

TOWN OF CALEDON
PLANNING
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871 Equestrian Court, Unit 1, Oakville ON L6L 6L7
Tel: 647-795-8153 | www.pecg.ca

Environmental Impact Study - 12519 and 12713 Humber Station Road, Caledon - Issued for SPA Submission 1B

Prologis Property

Palmer Project #
2008102

Prepared For
Prologis

November 22, 2024

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1. Introduction

Palmer (now part of SLR) has been retained by Prologis c/o Mainline Planning Services Inc. to complete an Environmental Impact Study (EIS) as part of an application for the proposed development of a property at 12519 & 12713 Humber Station Road in the Town of Caledon, Peel Region (the Subject Property – **Figure 1**). The approximately 78 ha Subject Property is situated northeast of Humber Station Road on the west side of the town of Bolton.

The property primarily consists of large agricultural fields, with the addition of small natural areas (wetlands and woodland) and drainage features. A creek named the Clarkway Drive Tributary lies to the east of the property. Buildings associated with former farmsteads were removed in 2017 and 2018. The Subject Lands are mostly surrounded by rural agricultural lands, although developed Bolton is on the east side of the Clarkway Drive Tributary and the closest properties contain large distribution centres. The Subject Property is partially regulated by the Toronto and Region Conservation Authority (TRCA).

The intent of this EIS is to delineate, inventory and evaluate the sensitivity and significance of the existing natural heritage features and ecological functions associated with the Subject Lands and assess the impacts of the proposed development. For the natural heritage features requiring protection, avoidance and mitigation measures are recommended where appropriate, to address potential impacts resulting from the proposed development. The proposed Phase 1 development consists of a single large distribution centre, with some land works to prepare for subsequent phases. The impacts of this phase only are discussed in this report.

1.1 Background

Prior to and at the same time as the preparation of this EIS, a Humber Station - Comprehensive Environmental Impact Study and Management Plan (CEISMP) report was being prepared by GEI Consultants Ltd. (GEI), in collaboration with Schaeffers Consulting Engineers (SCE), and Arcadis IBI Group as part of the Secondary Plan for the Humber Station Landowners Group that covers a larger area which includes the Subject Property (October 2023, CEISMP, *Phase 1 – Characterization/Existing Conditions and Baseline Inventory*) (GEI Consultants Ltd., 2023). That larger area is called the Humber Station Employment Area and is encompassed by Humber Station Road to the west, Mayfield Road to the south, Healey Road to the north and the Coleraine West Employment Area Secondary Plan Area boundary to the east.

Additionally, in October 2024 the Draft CEISMP Phases 2 (*Phase 2: Analysis, Impact Assessment, and Mitigation*) and 3 (*Comprehensive Implementation Plan, Monitoring Plan, and Adaptive Management Plan*) were prepared. We understand that these documents have now been finalized and submitted to the Town of Caledon and TRCA for this review.

In previous Town of Caledon planning documents, these lands were in a Prime Agricultural Area designation, as well as Environmental Policy Area land use category, but they are in the process of being changed, as the current draft Town of Caledon Official Plan designates the Subject Property as Employment Area, within the Urban Area Boundary (Town of Caledon, 2024).

The Peel Region Official Plan was recently updated to identify the lands as part of the Urban System, within the Bolton Residential Settlement Area (Region of Peel, 2022). This OP designates the Subject Property as an Employment Area.

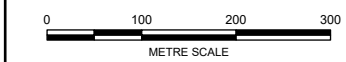
As GEI has undertaken extensive surveys for the Humber Station Employment Area lands, this EIS makes reference to some of that work, while at the same time providing additional data from Palmer field investigations. Palmer and GEI consulted together to come to an understanding regarding the status of most ecological features.



LEGEND

-  Watercourse ¹
-  Waterbody ¹
-  Wetland - Unevaluated ¹
-  Subject Property

1 - Land Information Ontario (LIO)



North American Datum 1983
Universal Transverse Mercator Projection Zone 17


Scale: 1:8,000
Page Size: Tabloid (11 x 17 inches)

Drawn: RS
Checked: HB
Date: Nov 21, 2024

Source Notes: Imagery (2024) provided by ESRI Map Services. Contains information licensed under the Open Government License - Ontario.



NORTH

| | |
|---|---------------------|
| CLIENT | Prologis |
| PROJECT | Humber Station Road |
| TITLE | Site Location |
| REF. NO. | 2008102-1-1 |
|  PART OF SLR | Figure 1 |

2. Study Approach

2.1 Background Review

Palmer has reviewed relevant background material to provide a focus on field investigations and ensure compliance with applicable regulations and policy. Background information collection is guided by the *Natural Heritage Information Request Guide* (Ministry of Natural Resources and Forestry, 2018). Current direction from the Ministry of Natural Resources and Forestry (MNRF) and Ministry of Environment, Conservation and Parks (MECP) is to gather natural heritage information and species occurrence records from available sources; the NHIC Make-a-Map application being the main source of information and records from the Ministry itself (Ministry of Natural Resources and Forestry, 2024). Information gathered is recommended to be balanced and supplemented by professional ecological review of potential habitats and characteristics of a project site.

Background review for the Subject Property included the collection and review of relevant mapping and reports, including regulations and policies, and Official Plans; and the NHIC Make-a-Map application for species occurrences and designated area mapping. In addition to these sources, the following data sources were reviewed for the project:

- Natural Heritage Information Centre (NHIC) database (Ministry of Natural Resources and Forestry, 2024);
- Land Information Ontario (LIO) database (Government of Ontario, 2024);
- Ontario Breeding Bird Atlas (Bird Studies Canada, 2024);
- Reptile and Amphibian Atlas (Ontario Nature, 2024);
- Ontario Butterfly Atlas (Toronto Entomologists Association, 2022); and
- Aquatic Species at Risk Mapping (Fisheries and Oceans Canada, 2024).

Other sources of information, such as aerial photography and topographic maps, were also consulted prior to commencing field assessments. Following the *Information Request Guide*, MECP advice and direction should be solicited should any SAR interactions or potential interactions be identified via field investigations and analysis.

As mentioned previously, some discussions were undertaken with GEI regarding the significance of features, although these were not comprehensive and did not cover all features.

No Terms of Reference document was prepared for any agency due to the nature of this study; i.e. initially we were engaged to undertake selective studies and con-consult with GEI.

2.2 Field Investigations

Palmer ecologists undertook field investigations to assess physical terrain characteristics, and to provide an assessment of the ecological features and functions within the Subject Property. Specifically, ecological surveys included in-field data collection for breeding bird surveys, amphibian surveys, aquatic habitat assessment and general wildlife observations. A SAR habitat screening and Significant Wildlife Habitat (SWH) assessments were undertaken which were supplemented with field observations. Further to GEI's field investigations conducted in 2017, 2018, 2021-2023, Palmer conducted field investigations in 2023

(Table 1). Detailed methods are given below for Palmer surveys. GEI methods are summarized in Section 2.10.

Table 1. Summary of Field Investigations (2017 - 2023)

| Company | Field Investigation(s) | Dates | Weather Conditions |
|---------|--|--------------------------------------|---|
| GEI | Ecological Land Classification & Flora | June 14, August 15 & October 4, 2017 | N/A |
| GEI | Breeding Bird Surveys | June 12, 17 & 28, 2017 | N/A |
| GEI | Amphibian Breeding Surveys | April 24, May 17 & June 21, 2017 | N/A |
| GEI | Aquatic Habitat Assessment | July 19, 2017 | N/A |
| GEI | Headwater drainage Feature Assessment | 2017, 2018 & 2023 | N/A |
| GEI | Acoustic Bat Surveys | June 8, 21 & 26, 2017 | N/A |
| GEI | Bat snag survey | April 21, 2017 | N/A |
| GEI | Turtle Nesting & Basking surveys | 2017, 2018 | N/A |
| GEI | Insect survey | June 12, 28, July 26, 2017 | N/A |
| GEI | Fish Community Survey | July 17, 2017 | N/A |
| GEI | Reptile Surveys | 2017, 2018 | N/A |
| GEI | Snake Transect Surveys | May 16 & 17, 2018 | N/A |
| GEI | Terrestrial Crayfish Survey | November 1, 2021 | N/A |
| GEI | Bat Habitat Structure Assessment | August 22, 2022 | N/A |
| Palmer | Aquatic Habitat Assessment | May 18, 2023 | Not recorded |
| Palmer | Breeding Bird Surveys | June 30, 2022, May 26, June 19 2023 | 17°C, 30% cloud cover and 10 km winds 6°C, no cloud cover and 6 km winds 13°C, no cloud cover and 10 km winds |
| Palmer | Amphibian Breeding Surveys | May 24, June 20 & June 29, 2023 | 15°C, 75% cloud cover and no wind 22°C, 20% cloud cover and no wind 21°C, 30% cloud cover and 10 km winds |
| Palmer | General Site Visit | June 29, 2023 | Hot, mainly clear |

2.3 Aquatic Habitat Assessment

An aquatic assessment was conducted for the drainage swale/watercourse and associated pools located in the centre of the Subject Property (Table 1). Data recorded includes estimated channel size, substrate type, presence of bank undercuts and other observations that indicate the quality of the habitat such as entrenchment, erosion, degradation, riparian cover, and shading.

2.4 Breeding Bird Surveys

Breeding bird surveys were conducted using a roving survey method whereby the entirety of the site is covered. The site was walked such that the observer was within about 50 m or less of all parts of the site (with the exception of row-crop agricultural fields). Palmer conducted three breeding bird surveys more than one week apart within the peak breeding season, on June 30, 2022, May 26, 2023 and June 19 2023. Surveys were conducted between 5:30 and 10:00 a.m. to coincide with the dawn chorus. Surveys were conducted under suitable weather conditions when wind speeds were less than 20 km/h and there was no precipitation. The surveyor used a site map to record all bird species and individuals seen and heard in the approximate location observed.

Breeding bird data was combined in the following manner. Because the data was collected in two close years (2022 and 2023) they were treated as if the same year. For example, if a given habitat three Song Sparrows were recorded in 2022 and two during each of the 2023 surveys, then the number entered was three territories (i.e., maximum number of that species in an area/habitat). Similarly, if a single individual of a species was recorded in 2022 in a given habitat, but not recorded in 2023, then one territory of that species was tabulated. The tabulation separates out the observations from different habitats as well as giving a combined total. GEI observations were discussed where relevant.

2.5 Breeding Amphibian Surveys

A breeding amphibian survey was completed at two stations targeting the Thicket Swamp (SWT) in the southwestern portion of the Subject Property. The amphibian breeding survey was completed on May 31, 2021, following the Environment Canada's Marsh Monitoring Program protocol for surveying amphibians (Bird Studies Canada, 2009). The survey method provides an indication of amphibian abundance during the breeding season. Species were identified by call, and an abundance code for each species heard calling was assessed by the following the Amphibian Monitoring protocol:

- Code 0: No calls heard.
- Code 1: Calls not overlapping or simultaneous, number of individual frogs can be counted
- Code 2: Calls overlapping or simultaneous, number of individuals can still be distinguished, number of individual frogs cannot be counted, but a reliable estimate of numbers can be made based on location and call voices
- Code 3: Full chorus, calls simultaneous and overlapping, numbers of calling males cannot be reasonably counted or estimate

2.6 General Ecological Site Visit

A site visit was conducted on June 29, 2023 to complete a general ecological overview survey of the Site. The survey was used to record natural features, watercourse/drainage features, wildlife observations and dominant vegetation cover within the Subject Property, as well as to meet with GEI to focus on wetland areas.

2.7 Incidental Wildlife Observations

Incidental observations of wildlife were made during all field investigations. Palmer ecologists traversed the site, noting any evidence of wildlife or sensitive habitat features (e.g., potential amphibian breeding habitat, stick nests) as well as gaining a general characterization of available habitat.

2.8 Species at Risk

For the purposes of this report, SAR include species listed as Endangered, Threatened or Special Concern under Ontario's ESA. Prior to field work, existing SAR records were queried through the NHIC database. Habitat opportunities for SAR on the site were then assessed by comparing habitat preferences of species deemed to have potential to occur to current site conditions. The species noted during the NHIC search and others known through professional experience to have potential to occur were considered in the assessment.

2.9 Significant Wildlife Assessment

The criteria for the identification of SWH features are provided in the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E* (Ontario Ministry of Natural Resources and Forestry, 2015). Note that the Subject Property is wholly within Ecoregion 6E, while the GEI CEISMP Study Area also touches Ecoregion 7E. These criteria were used to screen wildlife habitat within the Subject Property for potential SWH types. Along with field observations and geographical analysis, these criteria were used to provide an assessment and screening of wildlife habitat within the Subject Property for potential SWH types within and immediately adjacent to the Subject Property. There is also a *Peel-Caledon Significant Woodlands and Significant Wildlife Habitat Study* (North South Environmental et. al 2009). As the provincial Ecoregion Criteria is more recent, and the Peel-Caledon study was not formally adopted into the Region of Peel's policies, we have emphasized the MNR criteria, and have also reviewed the Peel-Caledon study.

2.10. GEI Field Methodologies

Headwater Drainage Feature Assessment

Following the requirements of the Headwater Drainage Feature (HDF) Assessment Guidelines (Toronto and Region Conservation Authority and Credit Valley Conservation, 2014), GEI completed three rounds of surveys to assess HDFs on the Subject Property. HDFs were completed on April 5, 12, June 12 and August 29, 2017. April 27 and June 13, 2018 and April 13, May 18 and August 11, 2023 (GEI Consultants, 2023).

Acoustic Bat Surveys

To assess bat occurrence within the Subject Property, an acoustic monitoring station were selected based on results from the bat habitat assessment survey. An Acoustics Song Meter SM3BAT was deployed for 6 nights in June 2017. In addition, EchoMeter Touch recording devices were utilized for transect and point count surveys for three nights in June around areas with structural diversity. Point count surveys were completed by two individuals standing on opposite sides of the structure with the detector held above their heads for 10 minutes (GEI Consultants, 2023).

Bat Habitat Structure Assessment

Surveys were completed following MNR survey guidelines as outlined in *Bats and Bat Habitats: Guidelines for Wind Power Projects* (Ontario Ministry of Natural Resources, 2011), consultation with the MNR, and professional experience. Bat habitat surveys occurred on April 21, 2017 and August 22, 2022.

Turtle Nesting and Emergence Surveys

Species-specific habitat preferences (COSEWIC, 2008) and the survey methods of the MNRF (2015) and Toronto Zoo (Caverhill, et al., 2011) (Caverhill et al. 2011; Kula. 2011) were considered in the formulation of this survey protocol. Turtle nesting and emergence surveys occurred on June 8 and 14, 2017. May 2 and 16, 2018 (GEI Consultants, 2023).

Insect Surveys

Insect surveys do not currently have a set protocol in Ontario. Species detection is dependent on repeated visits during the appropriate flight times for a given species in suitable habitat. Dragonflies and butterflies are conspicuous, easily observed and have plentiful resources to aid in identification of Ontario species and as a result, focus was on these groups during surveying (GEI Consultants, 2023). Insect surveys occurred on June 12, 28 and July 26, 2017.

Fish Community Surveys

Fish community sampling was completed to confirm the distribution and extent of direct fish habitat within watercourses and headwater drainage features on the Subject Property, while also identifying species diversity and relative abundance (GEI Consultants, 2023). Sampling methodology was based off the Ontario Stream Assessment Protocol standard single pass survey method (Stanfield, Del Giudice, Bearss, & Morodvanschi, 2013). Fish community surveys occurred on July 4, 2017.

Snake Transect Surveys

Survey methods are based on the MNRF (2016) and Toronto Zoo (Caverhill, et al., 2011) snake survey protocols and are also informed by species-specific habitat preferences. Snake transect surveys occurred on September 20, 2017, May 16, 17 and 23, 2018.

Terrestrial Crayfish Surveys

Evidence of the presence of terrestrial crayfish (i.e., chimneys) were recorded incidentally during other wildlife surveys in 2017 and 2018. An additional survey, specifically targeting terrestrial crayfish was undertaken in November 2021. Records of their chimneys and/or burrows were noted to confirm the presence or absence of terrestrial crayfish within the Subject Property (GEI Consultants, 2023).

3. Policy

3.1 Provincial Policy Statement

The Provincial Policy Statement (PPS) provides direction to regional and local municipalities regarding planning policies for the protection and management of natural heritage features and resources (Ontario Ministry of Municipal Affairs and Housing, 2020). The PPS defines eight types of Natural Heritage Features (NHF) and adjacent areas and provides planning policies for each. Of these NHF, development is not permitted in:

- Significant Coastal Wetlands;
- Significant Wetlands in Ecoregions 5E, 6E and 7E;
- Fish Habitat, except in accordance with provincial and federal requirements; or
- Habitat of species designated as Endangered and Threatened, except in accordance with provincial and federal requirements.

Additionally, unless it can be demonstrated through an Environmental Impact Study (EIS) that there will be no negative impacts on the natural features or their ecological functions, development and site alteration are also not permitted in:

- Significant Wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;
- Significant Woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River);
- Significant Valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River);
- Significant Wildlife Habitat;
- Significant Areas of Natural and Scientific Interest (ANSI);
- Other Coastal Wetlands in Ecoregions 5E, 6E and 7E; and
- Lands defined as Adjacent Lands to all the above natural heritage features.

Each of these natural heritage features is afforded varying levels of protection subject to guidelines, and in some cases, regulations.

As depicted on the MNRF's NHIC mapping (**Map A**), the Subject Property includes areas of woodland, unevaluated wetlands and watercourses. The watercourse appears connected/adjacent to the West Humber River Main Branch.



Map A. NHIC mapping depicts the Subject Property (red) which includes woodland (green), unevaluated wetland (hollow wetland symbol) and waterbodies (blue) within and adjacent to the Subject Property.

3.2 Peel Official Plan

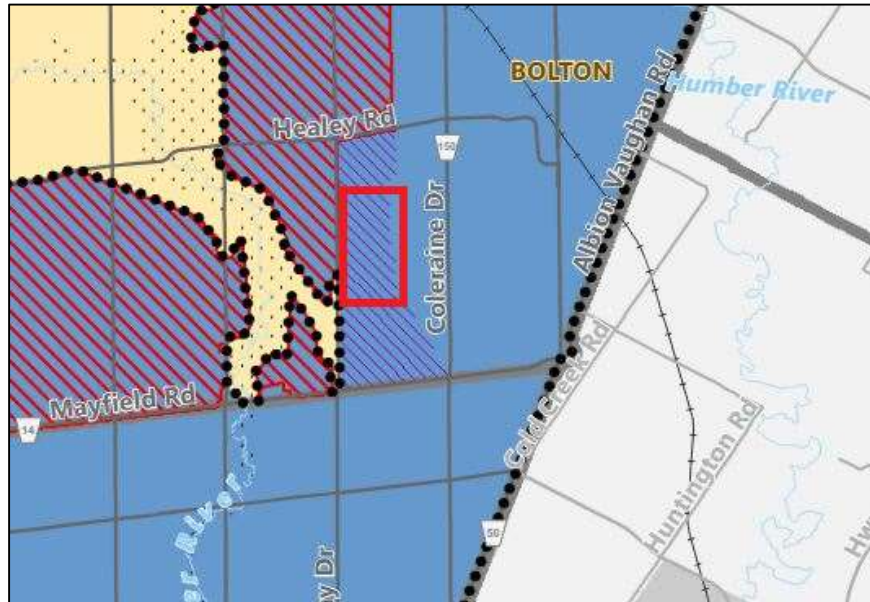
The Region of Peel Official Plan (OP) was adopted by Regional Council on July 11, 1996. It was approved with modification by the Ontario Ministry of Municipal Affairs and Housing (OMMAH) in 1996. Portions of the plan are under appeal at the Ontario Municipal Board (OMB). The latest office consolidation was undertaken on April 2022 (Region of Peel, 2022).

Outside of other provincial plan areas, natural heritage features in Peel Region are protected by its Greenlands System, which consists of Core Areas, Natural Areas, and Corridors (NAC), and Potential Natural Areas and Corridors. Core Areas are designated on Schedule C-2 (Core Areas of the Greenlands System of Peel) of the Official Plan, and are intended to represent the most important natural features in Peel; providing the best uninterrupted natural systems and highest biodiversity as identified through the OP. Natural Areas and Corridors and Potential Natural Areas and Corridors are to be identified and protected in lower tier municipal official plans in accordance with the policies outlined in the Peel Official Plan.

Core Areas include significant wetlands, Core woodlands (criteria provided), Environmentally Sensitive Areas, ANSI's, significant habitats of threatened and endangered species, and core valley and stream corridors (criteria provided). Development is generally prohibited within Core Areas. The Region's OP does not prescribe minimum buffer or setback standards for Core Areas but does provide direction to area municipalities to provide such standards.

Natural Areas and Corridors (NAC) include evaluated non-provincially significant wetlands, NAC woodlands (criteria provided), significant wildlife habitat, fish habitat, other valley and stream corridors not meeting criteria as Core Areas, headwater source and discharge areas, and others. Regional policies encourage municipalities to incorporate policies for the identification and appropriate protection of these features as well as for Potential Natural Areas and Corridors.

According to the Region’s OP Schedule E-1 (Regional Structure), the Subject Property is entirely within the Urban System and Bolton Residential Expansion Settlement Area (**Map B**). However, the Region’s OP Schedule C-2 (Core Areas of the Greenlands System in Peel), shows that the Subject Property includes areas within the Region of Peel Greenlands System (**Map C**). These features are associated with the West Humber River, including watercourses, wetlands and drainage features. Based on the woodland and wetland definitions and assessment criteria, the significance of features within the Subject Property will be determined and applicable buffers identified.



Map B. Region of Peel OP Schedule E-1 depicts the Subject Property (red outline) as within the Urban System (dark blue) and Bolton Residential Expansion Settlement Area (cross hatching).



Map C. The Region of Peel OP Schedule C-2 depicts the Subject Property (red outline) as partially within the Core Areas of the Greenlands System (green polygon).

3.3 Town of Caledon

The Town of Caledon Official Plan (OP) underwent office consolidation in March 2024. The OP's Environmental Policy Area (EPA) designation includes all Natural Core Areas and Natural Corridors. As stated in the OP's Section 5.7.3.1.1, new development is prohibited within areas designated EPA on the OP Land Use Schedules, with the exception of the specified permitted uses. The uses permitted in EPA are limited to legally existing residential and agricultural uses; a building permit on a vacant existing lot of record; portions of new lots; activities permitted through approved Forest Management and Environmental Management Plans; limited extractive industrial; non-intensive recreation and essential infrastructure (Town of Caledon, 2024).

Schedule C of the Town of Caledon Official Plan identifies designated Environmental Policy Area (EPA) through the watercourses and wetlands onsite (**Map D**). EPAs within the Site are protected and appropriate buffers determined through the EIS that consider the ecological functions.

Other Wetlands

Beyond EPA areas, there are other wetlands on the Subject Property. OP Policy 3.2.5.4.2 states that "New development will not be permitted in Other Wetlands unless it can be demonstrated that such development will not result in the degradation of ecosystem integrity, to the satisfaction of the Town, the Conservation Authority, the Ministry of Natural Resources and Forestry, or other delegated authority".



Map D. The Town's OP Schedule C depicts the Study Area (red outline) as within the New Employment Area (blue layer), Environmental Policy Area (olive layer) and Highway 413 Transportation Corridor (grey layer).

Woodlands

Core Woodlands in the Town Of Caledon are those that: *South and East of the Niagara Escarpment and Oak Ridges Moraine Conservation Plan Areas, (are) areas meeting one or more of the criteria for Core and Natural Areas and Corridors Woodlands in Table 1 of the Region of Peel Official Plan.*

Within the OP Section 3.2.5.3.1 states that: *New development within Woodland Core Areas is prohibited in accordance with Section 5.7, with the exception of the permitted uses as specified in policy 5.7.3.1.2.*

In the Phase 2 CEISMP report, GEI proposes an amendment to the OP to address proposed encroachments into a woodland feature at the north end of Subject Property. The text below is from the GEI CEISMP.

Through the Phase 2 CEISMP report, the above impacts were contemplated and assessed in alignment with relevant legislation, policies and regulations. To ensure alignment with the Town of Caledon Official Plan (2018) the Phase 2 CEISMP was prepared in conjunction with the Humber Station Employment Area Secondary Plan policies, which were revised to address specific environmental conditions for the preliminary NHS. This includes a proposed amendment to the Town of Caledon's Official Plan (2018) to modify how Core Woodland Areas can be addressed during planning applications as follows:

7.16.7.3. The limits of wetlands, woodlands, and stream corridors within the Secondary Plan Area are established through the recommendations of the CEISMP and form the basis for the Environmental Policy Area designation. The recommendations of the

CEISMP may include minor modifications (i.e. encroachment/removal and appropriate compensation) of Woodland Core Areas, which may be permitted through an approved Environmental Management Plan (in accordance with 5.7.3.1.2). Development and site alteration will not be permitted within this designation except as set out in the CEISMP.

It is assumed that upon approval of the secondary plan policies submitted as part of the OPA for this Secondary Plan area, that the preliminary NHS will proceed to include minor compensation and enhancement of the Core Areas; the details of this compensation are included in this report and will be further detailed through an Environmental Management Plan (EMP) as required.

3.4 Humber Station Employment Area - Draft Secondary Plan

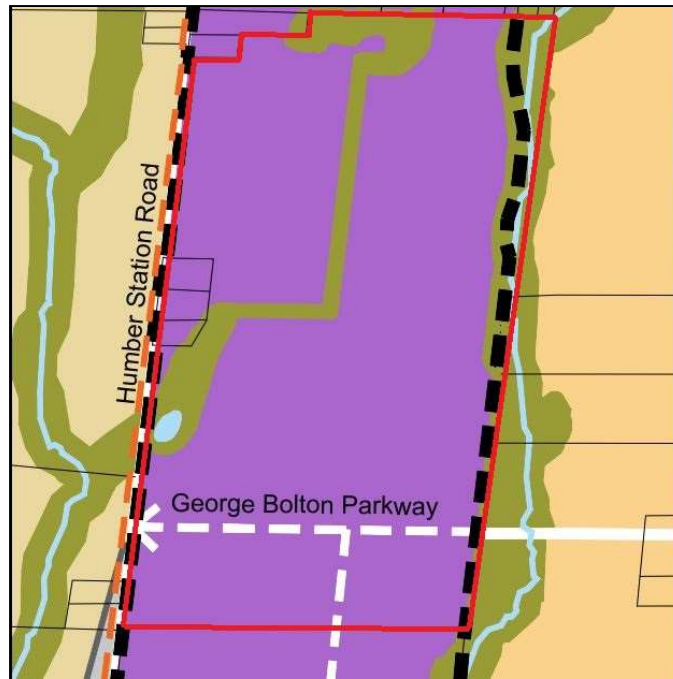
The Humber Station Employment Area, draft Secondary Plan was adopted in September, 2023. This Secondary Plan conforms to the Region of Peel Official Plan and is based on the principles and policies as established in Section 23.6 of the Official Plan. The plan is still undergoing review. The following sections from the Plan in italics are relevant to this study.

The Humber Station Employment Area Secondary Plan covers approximately 236 gross hectares in Bolton, within the Town of Caledon. The Secondary Plan Area is bounded by Humber Station Road to the west, Mayfield Road to the south, Healy Road to the north and the Coleraine West Employment Area Secondary Plan Area boundary to the east.

The 2022 Peel Regional Official Plan identifies the Secondary Plan Area as part of the Urban System and Bolton Residential Expansion Settlement Area (Schedule E1) and designates it Employment Area (Schedule E4)

*8.1 The Natural Heritage System lands within the Humber Station Employment Area are designated as Natural Features and Areas on Schedule XX. Lands designated Natural Features and Areas shall be in accordance with the policies of Section 13 of this Plan as well as the following specific policies. The Subject Property is located within the General Employment Area and Natural Features and Areas (**Map A**).*

8.4 The Natural Features and Areas designation within the Secondary Plan Area includes a conceptual drainage realignment in the central portion of the plan and will require an EIS to the satisfaction of the Town prior to consideration of its refinement and/or relocation.



Map A. The Humber Station Employment Area Draft Secondary Plan Schedule XX Land Use Plan depicts the Subject Property (red boundary) within the General Employment Lands (purple layer) and Natural Features and Areas (green layer).

According to Section 8.2 *The refined development limit will be set through the completion of an EIS to the satisfaction of the Town of Caledon and based on the current planning policies of this Plan, relevant Region of Peel, Provincial and Conservation Authority policies.*

Section 8.3 of the secondary plan states:

Where appropriate and as permitted in accordance with applicable Provincial policies, the refined development limit may result in alterations, additions, eliminations or relocations of the Natural Features and Areas, which will not require amendment to this Plan. Exact limits will be implemented through zoning.

As per section 8.4 The Natural Features and Areas designation within the Secondary Plan Area includes a conceptual drainage realignment in the central portion of the plan and will require an EIS to the satisfaction of the Town prior to consideration of its refinement and/or relocation.

3.5 Toronto and Region Conservation Authority

The Subject Property falls within the jurisdiction of the TRCA (**Map E**). Under the newly updated and consolidated Conservation Authorities Act (Government of Ontario, 2023), and its associated Ontario Regulation 41/24 (*Prohibited Activities, Exemptions and Permits*), TRCA regulates activities in natural and hazardous areas (i.e. watercourses, flood plains, steep slopes, valley lands, meander belts, shoreline of Lake Ontario, wetlands and hazardous land).



Map E. TRCA Regulated Area mapping depicts the Subject Property (approximately boundaries in red) within TRCA regulated lands (yellow layer).

Under section 28 of the Conservation Authorities Act (2024). The following activities are not permitted within the area of jurisdiction of an authority:

1. *Activities to straighten, change, divert or interfere in any way with the existing channel of a river, creek, stream or watercourse or to change or interfere in any way with a wetland.*
2. *Development activities in areas that are within the authority's area of jurisdiction and are,*
 - i. *hazardous lands,*
 - ii. *wetlands,*
 - iii. *river or stream valleys the limits of which shall be determined in accordance with the regulations,*
 - iv. *areas that are adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to an inland lake and that may be affected by flooding, erosion or dynamic beach hazards, such areas to be further determined or specified in accordance with the regulations, or*
 - v. *other areas in which development should be prohibited or regulated, as may be determined by the regulations. 2017, c. 23, Sched. 4, s. 25; 2022, c. 21, Sched. 2, s. 7 (1).*

Under section 28.1 (1):

An authority may issue a permit to a person to engage in an activity specified in the permit that would otherwise be prohibited by section 28, if, in the opinion of the authority,

- (a) *the activity is not likely to affect the control of flooding, erosion, dynamic beaches or unstable soil or bedrock;*
- (b) *the activity is not likely to create conditions or circumstances that, in the event of a natural hazard, might jeopardize the health or safety of persons or result in the damage or destruction of property; and*
- (c) *any other requirements that may be prescribed by the regulations are met. 2017, c. 23, Sched. 4, s. 25; 2022, c. 21, Sched. 2, s. 9 (1).*

TRCA Regulated Area lands exist within the limits of the Site, in association with watercourse and wetlands. Development within these areas will be subject to approvals and permitting from the TRCA.

3.6 Endangered Species Act

Species designated as Endangered or Threatened by the Committee on the Status of Species at Risk in Ontario (COSSARO) are listed as Species at Risk (SAR) in Ontario (Government of Ontario, 2007). These SAR and their habitats (e.g., areas essential for breeding, rearing, feeding, hibernation, and migration) are afforded legal protection under the *Endangered Species Act, 2007* (ESA). This *Act* is administered by the Ministry of Environment, Conservation and Parks (MECP).

The protection provisions for species and their habitat within the ESA apply only to those species listed as Endangered or Threatened on the SARO list, being *Ontario Regulation 230/08* of the ESA. Species listed as Special Concern may be afforded protection through policy instruments respecting significant wildlife habitat (e.g., the PPS) as defined by the Province, other relevant authority, or other protections contained in Official Plans.

4. Existing Conditions

4.1 Aquatic Assessment

Building off of the aquatic habitat information collected by GEI as part of the 2020 CEISMP report, the aquatic habitat conditions within the Subject Property were surveyed on April 13 and May 18, 2023 by Palmer staff. Both site visits were completed alongside GEI technical staff members.

The aquatic environment within the Subject Property is divided between two subwatersheds, both located within the larger West Humber River watershed. The western portion of the property drains westwards towards the Gore Road Tributary located on the west side of Humber Station Road, and the eastern portion of the Subject Property drains east and southeast towards the Clarkway Drive Tributary. The Clarkway Drive Tributary straddles the eastern limit of the Subject Property, overlapping with the northern-most property edge before meandering offsite.

Through background review, the Gore Road Tributary arises from headwater areas located north of Healey Road, within a predominantly agricultural setting with commercial and industrial land uses to the east. From its headwaters, the Gore Road Tributary traverses an agricultural mosaic, and intersects with Humber Station Road and Gore Road before finally emptying into the West Humber River just north of the Highway 407 corridor. At Castlemore Road, land use abruptly changes from an agriculturally-dominated landscape to urbanized residential. Immediately upstream (~500 m) of its confluence with the West Humber River, the Gore Road Tributary confluences with the Clarkway Drive Tributary (Aquafor Beech Limited., 2016)

Differing from the Gore Road Tributary, the Clarkway Drive Tributary arises with a headwater area that is entirely positioned within existing development; mostly commercial and industrial land uses centred around the Coleraine Drive and Healey Road intersection. From there, the Clarkway Drive Tributary runs somewhat parallel to the Goreway Drive Tributary, traversing an agricultural mosaic, until Castlemore Road where the predominant land-use transitions to urbanized residential. North of the Highway 407 corridor, the Clarkway Drive Tributary confluences with the Gore Road Tributary before emptying into the main branch of the West Humber River, upstream of the Claireville Reservoir (Aquafor Beech Limited., 2016) .

4.1.1 Headwater Drainage Features

Within the Subject Property, the aquatic habitat is composed predominantly Headwater Drainage Features (HDFs) within the Gore Road Tributary and Clarkway Drive Tributary subwatersheds occupying the west and east lands, respectively. Following feature labels provided in GEI's Humber Station CEISMP, features segments HDF-1b (partly), HDF-2a, HDF-2-1a, HDF-2-2a, HDF-3a, HDF-3-1a, HDF-3b, HDF-3c, HDF-3d, HDF-3e, HDF-3-2a, HDF-6a, HDF-7a, HDF-7-1a, HDF-8c (partly), HDF-8d, HDF-8c-2a-2, and HDF14a are located within the Subject Property (**Figure 2**). The various HDF feature segments, and their respective management recommendations assigned by GEI, are provided in **Table 2**. Within the HDF-3b feature is an elongated pond feature which provides more extensive aquatic habitat potential, as well as other ecological habitat functions. Besides the aquatic habitat provided along HDF features, a portion of the main stem of the Clarkway Drive Tributary also straddles the eastern property limit.

Table 2. HDF Segments within the Subject Property and GEI Assigned Management Recommendations

| HDF Segment | Management Recommendation (as assigned by GEI in the 2023 CEISMP) |
|-----------------|---|
| HDF-1b (partly) | Mitigation |
| HDF-2a | Mitigation |
| HDF-2-1a | No Management |
| HDF-2-2a | No Management |
| HDF-3a | Conservation |
| HDF-3-1a | No Management |
| HFD-3b | Protection |
| HDF-3c | Protection |
| HDF-3d | Conservation |
| HDF-3e | Protection |
| HDF-3-2a | No Management |
| HDF-6a | No Management |
| HDF-7a | Mitigation |
| HDF-7-1a | No Management |
| HDF-8c (partly) | Mitigation |
| HDF-8d | Mitigation |
| HDF-8c-2 | Mitigation |
| HDF-14a | No Management |

As outlined in greater detail in Section 5, there is a development focus to the main HDF segments associated with the HDF-3 and HDF-8 drainage networks, as a result, the focus of Palmer’s 2023 site surveys was focused along these HDF areas. For the remainder of HDF segments that are located outside of the main HDF-3 and HDF-8 drainage segments, HDF information documented by GEI in 2020 has been brought forward into this EIS. No Conservation or Protection segments were identified as part of the segments associated with HDF-1, HDF-2, HDF-6, HDF-7 or HDF-14, nor the smaller drainage segments of HDF-3 and HDF-8, including segments HDF-3a, HDF-3-1a, and HDF-3-2a, as captured by GEI and outlined in **Table 2** above. Results of the 2023 Palmer site surveys for the main HDF-3 and HDF-8 drainage networks are outlined in **Table 3** below. Results of Palmer site surveys are then compared alongside GEI’s 2020 site information, and a final management recommendation is then assigned.

The main segments of the HDF-3 and HDF-8 drainage areas were surveyed by Palmer staff on April 13, and May 18, 2023 alongside GEI technical staff members.

Table 3. HDF Segments within the Subject Property and GEI and Palmer-Assigned Management Recommendations

| HDF Segment | Hydrologic Function | Riparian Function | Fish and Fish Habitat Function | Terrestrial Function | Management Recommendation (as assigned by GEI in the 2023 CEISMP from 2020 Data) | Management Recommendation (as assigned by Palmer in the 2024 EIS from 2023 Data) |
|-----------------|---|-----------------------|--------------------------------|----------------------|--|--|
| HDF-3a | Valued, FC-4 (First Visit), FC-4 (Second Visit) | Valued (Meadow ditch) | Contributing | Valued | Conservation | Conservation |
| HDF-3b | Valued (Ponded area), FC-2 for both visits | Important (Wetland) | Important | Important | Protection | Protection |
| HDF-3c | Valued, FC-4 (First Visit), FC-2 (Second Visit) | Valued (Meadow) | Valued | Important | Protection | Protection |
| HDF-3d | Contributing, FC-4 (First Visit), FC-1 (Second Visit) | Limited (Cropland) | Valued | Contributing | Conservation | Conservation |
| HDF-3e | Valued, FC-4 (First Visit), FC-2 (Second Visit) | Important (Wetland) | Valued | Important | Protection | Protection |
| HDF-8c (partly) | Limited, FC-1 (First Visit), FC-1 (Second Visit) | Limited (Cropland) | Contributing | Limited | Mitigation | No Management Required (to be confirmed through agency consultation) |
| HDF-8d | Limited, FC-1 (First Visit), FC-1 (Second Visit) | Limited (Cropland) | Contributing | Limited | Mitigation | No Management Required (to be confirmed through agency consultation) |
| HDF-8c-2 | Limited, FC-1 (First Visit), FC-1 (Second Visit) | Limited (Cropland) | Contributing | Limited | Mitigation | No Management Required (to be confirmed through agency consultation) |

For the most part, Palmer’s onsite review of the HDF features was interpreted similarly to results previously collected by GEI. Management recommendation associated with the HDF-3 segments were similar to those outlined by GEI in the 2023 CEISMP document, while the management recommendations associated with the HDF-8 segments were identified as No Management by Palmer, and as Mitigation by GEI as part of the CEISMP. This difference in management recommendations is due to fact that the HDF-8 segments within the Subject Property were found to be surface dry by early April 2023, and thus provide limited hydrologic function. Factoring in the limited riparian, fish and terrestrial habitat functions of the HDF-8 segments which traverse active agricultural lands, a management recommendation of No Management is considered appropriate. HDF feature locations with their associated management recommendations are outlined in **Table 3** and shown on **Figure 2**.

4.1.2 Other Aquatic Features

HDF-3b Pond

Besides HDFs, two other aquatic habitat features are located within the Subject Property. The first exists along the HDF-3b segment, and includes a small, elongated pond feature which appears to be the result of backwatering from a small beaver dam, constructed just east of the Humber Station Road corridor (**Photo 1**). Later, in June of the same year (2023), the dam was broken and although the wetland likely had lower water levels it was still a feature with notable ponded standing water. Evidence of a concrete flow management structure was observed next to the beaver dam but did not appear to be functioning in any capacity during the 2023 site visits. From onsite review, the ponded area appeared to be fairly shallow (<2 m in most locations) with well-vegetated banks on all sides. During the May 2023 site visit, the pond was being utilized by various wildlife, including beaver and birds, and provides suitable habitat for amphibians and turtles (as confirmed by surveys). The upstream portion of the ponded area included submerged terrestrial vegetation including Reed-Canary grass.



Photo 1. Beaver dam (>1m in height) at the downstream extent of HDF segment HDF-3b.

Clarkway Drive Tributary

Besides the ponded area, the other aquatic habitat feature within the Subject Property was a portion of the Clarkway Drive Tributary which overlaps the northern-most portion of the property parcel. As outlined in the 2023 CEISMP, the Clarkway Drive Tributary is approximately 1.35 m in wetted width, with an average wetted depth of 0.1 m. Bankfull measurements are approximately 3.46 m in width and 0.56 m in depth. The riparian area is composed of predominantly Reed Canary Grass with bulrushes (*Scirpus sp.*) and cattails (*Typha sp.*) scattered throughout. Generally, the channel morphology is straight with occasional tight meanders, and instream habitat includes runs and riffles. Channel substrates are primarily silt and clay with gravel (GEI Consultants Ltd., 2023).



Photo 2. The general riparian corridor area of the Clarkway Drive Tributary

4.1.3 Aquatic Species at Risk

It should be noted that GEI, as illustrated in their CEISMP reporting, identified the Clarkway Drive Tributary, its associated riparian wetland communities, and HDF-8, as being Contributing Redside Dace habitat. GEI noted that from DFO's aquatic habitat mapping, Occupied Redside Dace habitat is mapped for a tributary to the West Humber River approximately 4.9 km downstream of the CEISMP Study Area (GEI Consultants Ltd., 2023). The CEISMP Study Area, and thus the Subject Property of this report, are located within TRCA's Fish Management Zone 7, which includes target species of Redside Dace, Rainbow Darter and Smallmouth Bass. Palmer/SLR plans to contact MECP to further discuss the status of this Species at Risk on the property.



LEGEND

- Terrestrial Crayfish Chimney (GEI 2023)
 - Watercourse ¹
 - Top of Slope + 10 m ²
 - Top of Bank + 10 m ²
 - Dripline ²
 - Creek Bank ²
- HDF Management Recommendations**
- Conservation
 - Protection
 - No Management (To be confirmed with MECP)
 - Assessed as part of the 2023 GEI CEISMP
- Ecological Land Classification (ELC)**
- Ecological Land Classification (ELC)
 - Significant Wetland (GEI Consultants Ltd.) ²
 - Other Wetland
 - Subject Property

ELC DESCRIPTIONS

- AG – Active agricultural
- AN – Anthropogenic (former garden)
- CUM1-1 – Dry-Moist Old Field Meadow
- CUT1 – Mineral Cultural Thicket (Buckthorn)
- CUW1 – Mineral Cultural Woodland
- FOD8 – Fresh-Moist Deciduous Forest (Basswood)
- HE – Hedgerow
- MAS2-1 – Cattail Mineral Shallow Marsh
- MAM2-2 – Reed -canary Grass Mineral Meadow Marsh
- SAS1-1 – Pondweed Submerged Shallow Aquatic
- SWT2-2 – Willow Mineral Thicket Swamp



0 50 100 150
METRE SCALE

North American Datum 1983
Universal Transverse Mercator Projection Zone 17

Scale: 1:4,500
Page Size: Tabloid (11 x 17 inches)

Drawn: RS
Checked: RC
Date: Nov 21, 2024

Source Notes: Imagery (2024) provided by ESRI Map Services. Contains information licensed under the Open Government License – Ontario.

| | |
|-----------------|--|
| CLIENT | Prologis |
| PROJECT | Humber Station Road |
| TITLE | Existing Environmental Conditions |
| REF. NO. | 2008102-2-5 |
| | |
| Figure 2 | |

4.2 Ecological Land Classification and Flora

The Subject Property is dominated by actively cultivated fields (**Photo 3**), with row crops of soybean and corn. Natural areas are generally small and often disturbed by cultural use. There is a linear system of marsh, meadow marsh, and upland meadows along the drainage feature that is just east of the subject property (i.e. Clarkway Tributary). There are also three small wetlands, including a pond with border of natural vegetation on the subject property.



Photo 3. The majority of the Subject Property is agricultural row crop (June 2022).

The following vegetation community descriptions are from the GEI CEISMP (2023) with some Palmer additions and edits.

| ELC Type | Community Description |
|--|---|
| Forest | |
| Deciduous Forest | |
| FOD8 Fresh-Moist Basswood Deciduous Forest | <ul style="list-style-type: none"> A young regenerating community of Basswood (<i>Tilia americana</i>), originating mostly from stump resprouts. Thick tall shrub layer of Common Buckthorn (<i>Rhamnus cathartica</i>), with occasional Choke Cherry (<i>Prunus virginiana</i>). Moderately developed herb layer, which includes Virginia Strawberry (<i>Fragaria virginiana</i>). |
| Cultural | |
| CUM1-1 Dry-Moist Old Field Meadow | <ul style="list-style-type: none"> A relatively diverse community of native species and exotics consisting of herbaceous plants and grasses. The species include: Smooth Brome (<i>Bromus inermis</i>), Tall Goldenrod (<i>Solidago altissima</i>), Common Milkweed (<i>Asclepias syriaca</i>). Canada Thistle (<i>Cirsium arvense</i>), Quack Grass (<i>Elymus repens</i>), New England Aster (<i>Symphotrichum novae-angliae</i>), Chickory (<i>Cichorium intybus</i>), Orchard Grass (<i>Dactylis glomerata</i>), are likely also present along with other species. |
| CUT1 Buckthorn Cultural Thicket | <ul style="list-style-type: none"> Open to dense community of Common Buckthorn, with occasional presence of young Green Ash (<i>Fraxinus pennsylvanica</i>) and Basswood. Ground cover of mostly old field meadow grasses and forbs. |
| CUW1 Mineral Cultural Woodland | <ul style="list-style-type: none"> Former farmstead area (together with an old field community). Trees include Norway Maple (<i>Acer platanoides</i>) |
| AG Agricultural | <ul style="list-style-type: none"> Row crops of soybean and corn |
| HR Hedgerow | <ul style="list-style-type: none"> Woody hedgerows are present along some subject property boundaries. Woody species include Common Buckthorn and other deciduous species. |
| AN Anthropogenic | <ul style="list-style-type: none"> This small area was a former farm or residence and consists of a few trees and a meadow area. |
| Wetlands and Shallow Water | |
| MAM2-2 Reed-canary Grass Mineral Meadow Marsh | <ul style="list-style-type: none"> These communities are dominated by Reed-canary Grass (<i>Phalaris arundinacea</i>), but other species are also present, such as Narrow Leaved Cattail (<i>Typha angustifolia</i>), Panicked Aster (<i>Symphotrichum lanceolatum</i>) and others. (Photo 4 and 5). This community is present in two of the three wetlands on-site. |
| MAS2-1 Cattail Mineral Shallow Marsh | <ul style="list-style-type: none"> The tall herb layer is dominated by Glaucous Cattail (<i>Typha x glauca</i>) and Narrow-leaved Cattail (<i>Typha angustifolia</i>). It is present along the Clarkway Tributary, and intermixed with meadow marsh in the north wetland (Photo 5). |
| SAS1-1 Pondweed Submerged Shallow Aquatic | <ul style="list-style-type: none"> This pond community is dominated by Sago Pondweed (<i>Stuckenia pectinata</i>), with additional occurrences of Small Pondweed (<i>Potamogeton pusillus</i>), and Lesser Duckweed (<i>Lemna minor</i>), and is present in the wetland close to Humber Station Road (Photo 4). |
| SWT2-2 Willow Mineral Thicket Swamp | <ul style="list-style-type: none"> Shrub thicket bordering a shallow aquatic community, composed primarily of Sandbar Willow (<i>Salix interior</i>), and Peach-leaved Willow (<i>Salix amygdaloides</i>) Herbaceous species consisted primarily of Reed Canary Grass, Purple Loosestrife (<i>Lythrum salicaria</i>), Narrow-leaved Cattail, Red-stemmed Spikerush (<i>Eleocharis erythropoda</i>), and Panicked Aster. |



Photo 4. Wetland pond (SAS1-1) surrounded by Reed-canary Grass Meadow Marsh (MAM2-2) (June 2023).



Photo 5. Marsh wetland (MAS2-1/MAM2-2) at north end with Buckthorn Thicket (CUT1) on left side (June 2023).

Several floral species were noted by Palmer when on the property for other purposes (**Appendix A**). Additionally, GEI recorded all floral species in the larger Secondary Plan Study Area (**Appendix B**). Our observations were that the property contained a typical mixture of species for such a disturbed site. Some species were native, while others were non-native; in the larger GEI Study Area 52% were non-native. A similar percentage would be expected on the Subject Property.

None of the species observed by Palmer nor GEI were Species at Risk, nor were any provincially rare (S1 to S3). In the GEI Study Area only two species were S4 (apparently secure in Ontario) with the remainder S5 (secure in Ontario). No species in the GEI Study Area had a coefficient of conservatism value above 6. 'Higher values of the coefficients of conservatism, on the scale of 1–10 (10 high), indicate species that are more “conservative” (or ecologically sensitive), including those least associated with anthropogenic disturbance, least aggressive, least able to spread, and most confined to particular natural habitat' (Catling 2013).

Locally rare species recorded by GEI on the subject property included:

- Pennsylvania Smartweed (*Persicaria pensylvanica*) – occasional on the shore of SAS1-1;
- Catchweed Bedstraw (*Galium aparine*) – occasional in FOD8;
- Peach-leaved Willow (*Salix amygdaloides*) – in SWT2-2;
- Sandbar Willow (*Salix interior*) – in SWT2-2;
- Small Pondweed (*Potamogeton pusillus*) – common in SAS1-1.

4.3 Breeding Amphibians

Palmer conducted three amphibian surveys during the spring months (April, May, June) of 2023, targeting the wetland communities located within the Subject Property. A summary of the surveys is provided in **Table 4** and monitoring station locations are shown on **Figure 2**. Amphibian activity was not recorded during the first round of amphibian surveys. During the remainder of surveys, the 'pond' wetland (SWT2-2/MAM2-2/SAS1-1) near Humber Station Road, and the marsh associated with Clarkway Tributary had low amounts of amphibian activity. The former community had the highest diversity of species recorded in May, with three different species recorded. Low numbers of all species were recorded. The Subject Property does not support breeding amphibian habitat SWH. Amphibian activity and diversity recorded are too low to meet the threshold for this.

Table 4: Breeding Amphibian Survey Results (2023)

| Community Type | Station Number | April 27, 2023 | May 24, 2023 | June 23, 2023 |
|-----------------------------|------------------|---|--|---|
| Weather Conditions: | | 7°C, Cloud cover <10%, Beauford Wind Scale No.1 | 15°C, Cloud cover 75%, Beauford Wind Scale No.0 | 22°C, Cloud cover 20%, Beauford Wind Scale No.0 |
| SWT2-2/MAM2-2/SAS1-1 | Station 1 | No calls | American Toad, Code: 1 ² Gray Treefrog, Code: 1 ¹ | Green Frog, Code: 1 ¹ |

| Community Type | Station Number | April 27, 2023 | May 24, 2023 | June 23, 2023 |
|---|------------------|----------------------------------|-------------------------------------|---------------|
| Wetland 'Pond' near Humber Station Road | | | | |
| MAS2-1/MAM2-2 Wetland Adjacent to Woodlot (FOD8) | Station 2 | No calls | No calls | No calls |
| MAS2-1 Wetland associated with Clarkway Tributary (north) | Station 3 | No calls | American Toad, Code: 1 ¹ | No calls |
| MAS2-1 Wetland associated with Clarkway Tributary (central) | Station 4 | No calls (dry, no water present) | No calls | No calls |

Note:

The calling codes are designated according to the Amphibian Road Call Counts (Gartshore *et al.* 2004). They are as follows:

- 1 – Individuals of one species can be counted, calls are not overlapping; second number denotes number of individuals.
- 2 – Calls of one species are overlapping; second number denotes estimated number of individuals.
- 3 – Full chorus of one species, calls continuous and overlapping, individuals not distinguishable.

GEI Observations

GEI consultants conducted three amphibian surveys during the spring months (April, May, June) of 2017, targeting the wetland communities located within the Subject Property. A summary of the surveys is provided in **Table 5** and monitoring station locations are shown in the 2023 CEISMP report (GEI Consultants, 2023). Note that the first column refers to the type of habitat the survey station is within and not the calling amphibians; we have extrapolated to determine the latter. Low levels of amphibian calling were recorded in the 'pond' wetland near Humber Station Road (Station 15 in Table 5) as well as the wetland beside the woodlot (Palmer MAS2-1/MAM2-2 and GEI station 10). No calling amphibians were recorded at other locations on site. The 'pond' wetland had the highest diversity of species recorded with three species present. No early species were recorded during the surveys and American Toad was the most widespread species recorded. With regard to SWH, the Subject Property does not support breeding amphibian habitat. Based on GEI data, amphibian activity and diversity recorded are too low to meet the threshold to be SWH.

Table 5: GEI Breeding Amphibian Survey Results (2017)

| Survey Station Community Type | Station # | April 24, 2017 | May 17, 2017 | June 22, 2017 |
|--|-------------------|----------------|-------------------------|---------------------------|
| FOD8 Western portion of the property | Station 1 | No calls | No calls, dry no water. | N/A |
| FOD8 | Station 2 | No calls | No calls, dry no water. | N/A |
| FOD8 | Station 3 | No calls | No calls, dry no water. | N/A |
| RES | Station 10 | No calls | No calls | Green Frog 1 ⁵ |

| Survey Station Community Type | Station # | April 24, 2017 | May 17, 2017 | June 22, 2017 |
|--|-------------------|------------------------------|---|---------------------------|
| Western corner of property near Humber Stn Rd (Observing off-site garden pond) | | | | |
| MAM2-2 Adjacent to FOD8 | Station 11 | No calls | No calls, dry no water. | N/A |
| MAS2/MAM2 Northern corner of property | Station 12 | No calls | No calls, dry no water. | N/A |
| RES Southwestern portion of property | Station 13 | No calls | No calls, dry no water. | N/A |
| SAS1-1 Along Humber Station Road (assumed recorded off-site) | Station 14 | American Toad 1 ² | American Toad 1 ³ | No calls |
| SAS1-1 North of Humber Station Road, adjacent to open pond | Station 15 | No calls | American Toad 1 ¹ Northern Leopard Frog 1 ¹ | Green Frog 1 ⁴ |

(GEI Consultants, 2023)

Note:

The calling codes are designated according to the Amphibian Road Call Counts (Gartshore *et al.* 2004).

They are as follows:

1 – Individuals of one species can be counted, calls are not overlapping; second number denotes number of individuals.

2 – Calls of one species are overlapping; second number denotes estimated number of individuals.

3 – Full chorus of one species, calls continuous and overlapping, individuals not distinguishable.

Based on Palmer and GEI data combined, frogs were heard calling from the a few locations stations in low numbers. As might be expected given the habitat, the 'pond' wetland (SWT2-2/MAM2-2/SAS1-1) near Humber Station Road contained the greatest diversity of species (American Toad, Northern Leopard Frog, Green Frog and Gray Treefrog). Only the Clarkway Tributary contained minimal numbers of Amerian Toad.

These are the only locations on the Subject Property with breeding amphibians. With regard to SWH, the Subject Property does not support breeding amphibian habitat. Amphibian activity and diversity recorded are too low to meet the threshold to be SWH.

4.4 Breeding Birds

A total of 34 breeding season bird species were observed – five of these were foraging on-site only. (**Appendix C**). The majority of birds observed were disturbance-tolerant species that are frequently found in rural areas (hedgerows, edges, gardens, fields etc.) and are common and widespread in southern Ontario. The four most abundant species in order of abundance were: Song Sparrow (*Melospiza melodia*), Red-winged Blackbird (*Agelaius phoeniceus*), American Robin (*Turdus americanus*), and American Goldfinch (*Carduelis tristis*). Also common were Savannah Sparrow (*Passerculus sandwichensis*), Killdeer (*Charadrius vociferus*) and Horned Lark (*Eremophila alpestris*). This is not surprising given the expansive agricultural fields on the subject property. All three species are common in southern Ontario where agricultural row-crop fields are large and dominant.

Note that Savannah Sparrow is considered an area-sensitive open-land species. Area-sensitive species are those which either require larger patches of habitat (whether grassland or forest) in which to breed or are more productive in larger patches of habitat. Despite being area-sensitive, Savannah Sparrow is a very common species in southern Ontario in many types of agricultural and old fields.

Most of the bird species recorded in the small forest (FOD8) at the northern edge of the Subject Property would be considered edge or shrubland species. This is not surprising given the small size of the forest. Only one species, Eastern Wood-Pewee (*Contopus virens*), observed would be considered by Palmer to be a forest species. However, it may not have been a breeding species as it was observed at the end of May only and may have been a migrant. GEI did not observe pewee in this location in 2017. Black-capped Chickadees (*Poecile atricapillus*) seen in hedgerows may have nested in this woodland.

None of the three wetlands on the property contained many wetland-specific bird species. Only a few common wetland species such as Spotted Sandpiper (*Actitis macularia*), Swamp Sparrow (*Melospiza georgiana*) and Common Yellowthroat (*Geothlypis trichas*) were recorded in one or more of the wetlands (**Appendix C**).

The wetland in the northeastern corner however is part of a larger off-site linear wetland and riparian corridor composed of marshes and old field habitat primarily. Thus, both Palmer and GEI observed a other, mainly common, species off-site using this corridor. Additionally, species thought to primarily be associated with this corridor were recorded foraging or moving across the Subject Property fields. For example, three non-breeding species of swallow - Tree (*Tachycineta bicolor*), Barn (*Hirundo rustica*) and Rough-winged Swallow (*Stelgidopteryx serripennis*) - were observed on the Subject Property and a Northern Harrier (*Circus hudsonius*) (S4, L2) flew across the property. This uncommon raptor species of large grasslands could have been nesting in the off-site corridor, although there is no certainty to this. Also, a Clay-Coloured Sparrow (*Spizella pallida*), and uncommon species of some shrublands, was recorded off-site in this corridor.

No provincially ranked S1 through S3 species, and no known regionally rare species were observed. Two species observed are ranked as L3 by TRCA; these are Great Blue Heron (*Ardea herodias*) and Vesper Sparrow (*Pooecetes gramineus*). The heron was not a breeding species (which the rank primarily refers to) – it was observed feeding in the pond wetland in June 2023. Vesper Sparrow is a less common species of very large agricultural fields.

An Upland Sandpiper (*Bartramia longicauda*) was observed by GEI in 2017 in agricultural fields just north of the Subject Property. This is an area-sensitive, uncommon species of large old fields and pastures. As the habitat was not suitable and it was not observed again, it was assumed to be a non-breeding bird.

4.1.1 Avian Species at Risk

Two breeding season, Special Concern birds were observed on the Subject Property. These were Barn Swallow and Eastern Wood-Pewee. The Barn Swallow no longer nests on the Subject Property (as buildings have been removed). As mentioned, one Eastern Wood-Pewee was observed in the small north woodland (FOD8) in late May. Another pewee was observed in the treed former garden area (CUW1) in the southwestern side of the property. This too was only recorded once in late May, so it is unknown if both were late migrants or infrequently singing breeding birds. Despite its status, Eastern Wood-Pewee is still a common species found in deciduous and mixed woodlands of many types and sizes.

GEI did not observe any other breeding Species at Risk on the subject property.

4.5 Incidental Wildlife Observation

The overall area primarily features agricultural lands, wetlands, and woodland. Natural Heritage Features extend off the Subject Property and would provide many habitat opportunities. However, with adjacent agriculture and industrial uses, wildlife present is expected to primarily consist of common, generalist and urban-adapted species such as Raccoon (*Procyon lotor*), and Skunk (*Mephitis mephitis*).

Wildlife incidentally observed during field surveys include Coyote (*Canis latrans*), Muskrat (*Ondatra zibethicus*), Red Squirrel (*Sciurus vulgaris*) and Green Frog (*Rana clamitans*).

4.6 Species at Risk Assessment

The ESA provides protection for species listed as Endangered or Threatened in Ontario, including their habitat. The Species at Risk in Ontario (SARO) List also identifies species of Special Concern that may become Threatened or Endangered in the future. Species of Special Concern and their habitats are not protected under the ESA, rather through designation of Significant Wildlife Habitat.

Prior to 2023 field investigations, a background review was completed for potential SAR habitat opportunities. The NHIC database and other relevant sources were reviewed for SAR records. The Subject Property was screened for potential SAR habitat opportunities by comparing habitat preferences of the species identified from the background and site records against current site conditions. This SAR habitat assessment can be found in **Appendix D**, providing a detailed description of each species' habitat, as well as a discussion of habitat suitability within and surrounding the Subject Property. The following 16 SAR had the potential to occur on the Subject Property, based primarily on both past records in the general vicinity and our professional experience:

- Birds (8)
 - Acadian Flycatcher (*Empidonax virescens*), Endangered
 - Barn Swallow (*Hirundo rustica*), Special Concern
 - Bobolink (*Dolichonyx oryzivorus*), Threatened
 - Chimney Swift (*Chaetura pelagica*), Threatened

- Eastern Meadowlark (*Sturnella magna*), Threatened
- Eastern Whip-poor-will (*Antrostomus vociferus*), Threatened
- Eastern Wood-pewee (*Contopus virens*), Special Concern
- Least Bittern (*Ixobrychus exilis*), Threatened
- Herptiles (3)
 - Eastern Milksnake (*Lampropeltis triangulum*), Special Concern
 - Snapping Turtle (*Chelydra serpentina*), Special Concern
 - Western Chorus Frog (*Pseudacris triseriata*), Threatened (COSEWIC & SARA)
- Mammals (4)
 - Tri-colored Bat (*Perimyotis subflavus*), Endangered
 - Eastern Small-footed Myotis (*Myotis leibii*), Endangered
 - Little Brown Myotis (*Myotis lucifugus*), Endangered
 - Northern Myotis (*Myotis septentrionalis*), Endangered
- Insect (1)
 - Monarch (*Danaus plexippus*), Special Concern

Of these, the only species observed on or near the Subject Property were Eastern Wood-pewee, Snapping Turtle and Monarch. There is no suitable habitat for many of the other species.

Eastern Wood-pewee (*Contopus virens*) is still a common species found in many types of deciduous and mixed forest, as mentioned previously. It is found in small and large forests across southern and central Ontario. The species was observed in two locations, FOD8 and CUW1. But may or may not be breeding based on time of observations. As a Special Concern species, habitat is discussed more in the assessment of SWH (Section 4.8). The other seven SAR bird species were either not observed during surveys and/or suitable habitat is not present within the Subject Property.

Snapping Turtle (*Chelydra serpentina*) was observed in the 'south pond' (SAS1-1/SWT2-2/MAM2-2). Therefore, the Subject Property presents suitable habitat. As a Special Concern species, habitat is discussed more in the assessment of SWH (Section 4.8).

Populations of several bat species have been in decline in recent years due to the spread of a fungal pathogen known as white nose syndrome. The four listed SAR bats were not recorded during GEI's acoustic surveys. Therefore, SAR bats are not present within the Subject Property.

Monarch Butterfly (*Danaus plexippus*) was not observed within the Subject Property. However, Monarch Butterfly was observed within the adjacent meadow marsh located to the east of the Subject Property. As a Special Concern species, habitat is discussed more in the assessment of SWH (Section 4.8).

4.7 Significant Wildlife Habitat Assessment

Significant Wildlife Habitat (SWH) can be difficult to appropriately determine at the site-specific level, as the assessment must incorporate information from a wide geographic area and consider other factors such as regional resource patterns and landscape effects. To help with site level assessments was completed based on a draft criteria and thresholds developed by the Region of Peel and Town of Caledon (NSE *et al.*, 2009) based on the MNRF's *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E* (Ontario Ministry of Natural Resources, 2015).

SWH is defined by the MNRF in the Significant Wildlife Habitat Technical Guide (Ontario Ministry of Natural Resources, 2000) and Natural Heritage Reference Manual (Ontario Ministry of Natural Resources, 2010) and includes the following categories:

- Seasonal Concentration Areas of Animals;
- Rare Vegetation Communities or Specialized Habitats for Wildlife;
- Habitats of Species of Conservation Concern; and
- Animal Movement Corridors.

Criteria for the identification of these features are provided in the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E* (OMNRF, 2015). These were used to screen wildlife habitat within the Subject Property for potential SWH (see **Appendix E** for full assessment). Based on the ELC ecosite, habitat screening and field surveys, Palmer and GEI have determined that there are SWH habitat for Habitat of Species of Conservation Concern: Terrestrial Crayfish and Special Concern and Rare Wildlife Species (two species within this category).

Terrestrial Crayfish: GEI observed terrestrial crayfish chimneys in three locations on the Subject Property at the interface of the north and east wetlands and the agricultural fields. These locations are shown on Figure 4a from the GEI CEISMP (**Appendix F** this report) Thus, they have been considered SWH and Palmer has carried this forward.

Special Concern and Rare Wildlife Species:

- Snapping Turtle: A Snapping Turtle was observed in the wetland containing the SAS1-1 (pond near Humber Station Road). This wetland (SAS1-1/SWT2-2/MAM2-2) has been considered SWH for this reason.
- Eastern Wood-Pewee: Single pewee's were observed in two locations (FOD8 and CUW1-1) early in the breeding season. These individuals may or may not have been breeding on site (they would generally be heard later in June if breeding). Regardless, if breeding, Palmer does not consider a single territory of pewee to be SWH since it is still a common species. Thus, there is no SWH for this species.
- Monarch: GEI considered the MAM2-10/MAM2-2 adjacent to the property on the east side as SWH due to observations of Monarch and presence of milkweed. Therefore, there is SWH for this species adjacent to the Subject Property (**Appendix F** for location).

4.8 Assessment of Other Significant Natural Features

This section discusses the presence and status of woodlands and wetlands on the subject property. There are no Areas of Natural and Scientific Interest nor valleylands on the Subject Property.

4.1.1 Woodlands

The Subject Property supports one woodland area located along the northwestern boundary (Fresh-Moist Deciduous Forest FOD8) (**Figure 2**) which has been identified for assessment. This woodland is also known as Woodland 2 in GEI reporting, as there is another woodland off-site in the larger CEISMP area. As aforementioned and reiterated below, the Town of Caledon considers significant woodlands as part of their Natural Heritage System. To assess whether this feature may be considered significant, the policies outlined in the Greenbelt Plan, the Region of Peel Official Plan (Table 1) and the Natural Heritage Reference Manual (Ontario Ministry of Natural Resources, 2010) have been reviewed, in addition to Town policy and discussion (by GEI).

It is our understanding that discussions, based on other locations in the jurisdiction, occurred between GEI and the Town of Caledon staff regarding the inclusion of the thicket as part of the woodland. Both GEI and SLR believe from an ecological standpoint that the buckthorn thicket area on the southeast side of this woodland should not be included in the woodland boundary. This area is shown as CUT1-7 Buckthorn Cultural Thicket and CUM1-1 Dry-Moist Old Field Meadow on GEI mapping, and CUT1 Mineral Cultural Thicket (Buckthorn) on SLR figures. The reason that GEI and SLR would have excluded this area was that it was an ELC thicket community, it is dominated by a species we consider a shrub, and that the shrub species is non-native and considered very invasive. However, the Town determined that this habitat type should be part of an adjacent woodland because they consider the species a tree and that the stem density count was over 100 stems per hectare. While we disagree with this inclusion we have nonetheless provided for compensation for a proposed partial removal of this thicket/woodland area.

Region of Peel OP

As per the Region's OP, significant woodlands are considered components of the Core Areas of the Greenlands System. Woodlands that are included as part of the Core Area, and considered 'significant', are mapped in the OP's Schedule C-2 and are considered "ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history". The Region OP defines relevant criteria and thresholds for the identification of Core, Natural Areas and Corridors (NAC) Woodlands in Table 1.

The recommended criteria / standards for the evaluation of significant woodlands are the following:

1. Woodland Size (0.5 ha or greater, based on the total forested area in the regional landscape)
2. Woodland Age (based on both woodland size and presence of native trees older than 100 years);
3. Significant Linkage function (based on woodland linkage to other significant features in the regional landscape);

4. Woodland Proximity (based on both woodland size and proximity to other significant features that support significant ecological relationships);
5. Surface Water Quality (based on woodland size and proximity to a watercourse, surface water feature, or wetland that can be identified with the Ontario Wetland Evaluation System);
6. Significant Species and Communities (based on woodland size, as well as GRANKS or SRANKS species, species at risk identified by COSEWIC or COSSARO, and/or specific forested communities)

The woodland (including buckthorn thicket) is approximately 1.52 ha based on Palmer/SLR mapping, and 1.6 ha based on GEI mapping; the small difference being the exclusion or inclusion of the treed area at the end of the neighbouring property's garden. Based on the criteria above the Fresh-Moist Deciduous Forest (FOD8) GEI and Palmer is considered an NAC Significant Woodland because it:

- is >0.5 ha
- a drainage swale/watercourse (HDF3e) and its associated wetland (MAS2-1/MAM2-2) are located within 30 m of the woodland (GEI Consultants, 2023).

Part of the south edge of the woodland was delineated by TRCA with GEI in October 2021. This is shown on **Figure 2** and integrated into our ELC boundaries.

Town of Caledon

As shown in section 3.3 of this report, the Town of Caledon in the main defers to Region of Peel definition of Significant (i.e. Core) Woodlands. Furthermore, the definition of any Woodland in the 2024 Town OP is:

any area greater than 0.5 hectares that has:

- a) A tree crown cover of over 60% of the ground, determinable from aerial photography, or
- b) A tree crown cover of over 25% of the ground, determinable from aerial photography,

together with on-ground stem estimates of at least:

- i) 1,000 trees of any size per hectare, or
- ii) 750 trees measuring over five centimetres in diameter at breast height (1.37m), per hectare, or
- iii) 500 trees measuring over 12 centimetres in diameter at breast height (1.37m), per hectare, or
- iv) 250 trees measuring over 20 centimetres in diameter at breast height (1.37m), per hectare (densities based on the Forestry Act of Ontario, 1998)

and, which have a minimum average width of 40 metres or more measured to crown edges.

GEI studies indicate that this woodland meets the stem density given here (pers. communication). Also, the woodland is mostly about 70 m wide and at its widest is about 85 m wide, based on digital measurements.

4.8.2 Wetlands

GEI assessed the provincial significance of three wetlands using current Ontario Wetland Evaluation System (OWES) protocol (MNR 2022), and two of these were determined they meet the criteria for significance as per OWES (GEI Consultants, 2023). These wetlands are those associated with the

Clarkway Drive Tributary and the south 'pond' (**Figure 2**). Other wetland communities are too small (<2 ha) to meet the OWES size criteria.

The first wetland are the wetlands of the Clarkway Drive Tributary; the parts on the Subject Property have been classified as a Cattail Mineral Shallow Marsh Type (MAS2-1). These wetlands are associated with the Core Areas of the Greenlands System of Peel.

The wetland, that can be described as the pond near Humber Station Road, is an online pond fringed with wetland vegetation is present. This feature has been classified Pondweed Submerged Shallow Aquatic (SAS1-1) and surrounded by Willow Mineral Thicket Swamp and Reed Canary Grass Mineral Meadow Marsh (SWT2-2/MAM2-2).

The remaining wetland (MAS2-1/MAM2-2) does not meet the OWES size criteria and is not associated with the Core Areas of the Greenlands System of Peel.

Wetland boundaries are based on TRCA 2021 feature delineation with GEI.

4.8.3 Ecological Constraints

The natural features of the Subject Property are shown on **Figure 3**. Also shown are the buffers required by policy. If a feature has different buffers (or Minimum Vegetation Protection Zones) the greater has been shown. On the Subject Property, the buffers shown follow environmental policy which in summary is:

- Significant Woodland – 10 m (Town of Caledon, Humber Station Employment Area Secondary Plan, Official Plan Amendment XXX, Draft June 2024)
- Significant Wetlands – 30 m (TRCA 2014; (Town of Caledon, Humber Station Employment Area Secondary Plan, Official Plan Amendment XXX, Draft June 2024)
- Other Wetlands - 10 m (TRCA 2014; (Town of Caledon, Humber Station Employment Area Secondary Plan, Official Plan Amendment XXX, Draft June 2024)
- Warmwater Fish Habitat – 15 m (MNRF 2010)

Additionally, HDFs with some form of constraint are shown (see discussion in 4.1.3 and 6.1 regarding Redside Dace and HDF8). Buffers are discussed again in Section 6.2.2.1.

Note that some policy has changed since the CEISMP Phase 1 was prepared and which these buffers are based on (formerly TRCA 2014 and Town of Caledon Op 2018). TRCA is now guided by O. Reg. 41/24 and the Town of Caledon OP was updated in 2024, however these buffers are ecologically sound and are consistent with the Draft Secondary Plan, Section 17.16.7.2 which states that: *Adjacent land use development will minimize any impacts to the natural features and functions within the Environmental Policy Area designation through appropriate buffers as established through the CEISMP.*'



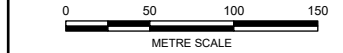
LEGEND

- Watercourse ¹
 - Top of Slope + 10 m ²
 - Top of Bank + 10 m ²
 - Creek Bank ²
 - HDF Management Recommendations**
 - Conservation
 - Protection
 - No Management (To be confirmed with MECP)
 - Setbacks**
 - 10 m from Core Woodland
 - 10 m from Other Wetland
 - 30 m from Significant Wetland
 - 15 m from Warmwater Fish Habitat
 - Core Woodland
 - Ecological Land Classification (ELC)
 - Significant Wetland (GEI Consultants Ltd.) ²
 - Other Wetland
 - Subject Property
- 1 - Land Information Ontario (LIO)
 2 - Staked on October 19, 2021 by Toronto Region Conservation Authority (TRCA) and GEI Consultants
- Note: Floodline is not shown

ELC DESCRIPTIONS

- AG – Active agricultural
- AN – Anthropogenic (former garden)
- CUM1-1 – Dry-Moist Old Field Meadow
- CUT1 – Mineral Cultural Thicket (Buckthorn)
- CUW1 – Mineral Cultural Woodland
- FOD8 – Fresh-Moist Deciduous Forest (Basswood)
- HE – Hedgerow
- MAS2-1 – Cattail Mineral Shallow Marsh
- MAM2-2 – Reed-canary Grass Mineral Meadow Marsh
- SAS1-1 – Pondweed Submerged Shallow Aquatic
- SWT2-2 – Willow Mineral Thicket Swamp

Key Map



North American Datum 1983
 Universal Transverse Mercator Projection Zone 17

Scale: 1:4,500
 Page Size: Tabloid (11 x 17 inches)

Drawn: RS
 Checked: RC
 Date: Nov 22, 2024

Source Notes: Imagery (2024) provided by ESRI Map Services. Contains information licensed under the Open Government License – Ontario.



| | |
|-----------------|---|
| CLIENT | Prologis |
| PROJECT | Humber Station Road |
| TITLE | Ecological Constraints and Buffers |
| REF. NO. | 2008102-3-2 |
| PART OF SLR | |
| Figure 3 | |

5. Proposed Development

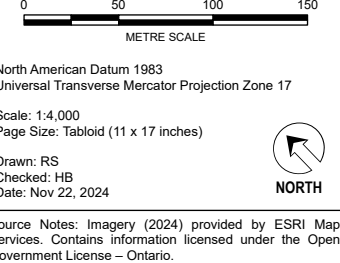
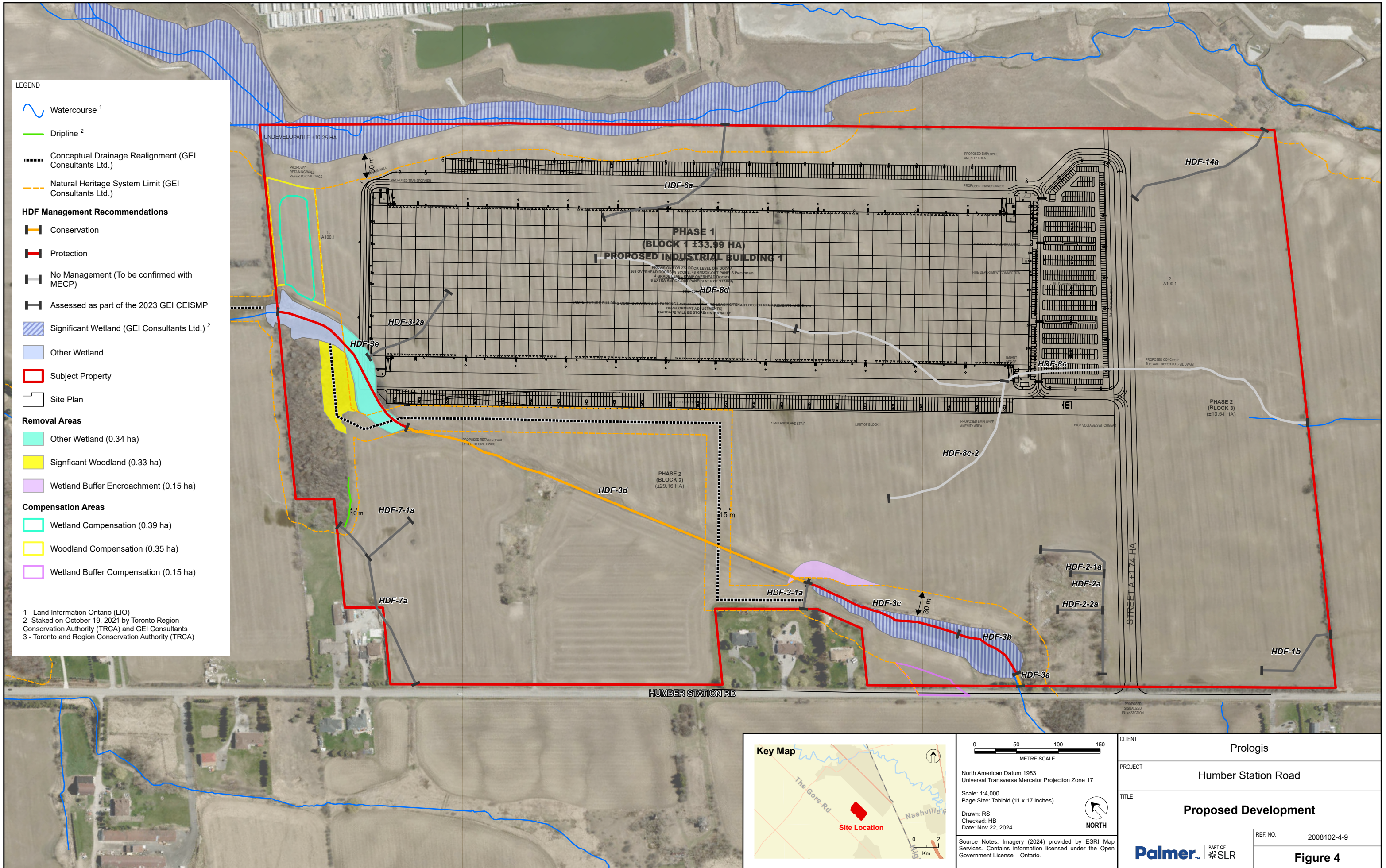
The proposed Phase 1 industrial development is composed of 368 trailer spaces, 172 docks and 681 parking spaces, one industrial slab-on grade building, loading areas, one access driveway from Humber Station Road and landscape areas (**Figure 4**). The development will be constructed in phases, including Phase 1A and B through 3 (C.F. Crozier & Associates Inc., 2024) however Phases 2 and 3 are not part of the current application. **Figure 4** shows Phase 1A.

Phase 1A of the proposed development includes the development of a 1-storey industrial building (Building 1) located on the northeast side of the Subject Property (C.F. Crozier & Associates Inc., 2024). The total gross area for Building 1 is 143,222 m². The Phase 1A area will also include: loading docks on the east and west sides of the building (parallel to Humber Station Road); trailer parking on the same sides; an internal drive aisle that wraps around the extents of the building; and a passenger vehicle parking lot south of the building. Site access for passenger vehicles and trucks is proposed via two driveway accesses from a proposed 'Street A' which will run east-west into the site area connecting with Humber Station Road.

Proposed water servicing and sanitary sewers are proposed to be located within Humber Station Road and future Street A (C.F. Crozier & Associates Inc., 2024)

The proposed stormwater management for the Phase 1A area includes the use of underground detention tanks to provide stormwater quantity control. Storm sewers internal to the site will capture and convey the runoff from the drive aisle, loading docks, and parking areas (C.F. Crozier & Associates Inc., 2024).. Portions of rooftop runoff will be conveyed to open-bottom infiltration tanks within the proposed drive aisle on either side of the building. Overflow from the infiltration tanks is proposed to be directed to the proposed detention tanks (C.F. Crozier & Associates Inc., 2024). Based on the results of the Palmer Hydrogeological Assessment Report (Nov 22, 2024), the proposed open-bottom infiltration tank Low Impact Development (LID) measures will fully maintain the pre- to post-development water balance (infiltration) for the Subject Property. While the results of the Hydrogeological Assessment concluded that the natural features on site were predominantly surface water supported, any minor groundwater contribution has been mitigated and maintained.

A realignment of drainage feature HDF3d and part of HDF3e is proposed at this stage in order to accommodate future phases.



| | |
|----------|----------------------|
| CLIENT | Prologis |
| PROJECT | Humber Station Road |
| TITLE | Proposed Development |
| REF. NO. | 2008102-4-9 |
| | Figure 4 |

6. Impacts and Mitigation

6.1 Aquatic Impacts and Mitigation

For the HDF-3 area, it is proposed that the mid-portion (segment HDF-3d) be realigned and restored to accommodate the proposed and future development within the Subject Property. Also, the development is proposed to overlay the north portion of the HDF-8 drainage area (**Figure 4**). This encroachment will primarily consist of non-permeable and non-natural surfaces associated with the warehouse and pavement, and to a lesser extent, graded slopes and soft-scaped edges which can be restored and naturalized. These two HDF areas are discussed below.

HDF-3 Area Realignment and Restoration

In general, the various main segments of the HDF-3 drainage area are subject to management recommendations of either Protection or Conservation. As outlined in the 2023 CEISMP, the following is applicable to Protection reaches:

Reaches HDF-3b, 3c, and the north part of 3e within the Subject Property are classified as 'Protection' and will be protected from development. As described in the HDF Guidelines, the Protection designation is for those features with important functions that are to be maintained and protected from potential development impacts.

- Protect and/or enhance the existing feature and its riparian zone corridor, and groundwater discharge or wetland in-situ;
- Maintain hydroperiod;
- Incorporate shallow groundwater and base flow protection techniques such as infiltration treatment;
- Use natural channel design techniques or wetland design to restore and enhance existing habitat features, if necessary; realignment not generally permitted; and
- Design and location of the stormwater management system (e.g., extended detention outfalls) are to be designed and located to avoid impacts (i.e., sediment, temperature) to the feature.

It is proposed that the realignment of the HDF-3d and the south part of 3e reach be completed through a natural channel design to restore fluvial and riparian functions to the HDF segment, while still maintaining hydrologic and wildlife movement functions between the ponded area associated with HDF-3b and 3c, and the wetland areas associated with HDF-3e. Reaches HDF-3a and 3d have an interpreted Management Recommendation of 'Conservation'.

As described in the HDF Guidelines, the Conservation designation affords the ability to realign drainage features using natural channel design, or to maintain or replace on-site flows using wetland creation:

- Maintain, relocate, and/or enhance drainage feature and its riparian zone corridor;
- If catchment drainage has been previously removed or will be removed due to diversion of stormwater flows, restore lost functions through enhanced lot level controls (i.e., restore original catchment using clean roof drainage), as feasible;
- Maintain or replace on-site flows using mitigation measures and/or wetland creation, if necessary;
- Maintain or replace external flows;

- Use natural channel design techniques to maintain or enhance overall productivity of the reach; and
- Drainage feature must connect to downstream.

The south portion of HDF3e is classed as Protection however it is also proposed for re-alignment. This is considered acceptable as through this approach, it is expected that a net benefit to the localized aquatic environment will be achieved as the HDF-3 drainage area will be improved from a habitat and fluvial processes standpoint, as it is currently just an eroded swale traversing active agricultural lands (**Photo 6**).

The natural channel design will incorporate a detailed riparian planting plan to restore a robust, native riparian corridor including a 15 m width buffer on either side, for a total of 30 m wide riparian area. A GEI schematic of the restoration along the re-alignment is given in **Appendix G**. Plants proposed for this area include all native species including willow shrub species, dogwood species, Swamp White Oak (*Quercus bicolor*) and Trembling Aspen (*Populus tremuloides*) species. It is important to note that the total length will increase post-restoration; currently HDF 3d and HDF3e together are currently about 750 m, whereas post-restoration it will be at least 950 m (this number will be larger as it excludes the length created by the sinuosity). GEI notes in the CEISMP '*Because HDF-3 provides direct fish habitat, the 15 m warm water fish habitat buffer has been applied to the drainage realignment as shown on Figure 6 (Appendix A1). The meander belt falls within and/or matches this buffer*'.



Photo 6. HDF-3d in current condition (June 2022)

HDF-8 Area

Palmer/SLR's investigation found that reaches HDF-8c, 8c-2, and 8d overlaying of a portion of HDF-8 drainage area on the Subject Property, from a surface water standpoint, would likely result in minimal to negligible impact to the local aquatic environment as the feature was found to provide limited to no

hydrological and ecological function during the 2023 site investigations. Palmer/SLR thus classed it as No Management Required (as presented in **Figures 2, 3 and 4**) subject to further consultation with MECP, which would confirm the presence of absence of Contributing Redside Dace habitat.

This classification differs from the GEI CEISMP, which classified reaches HDF-8c, 8c-2, and 8d as 'Mitigation' due to the potential to be considered Contributing Redside Dace habitat and that the feature hydrologic function should be maintained. GEI proposes to maintain the hydrologic function through improvements to the downstream area (i.e., off-site from the Prologis lands but within the overall Humber Station Landowner Group Secondary Plan area).

All Aquatic Features

Outside of specific reach-related mitigations and restoration approaches, all surface water features, including the ponded area and the Clarkway Drive Tributary, should be adequately protected through appropriate buffering and setbacks, and through implementation of a comprehensive Erosion and Sediment Control (ESC) plan which adheres to the requirements of the *Erosion and Sediment Control Guide for Urban Construction* (TRCA, 2019).

Due to proposed impacts to aquatic areas determined by GEI through their CEISMP mapping to be Contributing habitat for Redside Dace (GEI Consultants Ltd., 2023) (i.e., HDF-8 reaches, the Clarkway Drive Tributary and its associated riparian wetlands), it is recommended that consultation with MECP be undertaken, to confirm the presence or absence of Contributing habitat, and if present to ensure compliance with the *Endangered Species Act*. Additionally, any impacts to fish and/or fish habitat should be addressed through consultation with the DFO, as required through a formal Request for Review (RFR) application submission.

4.832 Terrestrial Impacts and Mitigation

6.2.1 Impacts

Potential impacts of the proposed development of the Subject Property can be divided into two types: those primarily associated with the construction phase and those that are permanent.

Construction related impacts include:

- Potential for erosion and loss of soils; and
- Disturbance to wildlife including birds during vegetation removal.

Permanent potential or actual impacts include:

- Removal of natural vegetation, buffers and associated wildlife habitat;
- Impacts to water quality through for example soil erosion, removal of vegetation etc.; and
- Changes to wildlife behaviour due to the introduction of artificial light, noise etc.

The anticipated removal of vegetation communities will consist of the removal of mainly agricultural lands, as well as small portions of the northwestern woodland/wetland feature (**Figure 4**). Amounts to be removed are approximately:

- Non-significant wetland (Cattail Mineral Shallow Marsh Type and Reed Canary Grass Mineral Meadow Marsh or MAS2-1/MAM2-2) – 0.34 ha
- Significant (Core) Woodland (Fresh-Moist Deciduous Forest, Basswood or FOD8) – 0.33 ha (much of this is buckthorn thicket)

Some of these areas will become part of the restored realigned drainage feature, thus the impacts are less than might appear. Any differences in areas between Palmer/SLR and GEI reporting are due to either minor mapping differences or rounding error; the intent and areas are the same.

Additionally, there is a 0.15 area of wetland buffer associated with the ‘pond’ wetland (i.e. Willow Mineral Thicket Swamp and Reed Canary Grass Mineral Meadow Marsh (SWT2-2/MAM2-2) where the buffer is less than 30 m.

6.2.2. Mitigation

6.2.2.1 Mitigation by Design

Buffers

The term “buffer” (or Minimum Vegetation Protection Zone) refers to an area of land neighbouring natural features that is alongside lands that are planned to undergo site alteration or development. The purpose of the buffer is to protect the ecological functions and features of the woodlands and wetlands by reducing impacts from site alteration or the proposed development. Generally, the buffer width depends on the sensitivity of the feature being protected and the potential risks of the proposed land use resulting in impacts to the natural heritage feature.

Buffers are proposed for all features. Apart from three exceptions (noted above in section 6.2.1), proposed buffers follow environmental policy (TRCA 2014 and Town of Caledon, Humber Station Employment Area Secondary Plan, Official Plan Amendment XXX, Draft June 2024), which in summary is:

- Significant Woodland – 10 m
- Significant Wetlands – 30 m
- Other Wetlands -10 m

All of these buffers are considered to be ecologically appropriate buffers which will protect the features that they surround. Buffers around wetlands ensure that pollutants are kept out of the wetlands, sedimentation into wetlands is minimized or stopped, and that habitat for wetland edge species is maintained. Woodland buffers protect the root zones of trees within the woodlands, among other functions.

The proposed removals of non-significant wetland and Significant Woodland are proposed to accommodate the drainage realignment and the edge of the warehouse. The partial removal and compensation for the Significant Woodland is considered ecologically acceptable because, this feature, while meeting the Significant Woodland criteria, is: small (about 1.4 ha), relatively isolated, not mature, and has minimal

function as a woodland in terms of avifauna (almost all birds recorded there are 'edge' species, disturbance-tolerant, and/or typically shrubland species).

Compensation Opportunities

In order to compensate for feature removals, woodland and wetland compensation areas are proposed within the Subject Property (**Figure 4**) and areas are listed below:

- Woodland compensation area of 0.35 ha
- Wetland compensation area of 0.39 ha
- Wetland buffer compensation area of 0.15 ha

A GEI Drawing of the combined wetland/woodland compensation area is provided in **Appendix H**. The proposed compensation areas are located directly adjacent from the impacted communities, thus, limiting the impact of community alteration. The impacted communities will have the same or larger overall area. MHBC has prepared restoration drawings for these areas. All species used would be native to the region and planted in a naturalized manner.

The proposed compensation area for the non-significant wetland is similar to the area being removed. However, this does not take into account the benefit that some of the wetland removal area will be returned to naturalized riparian corridor under this proposal. The native wetland restoration proposed is one that would be composed of two types of wetland: cattail shallow marsh and meadow marsh. This has the potential to provide for amphibian breeding habitat (that is not currently present in this location), as well as diversity of habitat.

The proposed compensation area for the FOD8 significant woodland is marginally greater than that being removed (0.33 ha removed; 0.35 ha compensated). The area between the north woodland/wetland and the Clarkway Tributary is the area proposed for compensation. In addition to providing a net benefit in area, the location of the compensation will mean that these two areas will be better connected ecologically than currently, thus providing better movement opportunities for wildlife movement. The width of the proposed corridor (i.e. compensation area) is 60 m. Tree species proposed to be planted here include: Red Oak (*Quercus rubra*), White Oak (*Quercus alba*), Bur Oak (*Quercus macrocarpa*), Sugar Maple (*Acer saccharum*), Red Maple (*Acer rubrum*), Shagbark Hickory (*Carya ovata*) and Bitternut Hickory (*Carya cordiformis*). This will be a marked improvement on species composition as the area of woodland removed is dominated by buckthorn.

The GEI CESMP Phase 3 proposes an Invasive Species Management Plan (ISMP) for the secondary plan area. SLR has not proposed an ISMP for the Subject Property, which could potentially focus on the buckthorn in the woodland (FOD8). This is because it is thought that the FOD8 woodland is not a good candidate for an ISMP because it does not fit the conditions which are appropriate for an ISMP: a) the woodland overall is not a large area (i.e. less worth dedicating time to); b) it is not an area including high-quality botanical or faunal features which need protecting; and c) the buckthorn is not concentrated in one area making removal more feasible; d) the buckthorn would be very difficult to control. The species is common in the understorey of the woodland and would require extensive management (both time and cost) that we do not consider useful in this situation; management would likely have to occur over many years.

The encroachment into the wetland buffer has a proposed compensation ratio of 1:1 and is proposed to occur between Humber Station Road and that wetland.

Buffer Plantings

In addition to naturalized compensation within the compensation areas, all the natural feature buffer areas will be planted with native species. These areas are currently primarily row crop agricultural field, and thus the existing features will ultimately be enhanced and widened. For example, the Clarkway Tributary area will be widened by 30 m westward on the Subject Property. The total areas of buffer restoration (not including any compensation areas and drainage realignment area) are 0.12 ha adjacent to woodland, 2.14 ha adjacent to the Clarkway Tributary, and another 1.61 ha adjacent to the pond wetland.

6.3 Species at Risk Impacts and Mitigation

The following three Species of Special Concern have been identified within or adjacent to the Subject Property:

- Eastern Wood-Pewee
- Snapping Turtle
- Monarch Butterfly (Not observed by Palmer, but GEI observed on adjacent meadow marsh to east.)

The Eastern Wood-Pewee was observed in the FOD8 and CUW1 communities. The FOD8 is proposed to be retained. Removal of the CUW1 will follow the Migratory Birds Convention Act (MBCA) and Fish and Wildlife Conservation Act. Eastern Wood-Pewee habitat on the Subject Property is not considered SWH.

The Snapping Turtle was observed in the south pond (SAS1-1/SWT2-2/MAM2-2). No impacts anticipated as the wetland found will be retained with a large buffer.

Monarch Butterfly was observed off property on the adjacent meadow marsh located east of the Subject Property. Since the observation was recorded off property, no impacts are anticipated.

6.4 SWH Impacts and Mitigation

There are two onsite SWH types and one adjacent to the Subject Property. The onsite 'pond' wetland (SAS1-1) provides SWH habitat for Snapping Turtle; there are several locations of Terrestrial Crayfish beside northerly wetlands, and Monarch Butterfly SWH has been identified along part of the Clarkway Tributary adjacent to the Subject Property. The proposed development will not affect any of these SWH as proposed development is outside these habitats, including crayfish habitat which lies within wetland buffer or compensation areas.

6.5 General Mitigation

In order to mitigate for the construction related impacts, the following general mitigation measures are necessary to protect the ecological features and functions:

- Removal of all vegetation (not only trees) should be completed outside of the breeding bird season (April 1 – August 31) to ensure compliance with the Migratory Birds Convention Act (MBCA) and provincial Fish and Wildlife Act. If vegetation removal during this period cannot be avoided, active nest searches may be conducted by a qualified biologist immediately prior to removal to ensure that no active nests of breeding birds are present.
- Erosion and Sediment Control (ESC) measures should be installed and maintained during construction. ESC measures are recommended to be installed at the limit of construction works. Best practices could follow those recommended in the *Erosion & Sediment Control Guidelines for Urban Construction per the Greater Golden Horseshoe Conservation Authorities (GGHA CAs)*, dated 2006.

With respect to ESC measures, the contractor should:

- Retain existing vegetation and stabilize ground with native vegetation where possible;
- Limit the duration of soil exposure and/or phase construction;
- Delimit the perimeter of excavation area with light-duty silt fencing;
- Maintain overland sheet flow and avoid concentrating flow;
- Store and stockpile soil away from natural drainage feature and drainage structure; and
- Assess ESC measures before and after significant rainfall and snowmelt events.

Also, all repairs required to ESC measures will be completed within 48 hours of notice unless otherwise agreed by the Region, the Contractor, the regulatory authority and the environmental inspector(s).

7. Policy Conformity

Table 6. Natural Heritage Policy Conformity

| Policy Document | Policy Intent/Objective | Implications and Policy Conformity |
|--------------------------------|--|---|
| Migratory Birds Convention Act | <i>The Migratory Birds Convention Act</i> (MBCA), 1994 and Migratory Birds Regulations (MBR) 2014 (along with the provincial Fish and Wildlife Convention Act), protect most species of birds and their nests and eggs anywhere they are found in Canada. | To ensure the protection of actively nesting birds, their eggs and their nests, vegetation removal should be completed outside of the breeding bird season (April 1 – August 31) or a site inspection for nesting birds should be completed immediately prior to vegetation removal. |
| Endangered Species Act | Species designated as Endangered or Threatened by the Committee on the Status of Species at Risk in Ontario (COSSARO) are listed as Species at Risk in Ontario (SARO). These species at risk (SAR) and their habitats (e.g., areas essential for breeding, rearing, feeding, hibernation and migration) are afforded legal protection under the <i>Endangered Species Act</i> (ESA). | No Endangered or Threatened Species at Risk were identified within the Subject Property. Only Species of Concern were identified and are generally protected through SWH. Absence of Redside Dace Contributing habitat to be confirmed with MECP. |
| Provincial Policy Statement | The Provincial Policy Statement (PPS) provides direction to regional and local municipalities regarding planning policies for the protection and management of natural heritage features and resources (OMMAH, 2014). Section 2.1 of the PPS defines ten natural heritage features (NHF) and adjacent lands and provides planning policies for each. | Within the Subject Property, the following natural heritage features have been identified: <ul style="list-style-type: none"> • Significant Woodlands • Significant Wetlands • Significant Wildlife Habitat (SWH) The Significant Wetlands and SWH are protected through retention and buffers. Compensation is proposed for the Significant Woodland removal. It is anticipated that the woodland compensation area will not only have a net benefit in composition, but once naturalized the woodland will be better connected to the Clarkway Tributary area. |
| Region of Peel Official Plan | In accordance with policy 2.14.16 of the OP, development and site alteration is prohibited within the Core Areas of the Greenlands System in Peel. Unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. | The wetland associated with the Clarkway Tributary is designated as Core Area within the Greenlands Systems of Peel. Through the implementation of setbacks and proposed mitigation measures, no impacts are anticipated to this feature and its function. |
| Town of Caledon Official Plan | As stated in the OP’s Section 5.7.3.1.1, new development is prohibited within areas designated EPA. | Within the Subject Property the three identified wetlands on are designated as EPA. Through the implementation of setbacks and proposed mitigation measures, no impacts are |

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| | <p>Beyond EPA areas, there are other wetlands on the Subject Property. OP Policy 3.2.5.4.2 states that <i>“New development will not be permitted in Other Wetlands unless it can be demonstrated that such development will not result in the degradation of ecosystem integrity, to the satisfaction of the Town, the Conservation Authority, the Ministry of Natural Resources and Forestry , or other delegated authority”</i>.</p> | <p>anticipated to two wetlands. The partial removals of the north wetland will be compensated within the Subject Property.</p> <p>With the addition of the compensation areas. We propose that the development will not result in the degradation of the ecosystem integrity.</p> |
| <p>Humber Station Employment Area – Draft Secondary Plan</p> | <p>In accordance with the draft secondary plan (June 2024), Section 7.16.7.2: Adjacent land use development will minimize any impacts to the natural features and functions within the Environmental Policy Area designation through appropriate buffers as established through the CEISMP. And 7.16.7.3: The limits of wetlands, woodlots, and stream corridors within the Secondary Plan Area are established through the recommendations of the CEISMP and form the basis for the Environmental Policy Area designation. Development and site alteration will not be permitted within this designation except as set out in the CEISMP. Also in 7.16.7.5: The Natural Features and Areas designation within the Secondary Plan Area includes a conceptual drainage realignment in the central portion of the plan. The CEISMP sets out the detailed justification for its refinement and/or relocation.</p> | <p>The natural features found within the Subject property are:</p> <ul style="list-style-type: none"> • Significant wetlands • Significant woodland • Other wetland <p>The buffers as in the CEISMP have been applied, apart from two partial removals that have a proposed compensation approach.</p> <p>This EIS is consistent with the CEISMP regarding the drainage realignment.</p> |
| <p>Toronto Region Conservation Authority</p> | <p>The Subject Property falls within the jurisdiction of the TRCA. Watercourses and wetlands are regulated under the TRCA. TRCA Regulated Area lands exist within the limits of the Subject Property, in association with drainage features and wetland features. Development within these areas will be subject to approvals and permitting from the TRCA.</p> | <p>The drainage/swale (HDF3) and wetlands on the Subject Property are regulated by TRCA. The realignment of part of HDF3 reach will be completed through a natural channel design to restore fluvial and riparian functions to the HDF segment, while still maintaining hydrologic and wildlife movement functions. Through this approach, it is likely that a net benefit to the localized aquatic environment will be achieved as the HDF-3 drainage area will be improved from a riparian habitat and fluvial processes standpoint.</p> |

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| | | <p>With the addition of the wetland compensation areas, the development will not result in the degradation of the ecosystem integrity. No impacts are anticipated to these features and their functions.</p> |
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8. Conclusion

The findings of the Environmental Impact Study are based on the results of a background review including use of GEI CEISMP information, field investigations and analysis of the data using the current scientific understanding of the ecology of the area, as well as the current natural heritage policy requirements. Based on the work completed, we have identified the natural environmental sensitivities, constraints and development opportunities of the Subject Property. Palmer has recommended outcomes for drainage features, characterized and, in conjunction with GEI, confirmed the limits of areas of a significant woodland, wetlands, and Significant Wildlife Habitat, which are present on the Subject Property

Based on the findings and recommendations of this study, it is our professional opinion that the proposed development is environmentally feasible provided that the recommended mitigation and protection measures described in the report are implemented and subject to any approval requirements determined through consultation with the Town, the TRCA, the Ministry of Environment Conservation and Parks, or other delegated authority, respectively. Compensation areas are proposed for areas of wetland and woodland removal. These, along with buffer plantings, and a widened realigned riparian corridor will enhance and better connect the existing natural features.

9. Certification

This report was prepared, and reviewed by the undersigned:

Prepared By:



Hayley Brown, B.Sc.
Int. Ecologist, Certified Arborist

Prepared By:



Joel Davey, B.BRM, MES, CISEC
Senior Aquatic Ecologist

**Prepared and
Reviewed By:**



Rosalind Chaundy, M.Sc.F
Senior Ecologist

Approved By:



Jason Cole, M.Sc., P.Geo.
Technical Discipline Manager, Hydrogeology and Hydrology

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Appendix A

Floral Inventory (Palmer)

| Common Name | Native/Eotic/Unranked | S Rank | COSEWIC Status | SARO Status | Eotic Status | Coefficient of Conservatism | Coefficient of Wetness | TRCA RANKS 2019 | STATUS (CVC 2002) |
|---------------------------|-----------------------|--------|----------------|-------------|--------------|-----------------------------|------------------------|-----------------|-------------------|
| Norway Maple | E | SNA | | | SE5 | | 5 | L+ | |
| European Water-plantain | | | | | | 3 | -5 | L5 | |
| Meadow Fotal | E | SNA | | | SE5 | | -3 | L+ | |
| Common Milkweed | N | S5 | | | | 0 | 5 | L5 | |
| Aster Species | | | | | | | | | |
| Smooth Brome | E | SNA | | | SE5 | | 5 | L+ | |
| Crested Sedge | N | S5 | | | | 3 | -3 | L5 | |
| Awl-fruited Sedge | N | S5 | | | | 3 | -5 | L5 | |
| Orchard Grass | E | SNA | | | SE5 | | 3 | L+ | |
| Red-stemmed Spikerush | N | S5 | | | | 4 | -5 | L5 | |
| Wild Strawberry | N | S5 | | | | 2 | 3 | L5 | |
| Red Ash | N | S4 | | | | 3 | -3 | L5 | |
| Black Walnut | N | S4? | | | | 5 | 3 | L5 | |
| Small Duckweed | N | S5? | | | | 5 | -5 | L5 | |
| Wood Lily | N | S5 | | | | 8 | 0 | L | |
| Purple Loosestrife | E | SNA | | | SE5 | | -5 | L+ | |
| Reed Canarygrass | N | S5 | | | | 0 | -3 | L+? | |
| Common Timothy | E | SNA | | | SE5 | | 3 | L+ | |
| Small Pondweed | N | S4? | | | | 4 | -5 | L1 | rare |
| Chokecherry | N | S5 | | | | 2 | 3 | | |
| Common Buttercup | E | SNA | | | SE5 | | 0 | L+ | |
| European Buckthorn | E | SNA | | | SE5 | | 0 | L+ | |
| Peach-leaved Willow | N | S5 | | | | 6 | -3 | L4 | rare |
| Sandbar Willow | N | S5 | | | | 1 | -3 | L5 | |
| Willow Species | | | | | | | | | |
| Soft-stemmed Bulrush | N | S5 | | | | 5 | -5 | L4 | |
| Tall Goldenrod | N | S5 | | | | 1 | 3 | L5 | |
| Goldenrod Species | | | | | | | | | |
| Sago Pondweed | N | S5 | | | | 4 | -5 | L4 | |
| Panicled Aster | N | S5 | | | | 3 | -3 | L5 | |
| Basswood | N | S5 | | | | 4 | 3 | L5 | |
| Red Clover | E | SNA | | | SE5 | | 3 | L+ | |
| Narrow-leaved Cattail | E | SNA | | | SE5 | | -5 | L+ | |
| (Typha angustifolia Typha | E | SNA | | | | | -5 | L+ | |
| White Elm | N | S5 | | | | 3 | -3 | L5 | |
| Tufted Vetch | E | SNA | | | SE5 | | 5 | L+ | |
| Riverbank Grape | N | S5 | | | | 0 | 0 | L5 | |

| LEGEND | |
|-------------------------------------|--|
| SRANK | Provincial Status: Provincial ranks are used by the NHIC to set protection priorities for rare species and natural communities. These ranks are not legal generally uncommon to common in the province. Species ranked S1-S3 are considered to be rare in Ontario. designations. S4 and S5 species are generally uncommon to common in the province. Species ranked S1-S3 are considered to be rare in Ontario. |
| 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. |
| S5 Secure | Common, widespread, and abundant in the nation or state/province. |
| SU Unrankable | Currently unrankable due to lack of information or due to substantially conflicting information about status or trends. |
| SNA Unranked | A conservation status rank is not applicable because the species is not a suitable target for conservation activities. |
| SX Presumed Extirpated | Species or community is believed to be extirpated from the nation or state/province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered. |
| SH Possibly Extirpated (Historical) | Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. |
| SE# Exotic Status | |
| S#? Rank Uncertain | |

Ontario Ministry of Natural Resources (OMNR). 2018. Natural Heritage Information Centre Species Lists. Last updated January 30, 2018. <https://www.ontario.ca/page/get-natural-heritage-information>

| COSSARO | |
|--------------------|---|
| 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. |
| DD Data Deficient | |
| EXP Extirpated | A species that no longer exists in the wild in Ontario but still occurs elsewhere. |

Ontario Ministry of Natural Resources and Forestry (2018). Species Risk in Ontario. Last updated UNE 28, 2018. <https://www.ontario.ca/environment-and-energy/species-risk-type>

| COSEWIC | |
|--------------------|--|
| 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. |
| VUL Vulnerable | |
| NAR Not at Risk | A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances. |
| DD Data Deficient | A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or (b) to permit an assessment of the wildlife species' risk of extinction. |
| NA Non-active | |
| XT Extirpated | A wildlife species that no longer exists in the wild in Canada, but exists elsewhere. |

Committee for the Status on Endangered Wildlife in Canada (COSEWIC). 2018. Canadian Wildlife Species at Risk. Last updated February 22, 2018. http://www.sararegistry.gc.ca/sar/index/default_e.cfm

Coefficient of Conservation

'Higher values of the coefficients of conservatism, on the scale of 1–10, indicate species that are more "conservative" (or ecologically sensitive), including those least associated with anthropogenic disturbance, least aggressive, least able to spread, and most confined to particular natural habitat' (Catling, Paul M. 2013. Using Coefficients of Conservatism and the Floristic Quality Index to assess the potential for serious and irreversible damage to plant communities. Canadian Field-Naturalist 127(3): 285–288.

Coefficient of Wetness

5 - Almost always occur on upland; 3 - Usually occur on uplands; 0 - Found on uplands and in wetlands; -3 Usually occur in wetlands; -5 Almost always occur in wetlands

Floristic Assessment System for Southern Ontario (Oldham et al, 1995).

Toronto and Region Conservation Authority L rank:

L1 to L3 Regional species of concern from highest to lowest; L4 Urban concern; L5 Secure through region

Appendix B

Floral Inventory for Humber Station Employment Area (GEI)

| Latin Name | Common Name | Coefficient of Conservatism | Wetness Index | Weediness Index | Provincial Status S-Rank | OMNR Status | COSEWIC Status | Global Status (G-Rank) | Local Status Area | Local Status Peel | Local Status CVC/Peel | Local Status Peel |
|---|-------------------------|----------------------------------|---------------|-----------------|--------------------------|-------------|----------------|------------------------|---------------------|-------------------|-----------------------|-------------------|
| | | | | | | | | | Local Status Source | Varga 2005 | CVC 2002 | |
| Equisetaceae | | Horsetail Family | | | | | | | | | | |
| <i>Equisetum arvense</i> | Field Horsetail | 0 | 0 | | S5 | | | G5 | | X | X | X |
| Cupressaceae | | Cedar Family | | | | | | | | | | |
| <i>Thuja occidentalis</i> | Eastern White Cedar | 4 | -3 | | S5 | | | G5 | | X | X | X |
| Pinaceae | | Pine Family | | | | | | | | | | |
| <i>Picea abies</i> | Norway Spruce | | 5 | -1 | SNA | | | G5 | | X | I | I |
| <i>Picea glauca</i> | White Spruce | 6 | 3 | | S5 | | | G5 | | R3 | L | L |
| Aceraceae | | Maple Family | | | | | | | | | | |
| <i>Acer negundo</i> | Manitoba Maple | 0 | -2 | | S5 | | | G5 | | X | X | X |
| <i>Acer saccharum ssp. saccharum</i> | Sugar Maple | 4 | 3 | | S5 | | | G5T5 | | X | X | X |
| Amaranthaceae | | Amaranth Family | | | | | | | | | | |
| <i>Amaranthus retroflexus</i> | Red-root Amaranth | | 2 | -1 | SNA | | | G5 | | X | X | I |
| Anacardiaceae | | Sumac or Cashew Family | | | | | | | | | | |
| <i>Rhus typhina</i> | Staghorn Sumac | 1 | 5 | | S5 | | | G5 | | X | X | X |
| <i>Toxicodendron rydbergii</i> | Rydberg's Poison Ivy | 0 | 0 | | S5 | | | G5T | | X | X | X |
| Apiaceae | | Carrot or Parsley Family | | | | | | | | | | |
| <i>Daucus carota</i> | Wild Carrot | | 5 | -2 | SNA | | | GNR | | X | X | I |
| Asclepiadaceae | | Milkweed Family | | | | | | | | | | |
| <i>Asclepias syriaca</i> | Common Milkweed | 0 | 5 | | S5 | | | G5 | | X | X | X |
| Asteraceae | | Composite or Aster Family | | | | | | | | | | |
| <i>Achillea millefolium</i> | Yarrow | | 3 | -1 | S5 | | | G5 | | X | X | I |
| <i>Ambrosia artemisiifolia</i> | Annual Ragweed | 0 | 3 | | S5 | | | G5 | | X | X | X |
| <i>Arctium lappa</i> | Greater Burdock | | | | SNA | | | GNR | | X | X | I |
| <i>Arctium minus</i> | Common Burdock | | 5 | -2 | SNA | | | GNR | | X | X | I |
| <i>Artemisia biennis</i> | Biennial Wormwood | | -2 | -1 | SNA | | | G5 | | X | X | I |
| <i>Bidens frondosa</i> | Devil's Beggaticks | 3 | -3 | | S5 | | | G5 | | X | X | X |
| <i>Bidens vulgata</i> | Tall Beggarticks | 5 | -3 | | S5 | | | G5 | | R1 | R | L |
| <i>Carduus crispus</i> | Curled Plumless Thistle | | 5 | -1 | SNA | | | GNR | | X | X | I |
| <i>Cichorium intybus</i> | Chicory | | 5 | -1 | SNA | | | GNR | | X | X | I |
| <i>Cirsium arvense</i> | Canada Thistle | | 3 | -1 | SNA | | | GNR | | X | X | I |
| <i>Cirsium vulgare</i> | Bull Thistle | | 4 | -1 | SNA | | | GNR | | X | X | I |
| <i>Erigeron annuus</i> | Annual Fleabane | | | | S5 | | | G5 | | X | X | |
| <i>Erigeron strigosus</i> | Daisy Fleabane | 0 | 1 | | S5 | | | G5 | | X | X | X |
| <i>Eurybia macrophylla</i> | Large-leaved Aster | 5 | 5 | | S5 | | | G5 | | X | X | X |
| <i>Euthamia graminifolia</i> | Grass-leaved Goldenrod | 2 | -2 | | S5 | | | G5 | | X | X | X |
| <i>Gnaphalium uliginosum</i> | Low Cudweed | 0 | 0 | -1 | SNA | | | G5 | | X | I | I |
| <i>Inula helenium</i> | Elecampane Flower | | 5 | -2 | SNA | | | GNR | | X | I | I |
| <i>Lactuca serriola</i> | Prickly Lettuce | | 0 | -1 | SNA | | | GNR | | X | I | I |
| <i>Leucanthemum vulgare</i> | Oxeye Daisy | | 5 | -1 | SNA | | | GNR | | X | X | I |
| <i>Matricaria perforata</i> | Scentless Chamomile | | 5 | -1 | SNA | | | GNR | | X | I | I |
| <i>Pilosella caespitosa</i> | Field Hawkweed | | 5 | -2 | SNA | | | GNR | | X | I | I |
| <i>Solidago altissima</i> | Tall Goldenrod | 1 | 3 | | S5 | | | G5 | | X | X | X |
| <i>Sonchus arvensis ssp. arvensis</i> | Field Sow-thistle | | | | SNA | | | GNR | | X | I | I |
| <i>Sonchus asper</i> | Prickly Sow-thistle | | 0 | -1 | SNA | | | GNR | | X | I | I |
| <i>Sonchus oleraceus</i> | Common Sow-thistle | | 3 | -1 | SNA | | | GNR | | X | I | I |
| <i>Symphotrichum lanceolatum var. lanceolatum</i> | White Panicked Aster | 3 | -3 | | S5 | | | G5T5 | | X | X | X |
| <i>Symphotrichum novae-angliae</i> | New England Aster | 2 | -3 | | S5 | | | G5 | | X | X | X |
| <i>Taraxacum officinale</i> | Common Dandelion | | 3 | -2 | SNA | | | G5 | | X | I | I |
| Balsaminaceae | | Touch-me-not Family | | | | | | | | | | |

| Latin Name | Common Name | Coefficient of Conservatism | Wetness Index | Weediness Index | Provincial Status S-Rank | OMNR Status | COSEWIC Status | Global Status (G-Rank) | Local Status Area | Local Status Peel | Local Status CVC/Peel | Local Status Peel |
|---------------------------------------|----------------------------|-------------------------------|---------------|-----------------|--------------------------|-------------|----------------|------------------------|---------------------|-------------------|-----------------------|-------------------|
| | | | | | | | | | Local Status Source | Varga 2005 | CVC 2002 | |
| <i>Impatiens capensis</i> | Spotted Jewelweed | 4 | -3 | | S5 | | | G5 | | X | X | X |
| Berberidaceae | | Barberry Family | | | | | | | | | | |
| <i>Podophyllum peltatum</i> | May Apple | 5 | 3 | | S5 | | | G5 | | X | X | X |
| Brassicaceae | | Mustard Family | | | | | | | | | | |
| <i>Alliaria petiolata</i> | Garlic Mustard | | 0 | -3 | SNA | | | GNR | | X | X | I |
| <i>Barbarea vulgaris</i> | Yellow Rocket | | 0 | -1 | SNA | | | GNR | | X | X | I |
| <i>Capsella bursa-pastoris</i> | Common Shepherd's Purse | | 1 | -1 | SNA | | | GNR | | X | X | I |
| <i>Erysimum cheiranthoides</i> | Worm-seed Mustard | | 3 | -1 | SNA | | | G5 | | X | X | X |
| <i>Hesperis matronalis</i> | Dame's Rocket | | 5 | -3 | SNA | | | G4G5 | | X | I | I |
| <i>Lepidium densiflorum</i> | Dense-flower Pepper-grass | | 0 | -2 | SNA | | | G5 | | X | X | X |
| <i>Rorippa palustris ssp. hispida</i> | Hispid Marsh Yellowcress | | | | S5 | | | G5T5 | | X | X | X |
| <i>Sinapis arvensis</i> | Corn Mustard | | 5 | -1 | SNA | | | GNR | | X | I | I |
| <i>Thlaspi arvense</i> | Field Penny-cress | | 5 | -1 | SNA | | | GNR | | X | I | I |
| Campanulaceae | | Bellflower Family | | | | | | | | | | |
| <i>Lobelia inflata</i> | Indian Tobacco | 3 | 4 | | S5 | | | G5 | | X | X | X |
| Caprifoliaceae | | Honeysuckle Family | | | | | | | | | | |
| <i>Lonicera tatarica</i> | Tartarian Honeysuckle | | 3 | -3 | SNA | | | GNR | | X | I | I |
| Caryophyllaceae | | Pink Family | | | | | | | | | | |
| <i>Cerastium fontanum</i> | Common Mouse-ear Chickweed | | 3 | -1 | SNA | | | GNR | | X | X | I |
| <i>Stellaria graminea</i> | Little Starwort | | 5 | -2 | SNA | | | GNR | | X | I | I |
| Chenopodiaceae | | Goosefoot Family | | | | | | | | | | |
| <i>Atriplex patula</i> | Halberd-leaf Saltbush | 0 | -2 | | S5 | | | G5 | | X | X | X |
| Cucurbitaceae | | Gourd Family | | | | | | | | | | |
| <i>Echinocystis lobata</i> | Wild Mock-cucumber | 3 | -2 | | S5 | | | G5 | | X | X | X |
| Elaeagnaceae | | Oleaster Family | | | | | | | | | | |
| <i>Elaeagnus angustifolia</i> | Russian Olive | | 4 | -1 | SNA | | | GNR | | X | I | I |
| Fabaceae | | Pea Family | | | | | | | | | | |
| <i>Lotus corniculatus</i> | Bird's-foot Trefoil | | 1 | -2 | SNA | | | GNR | | X | I | I |
| <i>Medicago lupulina</i> | Black Medic | | 1 | -1 | SNA | | | GNR | | X | I | I |
| <i>Melilotus albus</i> | White Sweetclover | | 3 | -3 | SNA | | | G5 | | X | I | I |
| <i>Trifolium pratense</i> | Red Clover | | 2 | -2 | SNA | | | GNR | | X | I | I |
| <i>Vicia cracca</i> | Tufted Vetch | | 5 | -1 | SNA | | | GNR | | X | I | I |
| Fagaceae | | Beech Family | | | | | | | | | | |
| <i>Quercus macrocarpa</i> | Bur Oak | 5 | 1 | | S5 | | | G5 | | X | X | X |
| Guttiferae | | St. John's-wort Family | | | | | | | | | | |
| <i>Hypericum perforatum</i> | Common St. John's-wort | | 5 | -3 | SNA | | | GNR | | X | I | I |
| Hydrophyllaceae | | Water-leaf Family | | | | | | | | | | |
| <i>Hydrophyllum virginianum</i> | Virginia Waterleaf | 6 | -2 | | S5 | | | G5 | | X | X | X |
| Juglandaceae | | Walnut Family | | | | | | | | | | |
| <i>Carya ovata</i> | Shagbark Hickory | 6 | 3 | | S5 | | | G5 | | X | X | X |
| Lamiaceae | | Mint Family | | | | | | | | | | |
| <i>Leonurus cardiaca</i> | Common Motherwort | | 5 | -2 | SNA | | | GNR | | X | I | I |
| <i>Mentha arvensis</i> | Corn Mint | 3 | -3 | | S5 | | | G5 | | X | X | X |
| <i>Nepeta cataria</i> | Catnip | | 1 | -2 | SNA | | | GNR | | X | I | I |
| Lythraceae | | Loosestrife Family | | | | | | | | | | |

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|---|--------------------------|--------------------------------|---------------|-----------------|--------------------------|-------------|----------------|------------------------|---------------------|-------------------|-----------------------|-------------------|
| | | | | | | | | | Local Status Source | Varga 2005 | CVC 2002 | |
| <i>Lythrum salicaria</i> | Purple Loosestrife | | -5 | -3 | SNA | | | G5 | | X | I | I |
| Oleaceae | | Olive Family | | | | | | | | | | |
| <i>Fraxinus americana</i> | White Ash | 4 | 3 | | S4? | | | G5 | | X | X | X |
| <i>Fraxinus pennsylvanica</i> | Red Ash | 3 | -3 | | S5 | | | G5 | | X | X | X |
| <i>Syringa vulgaris</i> | Common Lilac | | 5 | -2 | SNA | | | GNR | | X | I | I |
| Onagraceae | | Evening-primrose Family | | | | | | | | | | |
| <i>Circaea lutetiana</i> | Enchanter's Nightshade | 3 | 3 | | S5 | | | G5 | | X | X | X |
| <i>Epilobium parviflorum</i> | Small-flower Willow-herb | | 3 | -1 | SNA | | | GNR | | X | X | I |
| <i>Ludwigia palustris</i> | Marsh Seedbox | 5 | -5 | | S5 | | | G5 | | R5 | RL | RL |
| <i>Oenothera biennis</i> | Common Evening-primrose | 0 | 3 | | S5 | | | G5 | | U | X | X |
| Papaveraceae | | Poppy Family | | | | | | | | | | |
| <i>Sanguinaria canadensis</i> | Bloodroot | 5 | 4 | | S5 | | | G5 | | X | X | X |
| Plantaginaceae | | Plantain Family | | | | | | | | | | |
| <i>Plantago major</i> | Common Plantain | | -1 | -1 | SNA | | | G5 | | X | I | I |
| Polygonaceae | | Smartweed Family | | | | | | | | | | |
| <i>Fallopia convolvulus</i> | Black Bindweed | | 1 | -1 | SNA | | | GNR | | X | I | I |
| <i>Persicaria hydropiper</i> | Marshpepper Smartweed | 4 | -5 | | SNA | | | GNR | | X | I | I |
| <i>Persicaria maculosa</i> | Lady's-thumb | | -3 | -1 | SNA | | | G3G5 | | X | I | I |
| <i>Persicaria pennsylvanica</i> | Pennsylvania Smartweed | 3 | -4 | | S5 | | | G5 | | R3 | RL | RL |
| <i>Polygonum aviculare</i> ssp. <i>aviculare</i> | Prostrate Knotweed | | 1 | -1 | SNA | | | GNR | | X | I | I |
| <i>Rumex crispus</i> | Curly Dock | | -1 | -2 | SNA | | | GNR | | X | I | I |
| Primulaceae | | Primrose Family | | | | | | | | | | |
| <i>Anagallis arvensis</i> | Scarlet Pimpernel | | 4 | -1 | SNA | | | GNR | | X | X | I |
| <i>Lysimachia ciliata</i> | Fringed Loosestrife | 4 | -3 | | S5 | | | G5 | | X | X | X |
| Ranunculaceae | | Buttercup Family | | | | | | | | | | |
| <i>Ranunculus acris</i> | Tall Buttercup | | | -2 | SNA | | | G5 | | X | I | I |
| <i>Ranunculus sceleratus</i> var. <i>sceleratus</i> | Cursed Buttercup | 2 | -5 | | SU | | | G5T5 | | | X | X |
| Rhamnaceae | | Buckthorn Family | | | | | | | | | | |
| <i>Rhamnus cathartica</i> | Common Buckthorn | | 3 | -3 | SNA | | | GNR | | X | I | I |
| Rosaceae | | Rose Family | | | | | | | | | | |
| <i>Crataegus species</i> | Hawthorn species | | | | | | | | | | | |
| <i>Fragaria virginiana</i> | Virginia Strawberry | 2 | 1 | | S5 | | | G5 | | X | X | X |
| <i>Geum aleppicum</i> | Yellow Avens | 2 | -1 | | S5 | | | G5 | | X | X | X |
| <i>Geum canadense</i> | White Avens | 3 | 0 | | S5 | | | G5 | | X | X | X |
| <i>Potentilla argentea</i> | Silvery Cinquefoil | | 3 | -2 | SNA | | | GNR | | X | I | I |
| <i>Potentilla recta</i> | Sulphur Cinquefoil | | 5 | -2 | SNA | | | GNR | | X | I | I |
| <i>Prunus virginiana</i> | Choke Cherry | 2 | 1 | | S5 | | | G5 | | X | X | X |
| <i>Rubus idaeus</i> ssp. <i>strigosus</i> | Red Raspberry | 0 | -2 | | S5 | | | G5T5 | | X | X | X |
| Rubiaceae | | Madder Family | | | | | | | | | | |
| <i>Galium aparine</i> | Catchweed Bedstraw | 4 | 3 | | S5 | | | G5 | | R4 | L | L |
| <i>Galium mollugo</i> | White Bedstraw | | 5 | -2 | SNA | | | GNR | | X | | I |
| <i>Galium palustre</i> | Marsh Bedstraw | 5 | -5 | | S5 | | | G5 | | X | X | X |
| Salicaceae | | Willow Family | | | | | | | | | | |
| <i>Populus alba</i> | White Poplar | | 5 | -3 | SNA | | | G5 | | X | I | I |
| <i>Populus tremuloides</i> | Trembling Aspen | | 0 | | S5 | | | G5 | | X | X | X |
| <i>Salix amygdaloides</i> | Peach-leaved Willow | 6 | -3 | | S5 | | | G5 | | R6 | L | L |
| <i>Salix bebbiana</i> | Bebb's Willow | 4 | -4 | | S5 | | | G5 | | X | X | X |
| <i>Salix eriocephala</i> | Heart-leaved Willow | 4 | -3 | | S5 | | | G5 | | X | X | X |
| <i>Salix interior</i> | Sandbar Willow | 3 | -5 | | S5 | | | GNR | | R5 | L | L |

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|---|------------------------------|------------------------------|---------------|-----------------|--------------------------|-------------|----------------|------------------------|---------------------|-------------------|-----------------------|-------------------|
| | | | | | | | | | Local Status Source | Varga 2005 | CVC 2002 | |
| <i>Salix x rubens</i> | Reddish Willow | | -4 | -3 | SNA | | | GNA | | XSR | | |
| Scrophulariaceae | | Figwort Family | | | | | | | | | | |
| <i>Mimulus ringens</i> | Square-stemmed Monkey-flower | 6 | -5 | | S5 | | | G5 | | U | X | X |
| <i>Verbascum thapsus</i> | Common Mullein | | 5 | -2 | SNA | | | GNR | | X | I | I |
| <i>Veronica serpyllifolia</i> | Thyme-leaved Speedwell | 0 | -3 | | SNA | | | G5TNR | | X | I | I |
| Solanaceae | | Nightshade Family | | | | | | | | | | |
| <i>Solanum dulcamara</i> | Climbing Nightshade | | 0 | -2 | SNA | | | GNR | | X | I | I |
| Tiliaceae | | Linden Family | | | | | | | | | | |
| <i>Tilia americana</i> | American Basswood | 4 | 3 | | S5 | | | G5 | | X | X | X |
| Ulmaceae | | Elm Family | | | | | | | | | | |
| <i>Ulmus americana</i> | White Elm | 3 | -2 | | S5 | | | G5 | | X | X | X |
| Violaceae | | Violet Family | | | | | | | | | | |
| <i>Viola sororia</i> | Woolly Blue Violet | | | | S5 | | | G5 | | X | X | X |
| Vitaceae | | Grape Family | | | | | | | | | | |
| <i>Parthenocissus inserta</i> | Inserted Virginia-creeper | 3 | 3 | | S5 | | | G5 | | X | X | X |
| <i>Vitis riparia</i> | Riverbank Grape | 0 | -2 | | S5 | | | G5 | | X | X | X |
| Alismataceae | | Water-plantain Family | | | | | | | | | | |
| <i>Alisma subcordatum</i> | Southern Water-plantain | | | | S4? | | | G5 | | X | | |
| Cyperaceae | | Sedge Family | | | | | | | | | | |
| <i>Carex cristatella</i> | Crested Sedge | 3 | -4 | | S5 | | | G5 | | X | X | X |
| <i>Carex lupulina</i> | Hop Sedge | 6 | -5 | | S5 | | | G5 | | X | X | X |
| <i>Carex radiata</i> | Eastern Star Sedge | 4 | 5 | | S5 | | | G5 | | X | X | X |
| <i>Carex species</i> | Sedge species | | | | | | | | | | | |
| <i>Carex spicata</i> | Spiked Sedge | | 5 | -1 | SNA | | | GNR | | X | X | X |
| <i>Carex vulpinoidea</i> | Fox Sedge | 3 | -5 | | S5 | | | G5 | | X | X | X |
| <i>Cyperus esculentus</i> | Yellow Nut-grass | 1 | -3 | | S5 | | | G5 | | X | X | X |
| <i>Eleocharis obtusa</i> | Blunt Spike-rush | 5 | -5 | | S5 | | | G5 | | U | X | X |
| <i>Eleocharis palustris</i> | Small's Spike-rush | 6 | -5 | | S5 | | | G5? | | R4 | L | L |
| <i>Schoenoplectus tabernaemontani</i> | American Great Bulrush | 5 | -5 | | S5 | | | G5 | | X | X | X |
| Juncaceae | | Rush Family | | | | | | | | | | |
| <i>Juncus bufonius</i> | Toad Rush | 1 | -4 | | S5 | | | G5 | | X | X | X |
| <i>Juncus effusus</i> var. <i>effusus</i> | Soft Rush | 4 | -5 | | SNA | | | GNR | | X | X | X |
| Lemnaceae | | Duckweed Family | | | | | | | | | | |
| <i>Lemna minor</i> | Lesser Duckweed | 2 | -5 | | S5 | | | G5 | | X | X | X |
| Poaceae | | Grass Family | | | | | | | | | | |
| <i>Agrostis gigantea</i> | Redtop | | 0 | -2 | SNA | | | G4G5 | | X | I | I |
| <i>Agrostis stolonifera</i> | Redtop | | -3 | | S5 | | | G5 | | X | X | X |
| <i>Bromus inermis</i> | Awnless Brome | | 5 | -3 | SNA | | | G5TNR | | X | I | I |
| <i>Bromus tectorum</i> | Downy Chess | | 5 | -2 | SNA | | | GNR | | X | I | I |
| <i>Dactylis glomerata</i> | Orchard Grass | | 3 | -1 | SNA | | | GNR | | X | I | I |
| <i>Digitaria sanguinalis</i> | Hairy Crabgrass | | 3 | -1 | SNA | | | G5 | | X | I | I |
| <i>Echinochloa crus-galli</i> | Common Barnyard Grass | | -3 | -1 | SNA | | | GNR | | X | I | I |
| <i>Elymus repens</i> | Quack Grass | | 3 | -3 | SNA | | | GNR | | X | I | I |
| <i>Eragrostis pectinacea</i> var. <i>miserrima</i> | Tufted Love Grass | | | | SNA | | | G5T4T5 | | X | | |
| <i>Glyceria striata</i> | Fowl Meadow Grass | 3 | -5 | | S5 | | | G5 | | X | X | X |
| <i>Leersia oryzoides</i> | Rice Cut Grass | 3 | -5 | | S5 | | | G5 | | X | X | X |
| <i>Lolium perenne</i> | English Rye Grass | | 3 | -1 | SNA | | | GNR | | X | I | I |
| <i>Panicum dichotomiflorum</i> | Spreading Panic Grass | | -2 | -1 | SNA | | | G5 | | X | I | I |
| <i>Phalaris arundinacea</i> var. <i>arundinacea</i> | Reed Canary Grass | 0 | -4 | | S5 | | | GNR | | X | X | X |

| Latin Name | Common Name | Coefficient of Conservatism | Wetness Index | Weediness Index | Provincial Status S-Rank | OMNR Status | COSEWIC Status | Global Status (G-Rank) | Local Status Area | Local Status Peel | Local Status CVC/Peel | Local Status Peel | Local Status Source |
|--|-----------------------|-----------------------------|---------------|-----------------|--------------------------|-------------|----------------|------------------------|-------------------|-------------------|-----------------------|-------------------|---------------------|
| | | | | | | | | | | | | | Varga 2005 |
| <i>Phleum pratense</i> | Timothy | | 3 | -1 | SNA | | | GNR | | X | I | I | |
| <i>Poa annua</i> | Annual Blue Grass | | 1 | -2 | SNA | | | GNR | | X | I | I | |
| <i>Poa palustris</i> | Fowl Meadow Grass | 5 | -4 | | S5 | | | G5 | | X | X | X | |
| <i>Poa pratensis</i> ssp. <i>pratensis</i> | Kentucky Bluegrass | 0 | 1 | | SNA | | | G5T5 | | X | X | X | |
| <i>Puccinellia distans</i> | Spreading Goose Grass | | -5 | -1 | SNA | | | G5 | | X | I | I | |
| <i>Schedonorus pratensis</i> | Meadow Fescue | | 4 | -1 | SNA | | | G5 | | X | I | I | |
| <i>Setaria pumila</i> | Yellow Foxtail | | 0 | -1 | SNA | | | GNR | | X | I | I | |
| Potamogetonaceae | | Pondweed Family | | | | | | | | | | | |
| <i>Potamogeton pusillus</i> ssp. <i>pusillus</i> | Small Pondweed | 5 | -5 | | SU | | | G5T5 | | R3 | R | RL | |
| Typhaceae | | Cattail Family | | | | | | | | | | | |
| <i>Typha angustifolia</i> | Narrow-leaved Cattail | 3 | -5 | | SNA | | | G5 | | X | X | X | |
| <i>Typha latifolia</i> | Broad-leaved Cattail | 3 | -5 | | S5 | | | G5 | | X | X | X | |
| <i>Typha x glauca</i> | Glaucous Cattail | 3 | -5 | | SNA | | | GNA | | X | X | X | |
| STATISTICS | | | | | | | | | | | | | |
| Species Richness | | | | | | | | | | | | | |
| Total Number of Species: | 153 | | | | | | | | | | | | |
| Native Species: | 74 | 48% | | | | | | | | | | | |
| Exotic Species: | 79 | 52% | | | | | | | | | | | |
| S1-S3 Species: | 0 | 0% | | | | | | | | | | | |
| S4 Species: | 2 | 3% | | | | | | | | | | | |
| S5 Species: | 70 | 97% | | | | | | | | | | | |
| Floristic Quality Indices | | | | | | | | | | | | | |
| Mean Co-efficient of Conservatism (CC) | 3.0 | | | | | | | | | | | | |
| CC 0 - 3 = lowest sensitivity | 41 | 58% | | | | | | | | | | | |
| CC 4 - 6 = moderate sensitivity | 30 | 42% | | | | | | | | | | | |
| CC 7 - 8 = high sensitivity | 0 | 0% | | | | | | | | | | | |
| CC 9 - 10 = highest sensitivity | 0 | 0% | | | | | | | | | | | |
| Floristic Quality Index (FQI) | 26 | | | | | | | | | | | | |
| Weedy and Invasive Species | | | | | | | | | | | | | |
| Mean Weediness Index: | -1.6 | | | | | | | | | | | | |
| -1 = low potential invasiveness | 39 | 54% | | | | | | | | | | | |
| -2 = moderate potential invasiveness | 22 | 31% | | | | | | | | | | | |
| -3 = high potential invasiveness | 11 | 15% | | | | | | | | | | | |
| Wetland Species | | | | | | | | | | | | | |
| Mean Wetness Index | 0.5 | | | | | | | | | | | | |
| upland | 28 | 19% | | | | | | | | | | | |
| facultative upland | 36 | 25% | | | | | | | | | | | |
| facultative | 28 | 19% | | | | | | | | | | | |
| facultative wetland | 33 | 23% | | | | | | | | | | | |
| obligate wetland | 19 | 13% | | | | | | | | | | | |

Appendix C

Breeding Bird List

Breeding Birds of 12519 and 12713 Humber Station Road, Brampton

| Common Name | Scientific Name | Status | | | | | Number of Pairs/Territories | | | |
|-------------------------|-----------------------------------|---|---|---|-------------|------------------------------------|-----------------------------|------------------|--------------------------------------|--------|
| | | National Species at Risk COSEWIC ^a | Species at Risk in Ontario Listing ^a | Provincial breeding season SRANK ^b | TRCA Status | Area-sensitive (OMNR) ^c | FOD Woodland | On-site Wetlands | Fields, Hedgerows and former Gardens | Total |
| Great Blue Heron | <i>Ardea herodias</i> | | | S4 | L3 | | | 1 F | | 1 F |
| Canada Goose | <i>Branta canadensis</i> | | | S5 | L5 | | | | 3 F | 3 F |
| Mallard | <i>Anas platyrhynchos</i> | | | S5 | L5 | | | 1 | | 1 |
| Killdeer | <i>Charadrius vociferus</i> | | | S5 | L4 | | | | 5 | 5 |
| Spotted Sandpiper | <i>Actitis macularia</i> | | | S5 | L4 | | | 1 | | 2 |
| Mourning Dove | <i>Zenaidura macroura</i> | | | S5 | L5 | | 1 | 1, 6 F | | 2, 6 F |
| Downy Woodpecker | <i>Dryobates pubescens</i> | | | S5 | L5 | | | | 1 | 1 |
| Eastern Wood-Pewee | <i>Contopus virens</i> | SC | SC | S4 | L4 | | 1 M? | | 1 M? | 2 M? |
| Willow Flycatcher | <i>Empidonax traillii</i> | | | S5 | L4 | | | 3 | | 3 |
| Eastern Kingbird | <i>Tyrannus tyrannus</i> | | | S4 | L4 | | | | 2 | 2 |
| Horned Lark | <i>Eremophila alpestris</i> | | | S5 | L3 | | | | 5 | 5 |
| Tree Swallow | <i>Tachycineta bicolor</i> | | | S4 | L4 | | | 6 F | | 6 F |
| N. Rough-winged Swallow | <i>Stelgidopteryx serripennis</i> | | | S4 | L4 | | | | 4 F | 4 F |
| Barn Swallow | <i>Hirundo rustica</i> | SC | SC | S4 | L4 | | | | 3 F | 3 F |
| American Crow | <i>Corvus brachyrhynchos</i> | | | S5 | L5 | | | | 2 | 2 |
| Black-capped Chickadee | <i>Parus atricapillus</i> | | | S5 | L5 | | | | 1 | 1 |
| American Robin | <i>Turdus migratorius</i> | | | S5 | L5 | | 3 | 1 | 7 | 11 |
| Gray Catbird | <i>Dryobates carolinensis</i> | | | S4 | L4 | | 1 | | 2 | 3 |
| Brown Thrasher | <i>Toxostoma rufum</i> | | | S4 | L3 | | 1 | | 1 | 2 |
| Cedar Waxwing | <i>Bombycilla cedrorum</i> | | | S5 | L5 | | | | 1 | 1 |
| European Starling | <i>Sturnus vulgaris</i> | | | SE | L+ | | 1 | | 1 | 2 |
| Warbling Vireo | <i>Vireo gilvus</i> | | | S5 | L5 | | 1 | | 1 | 2 |
| Yellow Warbler | <i>Setophaga petechia</i> | | | S5 | L5 | | | | 1 | 1 |
| Common Yellowthroat | <i>Geothlypis trichas</i> | | | S5 | L4 | | | 3 | 1 | 4 |
| Northern Cardinal | <i>Cardinalis cardinalis</i> | | | S5 | L5 | | 1 | | 1 | 2 |
| Chipping Sparrow | <i>Spizella passerina</i> | | | S5 | L5 | | | | 1 | 1 |
| Vesper Sparrow | <i>Pooecetes gramineus</i> | | | S4 | L3 | | | | 5 | 5 |
| Savannah Sparrow | <i>Passerculus sandwichensis</i> | | | S4 | L4 | A | | | 7 | 7 |
| Song Sparrow | <i>Melospiza melodia</i> | | | S5 | L5 | | 1 | 5 | 14 | 20 |
| Swamp Sparrow | <i>Melospiza georgiana</i> | | | S5 | L4 | | | 3 | | 3 |
| Red-winged Blackbird | <i>Agelaius phoeniceus</i> | | | S4 | L5 | | | 11 | 9 | 20 |
| Common Grackle | <i>Quiscalus quiscula</i> | | | S5 | L5 | | 2 | 1 | 1 | 4 |
| Brown-headed Cowbird | <i>Molothrus ater</i> | | | S5 | L5 | | 1 | | 1 | 2 |
| American Goldfinch | <i>Spinus tristis</i> | | | S5 | L5 | | 2 | 2 | 2 | 6 |

F = species foraging only M? = possible migrant

| Field Work Conducted On: | Date | Temp (°C) | Wind Speed (km/h) | Cloud Cover (%) | Start time (a.m.) |
|--------------------------|---------------|-----------|-------------------|-----------------|-------------------|
| Site visit 1 | June 30, 2022 | 17 | 0 | 30 | 8:30 |
| Site visit 2 | May 26, 2023 | 6 | 9 | 0 | 7:10 |
| Site visit 3 | June 19, 2023 | 13 | 10 | 0 | 6:35 |

Number of Species: 34 (29 plus 5 foraging)

Number of (provincial and national) Species at Risk: 2 (Barn Swallow F, Eastern Wood-Pewee M ?)

Number of S1 to S3 (provincially rare) Species: 0

Number of Grassland Area-sensitive Species: 1 (Savannah Sparrow)

Number of Forest Area-Sensitive Species: 0

KEY

a COSEWIC = Committee on the Status of Endangered Wildlife in Canada

a Species at Risk in Ontario List (as applies to ESA) as designated by COSSARO (Committee on the Status of Species at Risk in Ontario)

END = Endangered, THR = Threatened, SC = Special Concern

^b SRANK (from Natural Heritage Information Centre) for breeding status if:

S1 (Critically Imperiled), S2 (Imperiled), S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure)

SZB (breeding migrants or vagrants) and SR (reported as breeding, but no persuasive documentation) .

SE (exotic, i.e. non-native)

c Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide (Appendix G). 151 p plus appendices.

d Toronto and Region Conservation Authority L rank:

L1 to L3 Regional species of concern from highest to lowest; L4 Urban concern; L5 Secure through region

Appendix D

Species at Risk Assessment

Species at Risk Screening

| NAME | SARA STATUS | SARO | COSEWIC | SCHEDULE | S-RANK | HABITAT REQUIREMENTS | SOURCE OF RECORD | HABITAT PRESENT (Y/P/N) | RATIONALE | POTENTIAL IMPACTS AND MITIGATION |
|--|-------------|------|---------|----------|----------|---|--------------------------|-------------------------|--|---|
| AVIFAUNA | | | | | | | | | | |
| Acadian Flycatcher (<i>Empidonax vireescens</i>) | END | END | END | 1 | S1B | The Acadian Flycatcher is typically found in mature, shady forests with ravines, or in forested swamps with lots of maple and beech trees. In Canada, the Acadian Flycatcher nests only in southwestern Ontario, near the shore of Lake Erie, in large forests and forested ravines. This species is found primarily in southern Ontario's Carolinian forests, and requires large, undisturbed forests, often more than 40 hectares in size. This species is relatively rare in Ontario, with 25 to 75 breeding pairs recorded in 2010 (Ministry of Natural Resources and Forestry, 2017). The main threat to the Acadian flycatcher is habitat loss due to urban and agricultural development. | Breeding Bird Atlas | N | Not observed during either Palmer or GEI surveys and no suitable habitat. | NA |
| Barn Swallow (<i>Hirundo rustica</i>) | THR | SC | SC | 1 | S4B | The Barn Swallow is a threatened species, is found throughout southern Ontario, and can range into the north as long as suitable nesting locations can be found. These birds prefer to nest within human made structures such as barns, bridges, and culverts. Barn Swallow nests are cup-shaped and made of mud; they are typically attached to horizontal beams or vertical walls underneath an overhang. A significant decline in populations of this species has been documented since the mid-1980s, which is thought to be related to a decline in prey. Since the Barn Swallow is an aerial insectivore, this species relies on the presence of flying insects at specific times during the year. Changes in building practices and materials may also be having an impact on this species (Ministry of Natural Resources and Forestry, 2015). | Professional experience | N | Nesting habitat is no longer present on the property (except structure placed as compensation) although the species continues to forage over the fields. | NA |
| Bobolink (<i>Dolichonyx oryzivorus</i>) | THR | THR | SC | 1 | S4B | The Bobolink is found in grasslands and hayfields, and feeds and nests on the ground. This species is widely distributed across most of Ontario; however, are designated at risk because of rapid population decline over the last 50 years (Ministry of Natural Resources and Forestry, 2014). The historical habitat of the bobolink was tallgrass prairie and other natural open meadow communities; however, as a result of the clearing of native prairies and the post-colonial increase in agriculture, bobolinks are now widely found in hayfields. Due to their reproductive cycle, nesting habits, and use of agricultural areas, bobolink nests and young are particularly vulnerable to loss as a result of common agricultural practices (i.e. first cut hay). | NHIC | N | Not observed during either Palmer or GEI surveys | NA |
| Chimney Swift (<i>Chaetura pelagica</i>) | THR | THR | THR | 1 | S3B | The Chimney Swift is a threatened species which breeds in Ontario and winters in northwestern South America. It is found mostly near urban areas where the presence of chimneys or other manmade structures provide nesting and roosting habitat. Prior to settlement, the Chimney Swift would mainly nest in cave walls and hollow trees. The Chimney Swift initially benefitted from human settlement; however, recent declines in flying insects and the modernization of chimneys are factors attributed to their current population declines. As a threatened species, the Chimney Swift receives protection for both species and habitat under the ESA (Ministry of Natural Resources and Forestry, 2014). | Breeding Bird Atlas | N | Not observed during either Palmer or GEI surveys and not suitable habitat. | NA |
| Eastern Meadowlark (<i>Sturnella magna</i>) | THR | THR | THR | 1 | S4B, S3N | The Eastern Meadowlark is a bird that prefers pastures and hayfields, but is also found to breed in orchards, shrubby fields and human use areas such as airports and roadsides. Eastern meadowlarks can nest from early May to mid-August, in nests that are built on the ground and well-camouflaged with a roof woven from grasses. The decline in population of these species is thought to be at least partially related to habitat destruction and agricultural practices (Ministry of Natural Resources and Forestry, 2014). | NHIC | N | Not observed during either Palmer or GEI surveys | NA |
| Eastern Whip-poor-will (<i>Antrostomus vociferus</i>) | THR | THR | SC | 1 | S4B | Once widespread throughout the central Great Lakes region, distribution of the Eastern Whip-poor-will in this area is now fragmented. Although there is uncertainty about the causes of the population decline, the main threat is likely habitat loss and fragmentation. Additional threats may include car mortality and food supply changes related to pesticides and climate change. The Eastern Whip-poor-will is usually found in areas with a mix of open and forested areas, such as patchy forests with clearings, forests that are regenerating after major disturbances, savannas, open woodlands or openings in more mature forests. Breeding habitat is dependent on forest structure rather than composition, although common tree associations are pine and oak, and it nests directly on the forest floor. Its distinctive call can be heard at dusk or dawn during the breeding season, and whip-poor-wills heard singing between mid-May and mid-July are likely local breeders (Committee on the Status of Endangered Wildlife in Canada, 2009). | Breeding Bird Atlas | N | No suitable habitat. | NA |
| Eastern Wood-Pewee (<i>Contopus virens</i>) | SC | SC | SC | 1 | S4B | The Eastern Wood-pewee is classified as a species of special concern by COSSARO. Their population has been gradually declining since the mid-1960's (The Cornell Lab of Ornithology, 2015). The Eastern Wood-pewee is a "flycatcher", a bird that eats flying insects, that lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It prefers intermediate-age forest stands with little understory vegetation. Threats to the population are largely unknown; however, causes may include loss of habitat due to urban development and decreases in the availability of flying insect prey (Ministry of Natural Resources and Forestry, 2014). | NHIC | Y | The species was observed in two locations (FOD8 and CUW1) but may or may be breeding based on time of observations. | FOD8 will be retained. Removal of CUW1 should follow Migratory Birds Convention Act and Fish and Wildlife Conservation Act. |
| Least Bittern (<i>Ixobrychus exilis</i>) | THR | THR | THR | 1 | S4B | The Least Bittern prefers marshes and swamps dominated by emergent vegetation, preferably cattails, interspersed with patches of woody vegetation and open water. The smallest member of the heron family, least bitterns nest in marshes south of the Precambrian Shield in Ontario. Due to the location of the nests close to the water surface, least bittern nests are susceptible to damage as a result of wakes cast by recreational boats (Government of Canada, 2015). | Breeding Bird Atlas | N | Not observed during either Palmer or GEI surveys and cattail habitat at and beyond the property is likely too small to support the species | NA |
| HERPTILES | | | | | | | | | | |
| Eastern Milksnake (<i>Lampropeltis triangulum</i>) | SC | - | SC | - | S4 | "Eastern Milksnakes are habitat generalists but prefer open habitats, including rock outcrops and meadows. They require suitable microhabitats for egg laying, hibernation and thermoregulation. Eastern Milksnakes are well known for occupying barns, sheds and houses in rural landscapes" (COSEWIC Report, 2015) | Amphibian/ Reptile Atlas | N | Not present based on GEI surveys which included cover boards, transects and road kill surveys. Additionally, Palmer did not observe the species on the property, | NA |
| Snapping Turtle (<i>Chelydra serpentina</i>) | SC | SC | SC | 1 | S4 | The snapping turtle is a species of special concern in Ontario due to the potential for the species to become threatened or endangered as a result of biological factors or other identified threats. While not presently protected by law, the snapping turtle has been recognized as a species of special concern by COSSARO. Snapping turtles spend the majority of their lives in water and travel slightly upland to gravel or sandy embankments or beaches to lay their eggs (Ontario Ministry of Natural Resources and Forestry, 2014). | Amphibian/ Reptile Atlas | Y | Observed in 'south pond' (SAS1-1/SWT2-2/MAM2-2) | No impacts anticipated as the wetland found will be retained. |
| Western Chorus Frog Great Lakes / St. Lawrence - Canadian Shield population (<i>Pseudacris triseriata</i>) | THR | - | THR | 1 | S4 | The Great Lakes/St. Lawrence - Canadian Shield population of the western chorus frog is federally listed as threatened by COSEWIC. This small frog is primarily a lowland terrestrial species that requires access to terrestrial and aquatic habitats in close proximity to one another. Relying on marshes and wooded wetlands adjacent to forested habitats, this species also requires isolated, predator free pools for breeding. Temporary pools, such as vernal pools in wooded areas, are preferred. This species hibernates terrestrially in a variety of environs, including leaf litter, wood debris, and vacant animal burrows (Government of Canada, 2016) | Amphibian/ Reptile Atlas | N | Not observed during either Palmer or GEI surveys | NA |
| MAMMALS | | | | | | | | | | |

| | | | | | | | | | | | |
|---|-----------|-----|-----------|---|---------|---|---|-------------------------|--|---|---|
| Tri-colored Bat (<i>Perimyotis subflavus</i>) | END | END | END | 1 | S3? | Tri-colored Bat is a small bat that is widely distributed in eastern North America and whose range extends north to southern Ontario. Tri-colored Bat is rare in this region of Ontario which is at the northernmost limit of the natural range for the species. These bats prefer to nest in foliage, tree cavities and woodpecker holes, and are occasionally found in buildings; though this is not their preferred habitat. Winter hibernation takes place in caves, mines and deep crevices. Tri-colored Bat feed primarily on small insects and prefer an open forest habitat type in proximity to water (University of Michigan Museum of Zoology, 2004). | Professional experience | N | Not recorded during GEI acoustic surveys | Not needed (tree clearing can follow breeding/nesting bird timing windows). | |
| Eastern Small-footed Myotis (<i>Myotis leibii</i>) | No Status | END | No Status | o | Schedu | S2S3 | The eastern small-footed myotis, a bat, are an endangered species threatened by a disease known as white nose syndrome, caused by a fungus from Europe. Eastern small-footed myotis' fur has black roots and shiny light brown tips, giving it a yellowish-brown appearance. Its face mask, ears and wings are black, and its underside is grayish-brown, about 8 cm long in size and weighs 4-5 grams. In the spring and summer, eastern small-footed myotis will 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. They change their roosting locations daily and hunt at night for insects to eat, including beetles, mosquitos, moths, and flies. They hibernate in winter, often in caves and abandoned mines. They can be found from south of Georgian Bay to Lake Erie and east to the Pembroke area, and choose colder and drier sites (Ministry of Natural Resources and Forestry, 2014). | Professional experience | N | Not recorded during GEI acoustic surveys | Not needed (tree clearing can follow breeding/nesting bird timing windows). |
| Little Brown Myotis (<i>Myotis lucifugus</i>) | END | END | END | 1 | S3 | Little brown myotis, a bat, are an endangered species threatened by a disease known as white nose syndrome, caused by a fungus from Europe. Little brown myotis have glossy brown fur and usually weigh between four and 11 grams. Bats are nocturnal. During the day they roost in trees and buildings. They often select attics, abandoned buildings and barns for summer colonies where they can raise their young. Little brown myotis hibernate from October or November to March or April, most often in caves or abandoned mines that are humid and remain above freezing – an ideal environment for the fungus to grow and flourish. The syndrome affects bats by disrupting their hibernation cycle, so that they use up body fat supplies before the spring when they can once again find food sources (Ministry of Natural Resources and Forestry, 2014). | Professional experience | N | Not recorded during GEI acoustic surveys | Not needed (tree clearing can follow breeding/nesting bird timing windows). | |
| Northern Myotis (<i>Myotis septentrionalis</i>) | END | END | END | 1 | S3 | Northern myotis, a bat, are an endangered species threatened by a disease known as white nose syndrome, caused by a fungus from Europe. Northern myotis have dull yellow-brown fur with pale grey bellies. They are approximately eight cm long, with a wingspan of about 25 cm, and usually weigh six to nine grams. Northern myotis can be found in boreal forests but occurs throughout southern Ontario to the north shore of Lake Superior and occasionally as far north as Moosonee. roosting under loose bark and in the cavities of trees. Northern Myotis roosts within tree crevices, hollows and under the bark of live and dead trees, particularly when trees are located within a forest gap. These bats hibernate from October or November to March or April, most often in caves or abandoned mines (Ministry of Natural Resources and Forestry, 2014). | Professional experience | N | Not recorded during GEI acoustic surveys | Not needed (tree clearing can follow breeding/nesting bird timing windows). | |
| OTHER | | | | | | | | | | | |
| Monarch Butterfly (<i>Danaus plexippus</i>) | END | SC | END | 1 | S2N,S4B | The monarch is an orange and black butterfly with small white spots and is classified as a species of special concern by COSSARO. The monarch relies on milkweed plants as a food source for growing caterpillars, but the adult butterflies forage in diverse habitats for nectar from wildflowers. The greatest threat to the monarch is loss of overwintering habitat in Mexico. Other threats include use of pesticides and herbicides throughout its range (Ministry of Natural Resources and Forestry, 2014). | Ontario Butterfly Atlas | P | Not observed by Palmer, but GEI observed on adjacent meadow marsh to east. | None. | |

Notes:

- SC - Special Concern
- THR - Threatened
- END - Endangered
- S1 - Extremely rare in Ontario
- S2 - Very rare in Ontario
- S3 - Rare to uncommon in Ontario
- S4 - Considered to be common in Ontario
- S5 - Species is widespread in Ontario
- SH - Possibly extirpated
- S#S# - Indicates insufficient information exists to assign a single rank.
- S#? - Indicates some uncertainty with the classification due to insufficient data.
- S#N - Nonbreeding
- S#B - Breeding
- Y= Yes, P = Potential, N = No

Appendix E

Significant Wildlife Habitat Assessment

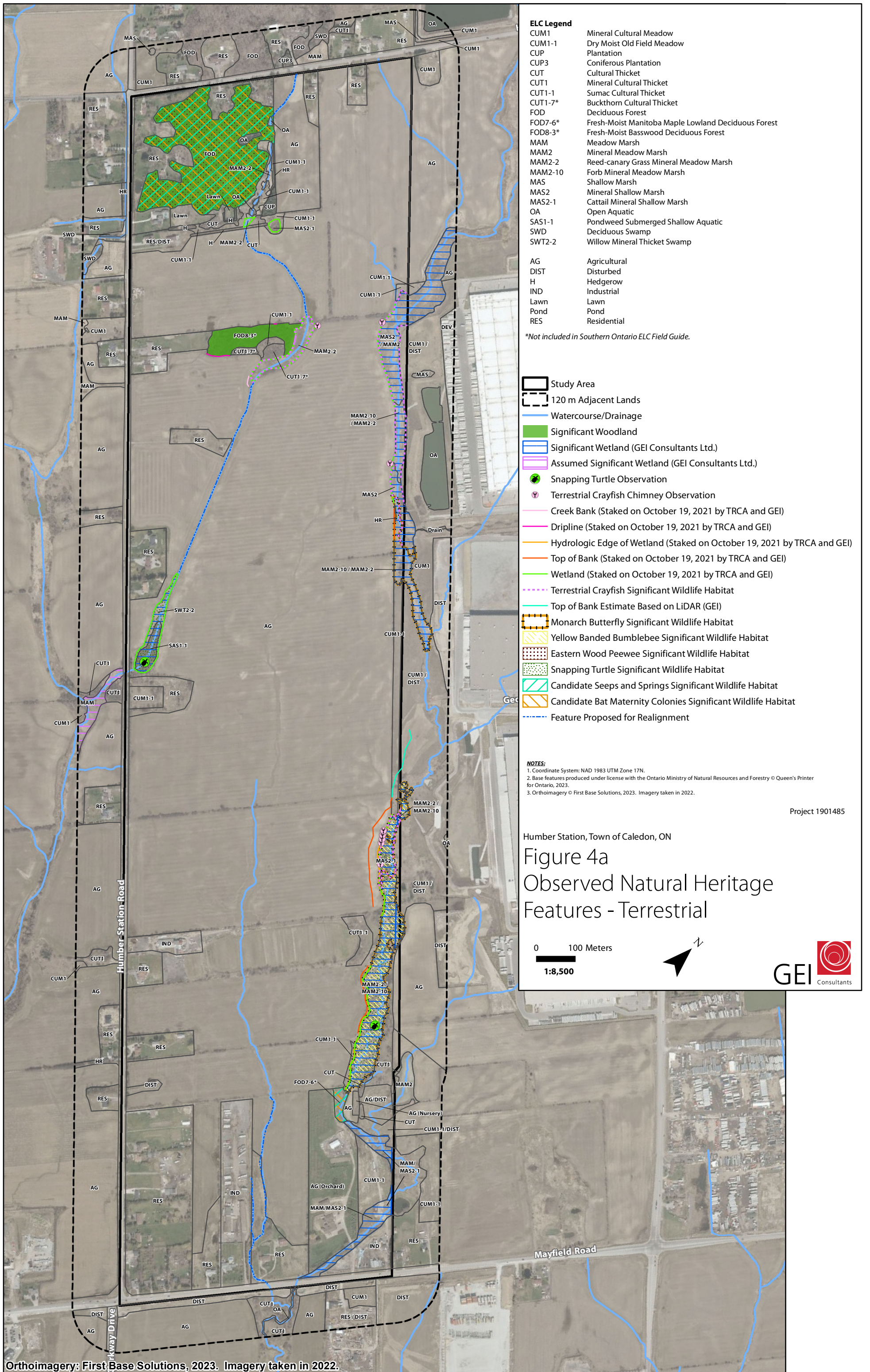
| SWH Type | Associated Species | Associated ELC Ecosites | Habitat Criteria | Presence (Y/P/N) | Additional Notes and Species Observations |
|---|--|---|---|------------------|--|
| Seasonal Concentration Areas of Animals | | | | | |
| Waterfowl Stopover and Staging Areas (Terrestrial) | Ducks | CUM + CUT ecosites | Fields with sheet-water flooding mid-March to May | N | All fields are agricultural. |
| Waterfowl Stopover and Staging Area (Aquatic) | Ducks, Geese | Ponds, Lakes, Inlets, Marshes, Swamps, Shallow Water Ecosites | Sewage & SWM ponds not SWH. Reservoir managed as a large wetland or pond/lake qualifies. | N | Wetlands too small. |
| Shorebird Migratory Stopover Area | Shorebirds | Beaches, Dunes, Meadow Marshes | Shorelines. Sewage treatment ponds and storm water ponds not SWH. | N | Shoreline of pond minimal habitat. |
| Raptor Wintering Area | Eagles, Hawks, Owls | Hawks/Owls: Combination of both Forest and Cultural Ecosites Bald Eagle: Forest or swamp near open water (hunting ground) | Raptors: >20ha, with a combo of forest and upland. Meadow (>15ha) with adjacent woodlands. Eagles: open water, large trees & snags for roosting. | N | No upland meadow. |
| Bat Hibernacula | Big Brown Bat, Tri-coloured Bat | Caves, Crevices, mines, karsts | Buildings and active mine sites not SWH. | N | No caves or mines. |
| Bat Maternity Colonies | Big Brown Bat, Silver-haired Bat | Deciduous or mixed forests and swamps. | Mature deciduous and mixed forests with >10/ha cavity trees >25 cm DBH. | N | Not present within Subject Property. |
| Turtle Wintering Area | Turtles (Midland, N. Map, Snapping) | SW, MA, OA, SA, FEO, BOO (requires open waters) | Free water beneath ice. Soft mud substrate. Permanent water bodies, large wetlands, bogs, fens with adequate DO. | N | The SAS1-1 ('pond') has the potential to contain SWH. However GEI basking surveys indicate that insufficient numbers of turtles are present. |
| Reptile Hibernaculum | Snakes | Snakes: Any ecosite (esp. w/ rocky areas), other than very wet ones. Five-lined Skink: FOD and FOM, FOC1, FOC3 - with rock outcrops | Access below frost line: burrows; rock crevices, piles or slopes, stone fences or foundations. Conifer/shrubby swamps/swales, poor fens, depressions in bedrock w/ accumulations of sphagnum moss or sedge hummock ground cover. | N | No suitable reptile hibernacula were observed. |
| Colonially-nesting Bird Breeding Habitat (Bank and Cliff) | Cliff Swallow, N. Rough-winged Swallow | Banks, sandy hills/piles, pits, slopes, cliff faces, bridge abutments, silos, barns. | Exposed soil banks, not a licensed/permitted aggregate area or new man-made features (2 yrs). | N | No swallow colonies on subject property. |
| Colonially-nesting Bird Breeding Habitat (Tree/Shrubs) | Great Blue Heron, Black-crowned NightHeron, Great Egret, Green Heron | SWM2, SWM3, SWM5, SWM6, SWD1 to SWD7, FET1 | Nests in live or dead standing trees in wetlands, lakes, islands and peninsulas. Shrubs and emergents may be used. Nests in trees are 11 - 15 m from ground, near tree tops. | N | No heron or egret colonies on subject property. |
| Colonially-nesting Bird Breeding Habitat (Ground) | Herring Gull, Great Black-backed Gull, Little Gull, Ring-billed Gull, Common Tern, Caspian Tern, Brewer's Blackbird | Gulls/Terns: Rocky island or peninsula in lake or river. Brewer's Blackbird: close to watercourses in open fields or pastures with scattered trees or shrubs. | Gulls/Terns: islands or peninsulas with open water or marshy areas. Brewer's Blackbird colonies: on the ground in low bushes close to streams and irrigation ditches. | N | No gull or tern colonies on subject property. |
| Migratory Butterfly Stopover Area | Painted Lady, Red Admiral, Special Concern: Monarch | Combination of open (CU) and forested (FO) ecosites (need one from each). | ≥10 ha, located within 5 km of Lake Ontario. Undisturbed sites, with preferred nectar species. | N | No large old field meadows on subject property and not within 5 km of Lake Ontario |
| Landbird Migratory Stopover Areas | All migratory songbirds. All migrant raptor species. | Forest (FO) and Swamp (SW) ecosites | Woodlots >10 ha within 5 km of Lake Ontario. If multiple woodlands are along the shoreline, those <2 km from L. Ontario are more significant. | N | Site is over 5 km from Lake Ontario. |
| Deer Yarding Areas | White-tailed Deer | Mixed or Conifer ecosites | Determined by MNRF - no studies | N | No suitable forests present. |
| Deer Winter Congregation Areas | White-tailed Deer | Mixed or Conifer ecosites | Determined by MNRF - no studies | N | No suitable forests present. |
| Rare Vegetation Communities | | | | | |
| Cliffs and Talus Slopes | | TAO, TAS, CLO, CLS, TAT, CLT e.g., Niagara Escarpment (contact NEC) | Cliff: near vertical bedrock >3m Talus Slope: coarse rock rubble at the base of a cliff | N | Habitat not present. |
| Sand Barren | | SBO1, SBS1, SBT1 | Sand Barrens >0.5 ha. Vegetation can vary from patchy and barren to tree covered, but <60%. <50% vegetation cover are exotic species. | N | Habitat not present. |
| Alvar | <i>Carex crawei</i> , <i>Panicum philadelphicum</i> , <i>Eleocharis compressa</i> , <i>Scutellaria parvula</i> , <i>Trichostema brachiatum</i> , Loggerhead Shrike | ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2 | Alvar >0.5 ha. Need 4 of the 5 Alvar Indicator Spp. <50% vegetation cover are exotic species. | N | Habitat not present. |

| SWH Type | Associated Species | Associated ELC Ecosites | Habitat Criteria | Presence (Y/P/N) | Additional Notes and Species Observations |
|--|--|---|---|------------------|--|
| Old Growth Forest | Trees >140 yrs; heavy mortality = gaps. Multi-layer canopy, lots of snags and downed logs | FOD, FOC, FOM, SWD, SWC, SWM | Woodland areas ≥30 ha with ≥10 ha interior habitat, assuming a 100 m buffer at edge of forest. | N | Habitat not present. |
| Savannah | Prairie Grasses w/ trees | TPS1, TPS2, TPW1, TPW2, CUS2 | A Savannah is a <u>tallgrass prairie</u> habitat that has tree cover of 25 – 60%. <50% cover of exotic species. | N | Habitat not present. |
| Tallgrass Prairie | Prairies Grasses dominate | TPO1, TPO2 | An <u>open Tallgrass Prairie</u> habitat has < 25% tree cover. Less than 50% cover of exotic species. | N | Habitat not present. |
| Other Rare Vegetation Communities | | Provincially Rare S1 - S3 veg. comm. are listed in Appendix M of the SWHTG. | Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps. | N | Habitat not present. |
| Specialized Habitat for Wildlife | | | | | |
| Waterfowl Nesting Area | Ducks | Upland habitats adjacent to: MAS1 to MAS3, SAS1, SAM1, SAF1, MAM1 to MAM6, SWT1, SWT2, SWD1 to SWD4 (>0.5 ha open water wetlands, alone or collectively). | Extends 120 m from a wetland or wetland complex. Upland areas should be at least 120 m wide. Wood Ducks and Hooded Mergansers use cavity trees (>40 cm dbh). | N | Negligible natural upland areas adjacent to wetlands. |
| Bald Eagle & Osprey Nesting, Foraging and Perching Habitat | Osprey, Bald Eagle | FOD, FOM, FOC, SWD, SWM, SWC directly adjacent to riparian areas | Nesting areas are associated with waterbodies along forested shorelines, islands, or on structures over water. | N | No suitable habitat is present (no forested areas adjacent to waterbodies) |
| Woodland Raptor Nesting Habitat | Barred Owl. Hawks: N. Goshawk, Cooper's, Sharp-shinned, Red-shouldered, Broad-winged. | Forests (FO), swamps (SW), and conifer plantations | >30 ha with > 10 ha interior habitat. | N | No suitable habitat present (no large forests) |
| Turtle Nesting Areas | Midland Painted Turtle Special Concern: Snapping Turtle, Northern Map Turtle | Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within: MAS1 to MAS3, SAS1, SAM1, SAF1, BOO1 | Nest sites within open sunny areas with soil suitable for digging. Sand and gravel beaches. | N | No suitable habitat was observed by either Palmer or GEI. |
| Seeps and Springs | Wild Turkey, Ruffed Grouse, Spruce Grouse, White-tailed Deer, Salamander spp. | Seeps/Springs are areas where ground water comes to the surface. | Any forested area within the headwaters of a stream/river system. (2 or more confirms SWH type). | N | No seeps or springs observed. |
| Amphibian Breeding Habitat (Woodland) | Woodland Frogs and Salamanders | FOC, FOM, FOD, SWC, SWM, SWD | Open water wetlands, pond or woodland pool of >500 m ² within or adjacent to wooded areas. Permanent ponds or holding water until mid-July preferred. | N | No amphibian breeding habitat within woodlands. |
| Amphibian Breeding Habitat (Wetlands) | Toads, Frogs, and Salamanders | SW, MA, FE, BO, OA and SA. Typically isolated (>120m) from woodland ecosites, however larger wetlands may be adjacent to woodlands. | Open water wetland ecosites >500m ² isolated from woodland ecosites with high species diversity. Permanent water with abundant vegetation for bullfrogs. | N | Open water wetlands contained insufficient numbers of amphibians. |
| Woodland Area-Sensitive Bird Breeding Habitat | Birds (area-sensitive species) | FOC, FOM, FOD, SWC, SWM, SWD | Large mature (>60 years) forest stands/woodlots >30 ha. Interior forest habitat >200m from forest edge. | N | No area-sensitive forest birds were recorded on the property. |
| Habitat of Species of Conservation Concern | | | | | |
| Marsh Bird Breeding Habitat | Wetland Birds | MAM1 to MAM6, SAS1, SAM1, SAF1, FEO1, BOO1 Green Heron: SW, MA and CUM1 | Wetlands with shallow water and emergent vegetation. Gr. Heron @ edges of these types w/ woody cover. | N | None of the species listed in the Ecoregion criteria were recorded on or immediately adjacent to the subject property. |
| Open Country Bird Breeding Habitat | Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, N. Harrier, Savannah Sparrow, Short-eared Owl (SC) | CUM1, CUM2 | Grassland/meadow >30 ha. Not being actively used for farming. Habitat established for 5 years or more. | N | While Vesper and Savannah Sparrow are present, the habitat consists of active agricultural row crops and does not meet this criteria. |
| Shrub/Early Successional Bird Breeding Habitat | Brown Thrasher + Clay-coloured Sparrow (indicators) , Field Sparrow, Black-billed Cuckoo, E. Towhee, Willow Flycatcher, Yellow-breasted Chat, Golden-winged Warbler | CUT1, CUT2, CUS1, CUS2, CUW1, CUW2 | Large field areas succeeding to shrub and thicket habitats > 10 ha. Areas not actively used for farming in the last 5 years. | N | No habitat present. |
| Terrestrial Crayfish | Chimney or Digger Crayfish; Devil Crayfish or Meadow Crayfish | MAM1 to MAM6, MAS1 to MAS3, SWD, SWT, SWM. CUM1 sites with inclusions of the aforementioned. | Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish (typc. protected by wetland setbacks). | Y | GEI observed terrestrial crayfish chimneys in three locations on the subject property at the interface of the north and east wetlands and the agricultural fields. Thus, they have considered SWH and Palmer has carried this forward. |

| SWH Type | Associated Species | Associated ELC Ecosites | Habitat Criteria | Presence (Y/P/N) | Additional Notes and Species Observations |
|---|---|------------------------------|---|------------------|---|
| Special Concern and Rare Wildlife Species | Any species of concern or rare wildlife species | Any ELC code. | Presence of species of concern or rare wildlife species. | Y | <p>Snapping Turtle: A Snapping Turtle was observed in the wetland containing the SAS1-1 (pond in southwest). This wetland (SAS1-1/SWT2-2/MAM2-2) has been considered SWH for this reason.</p> <p>Eastern Wood-Pewee: Single pewee's were observed in two locations early in the breeding season. These individuals may or may not have been breeding on site (they would generally be heard later in June if breeding). Regardless, Palmer does not consider a single territory of pewee SWH since it is still a common species. Thus there are no SWH for this species.</p> <p>Monarch: GEI considered the MAM2-10/MAM2-2 adjacent to the property on the east side as SWH due to observations of Monarch and presence of milkweed</p> |
| Animal Movement Corridors | | | | | |
| Amphibians | Amphibians | all ecosites assoc. w/ water | When Breeding Habitat - wetland confirmed | N | Minimal frog breeding habitat on the subject property. |
| Deer Movement | White-tailed Deer | all forested ecosites | When Deer Wintering Habitat confirmed | N | No deer wintering habitat. |
| Exceptions for Ecoregion 6E | | | | | |
| Mast Producing: 6E-14 | Black Bear | Forested Ecosites | >30 ha w/ mast producing species: Cherry (berries), Oak, Beech (nuts). | N | Not applicable to site. |
| Leks: 6E-17 | Sharp-tailed Grouse | CUM, CUS, CUT | Grassland/meadow >15 ha adjacent to shrublands, >30 ha adjacent to woodlands. Low agricultural intensity. | N | Species not in range. |

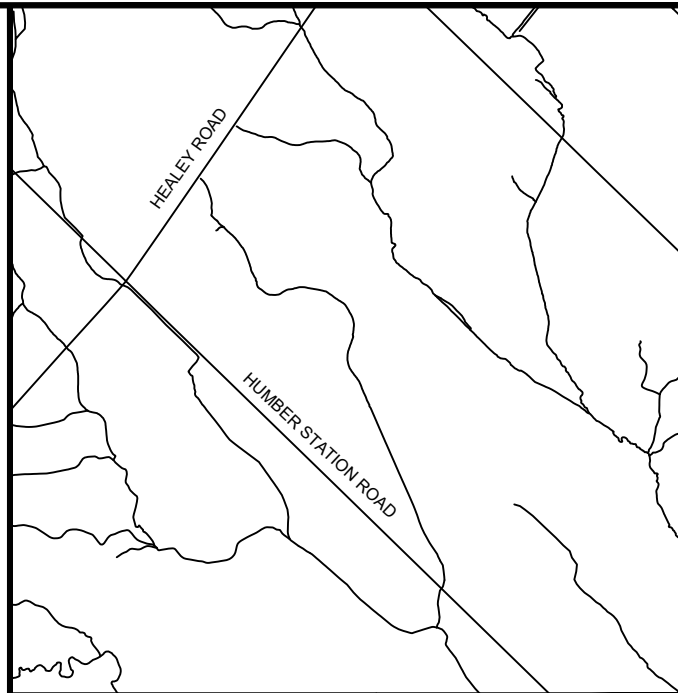
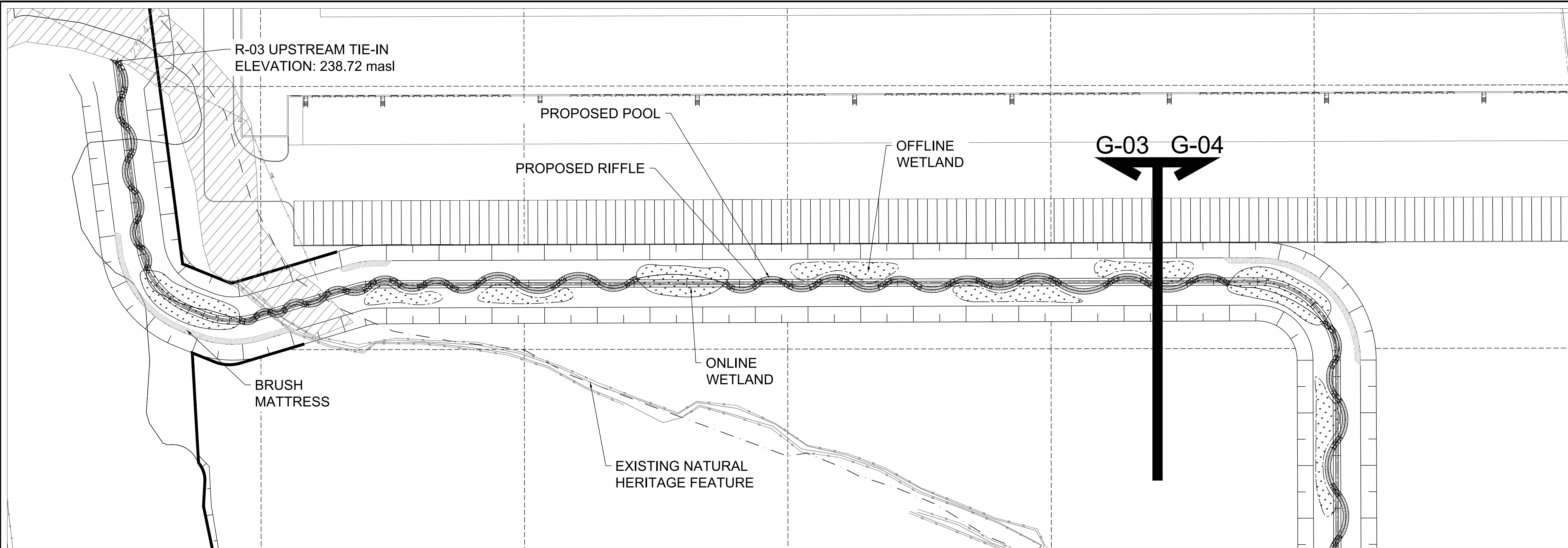
Appendix F

Observed Natural Heritage Features – Terrestrial (GEI 2023 CEISMP)

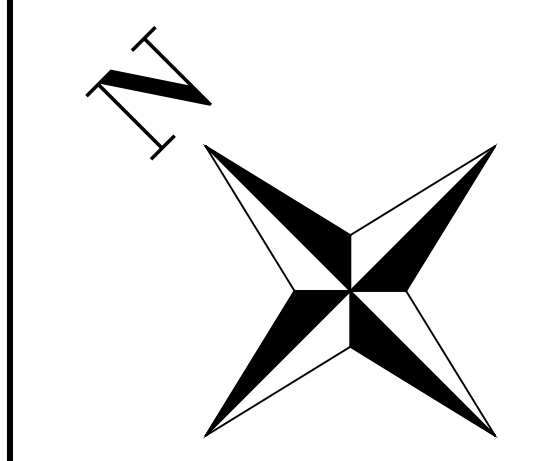


Appendix G

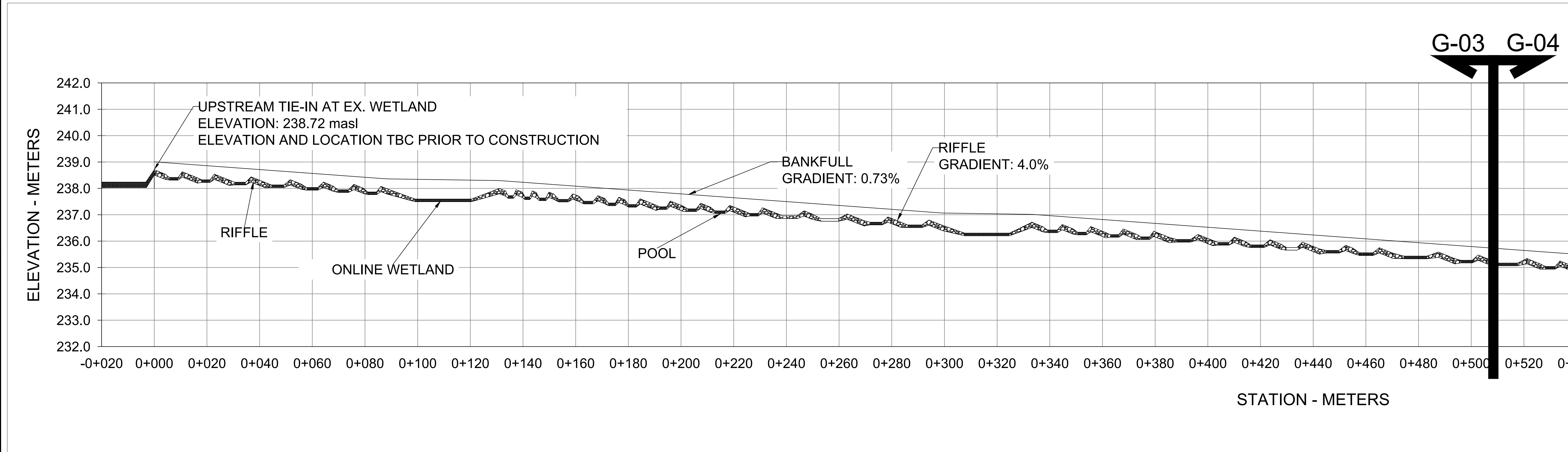
**Channel Realignment (GEI
2024 CEISMP Phase 3,
Drawing G-03)**



- GENERAL NOTES:**
1. ALL DIMENSIONS ARE IN METRES OR MILLIMETRES, UNLESS OTHERWISE NOTED.
 2. ACTIVITIES WITHIN THE WATERCOURSE SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION TIMING WINDOW IDENTIFIED BY THE MECP AND CONSERVATION AUTHORITY.
 3. ALL IN-WATER AND NEAR WATER WORKS WILL BE CONDUCTED IN THE DRY DURING THE TIMING WINDOW SPECIFIED.
 4. CONSTRUCTION SHALL NOT COMMENCE UNTIL ALL UTILITY LOCATIONS HAVE BEEN REVIEWED AND ALL PERMITS AND APPROVALS HAVE BEEN RECEIVED BY THE CONTRACT ADMINISTRATOR.
 5. A DETAILED ESC PLAN, INTENDED TO PREVENT ENTRY OF SEDIMENT INTO THE WATER COURSE AND NATURAL AREAS, SHALL BE PREPARED PRIOR TO CONSTRUCTION AND ADHERED TO FOR THE DURATION OF CONSTRUCTION. ANY DEVIATION FROM APPROVED PLANS MUST BE DESIGNED BY A QUALIFIED PROFESSIONAL.



REACH 3 - PROPOSED PLAN VIEW: PART 1
SCALE 1:750



| No. | DATE | ISSUE/REVISION | INITIAL |
|-----|---------|----------------------|---------|
| 1 | 8/28/24 | CONCEPT - 30% DESIGN | LM |

HUMBER STATION VILLAGE LOG

CHANNEL RE-ALIGNMENT

PLANVIEW AND PROFILE REACH 3: PART 1

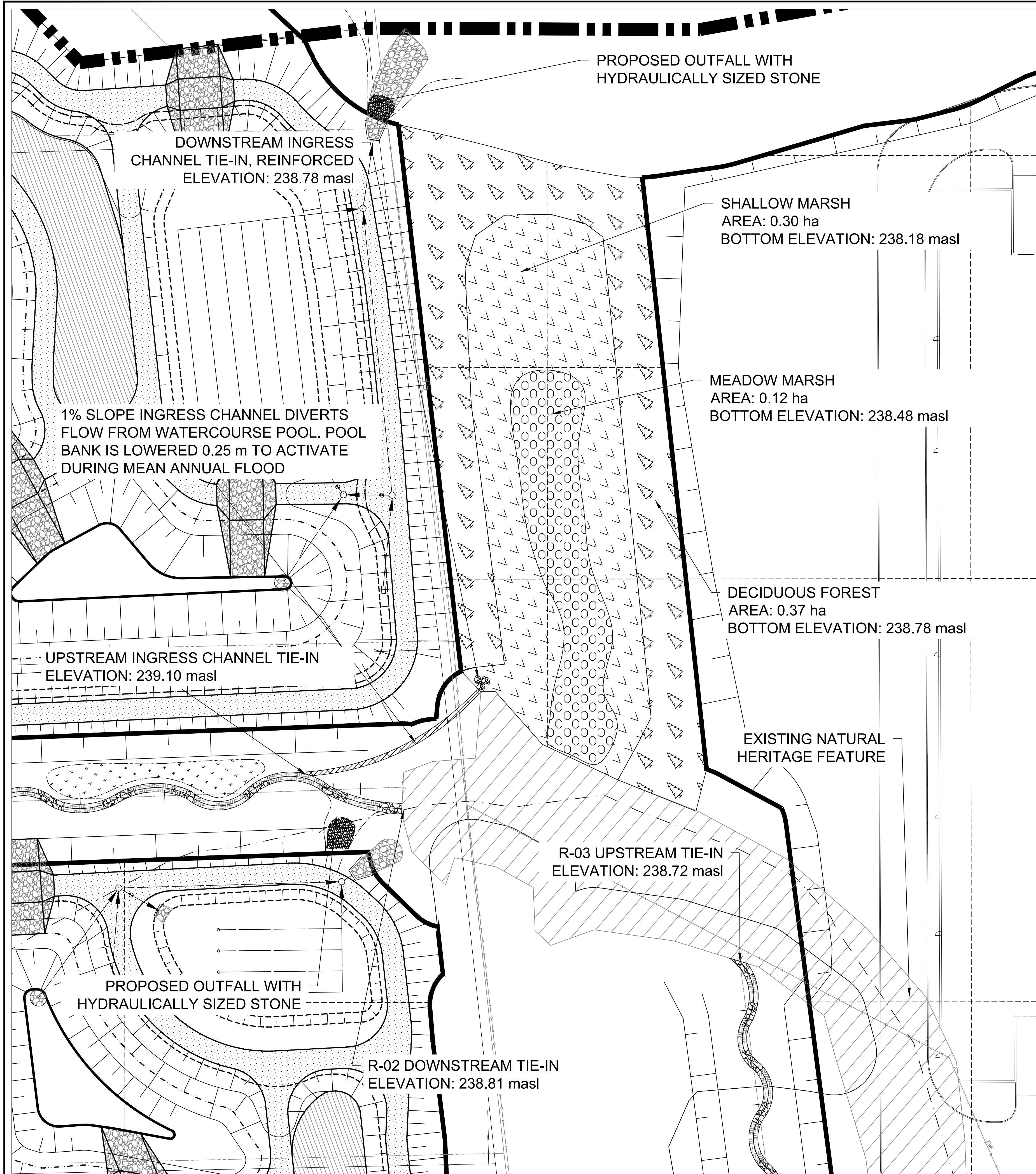


DESIGNED BY: LM DATE: AUGUST 2024 CHECKED BY: AS
 DRAWN BY: AS / LM PROJECT No. 1901485 DRAWING No. G-03
 SCALE: 1:750

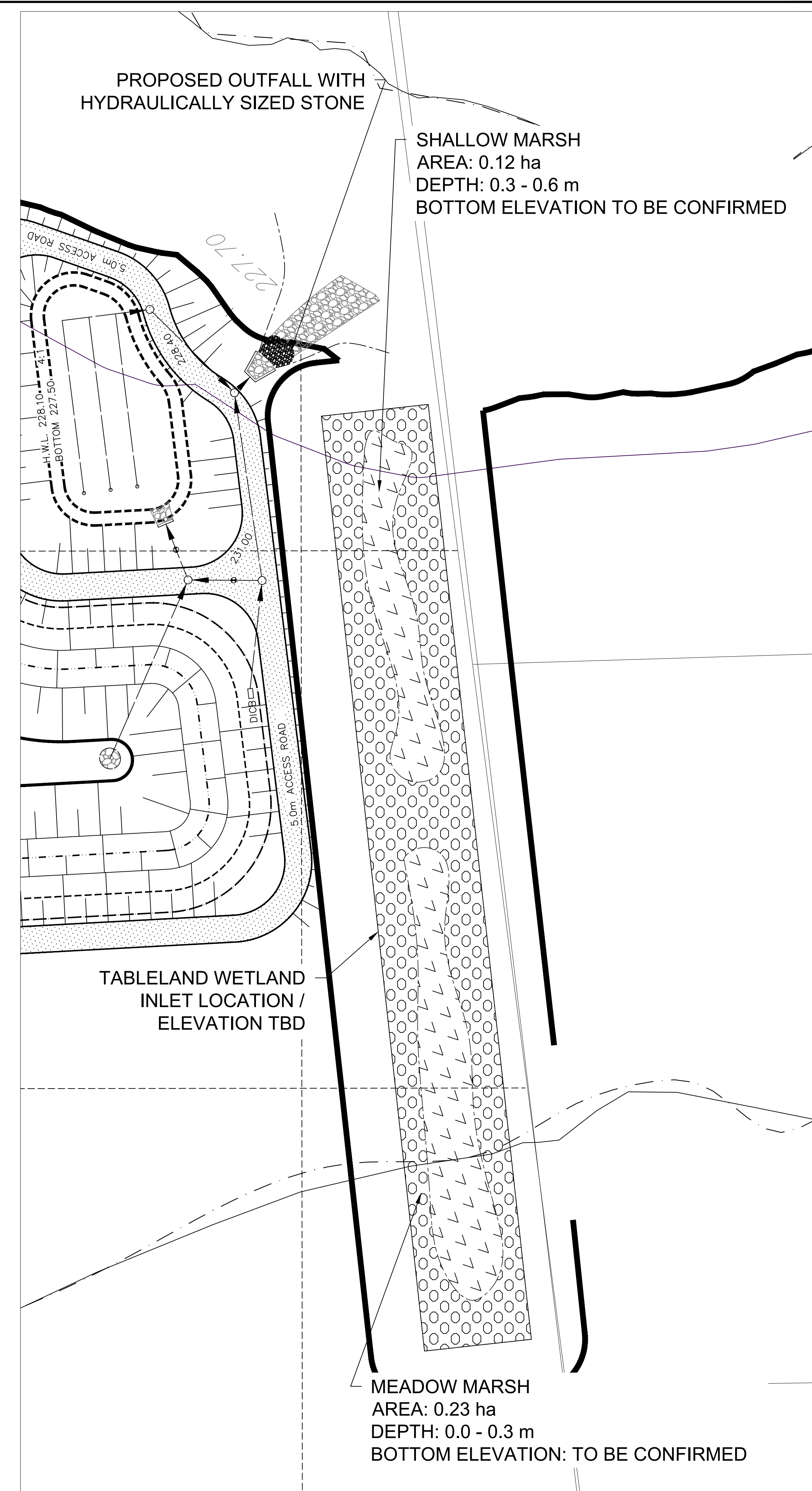
REACH 3 - PROPOSED PROFILE: PART 1
SCALE 1:750

Appendix H

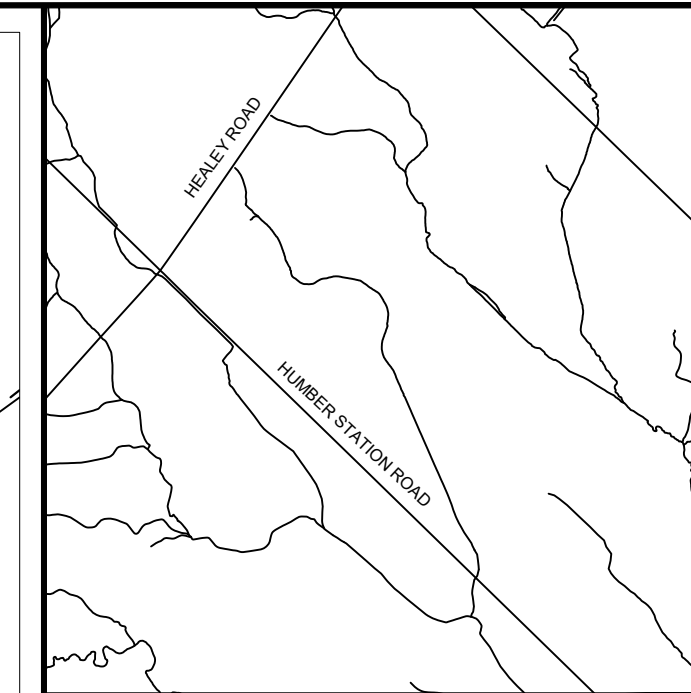
**Woodland and Wetland
Compensation (GEI 2024
CEISMP Phase 3, Drawing G-
05, Wetland Area 2)**



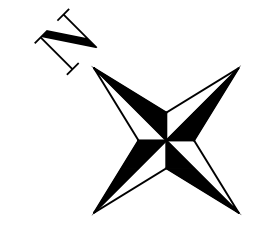
COMPENSATION WETLAND AREA 2
SCALE 1:500



COMPENSATION WETLAND AREA 3
SCALE 1:500



- GENERAL NOTES:**
1. ALL DIMENSIONS ARE IN METRES OR MILLIMETRES, UNLESS OTHERWISE NOTED.
 2. ACTIVITIES WITHIN THE WATERCOURSE SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION TIMING WINDOW IDENTIFIED BY THE MECP AND CONSERVATION AUTHORITY.
 3. ALL IN-WATER AND NEAR WATER WORKS WILL BE CONDUCTED IN THE DRY DURING THE TIMING WINDOW SPECIFIED.
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| | | | |
|-----|---------|----------------------|---------|
| No. | DATE | ISSUE/REVISION | INITIAL |
| 1 | 8/28/24 | CONCEPT - 30% DESIGN | LM |

HUMBER STATION VILLAGE LOG

WETLAND PLANS

PLANVIEW



| | | |
|-------------------|---------------------|------------------|
| DESIGNED BY: LM | DATE: AUGUST 2024 | CHECKED BY: AS |
| DRAWN BY: AS / LM | PROJECT No. 1901485 | DRAWING No. G-05 |
| SCALE: 1:500 | | |