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280 Clair Rd W Environmental Impact Study

Prepared for

John Farley, Home Opportunities

north-south ENVIRONMENTAL

North-South Environmental Inc. • 101B King Street West • Cambridge, Ontario • N3H 1B5

Project Study Team

North-South Environmental Inc.

Izabela van Amelsvoort – Senior Ecologist. Project Management. Fieldwork, Report Author
Sal Spitale – Senior Ecologist. Senior Review.
Patrick Strzalkowski – Junior Ecologist. Fieldwork, Report Author
Devin Bettencourt – Ecologist, ISA Certified Arborist (ON-2831A). Fieldwork
Grace Pitman – Fieldwork
Pauline Catling - Fieldwork
Benjamin Meinen – GIS Specialist. Figures

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1. Introduction

North-South Environmental Inc. (NSE) has been retained by Home Opportunities to complete an Environmental Impact Study (EIS) to assess the impact of a proposed residential development at 280 Clair Road West, located in the southeastern section of the City of Guelph ('the City'), on the southeast side of Clair Road, in between Gordon Road and Highway 6. The 'subject property' is comprised of the privately-owned land parcels at 280 Clair Road, as well as two smaller City-owned parcels at 266 Clair Road (**Figure 1** in **Appendix 1**). The subject property is approximately 8.7 ha and is currently composed of three small agricultural fields, hedgerows, and early successional / cultural vegetation communities.

The requirement for an Environmental Impact Study (EIS) at this location is triggered by the presence of the following environmental features adjacent (within 120 m) to the subject property (based on the City of Guelph Official Plan Schedules):

- Ecological Linkage; and
- Significant portion of the Paris-Galt Moraine (Significant Landform)

In accordance with the City of Guelph Official Plan (OP), development is not permitted on lands adjacent to natural heritage features and areas, unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated through an EIS that there will be no negative impacts on the natural features or on their ecological functions. The subject property and adjacent lands, defined as lands within 120 m of the subject property, represent the study area (**Figure 1** in **Appendix 1**).

The Terms of Reference (TOR) for this EIS has been developed in consultation with the City. The approved TOR is included as **Appendix 2**.

Note that a separate Tree Inventory and Preservation Report has been prepared by NSE and submitted concurrently with this EIS.

2. Regulatory and Planning Context

Federal and provincial legislation, and provincial and municipal plans guide development on the subject lands that are described below and will form the basis upon which legislative and policy recommendations and conclusions will be made.

2.1. Federal Legislation

2.1.1. Fisheries Act

2.1.1.1. Policy Overview

The *Fisheries Act* (1985) is in place to maintain healthy, sustainable and productive Canadian fisheries through the prevention of pollution, and the protection of fish and their habitat. and applies to all Canadian freshwater and marine fisheries waters. The *Fisheries Act* defines fish habitat as *"spawning grounds and other areas, including nursery, rearing, food supply and mitigation areas, on which fish depend directly or indirectly in order to carry out their life processes*" [subsection (2)1].

Under the current iteration of the Act, the *Fisheries Act* prohibits the death of fish by means other than fishing [subsection 34.4 (1)] and the harmful alteration, disruption or destruction of fish habitat [HADD; subsection 35. (1)]. A HADD is defined as "any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat's capacity to support one or more life processes" (DFO 2019). Protection provisions for fish and fish habitat exist in the form of standards, codes of practice, and guidelines for projects in and near water. These provide guidance on how to avoid and mitigate impacts to fish and fish habitat and comply with the *Fisheries Act* to avoid causing the death of a fish or HADD of fish habitat from your work, undertaking or activity.

The federal *Fisheries Act* regulates the harm and destruction of fish and fish habitat in Canadian waterways. Under the *Fisheries Act*, certain work, undertakings or activities taking place in or near water that occur within or near water may require review or authorization from the Department of Fisheries and Oceans (DFO). The DFO encourages proponents to implement measures to avoid impacts to fish and fish habitat. If avoidance is not possible, the DFO recommends mitigating impacts to fish and fish habitat and has prepared codes of practice for common works, undertakings and activities.

2.1.1.2. Relevance to the Study Area

No fish habitat is present. Consultation with the DFO is not required.

2.1.2. Migratory Birds Convention Act

2.1.2.1. Policy Overview

The *Migratory Birds Convention Act* (MBCA 1994) and *Migratory Birds Regulations*, (MBR 2022) protect most species of migratory birds and their nests and eggs. Under the MBR, it is prohibited to damage, destroy, disturb or remove migratory bird nests when they contain a live bird or viable egg and prohibit the deposit of harmful substances in waters and areas frequented by migratory birds.

For 18 species of migratory birds identified on Schedule 1, the MBR provides year-round nest protection until they can be deemed abandoned. Schedule 1 includes certain migratory birds who

either re-use their own nests from one year to the next (colonial species), or whose nests are commonly re-used by other species of migratory bird species, like Pileated Woodpeckers. If the nest of a Schedule 1 species has not been occupied by a migratory bird for the entirety of the waiting time indicated in the MBR 2022, it is considered to be abandoned, and no longer has high conservation value for migratory birds.

2.1.2.2. Relevance to the Study Area

Bird species protected under the MBCA are known to use the study area. Avoidance and mitigation measures are required to avoid contravening the MBCA and its Regulations. Recommendations are provided in **Section 8**.

2.2. Provincial Legislation

2.2.1. Endangered Species Act

2.2.1.1. Policy Overview

The *Endangered Species Act* (ESA; 2007) protects Species at Risk (SAR) and their habitats in Ontario. Species listed as endangered or threatened are afforded legal protection from harm and harassment and also prohibits damage or destruction of habitat of endangered or threatened species. General habitat protection is provided to all endangered or threatened species while species-specific habitat protection is set out in specific provisions in a habitat regulation as set out in Ontario Regulation (O. Reg. 242/08) under the ESA. New regulations 829/21 and 830/21 (2022) provide additional details regarding specific species where a conservation fund option or registration is permitted.

Destruction of a SAR and / or their habitats constitutes a contravention of the ESA. Should an ESA protected species be encountered, impacts to the species or its habitat can be avoided or mitigated through a number of avenues. These include avoidance (e.g., through design modifications or timing of works), adherence to an applicable Notice of Activity, or by obtaining an Overall Benefit Permit.

2.2.1.2. Relevance to the Study Area

Species that are protected under the ESA have potential to occur within the study area. This is further discussed in **Section 5.2**.

2.2.2. Provincial Planning Statement (2024)

2.2.2.1. Policy Overview

The Provincial Planning Statement (PPS; 2024), was issued pursuant to the *Planning Act*. All municipal decisions must be consistent with the PPS.

Section 4 provides direction for the wise use and management of resources, including the protection of natural areas and features. Natural heritage policies are described in Section 4.1.

Section 4.1.1 states that "natural features and areas shall be protected for the long term."

Section 4.1.2 of the PPS outlines protection needs related to biodiversity and connectivity, including protection of both ecological features and function required to maintain biodiversity and functional ecological connectivity.

Section 4.1.4 lists significant natural heritage features where development and site alteration are not permitted, including:

- Significant wetlands in Ecoregions 5E, 6E and 7E, and
- Significant coastal wetlands.

Section 4.1.5 lists significant natural heritage features where development and site alteration are not permitted, unless it has been demonstrated that there will be no *negative impact* on the natural features or their *ecological functions*, including:

- Significant woodlands in Ecoregions 6E and 7E,
- Significant valleylands in Ecoregions 6E and 7E,
- Significant wildlife habitat,
- Significant areas of natural and scientific interest (ANSI), and
- Coastal wetlands in Ecoregion 5E, 6E and 7E (that are not subject to policy 4.1.4)

Section 4.1.7 states that development and site alteration shall not be permitted in habitat of endangered and threatened species, except in accordance with provincial and federal requirements.

Section 4.1.8 states that development and site alteration are not permitted on adjacent lands to the natural heritage features and areas identified in policies 4.1.4, 4.1.5, and 4.1.6 (fish habitat) unless the *ecological function* of the adjacent lands has been evaluated and it has been demonstrated that there will be no *negative impacts* on the natural features or on their *ecological functions*.

2.2.2.2. Relevance to the Study Area

The following features are absent: significant wetland, significant coastal wetland, non-significant coastal wetland, significant woodland, significant valleyland, significant areas of natural and scientific interest, and fish habitat.

The following features are present: habitat of endangered and threatened species (Eastern Meadowlark – Confirmed; SAR bats – Candidate [potentially present]).

Habitat for endangered and threatened species are discussed in **Section 5.2**.

2.2.3. Clean Water Act (2006)

2.2.3.1. Policy Overview

Ontario's *Clean Water Act* affords protection to source drinking water in Ontario by granting regulatory authority to Source Protection Committees through the creation of Source Protection Plans (SPPs). Source water in the Grand River watershed is protected by the policies in the Grand River SPP prepared by the Lake Erie Source Protection Region (2021).

2.2.3.1. Relevance to the Study Area

The subject property is located within a Wellhead Protection Area (WHPA) and development on site must therefore adhere to the relevant policies within the Grand River SPP. The proposed development is residential and does not fall under restricted land uses within the Grand River SPP.

2.2.4. Conservation Authorities Act

2.2.4.1. Policy Overview

In Ontario, conservation authorities (CA's) develop and deliver resource management programs that safeguard watersheds. They are governed by the *Conservation Authorities Act* (1990), which is administered by the MNRF. The purpose of this Act is to provide for the organization and delivery of programs and services that further the conservation, restoration, development, and management of natural resources in watersheds in Ontario.

The Grand River Conservation Authority (GRCA) has the responsibility to regulate activities in natural and hazardous areas (i.e., streams, floodplains, wetlands, areas in and near rivers, slopes and a lakes shoreline), or in proximity to these areas. Previous to April 1, 2024, GRCA's regulation was O. Reg 150/06, issued under the *Conservation Authorities Act*. As of April 1, 2024, the regulation for all of Ontario's CA's is O. Reg 41/24.

Under O. Reg 41/24, any development or site alteration within a regulated area requires a permit from the local conservation authority. The regulated area limit ('regulation limit') is a 30 m setback from regulated wetlands. The regulated area limit along stream valleys is variable and depends on site characteristics (e.g., floodplain extent, meander belt extent).

Per Section 28.1 (1) of the *Conservation Authorities Act*:

> *A Conservation Authority may issue a permit to a person to engage in an activity that would otherwise be prohibited, 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.*

2.2.4.2. Relevance to the Study Area

The subject property is fully outside of the GRCA mapped regulated area. No wetlands are present in the study area. A permit from GRCA is not required.

2.3. Municipal Policies

2.3.1. City of Guelph Official Plan (February 2022 Consolidation)

2.3.1.1. Policy Overview

The City's Official Plan (OP) provides direction on matters of municipal interest, such as Natural Heritage policies for protection of natural features under Section 4.1. The policies under Section 4.1 "aim to strike a balance between protection of the Natural Heritage System and limited compatible development".

Adjacent lands "are those lands contiguous to a specific natural heritage feature or area where it is likely that development or site alteration would have a negative impact on the natural heritage feature or area". Development in Adjacent lands triggers the need for an EIS or other environmental assessment. Requirements related to buffers and adjacent lands, where applicable, are identified in Table 4.1 (under Section 4.1.1.11).

Section 4.1.2 describes the general permitted uses within the NHS and buffers. Generally, development and site alteration are not permitted within the NHS and buffers with some exceptions. Moreover, this section reiterates that permitted development adjacent to the NHS is required to demonstrate in an EIS (or other report) in consultation with applicable authorities that there will be no negative impact on the NHS and ecological and hydrological functions.

Section 4.1.3 describes objectives, criteria for designation and policies for Significant Natural Areas and their buffers, including Significant Landforms (Section 4.1.3.8) and Significant Wildlife Habitat (including Ecological Linkages) (Section 4.1.3.9).

Section 4.1.4 describes objectives, criteria for designation and policies for Natural Areas.

2.3.1.1. Relevance to the Study Area

Under the Guelph Official Plan, the subject property is mapped as Industrial and as Significant Natural Areas and Natural Areas on Schedule 2: Land Use Plan.

Natural heritage features present within or adjacent to the subject property include (as identified on the City's OP Schedules):

- Significant Natural Areas:
  - Ecological Linkage
  - Significant Landform (Significant Portions of the Paris-Galt Moraine)

The subject property is zoned as Industrial (B) and Natural Heritage System (NHS) under the City of Guelph Zoning By-law (2023)-20790.

3. Methodology

3.1. Background and Secondary Source Review

The background review includes the following sources:

- Background review of land designations (i.e., provincially significant wetlands (PSWs), Areas of Natural and Scientific Interest (ANSIs), etc.), land types and landforms, and Species at Risk (SAR) or locally significant species
  - Ministry of Natural Resources and Forestry (MNRF) /Natural Heritage Information Centre (NHIC) screening for Species At Risk (SAR) along with documented communications with appropriate governing agencies via Information Request
- Review of available background studies/reports
  - Soil Survey of Wellington County Ontario (Hoffman and Matthews 1963)
  - The Physiography of Southern Ontario, 3rd Ed. (Chapman and Putnam 1984)
  - City of Guelph Natural Heritage Strategy: Terrestrial Inventory & Natural Heritage System (Dougan & Associates and Snell & Cecile Environmental Research 2009)
  - City of Guelph Private Tree By-law 19058 (City of Guelph 2010)
  - Environmental Impact Study for 132 Clair Road (NSE 2015)
  - Clair-Maltby Secondary Plan and Master Environmental Servicing Plan Comprehensive Environmental Impact Study (Wood 2022)
- Review of online species atlases and records;
  - Atlas of the Breeding Birds of Ontario (OBBA 2007)
  - Ontario Reptile and Amphibian Atlas (Online)
  - eBird Canada (Online)
  - Ontario Butterfly Atlas (Online)
  - iNaturalist (Online)
- Review of technical guidance documents
  - Natural Heritage Reference Manual (OMNR 2010)
  - Significant Wildlife Habitat (SWH) Technical Guide (MNRF 2000)
  - Significant Wildlife Habitat (SWH) Criteria Schedules for Ecoregion 6E (MNRF 2015)

- City of Guelph Tree Technical Manual (2019)

3.2. Field Studies

3.2.1. Field Survey Dates

The following sections outline the methodology for the biological field program executed within the study area. **Table 1** summarizes the dates and survey types, and the staff involved with each visit. Location of surveys are illustrated on **Figure 2** in **Appendix 1**.

Table 1. Summary of Field Surveys, Timing, and Staff

Date	Time	NSE Staff	Purpose	Weather Conditions[1]
25 Oct 2019	-	Pauline Catling	Botanical Survey	NA
27 Apr 2020	11:30-13:45	Pauline Catling	Botanical Survey, Snake Survey	T=10-13˚C, W=1, C=10%
13 May 2020	11:45-15:05	Pauline Catling	Snake Survey	T=9-15˚C, W=2, C=0%
27 May 2020	06:20-08:40	Grace Pitman	Breeding Bird Survey, Snake Survey	T=18˚C, W=1, C=25%
29 June 2020	06:05-06:40	Sal Spitale	Breeding Bird Survey	T=20˚C, W=2, C=0%
11 August 2020	08:10-12:20	Izabela van Amelsvoort	Botanical Survey, Snake Survey	T=23˚C, W=1, C=15%
16, 18 September 2024	-	Devin Bettencourt, Patrick Strzalkowski	Tree Inventory	NA

1. T=Temperature; W=Wind (Beaufort Scale); C=Cloud Cover

3.2.2. Ecological Land Classification / Flora

A field visit on October 25, 2019, to define the vegetation community mapping (according to Ecological Land Classification [ELC] for Southern Ontario: First Approximation and Its Application (Lee et al. 1998), with the intent to confirm presence / absence of new features / communities.

Flora surveys were completed in the fall on October 25, 2019, in the spring on April 27, 2020, and in the summer on August 11, 2020.

3.2.3. Breeding Bird Surveys

Two breeding bird surveys were completed following Forest Bird Monitoring Program protocols (Konze and McLaren 1997). The surveys include an area search throughout the subject property using Breeding Bird Atlas protocols. In 2020, point counts at three stations within the subject property were conducted. Station 1 was in the northwest of the property, within the agricultural field, station 2 was in the cultural savannah, near the southern corner, and station 3 was in the cultural thicket, north of the eastern agricultural fields (**Figure 2** in **Appendix 1**). The surveys were completed within appropriate timing windows (first completed between May 24 and June 15 and second of these surveys completed no sooner than seven days from the first survey, between June 15 and July 10). Surveys

were completed in the morning between a half-hour before sunrise and 10:00 am during suitable weather conditions. Actual dates and times of the surveys are shown in **Table 1**. Breeding evidence was evaluated using the following guidelines (OBBA 2001):

> "Possible breeding" is indicated by the presence of a singing male (or breeding calls heard) in suitable habitat or the presence of a bird observed in suitable breeding habitat in its breeding season.
>
> "Probable breeding" is defined as an observation of any of the following: (1) a pair in breeding season in suitable habitat, (2) permanent territory presumed through registration of territorial song on at least two days, a week or more apart, at the same place or (3) courtship or display between a male and a female or two males, including courtship feeding or copulation; visiting probable nest site; agitated behaviour or anxiety calls of an adult; brood patch on an adult female or cloacal protuberance on an adult male; nest building or excavation of a nest hole.
>
> "Confirmed breeding" is defined as observation of any of the following: (1) a distraction display or injury feigning; (2) used nest or egg shell found (occupied or laid within the period of the study); (3) recently fledged young or downy young, including young incapable of sustained flight; (4) adults entering or leaving nest site in circumstances indicating occupied nest (e.g., adult carrying fecal sac; adult carrying food for young), or (5) nest containing eggs, or nest with young seen or heard.

3.2.4. Reptile Surveys

Area searches for determining probable absence of reptiles were conducted according to MNRF Guelph District's Milksnake Survey Protocol (MNRF 2013). These surveys involved walking transects and actively searching for snake species by looking under and turning over potential cover objects by hand. Three surveys were conducted (at least two weeks apart) between April and late June (**Table 1**). Environmental conditions were documented as part of reptile surveys to demonstrate suitability of field days, sunny days when air temperature is between 8°C and 25°C or overcast days when air temperature is above 15°C.

All field surveys conducted involved recording of any incidental observation of reptiles.

3.2.1. Monarch and Yellow-banded Bumblebee Observations

The City of Guelph has noted the potential for Monarch (*Danaus plexippus*) and Yellow-banded Bumblebee (*Bombus terricola*) to occur on the subject property. Any incidental observations of Monarch were recorded and described during all field inventories. Patches of milkweed (*Asclepias syriaca*), host plants for Monarch, were noted during vegetation inventories.

Although no targeted surveys were proposed for the Yellow-banded Bumblebee, general observations of pollinator (including bumblebee) activity were noted during all field inventories.

3.2.2. Incidental Wildlife

Incidental observations of all wildlife species (including mammals, birds, reptiles, amphibians, and insects) were recorded during all site visits.

3.2.3. Tree Inventory

A Tree Inventory and Tree Preservation Plan has been completed per the City of Guelph's Tree Technical Manual (2019). It has been provided under separate cover.

The Tree Inventory and Tree Preservation Plan includes:

- Inventory of all trees over 10 cm diameter at breast height (DBH), including size, form, species composition, health and risk assessment;
- Identify opportunities for transplanting smaller specimens of trees, where appropriate;
- Tree preservation plan specifying measures required for tree protection and monitoring during construction / development; and
- Measures for avoiding disturbance to any breeding birds during construction.

4. Characterization of the Natural Environment

This section of the EIS will describe the study area's biological and physical features. Two (2) levels of investigation will be used to describe different features, including (i) secondary sources (background review) as the primary source of information, and (ii) supplemental field inventories to confirm presence / absence of new features.

4.1. Past and Present Land Use, Adjacent Lands

A review of the earliest available aerial imagery, from 1954, shows that the subject property was two agricultural fields with a sparse hedgerow in between them. There were no natural vegetation communities present. All adjacent lands at this time were also agricultural fields (**Image 1**).

The subject property currently has three small agricultural fields, as well as a mix of cultural vegetation communities. There are no buildings on the property. Across Clair Road to the north of the subject property is singe-family home subdivision. To the northeast is Bishop Macdonell Catholic High School, which includes several turfgrass football and soccer fields. To the east, the cultural savannah continues for about 150 m, and then there is Larry Pearson Park, which includes baseball diamonds, tennis courts and a playground. To the south, southwest, and west the cultural savannah also continues for about 150 m, where there is the start of an industrial area. A stormwater management

pond occurs just southwest of the property. To the northwest there is a trail that follows the edge of a natural area and ecological linkage.

Image 1. Aerial Imagery of the Subject Property from 1954.

4.2. Physiography, Geology, and Soils

The subject property is located within a section of the physiographic region described as the Horseshoe Moraines (Chapman & Putnam 1984). The area has spillways which have resulted in broad gravel and sand terraces and swampy floors. The area is very hilly, with sections of steep slopes and kettles. The subject property is located on Dumfries soil type, which is composed of a coarse, stony, sandy loam till, coming from predominantly limestone, dolostone, and red shale and is characterized as having good drainage and being 45 to 60 cm deep (Hoffman & Matthews 1963; Chapman & Putnam 1984).

The surficial geology of the subject property and surrounding area is mapped as glaciofluvial deposits (gravelly river deposits and delta topset facies) in the west to northwest, stone-poor, sandy silt to silty sand-textured till on Paleozoic terrain in the south to southeast and ice-contact stratified deposits (sand and gravel, minor silt, clay and till) in the northeast (Ontario Geological Survey 2010; JLP 2024).

The southern part of the study area is located within the Paris-Galt Moraine area (JLP 2024).

4.3. Hydrology and Hydrogeology

The subject property area is located within the Ellis Creek-Speed River watershed and Hanlon Creek sub-watershed which eventually joins the Speed River. Regional groundwater flow in the area is in a northwest direction, towards the Speed River. It is expected that groundwater flow directions may vary locally from the regional flow directions due to various natural factors including local topography, submerged riverbeds, and engineering structures (JLP 2024).

According to the results of the groundwater level monitoring, the shallow groundwater flow direction across the subject property is interpreted to be varied from northwest to southwest, towards Hanlon Creek. The groundwater flow maps may need to be updated as groundwater monitoring progresses. A seasonal groundwater monitoring program is currently in progress at the subject property; groundwater monitoring has been ongoing since April 2024 (JLP 2024).

The estimated design infiltration rate based on infiltration rate testing for the subject property is 36 mm/hour (JLP 2024).

No wetlands occur on or within 120 m of the subject area. Closest mapped wetland is approximately 320 m to the southeast (Mill Creek Puslinch Wetland Complex).

The subject property is located within Wellhead Protection Area C, and within a mapped Significant Groundwater Recharge Area (with an unspecified vulnerability score). It is located outside the mapped highly vulnerable aquifer areas.

4.4. Aquatic and Fish Habitat

There are no surface water features present within the study area. There is no fish habitat present within the study area. The nearest surface water feature is a tributary of Hanlon Creek, which runs approximately 700 m northwest of the subject property.

4.5. Terrestrial Vegetation

4.5.1. Ecological Land Classification

Three natural vegetation communities and one anthropogenic community have been characterized and mapped according to Ecological Land Classification (ELC) protocols (Lee et al. 1998) (**Figure 2** in **Appendix 1**). Characterization of communities outside of the subject property is based on desktop review (not field verified). Vegetation communities include:

- Mineral Cultural Meadow Ecosite (CUM1)
- Mineral Cultural Thicket Ecosite (CUT1)
- Mineral Cultural Savannah Ecosite (CUS1)
- Agricultural Field (AGR)

4.5.1.1. Mineral Cultural Meadow Ecosite (CUM1)

There are two Cultural Meadows adjacent to the northern agricultural field. One field (0.75 ha) extends to the east, occurring on both the 280 Clair Road and 266 Clair Road parcels. The other extends west of the agricultural field (0.3 ha occurring on the subject property but extending further beyond the subject property). These two meadows have a low (2-10 m) and sparse (<10% cover) canopy layer of European Buckthorn (*Rhamnus cathartica*) and Staghorn Sumac (*Rhus typhina*). There are also very occasional Manitoba Maples (*Acer negundo*), Willows (*Salix* sp.), and Russian Olive (*Elaeagnus angustifolia*). The understorey is composed of European Buckthorn, Red Raspberry (*Rubus idaeus*), Riverbank Grape (*Vitis riparia*), and Mullein (*Verbascum thapsus*), 1-2 m tall and with 10% cover. The ground layer is dominated by Canada Goldenrod (*Solidago canadensis*) and Smooth Brome (*Bromus inermis*). Associate species include Queen Anne's Lace (*Daucus carota*), White Sweet-clover (*Melilotus albus*), Bull Thistle (*Cirsium vulgare*), Heath Aster (*Symphyotrichum ericoides*), Quackgrass (*Elymus repens*), and Tufted Vetch (*Vicia cracca*). The ground layer is dense, with greater than 60% cover and it includes vegetation less than 1 m tall.

4.5.1.2. Mineral Cultural Thicket Ecosite (CUT1)

The Cultural Thicket surrounds the larger of the two southern agricultural fields. It is 1.56 ha large. There is a sparse (<10% cover) of Manitoba Maple and American Basswood (*Tilia americana*), 10-25 m tall. The sub-canopy is dominated by shrubs, European Buckthorn, Tatarian Honeysuckle (*Lonicera tatarica*), and the occasional English Hawthorn (*Crataegus monogyna*). The shrubs in this layer are 2-10 m tall and cover more than 60% of the area. The understorey is also dominated by European Buckthorn and Tatarian Honeysuckle, Red-osier Dogwood (*Cornus sericea*) and European Red Currant (*Ribes rubrum*) are also present. This layer is 1-2 m tall and cover greater than 60% of the area. The most common species in the ground layer are Canada Goldenrod, Grey-stemmed Goldenrod (*Solidago nemoralis*), Early Goldenrod, New England Aster (*Symphyotrichum nova-angliae*), Viper's Bugloss (*Echium vulgare*), Smooth Brome, and Kentucky Bluegrass (*Poa pratensis*). The ground layer is dense, cover greater than 60% of the area and it is less than 1 m tall.

4.5.1.3. Mineral Cultural Savannah (CUS1)

The Cultural Savannah is the largest natural community on the subject property, it is 3.36 ha (where it occurs on the subject property, occurring on both the 280 Clair Road and 266 Clair Road parcels) and extends onto adjacent lands to the southeast. The canopy is composed of scattered trees 10-25 m tall and with 25-35% cover. The common tree species include Common Apple (*Malus pumila*), Sugar Maple (*Acer saccharum*), Siberian Elm (*Fagus pumila*), American Beech (*Fagus grandiflora*), and Manitoba Maple. The subcanopy is composed of Siberian Elm, Manitoba Maple, American Ash (*Fraxinus americana*), and Riverbank Grape. The subcanopy is sparse (10-25% cover) and it is 2-10 m tall. The understorey is composed a variety of shrubs with sparse cover (10-25%) and they are 1-2 m tall. These shrubs include Tatarian Honeysuckle, Nannybery (*Viburnum lentago*), European Buckthorn, Red Raspberry, and Red-osier Dogwood. The ground layer is dense (>60% cover) with herbaceous

species less than 1 m tall. These species include Smooth Brome, Kentucky Bluegrass, Grey-stemmed Goldenrod, Early Goldenrod, Heath Aster, Canada Goldenrod, Orange Hawkweed (*Pilosella aurantiaca*), Perennial Ryegrass (*Lolium perenne*), and Queen Anne's Lace.

4.5.2. Flora

Eighty-nine (89) flora species were recorded on the site, three of the species were only identified to the genus level (**Appendix 3a**). Of the species identified, 39 (45.3%) of the species are native, 47 (54.7%) are non-native. No SAR, provincially rare, or regionally rare (Riley 1989) species were noted on the site.

Due to the past and current disturbances of this property, many of the species are weedy and/or non-native, resulting in a low Floristic Quality Index (FQI) of 14.65 for all species and 21.22 for only native species. FQI is a measure of habitat specificity and the level of disturbance that species can tolerate (Oldham *et al.* 1995).

Black maple (*Acer nigrum*), which is considered significant within the City of Guelph was found within the subject property (on both the 280 Clair Road and 266 Clair Road parcels; **Figure 2** in **Appendix 1**). A total of ten Black Maples were recorded during the tree inventory, including nine above 10 cm DBH and one additional Black Maple under 10 cm DBH. This species is considered locally significant in Guelph (City of Guelph 2020). Early Goldenrod (*Solidago juncea*) was recorded in the cultural thicket and cultural savannah communities; this species is considered regionally rare in Wellington County (Frank and Anderson 2009).

4.5.3. Tree Inventory

A total of 365 trees above 10 cm DBH were surveyed, of which 308 occurred on the Subject Property and 57 appeared to occur as boundary / adjacent property trees. Of these, 69% are considered to be good to excellent health, 22% in fair health, and 10% poor, very poor or dead. The cumulative DBH of inventoried trees ranged from 10 to 79.5 cm. The largest single stemmed tree was a Black Cherry (*Prunus serotina*) with a DBH of 62 cm.

A total of 24 species were recorded during the tree inventory. The most abundant tree species were Scots Pine (*Pinus slyvestris*), Black Cherry, European Buckthorn, Common Pear (*Pyrus communis*) and Manitoba Mable.

For complete details of results, please refer to the Tree Inventory and Preservation Plan (NSE 2024).

4.6. Fauna

4.6.1. Birds

The breeding bird surveys recorded twenty-seven (27) species, with two more species recorded incidentally, for a total of twenty-nine (29) species (**Appendix 3b**). Of these species nine were recorded as probable breeding, twelve (12) as possible breeding, and eight (8) as observed (i.e., not likely breeding in the study area). No species were confirmed to be breeding due to a lack of visual evidence to confirm breeding. Nine (9) of the species recorded are locally significant in the City of Guelph and seven (7) are significant in Wellington County (**Table 2**).

Two (2) of the species are considered area sensitive, requiring larger tracts of habitat. These include Cooper's Hawk (*Accipiter cooperii*) and Eastern Meadowlark (*Sturnella magna*); however, only Eastern Meadowlark is expected to breed in the area due to the presence of suitable habitat.

One of the species is a SAR, provincially listed as Threatened (protected under the ESA): Eastern Meadowlark. Eastern Meadowlark was recorded during both breeding bird surveys and is considered probably breeding in the study area (**Figure 2** in **Appendix 1**).

One of the species is a SAR, provincially listed as Special Concern (not protected under the ESA): Barn Swallow (*Hirundo rustica*). Barn Swallow was recorded during both breeding bird surveys which suggests probable breeding evidence. However, no suitable nesting structure (e.g., building, culverts, bridges) are present on the subject property, as such it is using the study area for foraging.

Table 2 provides a list of regionally significant, area sensitive, and SAR breeding birds observed in the study area. These are also illustrated on **Figure 2** in **Appendix 1**.

Table 2. Regionally uncommon, area sensitive, or SAR breeding birds observed in the Study Area.

Scientific Name	Common Name	SARO[1]	SARA[2]	Wellington (regionally significant)	Guelph (locally significant)	Area Sensitive	Breeding Evidence[3]
Accipiter cooperii	Cooper's Hawk	NAR		X	X	TRUE	OB
Colaptes auratus	Northern Flicker			X	X		PO
Empidonax traillii	Willow Flycatcher			X	X		PR
Hirundo rustica	Barn Swallow	SC	THR		X	FALSE	PO
Icterus galbula	Baltimore Oriole			X	X	FALSE	PO
Larus delawarensis	Ring-billed Gull			X	X	FALSE	OB
Spizella passerine	Field Sparrow			X	X	FALSE	PR

Scientific Name	Common Name	SARO[1]	SARA[2]	Wellington (regionally significant)	Guelph (locally significant)	Area Sensitive	Breeding Evidence[3]
Sturnella magna	Eastern Meadowlark	THR	THR	X	X	TRUE	PR
Tyrannus tyrannus	Eastern Kingbird				X	FALSE	PR

1. Species at Risk in Ontario, NAR=Not at Risk, SC=Special Concern, THR=Threatened; **2.** Species at Risk Act (federal), THR=Threatened; **3.** OB=Observed, no breeding evidence; PO=Possible, PR=Probable

4.6.2. Incidental Wildlife

Records of incidental wildlife were recorded during all site visits. The following five mammals were recorded during field surveys: Coyote (*Canis latrans*), Eastern Cottontail (*Sylvilagus floridanus*), Eastern Chipmunk (*Tamias striatus*), Northern Racoon (*Procyon lotor*), and White-tailed Deer (*Odocoileus virginianus*).

The following amphibians were recorded during field surveys: Spring Peeper (*Pseudacris crucifer*). One individual was recorded during the spring vegetation inventory in the cultural thicket community. The species is likely breeding in wetlands south of the subject property (320 m away).

The following insects were recorded during field surveys: Eastern Common Bumble Bee (*Bombus impatiens*) and Monarch.

Monarch is provincially listed as a Special Concern species and is considered locally significant within the City of Guelph. Although observed, Monarch is a habitat generalist. The study area does not provide critical habitat to support this species (no abundance of Milkweed plants).

4.7. Species at Risk (Threatened / Endangered)

Eastern Meadowlark (Threatened) was recorded during breeding bird surveys. Although available habitat is marginal due to the higher cover of shrubs and trees, Eastern Meadowlark can be found using savannah habitats where shrub and woody vegetation is below 35% cover (COSEWIC, 2013). As with many grassland bird species, the suitability of habitat for Eastern Meadowlark involves a combination of landscape and patch characteristics, where larger tracts of habitat are preferred over smaller fragments (COSEWIC, 2013). The minimum area required is estimated to be 5 ha (COSEWIC), Given the fragmented patch work of suitable habitat within the subject property, the species is likely breeding in the larger area of suitable habitat along the southern boundary of the subject property, and in cultural meadows west of the subject property.

There is also moderate to high potential for three additional SAR to use habitat within the study area:

- Little Brown Myotis (*Myotis lucifugus*) – Endangered (ESA)
- Northern Myotis (*Myotis septentrionalis*) – Endangered (ESA)
- Tri-coloured Bat (*Pipistrellus subflavus*) – Endangered (ESA)

The SAR screening table is attached as **Appendix 4**.

5. Evaluation of Significance, Constraints, and Buffers

5.1. Significant Areas of Natural and Scientific Interest (ANSI)

No Significant Areas of Natural and Scientific Interest (ANSIs) occur on or within 120 m of the subject property.

5.2. Habitat for Endangered and Threatened Species at Risk

As described in **Section 4.7**, Eastern Meadowlark (Threatened) was recorded during breeding bird surveys. Although available habitat on the subject property is marginal, the species likely utilizes habitat along the western and southern habitat areas within the study area and beyond..

There is also moderate to high potential for three SAR bat (Endangered) to use habitat within the study area: Little Brown Myotis, Northern Myotis, and Tri-coloured Bat.

5.3. Significant Wetlands

No wetlands occur on or within 120 m of the subject area. Closest mapped wetland is approximately 320 m to the southeast (Mill Creek Puslinch Wetland Complex).

5.4. Surface Water Features and Fish Habitat

There is no surface water present within the study area. There is no fish habitat present within the study area. The nearest surface water feature is a tributary of Hanlon Creek, which runs approximately 700 m northwest of the subject property.

5.5. Significant Woodlands

No woodlands or significant woodlands occur on or within 120 m of the subject property.

5.6. Significant Valleyland

No woodlands or significant woodlands occur on or within 120 m of the subject property.

5.7. Significant Landform

Although none occur within the subject property itself, a Significant Landform (Significant portion of the Paris-Galt Moraine) has been identified as bordering the southeast property boundary. Adjacent

Lands of the Significant Landform (which have a width 50 m adjacent to the feature) occur within the subject property (**Figure 3** in **Appendix 1**).

5.8. Significant Wildlife Habitat

A Significant Wildlife Habitat (SWH) assessment was completed by according to Ecoregion Criteria Schedules for Ecoregion 6E (MNRF 2015) and Appendix D of the City's EIS Guidelines. The study area does not contain any SWH in accordance with the Ecoregion Schedules (MNRF 2015).

In accordance with the City's EIS Guidelines, the following SWH types are present (**Figure 3** in **Appendix 1**):

Confirmed SWH:

- Ecological Linkage (discussed below in **Section 5.9**)
- Habitat for Federal Species of Conservation Concern (Eastern Meadowlark)

Candidate SWH:

- Habitat for Federal Species of Conservation Concern (SAR Bats)

SWH Screening is presented in **Appendix 5**.

5.9. Ecological Linkage

In 2010, the City of Guelph adopted the Natural Heritage System Amendment per OPA 42. Through this amendment, a desktop study identified a 100 m-wide Ecological Linkage as running along the eastern boundary of the subject property (**Figure 3** in **Appendix 1**).

The City's Official Plan policies (described below) allow for the realignment of a mapped Ecological Linkage in accordance with outlined conditions including maintaining functionality and connectivity.

The proposed development includes relocation of the Ecological Linkage to the western boundary of the subject property, as well as width refinement (**Figure 3** in **Appendix 1**).

5.9.1. Policy Direction

Section 4.1.3.9 describes policies related to Ecological Linkages. *Ecological Linkages are a component of Significant Wildlife Habitat and are intended to facilitate the movement of flora and fauna between Significant Natural Areas and/or protected Habitat of Significant Species*.

5.9.1.1. Permitted Uses within an Ecological Linkage

Within this Section, policies 3, 5 and 10 identify permitted uses within Ecological Linkages.

(3) Development and site alteration shall not be permitted within Significant Wildlife Habitat (including Ecological Linkages) or the established buffers, where applicable, except for uses permitted by the General Permitted Uses of Section 4.1.2.

(5) In addition to the General Permitted Uses of Section 4.1.2, the following additional uses may be permitted … subject to the requirements of 4.1.2.7 and 4.1.2.8, where it has been demonstrated through an EIS or EA … that there will be no negative impacts to the Significant Wildlife Habitat [including Ecological Linkage] *or to its ecological functions:*

i) Essential linear infrastructure and their normal maintenance;

ii) flood and erosion control facilities and their normal maintenance; and

iii) water supply wells, underground water supply storage and associated small scale structures.

(10) In addition to the General Permitted Uses of Section 4.1.2 and the policies in 4.1.3.9.5, the following uses may be permitted within Ecological Linkages, subject to the requirements under 4.1.2.8, where it has been demonstrated through an EIS or EA … that the functionality and connectivity of the Ecological Linkage will be maintained or enhanced:

… ii) Essential transportation infrastructure and their normal maintenance; and

iii) stormwater management facilities and structures and their normal maintenance.

5.9.1.2. Policies Relating to Refinement of an Ecological Linkage

Policy 11 states: *The location of Ecological Linkages may be modified and/or width refined, without an amendment to this Plan provided it is demonstrated through an EIS or EA, to the satisfaction of the City, in consultation with the GRCA where appropriate, that:*

i) the Ecological Linkage is designed based on the most current conservation biology principles;
ii) proposed changes to the location or width of the Ecological Linkage will maintain or enhance functionality and connectivity between Significant Natural Areas and/or protected Habitat for Significant Species; and
iii) *where a proposed refinement to the width of an Ecological Linkage would result in a width of less than 50 metres*" … conditions a through c must be satisfied.

Additional policies state:

(8) Ecological Linkages may incorporate lands that do not otherwise meet the criteria for protection in accordance with Significant Natural Areas or Natural Areas policies.

(9) Connectivity between Significant Natural Areas and/or protected Habitat for Significant Species shall be maintained, and where appropriate, enhanced, with Ecological Linkages.

5.9.2. Proposed Realignment

In 2010, the City of Guelph adopted the Natural Heritage System Amendment per OPA 42. Through this amendment, a desktop study identified a 100 m-wide ecological linkage as running along the eastern boundary of the subject property.

The City's Official Plan policies (described above) allow for the realignment of a mapped Ecological Linkage in accordance with outlined conditions including maintaining functionality and connectivity. The proposed development includes relocation of the ecological linkage to the western boundary of the subject property, as well as width refinement (**Figure 3** in **Appendix 1**).

North of Clair Road West, the linkage is proposed to be widened to the full available width (135 m) of the undeveloped property. Here, the linkage occurs between Residential land use to the east and Industrial land use to the west.

South of Clair Road West, the linkage is proposed to be realigned along the western edge of the subject property and the western edge of the property to the south, to connect with Significant Natural Areas (the Natural Heritage System) to the south (**Figure 3** in **Appendix 1**). This portion of the proposed realignment includes a width refinement to 60 m over a length of 616 m.

Where the proposed relocated linkage occurs on the subject property, it will be bound by the proposed Residential land use to the east and both vacant lot (cultural meadow) / Industrial land use to the west. Immediately south of Clair Road West, the proposed linkage is separated from Industrial land use by cultural meadow at a width of 40 m to 145 m over an approximate distance of 210 m. The proposed linkage is within 40 m of Industrial land use for a distance of 100 m. For the remaining 246 m, before it reconnects with the mapped Significant Natural Area to the south, the proposed linkage is again bound by cultural meadow to the west and, south of the subject property, by a naturalized stormwater management pond (approximately 50 m separation from Industrial land use) to the west and cultural savannah to the east. Functionally, where the linkage occurs adjacent to meadow and savannah communities, the natural area available to wildlife is wider than the 60 m wide ecological linkage designation illustrated on mapping. For example, the natural area immediately south of the subject property, provides a greater than 250 m wide natural area which includes savannah associated with identified Significant Natural Areas. However, the mapped linkage is illustrated the length of the natural area to connect with another mapped Significant Natural Area.

Environment Canada (2013) states, linkages and corridors designed to facilitate species movement between forested habitats should be between 50 and 100 m in width. This width is considered sufficient to facilitate the movement of forest-dwelling species (e.g., small and large mammals, birds

and plants). Width may vary depending on length (shorter corridors may be narrower), and landscape scale (local linkages may be narrower than landscape-scale linkages). Literature identifies that linkages may be identified to correspond with / include existing natural areas, or areas which may be restored to a natural state.

In addition to landscape considerations, the form and function of the linkage should be designed in consideration of the target wildlife it is intended to support. The linkage on the subject property does not currently provide an ecological connection for amphibians moving between surface water features in proximity to each other (e.g., 240 m). From a broader landscape / natural heritage system perspective, the linkage could provide a connection for birds and mammals moving in a northwest-southeast direction between larger natural features and areas beyond the study area. Mammals currently utilizing the study area as a corridor between larger blocks of natural habitat likely include deer, coyotes, fox, and smaller mammals such as racoons, skunks, and opossums. As such, the form and function of the linkage should be designed to maintain refuge, foraging and cover for wildlife utilizing the linkage.

The proposed linkage refinement to 60 m width, with consideration of target wildlife and adjacent land use, is considered sufficient to provide for the movement of small and large mammals, birds, and seed dispersal for plants within and in habitats adjacent to the subject property.

In its current alignment, the ecological linkage largely overlaps with open or sparsely treed communities including agricultural field, cultural meadow and cultural thicket, with only a small portion overlapping with cultural savannah (where there is a higher tree density). Although vegetation communities located within the proposed realignment include agricultural field, cultural meadow, and cultural savannah, restoration and plantings (including within the current agricultural field) will be undertaken to enhance the ecological function of the linkage. Discussed in **Section 7**, restoration work will include native vegetation (plantings, shrubs and trees) left in a free-to-grow state.

Where the proposed linkage occurs adjacent to the proposed residential development, **Section 8** describes mitigation measures proposed to minimize potential negative effects of noise and lighting associated with the proposed development, and potential encroachment associated with increased human presence. As described in **Section 5.14**, a buffer to the ecological linkage is not proposed. The linkage width has been identified in consideration of proposed adjacent land uses and associated impacts.

The ecological linkage will function to provide refugia for local wildlife and plants, and movement across the local-scale landscape. This function will be maintained and enhanced following the proposed linkage realignment. As such, the proposed ecological linkage realignment is in accordance with the City's OP policies.

It is recommended that any future City works along Clair Road West consider the inclusion of eco-passages to provide safe crossing for small mammals, reptiles, etc.

5.10. Restoration Areas

A restoration area, as identified by the Guelph OP, occurs outside of the subject property but within the 120 m study area (**Figure 3** in **Appendix 1**).

5.11. Other Wetlands

No wetlands occur on or within 120 m of the subject area. The closest mapped wetland is approximately 320 m to the southeast (Mill Creek Puslinch Wetland Complex).

5.12. Cultural Woodlands

No woodlands or cultural woodlands occur on or within 120 m of the subject property.

5.13. Habitat of Significant Species (excluding Endangered and Threatened SAR)

Barn Swallow (Special Concern): One individual was recorded during breeding bird surveys. However, as discussed under **Section 4.5**, no suitable nesting structure (e.g., building, culverts, bridges) are present on the subject property. Foraging habitat, which includes farmland and open areas, is present within the subject property.

Monarch (Special Concern): Monarch is a habitat generalist. The study area does not provide critical habitat to support this species (no abundance of Milkweed plants).

Habitat of Significant Species (according to EIS Guidelines Appendix H: Locally Significant Species List 2020) is associated with the following five additional species: Northern Flicker, Willow Flycatcher, Baltimore Oriole, Field Sparrow, Eastern Kingbird. These species were recorded throughout the three vegetation communities. Although observed, the subject property does not provide breeding habitat for Cooper's Hawk or Ring-billed Gull.

Black Maple, a locally significant tree species, was found along the northern edge of the property, with two individuals along the western edge of the CUS community.

Early Goldenrod was recorded in the cultural thicket and cultural savannah communities; this species is considered regionally rare in Wellington County (Frank and Anderson 2009).

Available species locations are mapped on **Figure 2** in **Appendix 1**.

5.14. Buffers

Natural heritage features identified on / adjacent to the subject property include Significant Landform and Ecological Linkage. No buffers are required for either of these features. As described in **Section 5.9.2**, the width of the proposed ecological linkage realignment has been identified in consideration of proposed adjacent land uses and associated impacts.

SWH, as defined by the City's EIS Guidelines, includes Confirmed habitat for Federal Species of Conservation Concern (Eastern Meadowlark) and Candidate habitat for Federal Species of Conservation Concern (SAR bats). Both Eastern Meadowlark and SAR bats and their habitat are protected under the provincial ESA. Impacts to SWH are discussed in **Section 8**.

6. Proposed Development

6.1. Description of Proposed Development

Based on the current site plan, the proposed high-density residential development includes cluster townhouse buildings, apartment buildings, a parking structure, and associated driveway and greenspace areas (**Figure 4** in **Appendix 1**).

A passive stormwater management approach has been proposed within the proposed realignment of the ecological linkage (**Figure 4** in **Appendix 1**), which includes two infiltration basins. This approach is based on the hydrogeological report which had found a high rate of infiltration and lower groundwater table would support a more passive stormwater management approach (JLP 2024). Given the site's hummocky topography, all storm runoffs will be infiltrated within the site (Counterpoint 2024).

There is no hard infrastructure required within the linkage for this stormwater management approach. Two small areas of Rip-Rap Treatment are located wholly outside of the proposed ecological linkage realignment. The Treatment will use Cable Concrete®, a mat of flat stones, which provides water permeability and vegetation growth.

Some minor grading and fill will be required during construction (largely within the agricultural field portion of the realigned linkage) (**Figure 4** in **Appendix 1**). Utilizing the site natural slopes and topography minimizes the extent of grading required to form the retention basins. Minimal fill is required around the north basin to create a berm that will be naturalized. The south basin will only require minor grading along its east edge to shape the retention basin. The remaining areas in the environmental linkage will remain untouched from construction activities (Counterpoint 2024).

The infiltration basins and any areas where disturbance of vegetation occurred within the linkage will be naturally vegetated.

On-site stormwater management infrastructure, which relies on infiltration and evapotranspiration, has been designed to meet the City's criteria for the Hanlon Creek Sub-watershed for quantity control, water quality treatment, and water balance, in alignment with discussions held with City staff (Counterpoint 2024). As the 100-year storm volumes are captured and retained on-site (no designated storm outlet), all applicable water balance criteria are being achieved on-site (Counterpoint 2024).

No trails or any other types of land use have been identified within the linkage realignment.

6.2. Avoidance Alternatives

Alternative site plan considerations included the current ecological linkage location, the proposed realignment of the linkage, and alternatives related to linkage width. The proposed ecological linkage realignment was informed through an ecological assessment to maintain the form and function of the feature. The ecological linkage provides habitat in terms of refugia for local wildlife and plants, and movement across the local-scale landscape. This function will be maintained and enhanced following the proposed linkage realignment.

Avoidance in terms of seasonal wildlife timing windows, exclusion fencing, etc. are discussed in **Section 7**.

7. Proposed Restoration and Enhancement

As part of the proposed development and proposed realignment of the ecological linkage, restoration and enhancement of the area of the realigned linkage is proposed

Vegetation communities currently occurring along the proposed realignment include agricultural field, cultural meadow, and cultural savannah. As previously described, two naturalized / vegetation infiltration basins (no hard infrastructure) are proposed within the relocated linkage. As part of this, minor grading and fill will be required; however, it is largely limited to the existing agricultural field (based on current designs).

Restoration and plantings (including within the current agricultural field) will be undertaken to maintain and enhance the function of the linkage. These will include native vegetation (plantings, shrubs and trees) left in a free-to-grow state.

Based on contour information provided in the Hydrogeology report (JLP 2024), it has been interpreted that the subject property currently drains towards the area of the proposed linkage alignment. Current communities and vegetation are adapted to these drainage conditions. As described in **Section 4.2**, current soil conditions are course / porous.

It is NSE's understanding, through discussions with the engineer, the drawdown rate within proposed infiltration basins will be less than 48 hours in the event of a 100-year storm (based on an infiltration rate of 36 mm/hour; JLP 2024). As such, it is not expected that there will be a notable change in the soil moisture regime due to any infrequent flooding / water retention or the height of the water table in the linkage.

Native herbaceous plants, shrubs and tree species will be chosen to suit the current biotic and abiotic (e.g., soil texture, soil moisture) conditions within the linkage. The current and anticipated soil moisture regime and soil texture will continue to support upland vegetation. However, recognizing the potential for flooding within the linkage, and the discharge of storm water into the linkage, species tolerant of infrequent short periods of standing water and elevated levels of chlorides (salts) will be selected for the lowest elevation of the infiltration basin. The remaining areas within the linkage will be seeded/planted with upland species.

As described in **Section 8.6**, five Black Maples have been identified to be transplanted from the area of the proposed development into the realigned linkage. Additionally, Early Goldenrod will be seeded / planted.

As described in the Tree Inventory and Preservation Plan (2024), it was noted that tree and shrub planting activities had taken place in the east-most cultural meadow (CUM) community. It is our understanding that Trees for Guelph conducted planting in this area in previous years, prior to the proposal of development for the subject property. Many of these trees are below 10 cm DBH and have not been captured in the tree inventory. As these trees occur in an area of proposed development, NSE recommends that these planted trees and shrubs be considered for transplanting (where tree / shrub health allows) to the realigned ecological linkage.

Herbaceous seeding / planting throughout the linkage realignment will include pollinator-friendly species to promote habitat use by Monarch and Yellow-banded Bumblebee. There may also be an opportunity to promote pollinator gardens within the Community Garden identified as part of the proposed residential development.

A detailed enhancement / planting plan will be prepared as a condition of Draft Plan approval.

8. Impact Assessment, Avoidance and Recommended Mitigation

Potential impacts to the natural environment as a result of the proposed development may be short-term (i.e., occurring during construction and resolving a short time after construction) or long-term (i.e., lasting effects of construction or effects resulting from use of the subject property). Where impacts cannot be avoided, they can be minimized by incorporating mitigation measures into the project design and implementing mitigation measures during construction. The potential impacts of

the project, avoidance alternatives, and the recommended mitigation measures to reduce net effects on the natural environment are summarized below.

8.1. Terrestrial Vegetation – Tree Removal

8.1.1. Impact Assessment

Terrestrial vegetation within the subject property will be removed to accommodate the proposed development, including cultural meadow, cultural thicket and cultural savannah. This includes vegetation communities occurring also on the 266 Clair Road land parcel and overlapping with the current ecological linkage location.

As part of this vegetation removal, as determined by the Tree Inventory and Protection Plan (NSE, 2024, under separate cover), 306 trees greater than 10 cm DBH have been identified for removal to accommodate the proposed development. The most abundant tree species were Scots Pine, Black Cherry, European Buckthorn, Common Pear and Manitoba Mable. Subject to detailed design, additional tree removals may be identified due to additional impacts of grading / fill.

Terrestrial vegetation retained on site, especially trees, could be accidentally damaged during construction. Terrestrial vegetation retained on site, especially trees, could be indirectly harmed through soil compaction, increased impervious surfaces or pollutants such as de-icing salts.

8.1.2. Recommended Avoidance and Mitigation

Tree protection measures should be implemented as per the Tree Inventory and Protection Plan (submitted under separate cover, NSE 2024). Compensation plantings as per City of Guelph requirements (see NSE 2024) will be installed within the realigned ecological linkage.

Opportunities for tree relocation from the proposed development footprint will be considered where possible in addition to the planting of the relocated linkage with trees, shrubs and a native seed mix, as described in **Section 7**.

8.2. Surface Water and Groundwater

8.2.1. Impact Assessment

Short-term impacts groundwater as a result of construction are primarily related chemical spills. Accidental spills of these pollutants can contaminate groundwater. Vegetation removal, grading, and excavation during construction will leave soils exposed and vulnerable to erosion.

Long-term impacts to groundwater quality related to the residential development could include the release of fuel, oil, and other contaminants from parked vehicles; runoff or infiltration of road salt from winter property maintenance; and runoff or infiltration of fertilizers or herbicides.

Long-term impacts to groundwater without mitigation could include changes to pre-development infiltration values. The soil conditions are suitable for at-source infiltration of precipitation (Palmer 2023).

On-site stormwater management infrastructure, which relies on infiltration and evapotranspiration, has been designed to meet the City's criteria for the Hanlon Creek Sub-watershed for quantity control, water quality treatment, and water balance, in alignment with discussions held with City staff (Counterpoint 2024).

8.2.2. Recommended Avoidance and Mitigation

Design Considerations

General design considerations include:

- Limit the development footprint and limit the extent of impermeable surfaces, thereby promoting infiltration to the groundwater table.
- Meet or exceed water quality and quantity standards for stormwater discharge.
- Incorporate infiltration considerations (such as LID measures) to maintain groundwater inputs.

During Construction

During construction mitigation includes:

Erosion and Sediment Control Measures

- Erosion and Sediment Control (ESC) measures should be used as required during construction. An ESC plan should be developed and submitted to the City for review. ESC measures may include fabric silt fencing to prevent runoff if sediment. Netted erosion control blankets and other netted materials should not be used because they can pose an entanglement risk to snakes and other wildlife. ESC fencing will also double as exclusionary fencing to avoid intrusion into retained natural areas.

Regular monitoring of erosion control fences should be implemented to ensure fencing remains in working order and is repaired as needed.

Fuel and Related Substance Control Measures

Handling of potentially harmful substances (e.g., fuels, oils, etc.) should be conducted at least 30 m away from the future location of the linkage. A spill kit should be accessible anywhere where deleterious substances are stored or handled.

Post Occupancy

Post occupancy mitigation includes:

- Careful handling of fuel, oil and other contaminants associated with vehicle and lawn equipment use and maintenance.
- Avoid or limit the use of de-icing salts in accordance with a Salt Management Plan.
- Avoid or limit the use of fertilizers and herbicides.

8.3. Migratory Bird Nesting Habitat

8.3.1. Impact Assessment

The removal of trees and other vegetation on the subject property could impact nesting birds. Most nesting birds are protected under the *Migratory Birds Convention Act* and its Regulations.

Nesting birds could be impacted during clearing / grading. In addition to destruction of habitat, noise, vibrations and light from construction activities could disturb birds and deter them from using their nests.

8.3.2. Recommended Avoidance and Mitigation

Clearing, grading, and tree removals should be conducted outside of the active bird nesting season (generally April 1 – August 31) to minimize the potential to contravene the *Migratory Birds Convention Act* and its Regulations. Nests of certain protected species are protected even if encountered outside of the active bird nesting season. If it is not possible to restrict work to these timing periods, a nest sweep should be conducted by a qualified biologist, and locations of any nests should be identified. If migratory birds, their nests or eggs are encountered during the nest sweep, or subsequently during clearing /grading, all work shall cease and the contract administrator or environmental inspector be contacted for advice. Generally, a protective buffer will be placed around the nest and work will be prohibited within the buffer until the young have fledged.

8.4. Species at Risk

8.4.1. Impact Assessment

One SAR that is protected under the *Endangered Species Act* (i.e., Endangered or Threatened) is known to be present in the study area: Eastern Meadowlark. Although available breeding habitat within the subject property is marginal, the habitat for this species is found within the study area, including the western and southern areas of the subject property.

There is moderate to high potential for three provincially Endangered SAR bats to use habitat within the study area: Little Brown Myotis, Northern Myotis, and Tri-coloured Bat. These species may nest or roost in trees.

Potential direct impacts include tree removal if bats are present.

8.4.2. Recommended Avoidance and Mitigation

Eastern Meadowlark

Generally, development may be permitted within a maximum of 30 ha of suitable Eastern Meadowlark habitat under certain conditions. Proposed development or site alteration within the subject property would require consultation with the Ministry of Environment, Conservation and Parks (MECP) and, possibly, a registration process prior to commencement of the work. Compensation may be required and would include payment into the SAR Conservation Fund or the identification and management of compensation habitat. Removal and compensation of this SAR habitat type has become common, which has led to the MECP developing a streamlined process in managing impacts to Eastern Meadowlark and their habitat.

SAR Bats

Tree removals should occur outside of the active bat season (i.e. not removed between April 1 and September 30).

Guidance from the MECP is frequently revised given the on-going research into bats and their habitats. The MECP should be contacted to determine requirements with respect to any additional required field investigations (e.g., acoustic recorder surveys to document echolocation calls) and any required permits or authorizations. The amount of bat habitat that is present in the adjacent landscape, relative to the subject property, relative to the development footprint and the number of bat habitat tree removals is all factored in the determination of the extent of impact to the protected species and their habitats. Therefore, consultation with the MECP will be required should any potential bat habitat trees be proposed for removal.

Consultation with the MECP could be a condition of Site Plan approval. Demonstration of authorization, registration and / or permitting for SAR bats and Eastern Meadowlark, if required, should be provided prior to issuing a permit for site alteration or any development works on site. Consultation with MECP and any requirements can occur in tandem with the development process so that accessing authorization does not delay approval of a development application.

8.5. Significant Wildlife Habitat (Ecological Linkage)

8.5.1. Impact Assessment

There is no confirmed SWH in accordance with the SWH Ecoregion Schedule 6E.

SWH, in accordance with the City of Guelph's Official Plan, includes Confirmed Habitat for Federal Species of Conservation Concern (Eastern Meadowlark) and ecological linkage, and Candidate Habitat for Federal Species of Conservation Concern (SAR Bats)

Habitat for Federal Species of Conservation Concern - Eastern Meadowlark (Confirmed)

Eastern Meadowlark (Threatened) was recorded during breeding bird surveys. Although available habitat is marginal due to the higher cover of shrubs and trees, Eastern Meadowlark can be found using savannah habitats where shrub and woody vegetation is below 35% cover (COSEWIC, 2013). As with many grassland bird species, the suitability of habitat for Eastern Meadowlark involves a combination of landscape and patch characteristics, where larger tracts of habitat are preferred over smaller fragments (COSEWIC, 2013). The minimum area required is estimated to be 5 ha (COSEWIC), Given the fragmented patch work of suitable habitat within the subject property, the species is likely breeding in the larger area of suitable habitat along the southern boundary of the subject property, and in cultural meadows west of the subject property.

The proposed development includes the removal of 2.17 ha of cultural savannah, 1.55 ha of cultural thicket, and 0.69 ha of cultural meadow on the subject property. As described, this 4.41 ha of land is considered periphery and marginal due to the matrix of agricultural fields.

Habitat for Federal Species of Conservation Concern - Species at Risk Bats (Candidate)

There is moderate to high potential for three provincially Endangered SAR bats to use habitat within the study area: Little Brown Myotis, Northern Myotis, and Tri-coloured Bat. These species may nest or roost in trees.

Potential direct impacts include tree removal if bats are present. Tree removals are discussed under **Section 8.1**; however, targeted bat habitat suitability studies have not been undertaken.

Ecological Linkage

The proposed development includes relocation of the ecological linkage to the western boundary of the subject property, as well as width refinement. As discussed in **Section 5.9**, the proposed linkage refinement to 60 m width, in consideration of target wildlife species and adjacent land use, is considered sufficient to provide for the movement of small and large mammals, birds, and plants present within and in habitats adjacent to the subject property.

Two naturalized / vegetated infiltration basins (no hard infrastructure) are proposed within the relocated linkage (see description of proposed development in **Section 6**).

Elevated levels of chloride from road salt can have an impact on the vegetation growth within the infiltration basins.

Lights will be used to illuminate the residential development. Increase in noise is also expected from increased human presence and vehicles. The lights can negatively impact wildlife such as nocturnally migrating songbirds by confusing their orientation and also attracting them to insect flying around lights. Lights and noise can discourage use of the ecological linkage as a wildlife movement corridor.

The presence of people and pets within the linkage can also impact the use of the linkage by target wildlife species.

8.5.2. Recommended Avoidance and Mitigation

Habitat for Federal Species of Conservation Concern - Eastern Meadowlark (Confirmed)

Clearing, grading, and tree removals should be conducted outside of the active bird nesting season (generally April 1 – August 31). See further mitigation details under **Section 8.3.2**.

Proposed seeding / planting activities within the proposed ecological linkage realignment (see **Section 7**) includes restoration of 0.77 ha of agricultural field to cultural thicket / savannah habitat.

Cultural savannah, thicket and meadow communities continue immediately west and south of the subject property and will continue to provide a patchwork of open / shrubby habitat (consistent with existing habitat conditions) suitable for Eastern Meadowlark (more than 60 ha of remaining habitat; see **Figure 3** in **Appendix 1**). Use of this adjacent habitat by Eastern Meadowlark has been confirmed by NSE (2015) in association with the 132 Clair Road West Environmental Impact Study, and by Wood (2022) in association with the Clair-Maltby Secondary Plan.

Habitat for Federal Species of Conservation Concern - Species at Risk Bats (Candidate)

Tree removals should occur outside of the active bat season (i.e. not removed between April 1 and September 30).

Proposed enhancement of the ecological linkage realignment will include the installation of Rocket Bat Boxes to provide habitat for roosting bats.

Habitat continues to be available in the large tracts of woody habitat which continue to the south of the subject property and to the east (beyond the recreation complex / Larry Pearson Park).

Ecological Linkage

Two naturalized / vegetated infiltration basins (no hard infrastructure) are proposed within the relocated linkage alignment (see description of proposed development in **Section 6**). Restoration and plantings (including within the current agricultural field) will be undertaken to maintain and enhance the function of the linkage, including throughout the infiltration basin. Restoration / plantings are discussed in **Section 7** and will include native vegetation (plantings, shrubs and trees) left in a free-to-

grow state. There will be no mowing or removal of any vegetation within the linkage as part of any future maintenance. Species tolerant of infrequent short periods of standing water and elevated levels of chlorides (salts) will be selected for the lowest elevation of the infiltration basin.

A higher density of shrub and tree plantings are suggested along the eastern edge of the proposed ecological linkage realignment and on the western edge where the linkage occurs within 40 m of the adjacent Industrial land use, to buffer affects of noise and light associated with the proposed residential development.

Use dark-sky friendly lighting options and techniques are recommended wherever possible. Lighting should be angled away from the proposed ecological linkage, and downward pointing lights (shielded) should be used to minimize light spilling into the sky and ecological linkage.

A permanent chain-link fence (without gates) should be installed at the edge of the proposed ecological linkage to prevent encroachment by residents. In addition, educational signage should be posted at select locations to inform the public of the ecological sensitivity of the linkage.

8.6. Habitat of Significant Species (Excluding Endangered and Threatened Species)

8.6.1. Impact Assessment

As discussed in **Section 5.13**, five locally significant bird species (additional to SAR species discussed earlier), are possible – confirmed breeders in the study area, including: Northern Flicker, Willow Flycatcher, Baltimore Oriole, Field Sparrow, Eastern Kingbird. These species were recorded throughout the three cultural vegetation communities.

Monarch, a locally significant species and provincially listed as Species Concern was recorded but is considered a habitat generalist. The study area does not provide critical habitat to support this species (no abundance of Milkweed plants).

Early Goldenrod was recorded in the cultural thicket and cultural savannah communities; this species is considered regionally significant in Wellington County (Frank and Anderson 2009).

The proposed development includes the removal of 2.17 ha of cultural savannah, 1.55 ha of cultural thicket, and 0.69 ha of cultural meadow.

A total of ten Black Maples were recorded. This species is considered locally significant in Guelph (City of Guelph 2020). A total of five Black Maple trees are identified for removal (NSE 2024).

8.6.2. Recommended Avoidance and Mitigation

Proposed seeding / planting activities within the proposed ecological linkage realignment (see **Section 7**) includes restoration of 0.77 ha of agricultural field to cultural thicket / savannah habitat. Early Goldenrod seeding / planting will be included in the ecological linkage enhancement plan.

Cultural savannah, thicket and meadow communities continue immediately west and south of the subject property and will continue to provide a patchwork of open / shrubby habitat (consistent with existing habitat conditions) suitable for listed breeding birds, Monarch, Black Maple and Early Goldenrod (approximately 16 ha of remaining habitat).

A total of five young Black Maple trees are proposed to be transplanted to the proposed ecological linkage realignment. Tree size ranges from 6.5 to 15.5 cm in DBH, all considered to be in excellent condition at the time of the tree inventory. Trees transplanted should follow the latest version of the American National Standards Institute for Tree Care Operations (ANSI A300) (TCIA 2018). Black Maple will also be included as a planted species in the ecological linkage enhancement plan.

Herbaceous seeding / planting throughout the linkage realignment will also include pollinator-friendly species to promote habitat use by Monarch and Yellow-banded Bumblebee. There may also be an opportunity to promote pollinator gardens within the Community Garden identified as part of the proposed residential development.

8.7. Significant Landform

8.7.1. Impact Assessment

Although none occur within the subject property itself, a Significant Landform (Significant portion of the Paris-Galt Moraine) has been identified as bordering the southeast property boundary. Adjacent Lands of the Significant Landform (which have a width 50 m adjacent to the feature) occur within the subject property. The moraine is important for source water.

On-site stormwater management infrastructure, which relies on infiltration and evapotranspiration, has been designed to meet the City's criteria for the Hanlon Creek Sub-watershed for quantity control, water quality treatment, and water balance, in alignment with discussions held with City staff (Counterpoint 2024).

There will be no site alteration activities such as fill, grading and excavation that would change the landform and natural vegetative characteristics of the significant landform. No negative impacts are expected to groundwater as per the Hydrogeological Report prepared by JLP (2024).

8.7.2. Recommended Avoidance and Mitigation

See recommended mitigation measures for impacts to groundwater under **Section 8.2**.

8.8. General Best Construction Practices

Typical construction mitigation measures that should be incorporated into a detailed construction mitigation plans are outlined below and should be included in the detailed design for the site development.

- Clearly demarcate work limits at outset of construction and minimize unnecessary vegetation clearing.
- Ensure that all vehicles and construction machinery are cleaned and maintained as per Clean Equipment Protocol for Industry (Halloran et al. 2013) prior to arrival on Site and prior to departing Site to prevent the introduction or spread of pollutants or exotic invasive species.
- All construction materials, excess materials and debris should be removed and appropriately disposed of following construction.
- The Contractor will ensure that all mitigation measures are implemented properly, maintained, and repaired and remedial measures are initiated in a timely manner where warranted.

9. Monitoring Plan

During-construction monitoring will be conducted by a contract administrator or environmental inspector to ensure implementation of mitigation measures including ESC fencing, spill management, and migratory bird protection (per the MBCA and its Regulations).

Restoration and enhancement in the proposed ecological linkage realignment will involve tree and shrub planting and seeding activities. Post-installation health monitoring and tree / shrub replacements will occur for two years post-installation, or as directed by the City.

10. Policy Conformity

Table 4 provides an overview of conformity with applicable Federal, Provincial, Municipal and Conservation Authority policies.

Table 4. Summary of Policy Conformity

Legislation or Policy Document	Conformity	Comment
Fisheries Act	Yes	No fish habitat present.
Migratory Bird Convention Act	Yes, with recommended avoidance and mitigation	Vegetation clearing should not occur during the active bird breeding season (between April 1 and August 31) to mitigate contravening the MBCA. Nests are protected at any time, including outside of the active season. If a nest is found, the nest must be retained and protected with a buffer.
Endangered Species Act	Yes	SAR confirmed (Eastern Meadowlark) and potentially present (SAR bats) SAR Bats: Any removal of potential bat habitat trees should occur outside of the active bat season (i.e., should not occur between April 1 and September 30). Consultation with the MECP is recommended to determine the need for additional surveys (e.g., acoustic calling surveys) and the need for a permit / authorization. Eastern Meadowlark: Consultation with the MECP is recommended to determine the need for a registration / permit / authorization.
Provincial Planning Statement	Yes	No features protected under the PPS are present.
City of Guelph Official Plan	Yes, with recommended avoidance and mitigation	An EIS has been prepared per the requirement of Section 4.1 of the Guelph Official Plan as development and site alteration is proposed within the Natural Heritage System or on adjacent lands to natural heritage features and/or areas. This Environmental Impact Study has been prepared in accordance with the City of Guelph's EIS guidelines and the approved Terms of Reference. The development will have no negative impact on the NHS and its ecological functions. Habitat for Federal Species of Conservation Concern - Eastern Meadowlark (Confirmed): Vegetation clearing should not occur during the active bird breeding season (between April 1 and August 31). Removed habitat is peripheral and marginal. Remaining habitat in the ecological linkage and on adjacent lands will continue to provide suitable habitat (more than 16 ha). Habitat for Federal Species of Conservation Concern - Species at Risk Bats (Candidate): Any removal of potential bat habitat trees should occur outside of the active bat season (i.e., should not occur between April 1 and September 30). Habitat continues to be available in the large tracts of woody habitat which continue to the south of the subject property and to the east. Ecological Linkage: The design of the Linkage and mitigation proposed will ensure that the ecological connection through the property will be maintained and enhanced (see **Section 5.9**).
City of Guelph Zoning By-law	Yes, pending approval of the Zoning By-law Amendment	The property will require a rezoning from Industrial to Residential to accommodate residential development. Rezoning will also be required to relocate the ecological linkage from the eastern to the western boundary of the subject property.

Legislation or Policy Document	Conformity	Comment
City of Guelph Tree By-law	Yes, with implementation of tree protection measures and compensation plantings	A tree inventory and tree preservation plan has been prepared in accordance with the City's Tree Technical Manual (2019). Further details are presented in the Tree Inventory and Preservation Plan under separate cover (NSE 2024).
Clean Water Act	Yes	The subject property is located within WHPA-C and within a mapped Significant Groundwater Recharge Area. It is located outside the mapped highly vulnerable aquifer areas. The proposed development must therefore conform with relevant policies in Section 8.2 of the Grand River SPP (Lake Erie Source Protection Region, 2021).
GRCA Regulation	Yes	No GRCA-regulated areas or features are present.

11. Summary of Recommendations

It is recommended that the mitigation measures described in **Section 8** be incorporated into the site plan and/or implemented during construction, and/or post construction, as appropriate. A summary of these recommendations is provided below:

The following design considerations have been / will be incorporated into the site plan:

1. The development footprint should be minimized to limit impact to the natural environment.
2. Impermeable surfaces should be minimized to promote groundwater infiltration.
3. Low impact development (LID) features (such as swales) should be considered to promote groundwater infiltration.
4. A permanent chain-link fence (without gates) will be installed at the edge of the proposed ecological linkage realignment to prevent encroachment.
5. A Stormwater Management Plan will inform requirements in accordance with City of Guelph requirements.
6. The required replacement trees as compensation for removed trees should be incorporated into the restoration / enhancement plan. Please refer to the Tree Inventory and Preservation Plan (NSE 2024).
7. The landscape plan for green spaces within the proposed residential development should make use of native plant species where possible.
8. A landscape plan should be prepared for the linkage and should include a higher density of plantings adjacent to the proposed residential development, plant species tolerant of occasional flooding and elevated salt levels within the lower elevation of the infiltration basin, and only consist of native tree, shrubs and a seed mix appropriate for ecoregion 7e and 6e.
9. Low Impact Development (LID) strategies should be incorporated where possible.
10. Light pollution should be minimized through use of downward facing lighting.
11. Impervious surfaces should be minimized by maximizing landscaped area and using permeable surface treatments.
12. Preparation of educational signage to erect adjacent to the linkage to inform the public about the sensitivity of the linkage.

The following recommendations should be implemented during construction:

13. If SAR or other wildlife that enter the active construction zone, the contract administrator should allow the wildlife to leave on their own accord. If this is not possible, a qualified biologist should be contacted for advice.
14. Tree protection measures as described in the Tree Inventory and Preservation Plan (NSE 2024) should be implemented.

15. An Erosion and Sedimentation Plan should be developed and implemented. Netted erosion control blankets and other netted materials will not be used because they can pose an entanglement risk to snakes and other wildlife.
16. A Spills Management Plan should be developed and implemented. This Plan should identify a safe storage and refilling locations. A spill kit should be kept on site. All spills should be reported immediately to the Spills Action Centre.
17. Vegetation clearing should occur outside of the active nesting season for birds (i.e., not between April 1 – August 31). If this is not possible, to reduce the potential to contravene the MBCA and its Regulations, due diligence bird nest searches are recommended within 48 h of clearing.
18. Tree removals should occur outside of the active bat season (i.e. not removed between April 1 and September 30).

The following recommendations should be considered at occupancy:

19. Avoid or limit the use of de-icing salts.
20. Avoid or limit the use of fertilizers and herbicides

12. Summary and Conclusions

NSE was retained by Home Opportunities to complete EIS to assess the impact of a proposed residential development at 280 Clair Road West (the subject property). The subject property is composed of three small agricultural fields, hedgerows, and early successional / cultural vegetation communities. The requirement for an EIS was required due to the presence of an Ecological Linkage on the subject property and a Significant Landform within 50 m of the subject property.

In accordance with the City of Guelph Official Plan (OP), development is not permitted on lands adjacent to natural heritage features and areas, unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated through an EIS that there will be no negative impacts on the natural features or on their ecological functions.

The EIS has undertaken field work and considered the ecological function of the subject property in general and the linkage specifically. Through the assessment undertaken, and in consideration of the target wildlife species, the width of the linkage was reduced from 100 m to 60 m ensuring that the linkage would continue to provide a functional connection for target wildlife species. The EIS also considered the impact of realigning the linkage on the southwest border of the subject property, and the impact of the proposed development on the linkage, including the discharge of stormwater into infiltration basins within the linkage and the increased occupancy of the residents resulting from the proposed development. The ecological function of the linkage is proposed to be enhanced through planting of native vegetation, and mitigation is proposed in the form of chain link fencing to restrict access to the linkage by people and pets.

Note that a separate Tree Inventory and Preservation Report has been prepared by NSE and submitted concurrently with this EIS to address requirements for tree compensation as per the City of Guelph Tree By-law.

Avoidance and mitigation measures have been proposed to ensure the proposed development will not result in a negative impact. If the recommended mitigation measures are properly implemented, the proposed development will conform with the applicable federal and provincial legislation and, provincial and municipal natural heritage policies.

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APPENDIX 1 | Figures

Figure 1 | Subject Property and Study Area
280 Clair Rd., Guelph

Legend

- Subject Property (8.73 ha)
- Study Area (Subject Property +120m)

0 100 200 Meters

Project Number	Date:	
24-1421	2024-11-25	

north-south ENVIRONMENTAL

Figure 2 | Ecological Land Classification and Species Observations

280 Clair Rd., Guelph

Legend

- Subject Property (8.73 ha)
- Study Area (Subject Property +120m)
- Breeding Bird Survey Locations

Species at Risk - Threatened

- Eastern Meadowlark

Species at Risk - Special Concern

- Barn Swallow
- Monarch

Regionally and Locally Significant Species

- Northern Flicker
- Baltimore Oriole
- Field Sparrow
- Ring-billed Gull
- Willow Flycatcher

Locally Significant Species

- Eastern Kingbird
- Black Maple
- Ecological Land Classification

Vegetation Communities

AG - Agricultural Lands
CUM - Cultural Meadow
CUS - Cultural Savannah
CUT - Cultural Thicket
SWMP - Stormwater Management Pond

0 100 Meters

Project Number	Date:	
24-1421	2024-11-25	

north-south ENVIRONMENTAL

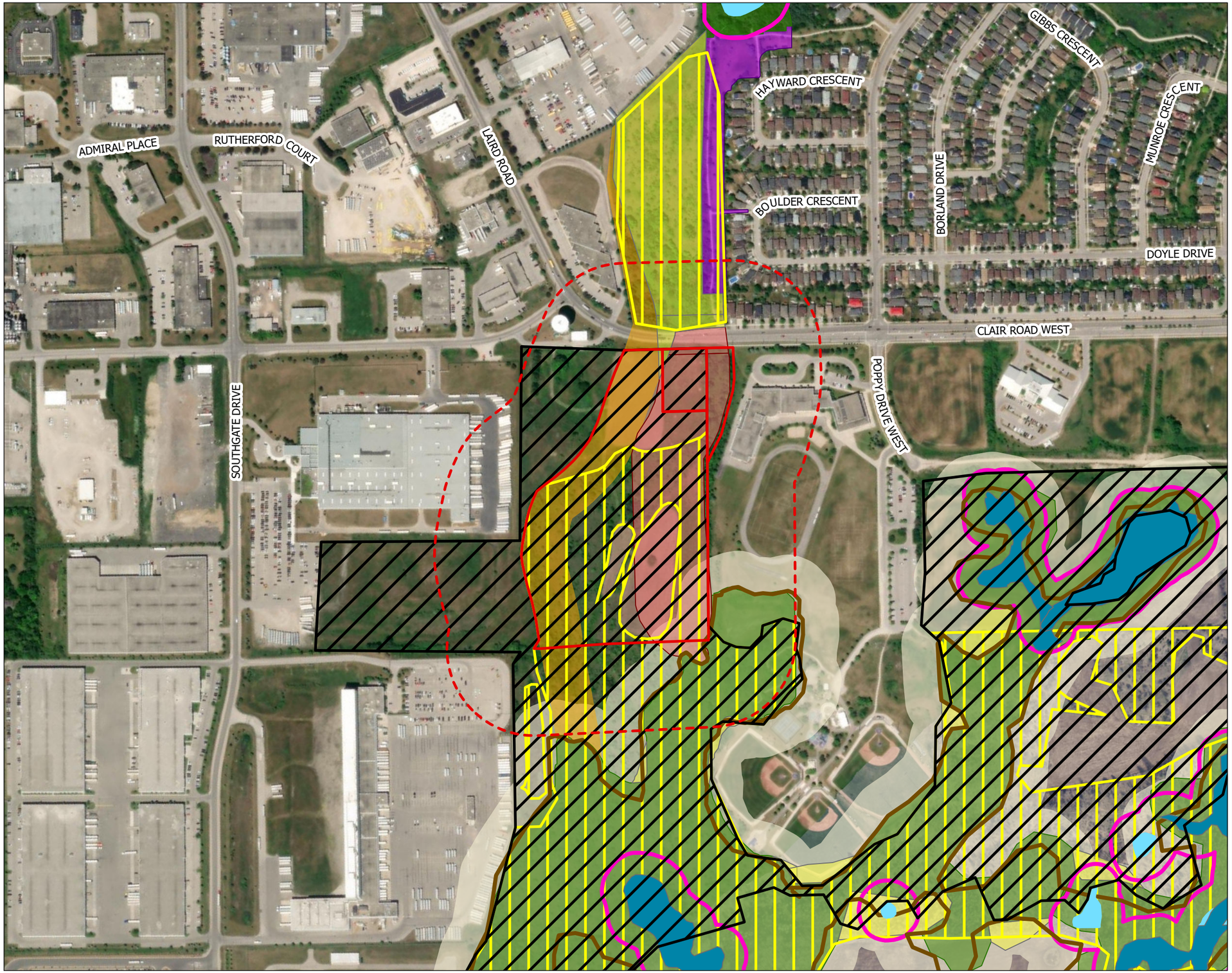

Figure 3 | Natural Heritage Constraints

280 Clair Rd., Guelph

Legend

- Subject Property (8.73 ha)
- Study Area (Subject Property +120m)
- GRCA Regulation Limit

Wetlands (Source: LIO)

- Provincially Significant Wetlands
- Wetlands (Source: GRCA)

Natural Heritage System

- Significant Natural Areas
- Significant Landform
- Adjacent Lands to Significant Landform
- Restoration Areas
- Ecological Linkage
- Proposed Linkage Removal
- Proposed Realignment of Ecological Linkage (60 m width)

Significant Wildlife Habitat

- Habitat for Federal Species of Conservation Concern (SAR Bats) (Candidate)
- Habitat for Federal Species of Conservation Concern (Eastern Meadowlark) (Confirmed)

0 100 200 300 Meters

Project Number	Date:	
24-1421	2024-11-25	

north-south ENVIRONMENTAL

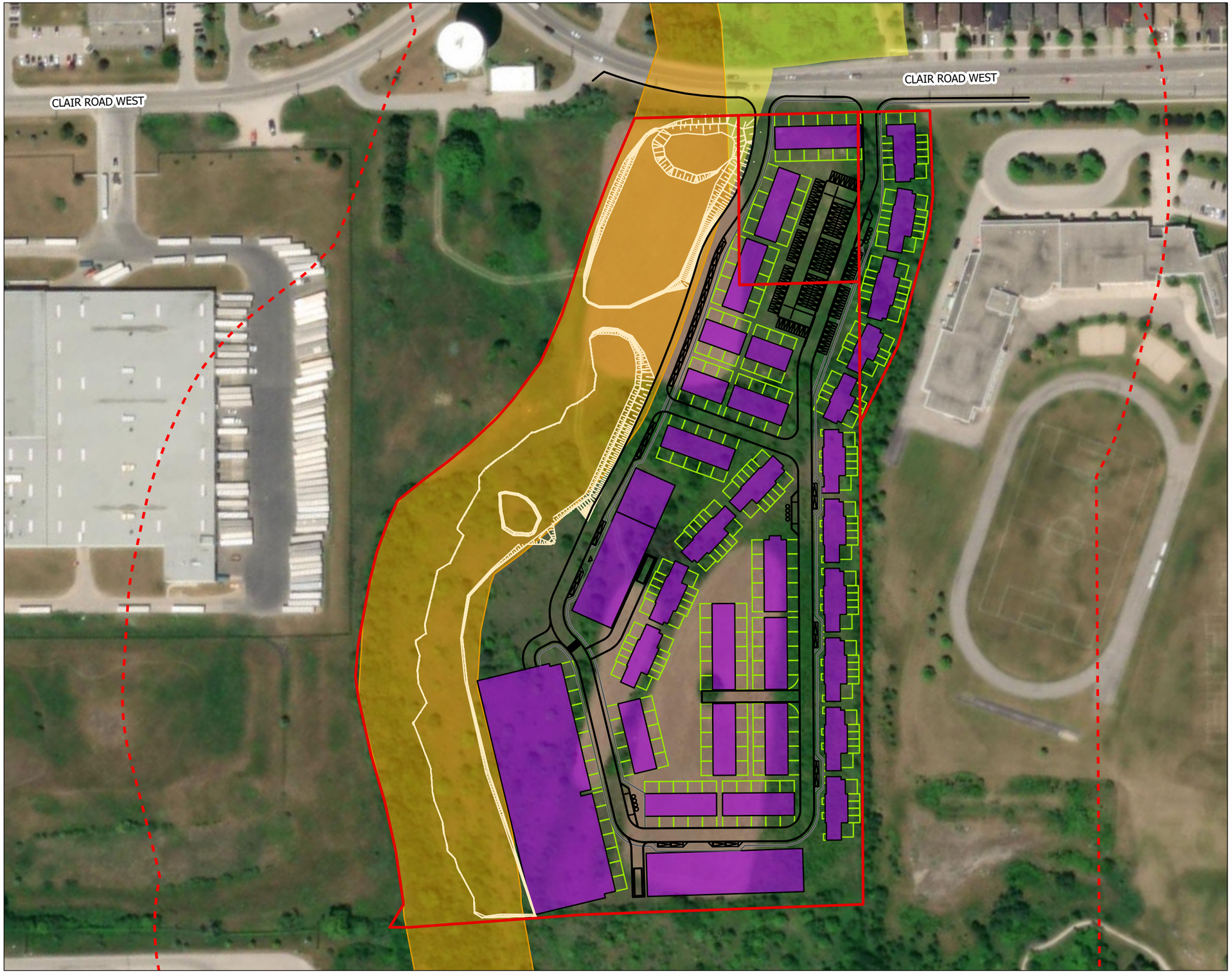

Figure 4 | Proposed Development
280 Clair Rd., Guelph

Legend

- Subject Property (8.73 ha)
- Study Area Boundary - 120m Buffer
- Ecological Linkage
- Proposed Realignment of Ecological Linkage (60 m width)

Site Plan

- Proposed Structures
- Proposed Yards
- Sidewalk
- Grading Plan
- Roadway and Parking

0 100 Meters

Project Number	Date:	
24-1421	2024-11-25	

north-south ENVIRONMENTAL

APPENDIX 2 | Terms of Reference

September 9, 2024

Draft Terms of Reference for Environmental Impact Study

280 Clair Road West
Guelph, Ontario

Prepared for

John Farley, Home Opportunities

north-south ENVIRONMENTAL

North-South Environmental Inc. • 101B King Street West • Cambridge, Ontario • N3H 1B5

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1. Introduction

North-South Environmental Inc. (NSE) has been retained by Home Opportunities to complete an Environmental Impact Study (EIS) to assess the impacts of a proposed development located at 280 Clair Road West (part of Lot 11, Concession 7, Geographic Township of Puslinch) in the City of Guelph. The subject property consists of 8.7 ha of land bound by Clair Road West to the north, Bishop MacDonnell Catholic High School to the east, industrial properties to the west and greenfield area to the south (**Figure 1**).

The purpose of the EIS is to characterize the existing conditions and assess potential impacts to the natural areas within and immediately adjacent to the proposed development. The EIS will assess the significance of the adjacent features identified as part of the City's Natural Heritage System, determine the potential for occurrences of Species at Risk (SAR) and/or the habitat of SAR, and assess the presence of any Significant Wildlife Habitat.

Subsequent to the determination of the preferred design, potential impacts to any Natural Heritage Features and/or functions and their associated buffers shall be evaluated. The EIS will identify potential constraints, assess impacts, and provide protection and mitigation recommendations to minimize any adverse effects to the Natural Heritage System and associated features and functions.

The following contents have been prepared according to the City of Guelph EIS Draft Guidelines (2020) and in consultation with the City of Guelph Official Plan and Schedules (City of Guelph 2001, consolidated February 2022).

In accordance with the City of Guelph EIS Draft Guidelines (2020), the introduction Section of the EIS will include:

- Description of the subject property (e.g., natural features and areas, land covers, existing hard surfaces, buildings, etc.);
- Description of the type and scale of the development proposal (e.g., any required servicing, infrastructure upgrades, stormwater management (SWM) facilities, etc.);
- Description of the historical and present uses of the subject property;
- Description of the site context/Study Area and the subject property's relationship to the surrounding landscape; and
- Map(s) of the development location, subject property and Study Area (including orthographic map with known natural heritage features/areas overlaid).

1.1. Study Area

The Study Area shall encompass the subject property and include adjacent lands that might reasonably be directly or indirectly affected by the proposed development. To the extent that is permitted by

adjacent land-owners, the area within 120 m of the edge of the proposed development shall be included for evaluation under this EIS. In the event that access is not granted for these lands, then NSE shall use the best available information from assembled background documents, mapping, and agency consultation to inform the contents of the EIS with respect to the adjacent lands.

1.2. Planning Context

Plans, policies and legislation relating to natural heritage that will be considered include the following:

- Provincial Policy Statement (2024)
- City of Guelph Official Plan (2001, consolidated February 2022)
- Endangered Species Act (2007)
- Species at Risk Act (2002)

It has been noted that Grand River Conservation Authority regulated lands do not overlap with the subject property.

The relevant natural heritage provincial and municipal policies and regulations will be reviewed. The proposed development will be assessed with respect to conformity with the relevant natural heritage policies. In accordance with the City of Guelph EIS Draft Guidelines (2020), this section shall also include:

- Current land use designation and zoning for the subject property and for the adjacent lands;
- Identification of required development applications; and
- Map(s) of the development location and extent of the area to be studied including Zoning/Land Use.

2. Background Review

A background review will include, but will not be limited to, the following sources:

- Background searches for designated significant features (i.e. provincially significant wetlands (PSW), Areas of Natural and Scientific Interest (ANSIs), etc.), land types and landforms, and Species at Risk (SAR) or locally significant species;
    - Ministry of Natural Resources and Forestry (MNRF) /Natural Heritage Information Centre (NHIC) screening for SAR (Online; 2019);

- Review of available background studies/reports;
    - City of Guelph Natural Heritage Strategy: Terrestrial Inventory & Natural Heritage System (Dougan & Associates and Snell & Cecile Environmental Research 2009);
    - City of Guelph Private Tree By-law 19058 (City of Guelph 2010);

  - Hanlon Creek Watershed Plan (Marshall Macklin Monaghan Limited and LGL Limited 1993);
  - Hanlon Creek State of the Watershed Study (Planning and Engineering Initiatives, et al. 2004);
  - South Guelph Secondary Plan Area Scoped EIS (LGL Limited 1998);
  - Environmental Impact Study for 132 Clair Road (NSE 2015);
  - Atlas of the Breeding Birds of Ontario (Online; 2019);
  - iNaturalist (Online; 2019);
  - eBird Canada (Online; 2019);
  - Ontario Butterfly Atlas (Online; 2019);
  - Soil Survey of Wellington County Ontario (Hoffman and Mathews 1963);
  - The Physiography of Southern Ontario, 3rd Ed. (Chapman and Putnam 1984);

- Review of technical guidance documents;
  - Natural Heritage Reference Manual (OMNR 2010);
  - Significant Wildlife Habitat Technical Guide (OMNR 2000); and
  - Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF 2015).

Ultimately, this section of the EIS shall identify relevant information from existing studies, plans, databases, and other sources to be analyzed as part of the EIS.

3. Characterizing the Natural Environment (Approach and Methodology)

In accordance with the City of Guelph EIS Draft Guidelines (2020), this section of the EIS will describe the Study Area's biological and physical features and functions and assess their significance and sensitivity to disturbance. Two (2) levels of investigation will be used to describe different features, including (i) secondary sources (compiling information from existing documents, see Section 2 above) and (ii) detailed field inventories as outlined below. The timing and level of investigation undertaken for different features have been explained and justified. This section will also describe the historical and existing land uses of the Study Area.

3.1. Natural Heritage Features

A constraint analysis based on a review of background documents and a site reconnaissance visit was undertaken by NSE in fall 2019. Results of the Natural Heritage Features assessment, which included consultation with the City's Environmental Planner, are described below. The constraint analysis was used to inform the context for the investigations and contribute to the development of the TOR for this EIS.

3.1.1. Significant Areas of Natural and Scientific Interest (ANSI)

None known to the Study Area. This feature will not be assessed.

3.1.2. Significant Habitat of Endangered and Threatened Species

The 132 Clair Road EIS (NSE 2015) notes that a single observation each of Eastern Meadowlark (*Sturnella magna*) and Bobolink (*Dolichonyx oryzivorus*) were documented on lands immediately adjacent to the subject property. The habitat for these species on the subject property is marginal, as they typically require grassland/meadow with a mix of forb and graminoid species, with little to no woody vegetation, particularly larger trees. The open habitat on the subject property has a higher density of woody vegetation than is typical of suitable habitat for Eastern Meadowlark and Bobolink.

The eBird Field Checklist for Guelph - Dragonfly Park Hills (within 1 km of the Study Area) lists occurrences of Chimney Swift (*Chaetura pelagica*), Bank Swallow (*Riparia riparia*), Barn Swallow (*Hirundo rustica*), Eastern Meadowlark and Bobolink. There is no habitat for Chimney Swift, Bank Swallow or Barn Swallow on the subject property. As noted in the previous paragraph, marginal habitat is present for Eastern Meadowlark and Bobolink.

3.1.3. Significant Wetlands and Other Wetlands

None known to the Study Area. This feature will not be assessed.

3.1.4. Surface Water Features and Fish Habitat

There is no evidence of aquatic habitat present within the Study Area, nor is there any information supporting the presence of Fish Habitat within the Study Area. This feature will not be assessed.

3.1.5. Significant Woodlands

None known to the Study Area. This feature will not be assessed.

3.1.6. Significant Valleylands

None known to the Study Area. This feature will not be assessed.

3.1.7. Significant Landform

Although none occur within the subject property itself, a Significant Landform has been identified as bordering the southeast property boundary. Adjacent Lands of the Significant Landform (which have a width 50 m adjacent to the feature) would occur within the subject property (**Figure 3**).

3.1.8. Significant Wildlife Habitat (including Ecological Linkages)

The preliminary Significant Wildlife Habitat screening follows the template set out in Appendix C to the City of Guelph's EIS Draft Guidelines and is included in **Appendix A** as part of NSE's constraint analysis.

This table is considered a living document; it shall be updated and revised based on the results of field studies and any additional information that becomes available throughout the life of the EIS. One Significant Wildlife Habitat feature was identified as occurring within the subject property: Animal Movement Corridor (Ecological Linkage). Ecological Linkages have been identified within the City's Official Plan (City of Guelph 2018) and overlaps the eastern edge of the subject property (**Figure 3**). The Ecological Linkage runs from the north of Clair Road to one of the branches of the Significant Landform (Paris-Galt Moraine).

Additionally, two candidate Significant Wildlife Habitat types were identified: Reptile (Snake) Hibernacula, and Shrub / Early Successional Breeding Bird habitat (**Figure 3**). It is unlikely that the rock piles observed during the reconnaissance field visit will support reptile hibernacula, which typically occurs more than 1 m below the surface (i.e., below the frost line). There is a potential that due to the larger continuous shrub habitat that extends south of the subject property, bird species relying on shrub habitat will be present. The size of the habitat and number of species recorded will need to be evaluated during the EIS to confirm presence of this Significant Wildlife Habitat type.

3.1.9. Restoration Areas

None known to the Study Area. This feature will not be assessed.

3.1.10. Habitat of Significant Species

No Habitat of Significant Species is known to the Study Area. A number of species identified under the City of Guelph's Locally Significant Species List (2012) have been identified in the vicinity of the Study Area. Consideration for these species and their habitats is represented in the field program (through breeding bird surveys, reptile surveys, and three-season floral inventories) as part of this EIS.

3.1.11. Cultural Woodlands

None known to the Study Area. This feature will not be assessed.

3.2. Biophysical Characterization

NSE will characterize known surface water and groundwater features in the Study Area as well as outline the regional and local hydrogeology. A description of the following shall be included:

- Geomorphological and topographic features;
- Surficial and bedrock geology, as well as soil types, as they relate to drainage and infiltration in the study area;
- Hydrogeological conditions;
- Surface and groundwater features onsite, within adjacent lands and in the surrounding area;
- Recharge and discharge zones, including seepage areas and springs, if present;

- Existing catchment areas, drainage patterns, watercourses and drainage basin boundaries; and
- Flood-related hazards (i.e., floodplains) (including mapping of these natural hazards).

3.2.1. Significant Landform

Although none occur within the subject property itself, a Significant Landform has been identified as bordering the southeast property boundary. Adjacent Lands of the Significant Landform (which have a width 50 m adjacent to the feature) overlap with the subject property (**Figure 3**). The impact assessment will consider the Significant Landform.

3.3. Fauna

3.3.1. Breeding Bird Survey

Two breeding bird surveys will be completed following Forest Bird Monitoring Program protocols (Konze and McLaren 1997). These surveys will be completed in the morning between a half-hour before sunrise and 10:00 am during suitable weather conditions. The surveys include an area search throughout the subject property using Breeding Bird Atlas protocols. Breeding evidence will be evaluated using the following guidelines (Ontario Breeding Bird Atlas 2001):

> "Possible breeding" is indicated by the presence of a singing male (or breeding calls heard) in suitable habitat or the presence of a bird observed in suitable breeding habitat in its breeding season.
>
> "Probable breeding" is defined as an observation of any of the following: (1) a pair in breeding season in suitable habitat, (2) permanent territory presumed through registration of territorial song on at least two days, a week or more apart, at the same place or (3) courtship or display between a male and a female or two males, including courtship feeding or copulation; visiting probable nest site; agitated behaviour or anxiety calls of an adult; brood patch on an adult female or cloacal protuberance on an adult male; nest building or excavation of a nest hole.
>
> "Confirmed breeding" is defined as observation of any of the following: (1) a distraction display or injury feigning; (2) used nest or egg shell found (occupied or laid within the period of the study); (3) recently fledged young or downy young, including young incapable of sustained flight; (4) adults entering or leaving nest site in circumstances indicating occupied nest (*e.g*, adult carrying fecal sac; adult carrying food for young), or (5) nest containing eggs, or nest with young seen or heard.

3.3.2. Reptile Surveys

Features that may be associated with reptile hibernacula may be present within the Study Area. NSE will review these features and assess their potential for candidate hibernacula for reptiles. Should the features be considered potential for hibernacula then NSE will conduct targeted surveys in the spring

for emerging snakes to determine if any of the structures are being used as hibernacula. Where suitable structures are present, the area will be slowly walked (under suitable weather conditions and at times advantageous for the observation of basking reptiles), scanning for snakes (using binoculars).

Area searches for reptile habitat in and around the potential hibernacula will be conducted according to MNRF Guelph District's Milksnake Survey Protocol (June 2013). These surveys involve walking transects and actively searching for snake species by looking under and turning over potential cover objects by hand. Three surveys will be conducted (at least two weeks apart) between April and late June.

Environmental conditions will be documented as part of reptile surveys to demonstrate suitability of field days.

Incidental observations of reptiles will be recorded and described during all field inventories.

3.3.3. Monarch and Yellow-banded Bumblebee Observations

The City of Guelph has noted the potential for Monarch (*Danaus plexippus*) and Yellow-banded Bumblebee (*Bombus terricola*) to occur on the subject property. Any incidental observations of Monarch will be recorded and described during all field inventories. Patches of milkweed (*Asclepias syriaca*), host plants for Monarch, will be noted during vegetation inventories.

Although no targeted surveys are proposed for the Yellow-banded Bumblebee, general observations of pollinator (including bumblebee) activity will be noted during all field inventories. This species will be managed for through potential compensation measures (e.g., promoting pollinator habitat in buffer areas, including the Ecological Linkage).

3.4. Vegetation and Ecological Land Classification

Vegetation communities within the Study Area and on adjacent lands will be characterized and mapped according to ELC protocols (Lee et al. 1998). ELC undertaken in 2020 (**Figure 2**) revealed three vegetation units on the subject property including cultural meadow (CUM), cultural thicket (CUT) and cultural savannah (CUS).

Three-season botanical inventories are proposed to encompass all floral growing seasons to complement the existing fall inventory and complete the three-season floristic characterization. Relative abundance of each species will be recorded, and significant species and/or plant populations will be documented using a GPS unit. Results of all three seasons of assessments will be summarized in an annotated checklist and included in the EIS as a table.

3.5. Ecological Connections, Linkages, and Landscape Functions

The natural heritage features on and off the subject property will be assessed at a landscape scale through a review of secondary sources in order to evaluate potential linkage functions and evaluate ecological connections for wildlife movement. An existing Ecological Linkage is identified under the City's Official Plan (City of Guelph 2022) as overlapping the eastern edge of the subject property (**Figure 3**). This Linkage runs from the north of Clair Road to one of the branches of the Significant Landform (Paris-Galt Moraine).

The proposed development includes relocation and refinement of the existing Ecological Linkage to the western boundary of the subject property, and a width refinement to 60 m. City of Guelph Official Plan policies allow for the realignment of a mapped Ecological Linkage in accordance with outlined conditions including maintaining functionality and connectivity. Detailed rationale for the linkage realignment will be provided in the EIS.

3.6. Habitat for Significant Species

This section will evaluate all identified natural heritage features and areas, and associated ecological functions (in the study area, and in particularly in the subject property) and screen them against the in effect and applicable policies and guidelines to confirm whether or not they are considered "significant" in the City of Guelph.

The presence of significant species and their habitats shall be verified through the EIS. The City of Guelph's Locally Significant Species List (2012) provides a list of locally significant species and includes both flora and fauna. All significant species will be identified and form part of the analysis regarding habitat protection for these species.

3.7. Tree Inventory and Preservation Plan

A Tree Inventory and Tree Preservation Plan will be completed per the City of Guelph's Tree Technical Manual (2019). The plan shall include as a minimum:

- Inventory of all trees over 10 cm dimeter at breast height (DBH), including size, form, species composition, health and risk assessment;
- Identify opportunities for transplanting smaller specimens of trees, where appropriate;
- Tree preservation plan specifying measures required for tree protection and monitoring during construction / development; and
- Measures for avoiding disturbance to any breeding birds during construction.

4. Data Analysis

In accordance with the City of Guelph's Draft EIS Guidelines (2020), this section shall include:

- Evaluation of significance;
  Assessment of opportunities and constraints;
- Impact assessment;
- Evaluation of alternatives;
- Recommended mitigation measures (including opportunities for enhancement, restoration, and/or compensation); and
- Environmental policy analysis.

4.1. Evaluation of Significance

The data obtained from the field investigations and review of background studies will be evaluated in order to determine sensitivity of features and functions. The criteria for determining significant features and functions (e.g. Significant Woodlands, Significant Wildlife Habitat, etc.) will be evaluated according to the following guiding documents:

- Natural Heritage Reference Manual (OMNR 2010);
- Significant Wildlife Habitat Technical Guide (OMNR 2000);
- Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF 2015); and
- City of Guelph Official Plan (consolidation February 2022).

NSE shall review the policy and legislative framework for the site. All significant features within the study area will be illustrated on a figure. This section of the EIS will also include a discussion and analysis regarding opportunities and constraints, and will:

- Identify all the constraints to potential development related to natural heritage features and areas identified for protection, as well as natural hazards, including their respective buffers and setbacks;
- Identify opportunities for development on the subject property that work within the limitations of the site-specific constraints; and
- Identify opportunities for restoration, enhancement and/or stewardship opportunities.

NSE shall prepare maps showing:

- Vegetation communities overlaying aerial photography; and
- Significant features and constraints to site plan development.

4.2. Identifying and Assessing the Impacts of the Proposal

This section of the EIS will identify the natural heritage features and hydrologic features that might be negatively impacted by the subject property's proposed development. This section will also describe potential negative impacts (direct and indirect) in terms of their magnitude, area affected and likely duration.

In particular, this section will:

- Provide a detailed description of the proposed development as it related to elements of the development that may impact the natural heritage features and areas identified for protection, and/or their ecological functions;
- Assess potential impacts to hydrological functions;
- Evaluate potential impacts to SAR and/or their habitat;
- Describe direct, indirect, short-term, and long-term impacts with particular emphasis on the following:
    - Tree/vegetation removal (if any);
    - Significant Landform;
    - Ecological Linkages;
    - Reptile over-wintering; and
    - Locally significant avifauna and their habitats.

4.3. Avoiding Impacts and Evaluating Alternative Mitigation Measures

Avoiding negative impacts is preferred over mitigation. Ways of avoiding impacts will be recommended and may consider alternatives to the proposed development, where feasible. Where adverse impacts are unavoidable, a range of mitigation measures to reduce or minimize significant impacts will be recommended. The relative effectiveness of implementing these measures will be estimated and the extent of any remaining impacts discussed.

This section will also include the following:

- A description of any proposed restoration recommendations for impacts that cannot be mitigated or disturbed areas; and
- A description of other mitigation or compensation measures proposed to eliminate, reduce or off-set impacts such as tree removal.

5. Monitoring

If appropriate, the EIS will include recommendations for short- or long-term management, conservation, enhancement, and/or the monitoring of significant environmental features and/or functions within the Study Area and/or adjacent lands. The scope of any proposed monitoring plan and types of monitoring being proposed will be determined through assessment of features and ecological functions, sensitivity of features, and impacts resulting from the proposed development.

6. Conclusion

This section will summarize the potential negative impacts associated with the proposed development and the recommended measures to avoid or mitigate these impacts. Enhancements may also be suggested. Recommendations will be as specific as possible, and may include:

- A modification of the concept plan;
- Construction requirements or constraints;
- A requirement for appropriate buffers/setbacks or other environmental protection measures; and
- An integral component of detailed designs or site plans, such as:
    - Tree protection plan,
    - Erosion and sediment control plan, and/or
    - Restoration/enhancement measures.

7. References

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Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide. 151 pp.

Ontario Ministry of Natural Resources (OMNR). 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. 248 pp.

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From:	Ryan Hamelin
To:	Izabela van Amelsvoort
Cc:	Ryan Mallory; Anand Shah; Jane Gurney
Subject:	RE: EIS for 280 Clair Road W - Confirm TOR SoW
Date:	Wednesday, September 18, 2024 1:09:48 PM
Attachments:	image001.png image002.png image003.png image004.png image005.png image006.png

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Hello Izabela,

Thank you for providing the Draft EIS Terms of Reference for 280 Clair Rd W. I have provided combined comments below from Parks Planning and Environment Planning.

Comments:

1. The ToR references the City's EIS Guidelines as a Draft; however, the guidelines have been updated and published and are no longer a draft version.
    - Relatedly, some of the referenced sections of the EIS Guidelines have changed. For example, the ToR references Appendix C of the guidelines as the Significant Wildlife Habitat screening table, however, that information is now in Appendix D.

2. The ToR references an older version of the City of Guelph Official Plan. The Current Official Plan is the February 2024 consolidation.

3. The Terms of Reference discusses the proposed Ecological Linkage width and location refinements. Please note the related OMB Minutes of Settlement (2013) regarding the criteria of linkage refinements. The EIS must demonstrate how any proposed Linkage change meets the OMB settlement requirements. Some initial concerns and considerations relating to the proposed linkage changes are:

    - The proposed linkage alignment will not directly connect to the identified Natural Heritage System on the property to the south.
    - The proposed alignment will result in the linkage being located between High-Density Residential and Industrial rather than next to Open Space and recreational facilities. Based on the proposed linkage location, the adjacent land uses will have impacts associated with light and noise that must be addressed in the EIS.
    - The proposed reduced width from 100m to 60m may not be appropriate based on adjacent land uses.

4. The EIS shall provide recommendations on restoration and enhancements of the linkage. Robust linkage enhancements may help justify reduced linkage widths.

5. A feature-based water balance will be required as part of the EIS. The hydrology of the linkage and any water being directed to the linkage must be considered.
    - Any proposed restoration and enhancements of the linkage must be consistent with

the proposed hydrology.
- If the EIS is completed before detailed hydrological studies and stormwater management plans are available, the EIS can provide a preliminary water balance analysis. A preliminary water balance analysis must include details of the relevant Stormwater Management and Infiltration policies and provide recommendations on a proposed stormwater management strategy and water balance targets that can be implemented during the detailed design and Site Plan.

6. The EIS shall provide an evaluation of the preliminary trail design and alignment. The trail alignment shall follow applicable environmental policies in the Official Plan and standards in the Guelph Trails Master Plan.

7. The EIS shall discuss appropriate buffer strips and property demarcation between the open-space and the proposed development. City owned lands shall be appropriated buffered on the private property and demarcation provided in accordance with the City's demarcation policy (black vinyl coated chain link fence or demarcation bollards where appropriate).

Updated Terms of Reference do not need to be submitted, but please append these comments to the EIS.

Please let me know if you have any questions or want to discuss any comments.

Regards,

Ryan Hamelin

Ryan Hamelin,
Environmental Planner
Infrastructure, Development and Environment, **Planning and Building Services**
City of Guelph
T 519-822-1260 x 2718
ryan.hamelin@guelph.ca

From: Ryan Hamelin
Sent: Friday, September 13, 2024 3:24 PM
To: Izabela van Amelsvoort <ivanamelsvoort@nsenvironmental.com>; Jane Gurney <Jane.Gurney@guelph.ca>
Cc: Ryan Mallory <Ryan.Mallory@guelph.ca>; Anand Shah <Anand.Shah@guelph.ca>

APPENDIX 3 | Species Lists

Scientific Name	Common Name	G Rank	S Rank	SARA	SARO	COSEWIC	Native Status	Local and Regional Statuses		CC	Vegetation Communities		
								Guelph (City of Guelph 2020)	Wellington (Frank & Anderson 2009)		CUM	CUS	CUT
Acer negundo	Manitoba Maple	G5	S5				Native			0	X	X	X
Acer nigrum	Black Maple	G5	S4?				Native	X	U	7		X	X
Acer saccharum	Sugar Maple	G5	S5				Native			4		X	
Achillea millefolium	Common Yarrow	G5	SNA				Non-Native				X	X	X
Agrostis gigantea	Redtop	G4G5	SNA				Non-Native				X	X	X
Ambrosia artemisiifolia	Common Ragweed	G5	S5				Native			0	X	X	X
Amelanchier sp.	a serviceberry species											X	
Anemone virginiana	Tall Anemone	G5	S5				Native			4		X	X
Antennaria neglecta	Field Pussytoes	G5	S5				Native			3			X
Arctium minus	Common Burdock	GNR	SNA				Non-Native				X		X
Asclepias syriaca	Common Milkweed	G5	S5				Native			0	X	X	X
Bromus inermis	Smooth Brome	G5T5	SNA				Non-Native				X	X	X
Centaurea stoebe	Spotted Knapweed	GNR	SNA				Non-Native					X	
Cirsium arvense	Canada Thistle	G5	SNA				Non-Native				X		X
Cirsium vulgare	Bull Thistle	GNR	SNA				Non-Native				X		
Clinopodium vulgare	Wild Basil	G5	S5				Native			4			X
Cornus obliqua	Silky Dogwood	G5	S5				Native		U	2			X
Cornus sericea	Red-osier Dogwood	G5	S5				Native			2		X	X
Crataegus monogyna	English Hawthorn	G5	SNA				Non-Native					X	X
Crataegus sp.	a hawthorn species											X	
Dactylis glomerata	Orchard Grass	GNR	SNA				Non-Native				X	X	X
Daucus carota	Wild Carrot	GNR	SNA				Non-Native				X	X	X
Dipsacus fullonum	Common Teasel	GNR	SNA				Non-Native				X		
Echinocystis lobata	Wild Cucumber	G5	S5				Native			3		X	
Echium vulgare	Common Viper's Bugloss	GNR	SNA				Non-Native				X	X	X
Elaeagnus angustifolia	Russian Olive	GNR	SNA				Non-Native				X	X	X
Elaeagnus umbellata	Autumn Olive	GNR	SNA				Non-Native					X	X
Elymus repens	Quackgrass	GNR	SNA				Non-Native				X		
Erigeron canadensis	Canada Horseweed	G5	S5				Native			0	X	X	X
Erigeron strigosus	Rough Fleabane	G5	S5				Native			4	X	X	X
Erythronium americanum	Yellow Trout-lily	G5	S5				Native			5		X	
Euthamia graminifolia	Grass-leaved Goldenrod	G5	S5				Native			2		X	X
Fagus grandifolia	American Beech	G5	S4				Native			6		X	
Fragaria virginiana	Wild Strawberry	G5	S5				Native			2	X	X	X
Fraxinus americana	White Ash	G4	S4				Native			4	X	X	
Galium mollugo	Smooth Bedstraw	GNR	SNA				Non-Native					X	
Galium sp.	a bedstraw species											X	X
Geum aleppicum	Yellow Avens	G5	S5				Native			2		X	X
Hypericum perforatum	Common St. John's-wort	GNR	SNA				Non-Native				X	X	X

Juniperus virginiana	Eastern Red Cedar	G5	S5				Native		U	4		X	
Leonurus cardiaca	Common Motherwort	GNR	SNA				Non-Native				X		
Leucanthemum vulgare	Oxeye Daisy	GNR	SNA				Non-Native				X	X	X
Linaria vulgaris	Butter-and-eggs	GNR	SNA				Non-Native				X	X	X
Lolium perenne	Perennial Ryegrass	GNR	SNA				Non-Native					X	X
Lonicera morrowii	Morrow's Honeysuckle	GNR	SNA				Non-Native					X	X
Lonicera tatarica	Tatarian Honeysuckle	GNR	SNA				Non-Native				X	X	X
Lotus corniculatus	Garden Bird's-foot Trefoil	GNR	SNA				Non-Native				X	X	X
Malus pumila	Common Apple	G5	SNA				Non-Native					X	
Medicago lupulina	Black Medick	GNR	SNA				Non-Native					X	X
Melilotus albus	White Sweet-clover	G5	SNA				Non-Native				X	X	X
Monarda fistulosa	Wild Bergamot	G5	S5				Native		U	6	X		
Morus alba	White Mulberry	GNR	SNA				Non-Native					X	X
Nepeta cataria	Catnip	GNR	SNA				Non-Native				X	X	X
Panicum capillare	Common Panicgrass	G5	S5				Native			0	X		X
Parthenocissus quinquefolia	Virginia Creeper	G5	S4?				Native			6	X	X	X
Phalaris arundinacea	Reed Canarygrass	G5	S5				Native			0	X		
Phleum pratense	Common Timothy	GNR	SNA				Non-Native				X	X	X
Picea glauca	White Spruce	G5	S5				Native			6	X	X	
Pilosella aurantiaca	Orange Hawkweed	GNR	SNA				Non-Native					X	X
Pinus strobus	Eastern White Pine	G5	S5				Native			4	X	X	
Pinus sylvestris	Scots Pine	GNR	SNA				Non-Native					X	
Plantago lanceolata	English Plantain	G5	SNA				Non-Native				X	X	X
Plantago major	Common Plantain	G5	SNA				Non-Native					X	
Poa pratensis ssp. pratensis	Kentucky Bluegrass	G5T5	SNA				Non-Native				X	X	X
Polygonum aviculare	Prostrate Knotweed	G5	S4?				Native			0	X		
Populus balsamifera	Balsam Poplar	G5	S5				Native			4		X	
Potentilla recta	Sulphur Cinquefoil	GNR	SNA				Non-Native				X	X	X
Prunus mahaleb	Mahaleb Cherry	G5	SNA				Non-Native					X	X
Prunus pensylvanica	Pin Cherry	G5	S5				Native			3	X	X	X
Prunus serotina	Black Cherry	G5	S5				Native			3		X	
Prunus virginiana	Chokecherry	G5	S5				Native			2		X	
Prunus virginiana var. virginiana	Chokecherry	G5T5	S5				Native			2			X
Pyrus communis	Common Pear	G5	SNA				Non-Native					X	X
Ranunculus acris	Common Buttercup	G5	SNA				Non-Native					X	X
Rhamnus cathartica	European Buckthorn	GNR	SNA				Non-Native				X	X	X
Rhus typhina	Staghorn Sumac	G5	S5				Native			1	X		
Ribes rubrum	European Red Currant	G4G5	SNA				Non-Native					X	X
Ribes sp.	#N/A	#N/A	#N/A				#N/A					X	
Rubus idaeus	Red Raspberry	G5	S5				Native			2	X	X	X
Rubus occidentalis	Black Raspberry	G5	S5				Native			2		X	
Rumex crispus	Curled Dock	GNR	SNA				Non-Native				X		X
Salix sp.	a willow species										X		

Sanguinaria canadensis	Bloodroot	G5	S5				Native			5		X	
Securigera varia	Purple Crown-vetch	GNR	SNA				Non-Native				X		
Solanum dulcamara	Bittersweet Nightshade	GNR	SNA				Non-Native				X	X	X
Solidago altissima	Tall Goldenrod	G5	S5				Native			1	X	X	X
Solidago canadensis	Canada Goldenrod	G5	S5				Native			1	X	X	X
Solidago juncea	Early Goldenrod	G5	S5				Native		R	3		X	X
Solidago nemoralis	Grey-stemmed Goldenrod	G5	S5				Native			2		X	X
Sonchus arvensis	Field Sow-thistle	GNR	SNA				Non-Native				X		X
Sorbus aucuparia	European Mountain-ash	G5	SNA				Non-Native					X	
Symphyotrichum ericoides	White Heath Aster	G5	S5				Native			4	X	X	X
Symphyotrichum laeve	Smooth Aster	G5	S5				Native			7		X	
Symphyotrichum lanceolatum	Panicled Aster	G5	S5				Native			3	X		
Symphyotrichum lateriflorum	Calico Aster	G5	S5				Native			3	X		
Symphyotrichum novae-angliae	New England Aster	G5	S5				Native			2	X	X	X
Symphyotrichum pilosum var. pilosum	Old Field Aster	G5T5	S5				Native		U	1		X	X
Symphyotrichum urophyllum	Arrow-leaved Aster	G4G5	S4				Native		U	6		X	
Tanacetum vulgare	Common Tansy	GNR	SNA				Non-Native				X		
Taraxacum officinale	Common Dandelion	G5	SNA				Non-Native				X	X	X
Tilia americana	Basswood	G5	S5				Native			4	X	X	X
Tragopogon dubius	Yellow Goatsbeard	GNR	SNA				Non-Native					X	X
Trifolium pratense	Red Clover	GNR	SNA				Non-Native				X	X	X
Trifolium repens	White Clover	GNR	SNA				Non-Native						X
Tussilago farfara	Coltsfoot	GNR	SNA				Non-Native					X	
Ulmus americana	White Elm	G4	S5				Native			3		X	X
Ulmus pumila	Siberian Elm	GNR	SNA				Non-Native					X	
Urtica dioica	Stinging Nettle	G5	SNA				Non-Native					X	
Verbascum thapsus	Common Mullein	GNR	SNA				Non-Native				X		X
Viburnum lantana	Wayfaring Viburnum	GNR	SNA				Non-Native					X	X
Viburnum lentago	Nannyberry	G5	S5				Native			4		X	
Viburnum opulus var. americanum	Highbush Cranberry	G5T5	S5				Native		U	5	X	X	
Vicia cracca	Tufted Vetch	GNR	SNA				Non-Native				X	X	X
Vitis riparia	Riverbank Grape	G5	S5				Native			0	X	X	X

G Rank: Global Rank
G4: Apparently Secure
G5: Secure
GNR: Unranked
T#: Subspecies Rank
S Rank: Sub-national Rank
S4: Apparently Secure
S5: Secure
SNA: Not Applicable
COSEWIC – Committee of the Status of Endangered Wildlife in Canada
SARA – Species at Risk Act (Federal)
SARO – Species at Risk in Ontario (Provincial)
CC (Coefficient of Conservatism) - Higher values indicate species that are more ecologically sensitive and associated with less disturbed habitats.

Guelph Local Rank
X: Locally Significant
Wellington Regional Rank
R: Rare
U: Uncommon

Fauna species recorded within the subject property.

Taxa	Family	Common Name	Scientific Name	G Rank	S Rank	SARA	SARO	COSEWIC	Guelph (City of Guelph 2020)	Wellington (Frank & Anderson 2009)	Area Sensitive	Breeding Bird Code
Amphibians	Hylidae	Spring Peeper	*Pseudacris crucifer*	G5	S5							
Birds	Accipitridae	Cooper's Hawk	*Accipiter cooperii*	G5	S4		NAR	NAR	X	X	TRUE	OB
Birds	Icteridae	Red-winged Blackbird	*Agelaius phoeniceus*	G5	S5						FALSE	PR
Birds	Bombycillidae	Cedar Waxwing	*Bombycilla cedrorum*	G5	S5						FALSE	PO
Birds	Cardinalidae	Northern Cardinal	*Cardinalis cardinalis*	G5	S5						FALSE	PO
Birds	Charadriidae	Killdeer	*Charadrius vociferus*	G5	S4B						FALSE	PO
Birds	Picidae	Northern Flicker	*Colaptes auratus*	G5	S5				X	X	FALSE	PO
Birds	Corvidae	American Crow	*Corvus brachyrhynchos*	G5	S5						FALSE	OB
Birds	Corvidae	Blue Jay	*Cyanocitta cristata*	G5	S5						FALSE	OB
Birds	Mimidae	Gray Catbird	*Dumetella carolinensis*	G5	S5B, S3N						FALSE	PO
Birds	Tyrannidae	Willow Flycatcher	*Empidonax traillii*	G5	S4B				X	X	FALSE	PR
Birds	Hirundinidae	Barn Swallow	*Hirundo rustica*	G5	S4B	THR	SC	SC	X		FALSE	PO
Birds	Icteridae	Baltimore Oriole	*Icterus galbula*	G5	S4B				X	X	FALSE	PO
Birds	Laridae	Ring-billed Gull	*Larus delawarensis*	G5	S5				X	X	FALSE	OB
Birds	Passerellidae	Song Sparrow	*Melospiza melodia*	G5	S5						FALSE	PR
Birds	Paridae	Black-capped Chickadee	*Poecile atricapillus*	G5	S5						FALSE	OB
Birds	Icteridae	Common Grackle	*Quiscalus quiscula*	G5	S5						FALSE	OB
Birds	Parulidae	Yellow Warbler	*Setophaga petechia*	G5	S5B						FALSE	PR
Birds	Fringillidae	American Goldfinch	*Spinus tristis*	G5	S5						FALSE	PR
Birds	Passerellidae	Chipping Sparrow	*Spizella passerina*	G5	S5B,S3N						FALSE	PO
Birds	Passerellidae	Field Sparrow	*Spizella pusilla*	G5	S4B,S3N				X	X	FALSE	PR
Birds	Hirundinidae	Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	G5	S4B						FALSE	PO
Birds	Icteridae	Eastern Meadowlark	*Sturnella magna*	G5	S4B, S3N	THR	THR	THR	X	X	TRUE	PR
Birds	Sturnidae	European Starling	*Sturnus vulgaris*	G5	SNA						FALSE	PR
Birds	Hirundinidae	Tree Swallow	*Tachycineta bicolor*	G5	S4,S5B						FALSE	PO
Birds	Turdidae	American Robin	*Turdus migratorius*	G5	S5						FALSE	PO
Birds	Tyrannidae	Eastern Kingbird	*Tyrannus tyrannus*	G5	S4B				X		FALSE	PR
Birds	Vireonidae	Warbling Vireo	*Vireo gilvus*	G5	S5B						FALSE	PO
Birds	Columbidae	Mourning Dove	*Zenaida macroura*	G5	S5						FALSE	OB
Insects	Apidae	Common Eastern Bumble Bee	*Bombus impatiens*	G5	S5							
Insects	Nymphalidae	Monarch	*Danaus plexippus*	G4	S2N,S4B	END	SC	END	X	X		
Mammals	Canidae	Coyote	*Canis latrans*	G5	S5							
Mammals	Cervidae	White-tailed Deer	*Odocoileus virginianus*	G5	S5							
Mammals	Procyonidae	Northern Raccoon	*Procyon lotor*	G5	S5							

Taxa	Family	Common Name	Scientific Name	G Rank	S Rank	SARA	SARO	COSEWIC	Guelph (City of Guelph 2020)	Wellington (Frank & Anderson 2009)	Area Sensitive	Breeding Bird Code
Mammals	Leporidae	Eastern Cottontail	*Sylvilagus floridanus*	G5	S5							
Mammals	Sciuridae	Eastern Chipmunk	*Tamias striatus*	G5	S5							

G Rank: Global Rank
G4: Apparently Secure
G5: Secure
S Rank: Sub-national Rank
S2: Imperiled
S3: Vulnerable
S4: Apparently Secure
S5: Secure
SNA: Not Applicable
B#: Breeding Rank
N#: Non-breeding Rank

COSEWIC – Committee of the Status of Endangered Wildlife in Canada
SC: Special Concern
THR: Threatened
END: Endangered
NAR: Not at Risk
SARA – Species at Risk Act (Federal)
THR: Threatened
END: Endangered
SARO – Species at Risk in Ontario (Provincial)
SC: Special Concern
THR: Threatened
NAR: Not at Risk

Guelph Local Ranks
X: Significant
Wellington Regional Ranks
X: Significant
Area Sensitive: Wildlife species that require large areas of suitable habitat (MNRF Significant Wildlife Habitat Technical Guide)
Breeding Evidence
OB: Observed
PO: Possible
PR: Probable
CO: Confirmed

APPENDIX 4 | Species at Risk Screening

List of Species at identified through background review.

Species	Source	Status		Habitat Present on Site	Surveys Conducted	Probability of Occurrence and Rationale	Potential to be Impacted by Proposed Activities
Endangered, Threatened and Special Concern Species							
Plants							
Butternut *Juglans cinerea*	NHIC	COSEWIC - END SARA - END SARO - END	Deciduous forests with moist, well-drained soil. Often found along streams and on well drained gravel sites. (OMNR, 2013)	**Yes**	**Flora, Tree Inventory**	**None** - No individuals were recorded	**None**
Western Chorus Frog - Great Lakes / St. Lawrence - Canadian Shield population *Pseudacris triseriata*	NHIC	SARO- N/A SARA- THR COSEWIC - THR	Roadside ditches or temporary ponds in fields; swamps or wet meadows; woodland or open country with cover and moisture; small ponds and temporary pool (OMNR, 2000)	**No** - No suitable habitat (wet areas) is present in the study area. Adjacent lands have suitable habitat.	**None**	**None -**No suitable habitat is present.	**None**
Birds							
Bank Swallow *Riparia riparia*	eBird	SARO-THR SARA-THR (under consideration) COSEWIC- SC	Sand, clay or gravel riverbanks or steep riverbank cliffs; lakeshore bluffs of easily crumbled sand or gravel; gravel pits, road-cuts, grassland or cultivated fields that are close to water; nesting sites are a limited factor for species presence (OMNR, 2000).	**No**	**Breeding Bird Surveys**	**None -** No suitable habitat is present.	**None**
Bobolink *Dolichonyx oryzivorus*	NSE (2015), NHIC	SARO- THR SARA- THR COSEWIC- THR	Large, open expansive grasslands with dense ground cover; hayfields, meadows or fallow fields; marshes; requires tracts of grassland >50 ha (OMNR, 2000).	**No** - Low quality. The habitat has many trees and shrubs present which is not considered suitable habitat for Eastern Meadowlark.	**Breeding Bird Surveys**	**None -** No suitable habitat is present.	**None -** No Bobolink were recorded. Development will not be removing suitable habitat.
Chimney Swift *Chaetura pelagica*	eBird	SARO- THR SARA- THR COSEWIC- THR	Commonly found in urban areas near buildings; nests in hollow trees, crevices of rock cliffs, chimneys; highly gregarious; feeds over open water (OMNR, 2000).	**No -** No hollow trees recorded during surveys, but buildings with flat roofs are present on adjacent lands.	**Breeding Bird Surveys**	**None -** No breeding habitat is present. Foraging habitat is present on adjacent lands.	**None -** No breeding habitat (hollow trees, buildings) is proposed to be removed. Foraging habitat remains on adjacent lands.
Eastern Meadowlark *Sturnella magna*	NSE (2015), NHIC	SARO- THR SARA- THR COSEWIC- THR	Generally, prefers large, open expansive grasslands with dense ground cover; hayfields, meadows or fallow fields; marshes; requires tracts of grassland >50 ha. In migration and winter uses freshwater marshes and grasslands (OMNR 2000).	**No** - Low quality. The habitat has many trees and shrubs present which is not considered suitable habitat for Eastern Meadowlark.	**Breeding Bird Surveys**	**Confirmed -** At least one individual was recorded during surveys.	**Moderate -** Eastern Meadowlarks were recorded within the study area. Although available habitat is marginal, the species likely utilizes habitat along the western boundary of the subject property, and in cultural meadows and savannah adjacent to the west and south of the subject property.

Species	Source	Status		Habitat Present on Site	Surveys Conducted	Probability of Occurrence and Rationale	Potential to be Impacted by Proposed Activities
Mammals (bats)							
Little Brown Myotis *Myotis lucifugus*	Assumed	SARO- END SARA- END COSEWIC- END	Hibernates during winter in mines or caves; during summer males roost alone and females form maternity colonies of up to 60 adults; roosts in houses, manmade structures but prefers hollow trees or under loose bark; hunts within forests, below canopy (OMNR, 2000)	**Yes -** Mature trees are present within the study area.	**None**	**Moderate to High**	**High –** The most suitable habitat is along the northern edge of the property where there are mature, deciduous tree. Most of these trees are proposed to be removed.
Northern Myotis *Myotis septentrionalis*	Assumed	SARO- END SARA- END COSEWIC- END	Hibernates during winter in mines or caves; during summer males roost alone and females form maternity colonies of up to 60 adults; roosts in houses, manmade structures but prefers hollow trees or under loose bark; hunts within forests, below canopy (OMNR, 2000)	**Yes -** Mature trees are present within the study area.	**None**	**Moderate to High**	**High –** The most suitable habitat is along the northern edge of the property where there are mature, deciduous tree. Most of these trees are proposed to be removed.
Tri-coloured Bat *Pipistrellus subflavus*	Assumed	SARO- END SARA- END COSEWIC- END	Found in a variety of forested habitats. Forms day roosts and maternity colonies in older forest and occasionally in barns or other structures. They forage over water and along streams in the forest. At the end of the summer they travel to a location where they swarm; it is generally near the cave or underground location where they will overwinter (OMNR, 2000)	**Yes -** Mature trees are present within the study area.	**None**	**Moderate to High**	**High –** The most suitable habitat is along the northern edge of the property where there are mature, deciduous tree. Most of these trees are proposed to be removed.
Special Concern Species							
Species	**Source**	**Status**		**Habitat Present on Site**	**Surveys Conducted**	**Probability of Occurrence and Rationale**	**Potential to be Impacted by Proposed Activities**
Reptiles							
Eastern Ribbonsnake *Thamnophis sauritus*	NHIC	SARA- SC SARO-SC COSEWIC- SC	The Eastern Ribbonsnake is usually found close to water, especially in marshes, where it hunts for frogs and small fish. A good swimmer, it will dive in shallow water, especially if it is fleeing from a potential predator. At the onset of cold weather, these snakes congregate in underground burrows or rock crevices to hibernate together (MECP, 2014)	**No** - Suitable habitat is likely present on adjacent lands	**Incidental**	**None** - No suitable habitat present	**None**

Species	Source	Status		Habitat Present on Site	Surveys Conducted	Probability of Occurrence and Rationale	Potential to be Impacted by Proposed Activities
Midland Painted Turtle *Chrysemys picta marginat*	NHIC	SARA- SC SARO- N/A COSEWIC- SC	Quiet, warm, shallow water with abundant aquatic vegetation such as ponds, large pools, streams, ditches, swamps, marshy meadows; eggs are laid in sandy places, usually in a bank or hillside, or in fields; basks in groups; not territorial (OMNR 2000).	**No** - Suitable habitat is likely present on adjacent lands	**Incidental**	**None** - No suitable habitat present	**None**
Northern Map Turtle *Graptemys geographica*	NHIC	SARA- SC SARO- SC COSEWIC- SC	Large bodies of water with soft bottoms, and aquatic vegetation; basks on logs or rocks or on beaches and grassy edges, will bask in groups; uses soft soil or clean dry sand for nest sites; may nest at some distance from water; home range size is larger for females (about 70 ha) than males (about 30 ha) and includes hibernation, basking, nesting and feeding areas; aquatic corridors (e.g. stream) are required for movement; not readily observed (OMNR 2000).	**No** - Suitable habitat is likely present on adjacent lands	**Incidental**	**None** - No suitable habitat present	**None**
Birds							
Eastern Wood-Pewee *Contopus virens*	NHIC	SARO- SC SARA- SC COSEWIC- SC	Open, deciduous, mixed or coniferous forest; predominated by oak with little understory; forest clearings, edges; farm woodlots, parks (OMNR, 2000)	**No**	**Breeding Bird Surveys**	**None** - No suitable habitat present	**None**
Grasshopper Sparrow *Ammodramus savannarum pratensis*	NHIC	SARO - SC SARA - N/A COSEWIC- SC	Well-drained grassland or prairie with low cover of grasses, taller weeds on sandy soil; hayfields or weedy fallow fields; uplands with ground vegetation of various densities; perches for singing; requires tracts of grassland > 10 ha (OMNR, 2000)	**No**	**Breeding Bird Surveys**	**None** - No suitable habitat present	**None**
Wood Thrush *Hylocichla mustelina*	NHIC	SARO-SC SARA- THR COSEWIC- THR	Undisturbed moist mature deciduous or mixed forest with deciduous sapling growth; near pond or swamp; hardwood forest edges (OMNR, 2000).	**No**	**Breeding Bird Surveys**	**None** - No suitable habitat present	**None**

Species	Source	Status		Habitat Present on Site	Surveys Conducted	Probability of Occurrence and Rationale	Potential to be Impacted by Proposed Activities
Insects							
Monarch *Danaus plexippus*	City of Guelph	SARO – SC SARA – END COSEWIC- END	Breeding habitat is confined to where milkweed grows, since the leaves of these plants are the sole food of the caterpillars. Different species of milkweed grow in a variety of environments, including meadows, along roadsides and in ditches, open wetlands, dry sandy areas, short and tall grass prairies, river banks, irrigation ditches, arid valleys and south facing hillsides. Nectaring habitat ranges from native grasslands to home gardens with adult butterflies nectaring on a wide variety of flowers including Goldenrods, Asters and Milkweeds. (Environment Canada 2014)	**Yes**	**Incidental**	**Confirmed**	**Low -** Monarch is a habitat generalist. The study area does not provide critical habitat to support this species (no abundance of Milkweed plants). Enhancement within the proposed ecological linkage realignment will include seeding / planting pollinator-friendly species to promote habitat use by Monarch.
Yellow-banded Bumblebee *Bombus terricola*	City of Guelph	SARO- SC SARO- SC COSEWIC- SC	Forage and habitat generalist, able to use a variety of nectaring plants and environmental conditions. It can be found in mixed woodlands, particularly for nesting and overwintering, as well as a variety of open habitat such as native grasslands, farmlands and urban areas. Nest sites are often underground in abandoned rodent burrows or decomposing logs (MECP, 2021)	**Yes**	**Incidental**	**Low**	**Low -** No Yellow-banded Bumblebee were observed. No abundance of pollinators was noted. Enhancement within the proposed ecological linkage realignment will include seeding / planting pollinator-friendly species to promote habitat use by Yellow-banded Bumblebee, if present within the area.

APPENDIX 5 | Significant Wildlife Habitat Assessment

Significant Wildlife Habitat Screening Table – SWH Types according to Criteria Schedule for Ecoregion 6E (MNRF 2015)

Significant Wildlife Habitat Type	Known or Candidate SWH present within or adjacent to the Subject Property	Rationale for Potential for Habitat Presence	Targeted Field Surveys Completed	Final Assessment on Habitat Presence
Seasonal Concentration Areas				
Deer Yarding Areas (as identified by MNRF)	None identified by the MNRF	Habitat not believed to be present. Figure 11 of the City of Guelph Terrestrial Inventory & Natural Heritage System Final Report (Dougan & Associates Incorporated and Snell & Cecile Environmental Research 2009) indicates that Deer Wintering Areas are not present within the Subject Property.	-	None
Deer Winter Concentration Areas (as identified by MNRF)	None identified by the MNRF	Habitat not believed to be present	-	None
Colonial Bird Nesting Habitat: • tree/shrub • cliff/bank • ground	None	Habitat not believed to be present	Breeding Bird Surveys	None
Waterfowl Stopover and Staging Areas: • Aquatic • Terrestrial	None	No fields with evidence of standing water in spring. No aquatic habitats present.	-	None
Waterfowl Over Wintering Areas (as identified by MNRF)	None identified by the MNRF	Habitat not believed to be present	-	None
Raptor Wintering (Feeding and Roosting) Areas	None on Subject Property	Habitat not believed to be present	-	None
Turtle Wintering Areas	No	No permanent waterbodies or large wetlands with deep water within 120 m of Subject Property	-	None
Reptile (Snake) Hibernacula	Potential Candidate SWH	Rock piles present on Subject Property. Although they are likely to be anthropogenic (piled fieldstones created when the agricultural fields were dug up), additional surveys are required to confirm this. No areas of broken or fissured rocks were observed.	Reptile Surveys per Milksnake Protocol	None
Bat Hibernacula	None	No caves, mine shafts, underground formations/foundations, crevices, or Karst observed	-	None
Bat Maternity Colonies	None	No mature to over-mature mixed/deciduous stands with large diameter dead or dying trees with cavities	-	None

Significant Wildlife Habitat Type	Known or Candidate SWH present within or adjacent to the Subject Property	Rationale for Potential for Habitat Presence	Targeted Field Surveys Completed	Final Assessment on Habitat Presence
Rare Vegetation Communities				
Alvar	None	Habitat not believed to be present	Ecological Land Classification	None
Prairie	None	Habitat not believed to be present	Ecological Land Classification	None
Savannah	None	Habitat not believed to be present	Ecological Land Classification	None
Rare Forest Types	None	Habitat not believed to be present	Ecological Land Classification	None
Cliff/ Talus	None	Habitat not believed to be present	Ecological Land Classification	None
Rock Barrens	None	Habitat not believed to be present	Ecological Land Classification	None
Sand Barrens	None	Habitat not believed to be present	Ecological Land Classification	None
Other Rare Vegetation Types, including Old Growth Forest	None	Habitat not believed to be present	Ecological Land Classification	None
Specialized Habitats for Wildlife				
Waterfowl Nesting Area	None	Habitat not believed to be present	-	None
Bald Eagle and Osprey nesting, foraging and Perching Habitat	None	Habitat not believed to be present	-	None
Woodland Raptor Nesting Habitat	None	No Intermediate-aged to mature forests on Subject Property or within 120 m	-	None
Amphibian Breeding Habitat: • Woodland • Wetland (includes bullfrog concentration areas)	None	No breeding pools within or adjacent to woodlands on Subject Property or within 120 m of the Subject Property	-	None

Significant Wildlife Habitat Type	Known or Candidate SWH present within or adjacent to the Subject Property	Rationale for Potential for Habitat Presence	Targeted Field Surveys Completed	Final Assessment on Habitat Presence
Turtle Nesting Habitat	None	Agricultural Lands provide exposed mineral soil areas on Subject Property; however, no open water or wetlands are located close by.	-	None
Woodland/Specialized Raptor Nesting	None	No Intermediate-aged to mature forests within or adjacent to the Subject Property	-	None
Bald Eagle Wintering Areas	None	Habitat not believed to be present	-	None
Seeps and Springs	None	Subject Property are not forested. No watercourse headwater areas.	-	None
Wildlife Movement Corridors				
Animal Movement Corridors (including Ecological Linkages) - Deer Movement Corridors - Amphibian Movement Corridors	None	Habitat not believed to be present	-	None
Habitats of Species of Conservation Concern				
Marsh Bird Breeding Habitat	None	Habitat not believed to be present	-	None
Woodland Area-Sensitive Breeding Habitat	None	No forest stands (large, mature >60 years) or woodlots (>30 ha) apparent within the Subject Property or within 120 m of the Subject Property	Breeding Bird Surveys	None
Open Country Bird Breeding Habitat	None	Limited grassland areas (natural/cultural >30 ha) appear in aerial imagery within the Subject Property or within 120 m of the Subject Property	Breeding Bird Surveys	None
Shrub / Early Successional Breeding Bird Habitat	Potential Candidate SWH	Large field areas succeeding to shrub and thicket habitats >10 ha appear in aerial imagery overlapping the Subject Property and adjacent lands	Breeding Bird Surveys	None
Terrestrial Crayfish Habitat	None	Habitat not believed to be present	-	None

Significant Wildlife Habitat Type	Known or Candidate SWH present within or adjacent to the Subject Property	Rationale for Potential for Habitat Presence	Targeted Field Surveys Completed	Final Assessment on Habitat Presence
Provincial Species of Conservation Concern (i.e., listed as special concern provincially or S1, S2 or S3 by the NHIC)	None	NHIC lists Northern Map Turtle and Eastern Ribbonsnake, both Special Concern; however, records are from 1924 and 1990, respectively. The City of Guelph has also indicated that a more recent record of Eastern Ribbonsnake has been recorded on a nearby property at 132 Clair Road West. Eastern Ribbonsnake is semi-aquatic and is most often found along the edges of shallow ponds, streams, marshes and other wetlands bordered by dense vegetation. Suitable habitat does not appear to be present within the Subject Property or within 120 m of the Subject Property. No Eastern Ribbonsnake observed during field surveys. Barn Swallow (Special Concern) was recorded during both breeding bird surveys and is considered to have probable breeding evidence in the study area. However, no suitable nesting structure (e.g., building, culverts, bridges) are present on the subject property. Although observed, Monarch is a habitat generalist. The study area does not provide critical habitat (no abundance of Milkweed plants). No Yellow-banded Bumblebee were observed. No abundance of pollinators was noted.	Reptile Surveys per Milksnake Protocol Breeding Bird Surveys Incidental observations of Monarch and Yellow-banded Bumblebee	None

Significant Wildlife Habitat Screening Table – SWH Types unique to City of Guelph EIS Guideline Appendix D (2020)

Significant Wildlife Habitat Type	Known or Candidate SWH present within or adjacent to the Subject Property	Rationale for Potential for Habitat Presence	Targeted Field Surveys Completed	Final Assessment on Habitat Presence
Wildlife Movement Corridors				
Animal Movement Corridors (including Ecological Linkages) - Deer Movement Corridors - Amphibian Movement Corridors - Other Wildlife Movement Corridors	Confirmed SWH	City of Guelph's Natural Heritage System identifies Ecological Linkages on the Subject Property	-	**Present** – Ecological Linkage mapped on Guelph OP Schedules
Habitats of Species of Conservation Concern				
Global Species of Conservation Concern (i.e., G1, G2 and G3) as identified by the NHIC	None	No recent records of Global Species of Conservation Concern identified by NHIC	-	None
Federal Species of Conservation Concern (i.e., listed as endangered, threatened or special concern federally)	None	NHIC lists Northern Map Turtle and Eastern Ribbonsnake, both Special Concern; however, records are from 1924 and 1990, respectively. Regardless, suitable habitat does not appear to be present. No Eastern Ribbonsnake observed during field surveys. Barn Swallow (Special Concern) was recorded during both breeding bird surveys and is considered to have probable breeding evidence in the study area. However, no suitable nesting structure (e.g., building, culverts, bridges) are present on the subject property. Although observed, Monarch is a habitat generalist. The study area does not provide critical habitat (no abundance of Milkweed plants). There is moderate to high potential for three additional SAR to use habitat within the study area: • Little Brown Myotis (*Myotis lucifugus*) – Endangered • Northern Myotis (*Myotis septentrionalis*) – Endangered • Tri-coloured Bat (*Pipistrellus subflavus*) – Endangered	Reptile Surveys per Milksnake Protocol Breeding Bird Surveys Incidental observations of Monarch	**Confirmed** - Eastern Meadowlark (Threatened) **Candidate** - Species at Risk bats (Endangered)