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.

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.

B

Appendix B
Background Mapping

City of Ottawa Official Plan Schedule C-11b