Scoped Environmental Impact Study

Rose Street (PT LT 1 PL 663 AYR PTS 1, 6 & 7 67R1718), Ayr (Township of North Dumfries)

December 2024

Prepared For:	Alexander Chmelar
Prepared By:	Aster Environmental Services Ltd.
Date:	December 20, 2024
Project ID:	AES-24050

Aster Environmental Services Ltd. / www.aster-enviro.com
705-627-3588 / admin@aster-enviro.com

Date: December 21, 2024
Project ID: AES-24050

Alexander Chmelar

Sent to: ch7sasha@hotmail.com

Subject: **Environmental Impact Study, PT LT 1 PL 663 AYR PTS 1, 6 & 7 67R1718, Township of North Dumfries**

Dear Alexander:

Aster Environmental Services Ltd. has prepared the attached report to address applicable submission requirements for your development application(s).

We trust that the enclosed addresses the scope of work agreed upon in our contract and/or as established through consultation with the approval agency.

Best regards,

Aster Environmental Services Ltd.

MFrancis

Mike Francis, M.E.S., H.B.Sc., E.P.
Principal – Senior Ecologist

Table of Contents

List of Report Figures

List of Report Appendices

1) INTRODUCTORY CONTEXT & BACKGROUND

Aster Environmental Services Inc. (hereafter 'Aster Environmental' or 'AES') was retained by Alexander Chmelar (hereafter 'proponent') to prepare an Environmental Impact Study (EIS) for proposed development on a property described as PT LT 1 PL 663 AYR PTS 1, 6 & 7 67R1718 (between 30 and 70 Rose Street) in the Township of North Dumfries (the 'subject property'; see **Figure 1**). The property measures approximately 0.15 ha and is located in a built residential area within the settlement area of Ayr. The subject property represents a single existing lot-of-record, presumably severed in the past from an adjoining parcel with the intent of creating a residential building lot.

To summarize our understanding of planning context, the subject property is contained outside of any targeted provincial planning jurisdictions (e.g., Greenbelt Plan). Building and planning decisions within the local jurisdiction are governed by the Township of North Dumfries Zoning Bylaw 689-83, Township Official Plan (OP; 2018 Consolidation), and Region of Waterloo OP (2015). The property appears to be zoned as 'Urban Residential (Flood Plain)' and designated in Map 2.1 to the Township OP as 'Open Space'. Map 5A to the Township OP further identifies portions of the property as part of a 'Significant Valley' and 'Core Environmental Feature'. These designations are consistent with applicable planning resources of the Region. Additionally, the subject property is contained within the watershed-based regulatory jurisdiction of the Grand River Conservation Authority (GRCA), with the entire parcel appearing to be regulated under the *Conservation Authorities Act.* For convenient reference, various applicable land-use schedules/maps are provided in **Appendix 1**, with the property location highlighted on each.

From a natural heritage perspective, the subject property is located in an urban/residential area, but situated directly adjacent to and within the valley of the Nith River. This river valley meanders through the settlement area of Ayr, along with a variable forested corridor and floodplain. The subject property supports a narrow fringe of forest and other vegetation along an upper terrace above the primary river valley. This area and other forested floodplain areas on the local landscape may support wildlife habitat functions, while the Nith River supports habitat for fish and other aquatic wildlife. Such features and areas have the potential to support significant wildlife habitat and/or Species at Risk protected under provincial and federal regulations (e.g., *Endangered Species Act*).

It is our understanding that this EIS has been requested by the Town to support an application for Zoning Bylaw Amendment that is required to construct a single dwelling. Despite the location within a largely built settlement area, the property is contained in an area identified in local planning resources as significant and/or sensitive. Therefore, the proposal presents the potential for negative impacts to such features and functions, which must be assessed to inform applications for planning and/or regulatory approvals.

The initial goal of this assessment is to determine the presence, extent, and function of natural heritage features distributed throughout relevant portions of a defined study area. The report identifies any potential impacts resulting from the prospective development and offers recommended measures to mitigate such potential impacts, where applicable. This allows for a review of application conformity with various local and provincial policies that support protection of natural heritage. The EIS also includes consideration for compliance with commonly applicable environmental regulations, including the provincial *Endangered Species Act*, federal *Fisheries Act*, and federal *Migratory Birds Convention Act*. The EIS is prepared to accompany any potential required applications for planning approvals and/or regulatory permits.

2) ASSESSMENT APPROACH

The approach and methods used to carry out this assessment include the following general stages:

1. Confirm an understanding of key project context, including the nature of proposed development and the trigger and purpose for conducting the study (as outlined in **Section 1**).
2. Identify a study area in which to focus assessment efforts.
3. Gather background biophysical information for the study area to become familiar with existing natural heritage feature mapping and records of features and species of conservation interest prior to the site investigation.
4. Conduct a general site investigation and/or targeted survey methods (where feasible/appropriate) to further support an assessment of the presence or absence of natural heritage features that are considered significant and requiring protection, *e.g.*, woodlands, wetlands, habitat for endangered or threatened species, etc.
5. Determine whether implementation of the proposed development plan will result in negative impacts to significant/key natural heritage features, and identify ways in which such impacts can be mitigated via avoidance, minimization, and/or compensation measures.
6. Provide an assessment of consistency and conformity of the proposed development plan with applicable municipal, provincial, and federal environmental policies and regulations.

2.1 Identification of Study Area

The primary focus of this assessment is the subject property on which development is proposed (see **Figure 1** and **Figure 2**). The study area is further defined as a 120 m radius around the estimated limit of disturbance associated with the development. The 120 m assessment radius is a measure that is intended to ensure appropriate consideration for natural heritage features and functions of adjacent lands, consistent with direction in the Natural Heritage Reference Manual (NHRM) under the Provincial Policy Statement (PPS).

Notwithstanding, there may be limitations to the extent of investigations that can take place within a 120 m radius. In some cases, the presence of roadways or other physical barriers may be used as a logical break in the continuous extent of the study area. While such lands may be within 120 m of proposed development, a prominent physical barrier may also serve to provide a functional (physical, ecological, and hydrologic) separation between development and natural features that would otherwise be considered relevant. With respect to land ownership, the study area generally includes consideration for adjacent privately-owned lands; however, access to privately-owned lands is typically not sought as part of an EIS. Assessment of inaccessible portions of the study area are typically limited to a desktop review and only discussed if/where relevant.

For this file, the assessment does not have regard for lands east of Rose St., and provides only cursory discussion for lands west of the Nith River, as both features represent physical and functional barriers to potential development impacts. Adjacent privately-owned residential parcels to the north and south are considered in the assessment but were not accessed for direct data collection.

2.2 Review of Background Information Sources

Background biophysical information pertaining to the study area was collected from a variety of sources. These include:

- **Region of Waterloo Official Plan** & Schedules (2015)
- **Township of North Dumfries Official Plan** & Schedules (2018 Consolidation)

- **Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Areas and Natural Heritage Information Centre (NHIC)** database regarding information on NEC designations and occurrences of SAR and provincially tracked species (squares: 17NH4392 and adjoining squares); accessed Dec 2024, at: http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US).
- **Ontario Breeding Bird Atlas (OBBA) database and the Atlas of the Breeding Birds of Ontario, 2001–2005** (Cadman et al. 2007) regarding birds that were documented to be breeding in the vicinity of the study area during the 2001–2005 period (accessed Dec 2024 at: http://www.birdsontario.org/atlas/squareinfo.jsp).
- **Ontario Reptile and Amphibian Atlas (ORAA)** database regarding records of reptiles and amphibians that have been observed within the vicinity of the study area (accessed Dec 2024 at: http://www.ontarioinsects.org/herpatlas/herp_online.html).
- **Department of Fisheries and Oceans – Aquatic Species at Risk Mapping:** https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html
- **Department of Fisheries and Oceans – Fish and Fish Habitat Protection Program Website**: https://www.dfo-mpo.gc.ca/pnw-ppe/ffhpp-ppph-eng.html
- **Atlas of the Mammals of Ontario** (Dobbyn 1994) regarding mammal records within and adjacent to the study area.
- **Species at Risk (SAR) range maps** (accessed Dec 2024 at: http://www.ontario.ca/environment-and-energy/species-risk-ontario-list).
- **iNaturalist** (accessed Dec 2024 at: https://www.inaturalist.org).
- **Physiography of Southern Ontario** (Chapman and Putnam 2007) for information pertaining to the physiography and soils of the study area and adjacent lands.
- Digital Ontario base maps and aerial photography resources.

2.3 Site Assessment Methods

The sections below outline the various methods used to characterize and assess potential natural heritage features and associated functions within the subject property.

2.3.1 Functional Habitat Assessment

Aster Environmental relies first and foremost on a functional assessment approach. We first focus on evaluating the biophysical conditions of a site, including classifying vegetation communities, identifying hydrologic features (wetlands, watercourses), and characterizing other physical characteristics. We review existing background mapping to determine if significant features have been previously identified within the study area, or if the planning authority has already undertaken a comprehensive review of natural heritage features. For example, if a planning authority has already undertaken a jurisdictional review of significant woodlands, then we may simply rely on this resource to determine the presence/absence and extent of such features.

We then consider the potential for significant species within an area of interest based on general habitat requirements, background occurrence records, etc. If conditions are suitable within the study area for a significant species that is known to occur in a local area, it may be simplest to assume that such a species is present, rather than undertake targeted assessments to demonstrate absence. Species-specific habitat preferences and/or affinities may be determined from published reports, unpublished documents, and direct experience. The acceptable degree of interpretation/assumption is often determined based on the relative risk of a development proposal.

The above method is considered far more practical than immediately deferring to targeted biophysical surveys that may be superfluous in achieving the goal of the study. For example, if a wetland feature is present within 120 m from a proposed development, we would first determine if the development can demonstrate functional avoidance of the feature before undertaking detailed assessments to characterize biological functions of the wetland (*e.g.*, undertaking turtle and/or amphibian surveys, *etc.*).

2.3.2 Targeted Wildlife Assessment

In certain circumstances, Aster Environmental completes further species-specific or otherwise targeted assessments in accordance with applicable standard methods and protocols (or modified versions thereof). Targeted survey efforts may be undertaken due to one or more triggers, such as a specific request from an approval authority. In some case, when a species of conservation concern may occur in conflict with a development proposal, it can become critical to confirm presence/absence to inform mitigation planning or potential regulatory authorization requirements.

Given the scoped nature of this study, a robust targeted survey program or even an in-season survey was not considered necessary to inform an impact assessment. This is because the nature and context of the proposal presents minimal and/predictable opportunity for increased risk to areas that represent wildlife habitat. While significant species may be expected to occur within the local landscape, it is our opinion that presence/absence of most species/guilds would be unlikely to influence the outcome of the assessment. It is our general opinion that further in-season, targeted survey effort (beyond the single, late-season survey) is not necessary to draw reasonable conclusions regarding the potential for negative impacts. Conservation assumptions have been applied in our estimate of which relevant species could occur within the study area.

2.3.3 Physical Assessment (Topography, Surficial Geology, & Drainage)

The geophysical setting of the study area was determined using various background resources, including topographic maps, provincial soil survey data, and aerial imagery. On-site investigations further characterize general physical conditions, describing notable features such as steeply sloping land, interesting micro-topographical conditions, exposed bedrock, etc. While soil conditions are not always analysed, soil sampling may be undertaken where determination of specific soil conditions would influence other ecological characterization of the site, e.g., determining the presence/absence of hydric soils to inform wetland mapping. The potential for drainage features was determined through the review of background mapping resources and further assessed during the on-site investigation.

2.3.4 Vegetation Assessment

Natural vegetation communities within the study area were reviewed in accordance with applicable Ecological Land Classification (ELC) community tables (Lee et al., 1998), which is generally intended for use in Ecoregions 6E and 7E. ELC defines ecological units or communities based on bedrock, climate (temperature, precipitation), physiography (soils, slope, aspect), and corresponding vegetation. The key value of applying the ELC system in an EIS context is the potential to identify communities that are known to be rare/sensitive or otherwise likely to support certain other natural heritage features or functions (e.g., rare species or specialized wildlife habitat).

In our experience, the ELC classification key is not comprehensive, and improvised classifications are occasionally used to describe communities, e.g., anthropogenic features. Moreover, given the time intensity required to conduct the ELC protocol, it is commonplace to employ a scoped, streamlined approach to ELC for the purpose of conducting site-specific EIS work. In most cases, vegetation communities are pre-delineated via aerial photo interpretation and subsequently confirmed and refined in the field using a general wandering survey approach. The boundaries of any identified

wetland boundaries were delineated in accordance with the “50% wetland vegetation rule” as directed by the Ontario Wetland Evaluation System (OWES), where feasible.

2.3.5 On-Site Investigation

The background review of biophysical information and general preliminary assessment informed the scoping of field data collection activities undertaken on Nov 15, 2024. Conditions during the on-site investigation were described as cloudy, low wind, with temperatures ranging from 9-10 degrees. Approximately 2.5 hours were spent conducting on-site surveys, beginning at approximately 9:30 am. The site investigation was undertaken by a qualified ecologist, focused on characterizing and (where applicable) delineating natural heritage features that are considered relevant within the jurisdiction, e.g., woodlands and wildlife habitat, including potential habitat for threatened or endangered species.

It is acknowledged that the site investigation was undertaken late in the season, largely due to the timing of project initiation and the scheduling goals of the proponent. As previously noted, given the context for the application, the seasonality of the site review is considered less relevant, as the risk of environmental impacts is primarily ‘indirect’ in nature. On this basis, the timing of the visit is considered sufficient for characterizing site conditions and assessing the habitat potential of constraining species, including potential rare or at-risk wildlife and vascular plants.

Any discrete feature boundaries were delineated with a high-accuracy GPS, and all relevant features were photographed and catalogued for inclusion in this report (**Appendix 2**). Existing conditions, as characterized through our on-site investigations, are described in **Section 3**.

2.4 Significant Natural Heritage Feature Assessment

Provincial and local planning policies employ varying terms for natural heritage features and designations that have recognized ‘statuses’ within the applicable planning jurisdiction. The subject property is located within the planning areas of the Township of North Dumfries and the Regional Municipality of Waterloo. These jurisdictions administer a unique set of policies based on characterization of ‘Landscape Level Systems’, ‘Environmentally Sensitive Policy Areas’, ‘Core Environmental Features’, and Supporting Environmental Features’. This varies from the general provincial classification approach that breaks natural systems into a series of ‘significant’ or ‘key’ natural heritage features, generally part of a broader ‘Natural Heritage System’.

The terminology used in this report aims to consolidate the above-noted terminology, including reference to individual significant natural heritage features, and also reference to the jurisdiction-specific terminology for various features/systems. The various features/systems discussed in our assessment include the following:

- Watercourses & Fish Habitat
- Wetlands (including provincially significant wetlands)
- Areas of natural and scientific interest
- Significant valleylands
- Woodlands (including significant woodlands)
- Habitat of endangered and threatened species
- Significant wildlife habitat (including rare vegetation types and habitat for species of special concern)
- Landscape Level Systems (Region-specific Designation)
- Environmentally Sensitive Policy Areas (Region-specific Designation)

- Core Environmental Features (Region-specific Designation)
- Supporting Environmental Features (Region-specific Designation)

The potential presence/absence of relevant species of conservation interest, such as endangered and threatened species, are assessed using a combination of the background information review outlined in **Section 2.2** and the habitat-based approach outlined in **Section 2.3.1**. The potential presence of certain features such as significant woodlands, significant valleylands, and significant wildlife habitat (SWH) is determined using existing background mapping and/or assessed in accordance with applicable guidance documents. Key guidance documents include but are not limited to:

- Ontario Wetland Evaluation System – Southern Manual (2022)
- Natural Heritage Reference Manual (NHRM) for the Natural Heritage Policies of the Provincial Policy Statement (MNRF 2010)
- Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF 2015).
- Department of Fisheries and Oceans Fish and Fish Habitat Protection Program guidelines.
- General habitat descriptions, recovery strategies, and other official technical documents related to species listed as endangered or threatened under the Endangered Species Act.

The detailed assessment of significant features/systems is provided in **Section 4** of this report.

2.5 Impact Assessment and Mitigation Planning

The impact assessment process is a systematic evaluation of the potential environmental consequences a proposed project or development. It is typically predictive and interpretative, relying on a melding of hard data and professional judgement. Once a specific site is sufficiently characterized through an existing conditions assessment, individual features are defined for their significance and sensitivities. The impact assessment then focuses on predicting how significant and sensitive features may be subject to change, degradation, or outright elimination through the life of the development. It is further determined whether such impacts may occur through direct or indirect means.

Where negative impacts to a feature are possible, a review is undertaken to determine the potential scale of impacts and opportunities for mitigation. The ultimate goal is to outline a mitigation plan that allows for avoidance or compensation of anticipated impacts, thereby achieving a scenario of ‘no negative impacts’ and/or ‘no net negative impacts’. Site-specific mitigation can take any of the following forms:

- **Avoidance:** identifying an alternative approach that avoids the predicted impact.
- **Minimization:** refining the proposal to reflect a scenario where predicted impacts are either negligible or acceptable.
- **Active Mitigation:** developing a plan to mitigate various impact pathways through the development process, the successful implementation of which will avoid impacts.
- **Offsetting:** undertaking one or more measures to compensate for unavoidable impacts, thereby pursuing a scenario of no *net* negative impacts.

Aster Environmental’s impact assessment and recommended mitigation measures/plan are provided in **Section 5.**

2.6 Conformity & Compliance Review

There are several environmental policies (*e.g.*, statutes, regulations, plans, guidance documents, etc.) that may apply to the study area and proposed development, which are listed below. A general assessment of the proposed development's consistency and conformity with these environmental policies is offered in **Section 6**.

- Federal *Fisheries Act*, R.S.C. 1985
- Federal *Migratory Birds Convention Act*, S.C. 1994, c. 22
- Provincial Policy Statement, 2020, pursuant to the *Planning Act*, R.S.O. 1990, c. P.13
    - Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2010.
    - Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E.
- Provincial *Endangered Species Act*, S.O. 2007, c. 6
- Provincial Conservation Authorities Act, R.S.O. 1990, c. C.27
- Region of Waterloo Official Plan, 2015
- Township of North Dumfries Official Plan, 2018 Consolidation

3) EXISTING CONDITIONS – STUDY AREA CHARACTERIZATION

3.1 General Site Conditions & Land Uses

The subject property measures approximately 0.15 ha and is vacant of any structures or signs of existing land uses. There is an existing access driveway from Rose St. that is presently top-dressed with gravel. This leads to an open area in the center of the parcel that appears to be maintained and evidently has been subject to some minor tree removal. The rear of the parcel supports a narrow swath of vegetation along the top of a steep slope leading to the Nith River channel.

Neighboring properties to the north and south support existing residential dwellings and areas of maintained amenity space, e.g., grassed lawns. These properties also support a consistent vegetated swath along the edge of the Nith River. The broader local landscape is primarily built residential areas, with scattered patches of natural cover dispersed along the Nith River corridor. There is a large municipal park directly east of the property on the opposite side of Rose St.

3.2 Topography, Physiography, and Drainage

The study area is associated along a transition in physiographic regions, where the 'Waterloo Hills' region that characterizes much of Waterloo Region transitions into the 'Norfolk Sand Plain' that extends southward and encompasses larger portions of Brant and Norfolk counties. The Waterloo Hills are aptly named for the reoccurring series of till and kame moraines divided by outwash channels. The study area is located within a former glacial spillway, contained within this broader landscape of mixed kame and till moraines (Chapman and Putnam 1984); however, the landscape immediately to the south gives way to flat, sandy outwash plain.

According to the Ontario Soil Survey (AgMaps 2024), the study area is located within an area of Burford Gravelly Loam. These well-drained soils occur extensively on terraces and outwash areas bordering larger watercourse valleys (Presant & Wicklund 1971). Typical composition includes 12" or less of loam or sandy loam over gravelly materials.

Topography within the subject property is characterized by a prominent slope westward from Rose St. There is also a steep, south-facing slope leading from the property to the north into the subject property, evidently from significant infilling of the valleyland, presumably at the time the adjacent dwelling was constructed. Most of the central and eastern portion of the property is contained on an upper terrace above the main channel of the Nith River, potentially within the current or historic floodplain. The rear of the property overlaps with the top of slope of the Nith River, and the parcel itself crosses the channel of the watercourse.

The subject property is entirely contained within the drainage area of the Nith River, which represents the western extent of the broader Grand River watershed, draining nearly 20% of the overall watershed. The river originates south of Conestogo Lake and drains into the Grand River in Paris approximately 60 km to the southwest of its headwaters. Functional drainage on the property is presumably supported by infiltration and diffuse overland flows. Aside from the Nith River, there are no mapped or otherwise defined drainage features occurring within the property or adjacent lands.

3.3 Aquatic Conditions

Aquatic areas/environments within the study area are limited to the Nith River channel, which occurs along the rear of the subject property as described above. No comprehensive survey or sampling of in-stream structure or channel morphology was undertaken as part of this assessment. The reach associated with the subject property was described during the site assessment as supporting a wetted channel width of approximately 20 m and an estimated average depth of 1 m. The channel appears to support a mix of cobble and small boulders over finer bed substrates. There is a sequence of riffles and runs spanning 50-100m upstream from the subject property and at least 50 m downstream, with larger pools on either end. The edge of the property sits on the outside of one of several broad meanders that characterize the river as it passes through the Ayr settlement area.

3.4 Vegetation Conditions

Existing vegetation communities within the study area were assessed through a combination of background review and on-site investigation. A desktop exercise was undertaken to map vegetation community boundaries using background information sources and current aerial photographs; the mapped vegetation communities were then ground-truthed to a high level and refined where necessary during the site investigation. Given the successional/anthropogenic nature of some encountered vegetation assemblages, the assigned ELC codes/descriptions may be improvised, generalized, ‘complexed’, or otherwise not strictly conforming to the ELC guide.

Vegetation community mapping with classifications generally based on Lee et al (1998) is provided on **Figure 2**, however, given the limited diversity of natural vegetation cover within the property, discussion of vegetation conditions is broken down below by the verified conditions observed on the subject property vs. the interpreted conditions of adjacent lands (rather than individual ecosite descriptions). All species observed within the study area are considered common locally and provincially.

3.4.1 Subject Property (Above Top of Bank)

The area above the top of bank on the subject property includes two cover types, the majority of this being described as ‘Anthropogenic Area’. This encompasses all areas not with the woodland/vegetated areas identified on **Figure 3**. This includes the majority of the property which contains the driveway and cleared/maintained area in the central portion of the parcel. The anthropogenic space includes no tree or natural vegetation cover, although it does appear that a small number of young trees (Black Walnut, *Juglans nigra*) have been removed from the site in recent years.

The existing open area transitions into a narrow patch of primarily successional vegetation that we describe as Deciduous Forest/Cultural Woodland (FOD/CUW). This area occurs directly above the primary top of bank to the Nith River, spanning an average width of 15 m between the river and the aforementioned open, maintained space. There is a sparse layer of canopy-height Black Walnut, with trace Sugar Maple (*Acer saccharum*) and Basswood, and some lower coverage of Bur Oak (*Quercus macrocarpon*), Black Walnut, and Hackberry (*Celtis occidentalis*). Tree cover is variable but functionally dominated by a tall shrub layer of Buckthorn (*Rhamnus cathartica*), White Ash (*Fraxinus americana*), Lilac (*Syringa vulgaris*), and a lower layer of Barberry (*Berberis sp*.), Raspberry (Rubus strigosis), Tatarian Honeysuckle (*Lonicera tatarica*), and Ninebark (*Physocarpus opulifolius*). The groundcover in this narrow woodland includes dense layers of non-native Periwinkle (*Vinca minor*), Celandine (*Chelidonium majus*), Garlic Mustard (*Alliaria petiolata*), Dame's Rocket (*Hesperis matronalis*), and other species indicative of disturbance. In general, this section of the property is quite degraded by non-native species cover and lacks a mature canopy component. Various photos in **Appendix 2** can be viewed to support an understanding of on-the-ground conditions.

3.4.2 Adjacent Lands

The primary cover type observed on adjacent lands is a combination of the same vegetation observed within the property. Areas to the north and south of the property are represented by further maintained residential space and existing built dwellings. The rear of these parcels is represented by the same narrow woodland ecosite described on the property as FOD/CUW. This woodland becomes slightly broader to the south and supports more mature canopy components with some additional diversity, including some larger Bur Oak, Basswood, and Beech (*Fagus americana*). To the north, the woodland strip is quite narrow and consists of sparse Walnut and Hackberry on a raised ridge.

Below the top of bank to the Nith River, there is an erosive slope with sparse vegetation cover including Coltsfoot (*Tussilago farfara*), Goldenrod (*Solidago canadensis*), Periwinkle, and an abundance of exposed sandy-gravelly soil. At the base of this slope is a very narrow strip of active riparian vegetation consisting of sparse Goldenrod, Coltsfoot, and Reed Canary-Grass (*Phalaris arundinacea*), before transitioning to wetted portions of the river channel (see **Section 3.3**). West of the river is a broad area of riparian/floodplain woodlands. This area was not assessed directly; however, observed dominant vegetation includes a mix of Black Walnut, Silver Maple (*Acer saccharinum*), Willow (*Salix sp*.), and Ash (*Fraxinus sp*.). This area likely straddles the interface between 'lowland' riparian forest and swamp; however, there are no mapped wetland communities in this location.

3.5 Fish & Wildlife Habitat Conditions

3.5.1 Wildlife Habitat

The combined results of Aster Environmental's background review and on-site assessment indicate that the subject property and/or adjacent lands support a range of potential wildlife habitat functions.

No targeted survey efforts were undertaken with respect to general mammalian diversity; however, all incidental species observations (or evidence thereof) were documented during our on-site investigation, which included evidence of Grey Squirrel (*Sciurus carolinensis*) and Raccoon (*Procyon lotor lotor*). Given the urban landscape context, the property and surrounding landscape is most likely to support habitat for these and a limited number of other common and human-tolerant mammal species. Additionally, the study area has some potential to support one or more bat species. Potentially significant habitat functions related to mammals, including bats, are discussed under **Section 4.**

In addition to mammals, we expect that the subject property and adjacent lands has the potential to support a mix of migratory and resident bird species. On-site investigations were undertaken outside

of the breeding bird season. Therefore, any incidental observations would be expected to consist of only year-round resident species or late migrants. Species documented while on site included Black-capped Chickadee (*Poecile atricapillus*), Blue Jay (*Cyanocitta cristata*), American Crow (*Corvus brachyrhynchos*), and Downy Woodpecker (*Picoides pubescens*). Based on structure and urban context, the woodland associated with the study area appears unlikely to support significant diversity of bird species; however, various additional species can be expected to occur during the active season. Potential occurrences of bird species of conservation concern are assessed in **Section 4** based on combination of habitat assessment and review of background databases.

Targeted reptile and/or amphibian surveys were not considered necessary to inform this scoped review; however, our site visit was undertaken at a time of year that would allow for identification of key habitat features. Importantly, the subject property contains no specialized habitat for herptiles (e.g., open-water wetlands, woodland breeding pools, bedrock openings, etc.). Regardless, it is possible that limited species could occur within the property or adjacent lands during the course or regular seasonal movements. The Nith River could also support an important movement corridor for one or more turtle species. Potential occurrences of herptile species of conservation concern are assessed in **Section 4** based on combination of habitat assessment and review of background databases.

We note that the subject property and/or surrounding landscape may represent habitat for one or more wildlife species protected under the ESA, as evidenced by existing records within background databases (NHIC, OBBA, iNaturalist), as well as indicative habitat features observed by Aster Environmental staff during the assessment. All relevant observations of wildlife species and/or habitat features, including individuals of species at risk or other species of conservation concern, are discussed in **Section 4** of this report within the context of KNHFs.

3.5.2 Fish & Aquatic Habitat

The structure of aquatic habitat associated with the study area is described under **Section 3.3** above. Given the nature of the proposal and the scope of this assessment, no comprehensive biological sampling of aquatic habitats within the study area has been undertaken. According to GRCA (2024), the Nith River sub-watershed supports 60 recorded fish species, 18 mussel species, and other aquatic species at risk such as Queensnake (*Regina septemvittata*). The Fish On-line database lists catch records for only 13 species (all common game fish), and is therefore not considered comprehensive. Background fish/aquatic species records are generally associated with the Nith River and not specific to local reaches associated with the study area.

As with general wildlife habitat, potential occurrences of aquatic species of conservation concern are assessed in **Section 4** based on combination of habitat assessment and review of background databases. A general assessment of potential fish habitat impacts is provided further in this report.

4) SIGNIFICANT NATURAL HERITAGE FEATURE ASSESSMENT

Based on review of the biophysical information collected during background information gathering, and analysis of the existing conditions of the study area as described above, the following applicable features/areas are considered present (or potentially present) within the study area.

- Watercourses & Fish Habitat
- Significant Valleylands
- Woodlands (including potential Significant Woodlands)
- Habitat of Endangered & Threatened Species
- Significant Wildlife Habitat

- Landscape Level Systems, Environmentally Sensitive Policy Areas, Core Environmental Features, & Supporting Environmental Features

All significant features/areas as defined under the local and regional OP policies are listed in the section below, with rationale provided regarding the conclusion of presence/absence of each feature within the study area.

4.1 Watercourses & Fish Habitat

The study area contains a single watercourse, the Nith River, which represents direct fish habitat. A general biophysical characterization of this feature is provided under **Section 3**. Additional discussion, including a review of potential impacts to this feature resulting from implementation of the proposed plan, is provided in **Section 5.1**.

4.2 Wetlands

Background mapping resources (On Geohub and GRCA mapping) do not indicate the presence of wetland features occurring within or adjacent to the subject property (see **Figure 1** and **Figure 2**). There is a floodplain forest located west of the Nith River that may support some wetland functions; however, this feature was not directly assessed as part of this study. Given the functional separation offered by the river corridor, further assessment is not considered warranted.

4.3 Areas of Natural and Scientific Interest

It is the responsibility of the Ministry of Natural Resources and Forestry (MNRF) to designate and administer mapping for areas of natural and scientific interest (ANSIs). Based on available background mapping, the nearest life science ANSI occurs >2 km east of the subject property. No further assessment undertaken.

4.4 Significant Valleylands

Significant valleylands represent valleys or other landform depressions with recognized significant attributes, such as supporting natural vegetation cover with associated ecological linkages and corridors. Valleylands are typically associated with a watercourse feature. Designation of significant valleylands is ultimately the responsibility of the relevant planning authority; however, site-specific designation of these feature can be undertaken using standardized criteria endorsed by the province and/or the planning authority.

Applicable OP documents already designate lands within the study area as significant valleylands. The appropriate limit of this feature is difficult to discern due to existing built context of the local area. The property itself is located within a middle terrace, downslope from an area of upper tableland extending eastward from Rose St. There is a secondary, abrupt drop in elevation near the rear of the property, represented by a steep bank to the Nith River. The property to the north has evidently experienced significant infilling from residential construction, while the property to the south also contains a dwelling supported in part by a low retaining wall. These features and factors complicate an exact delineation of the limits of what may be considered significant valleyland.

Notwithstanding the discussion above, we note that Regional ‘open data’ mapping layers delineate the approximate top of bank to the Nith River as the eastern limit of the significant valleyland (see **Figure 2**). Therefore, we regard the top of bank as the functional limit for impact assessment purposes. Additional discussion, including a review of potential impacts to valleyland functions resulting from implementation of the proposed plan, is provided in **Section 5.2**.

4.5 Woodlands & Significant Woodlands

Significant woodland features represent areas of forested cover with recognized significant attributes, such as large contiguous blocks of woodland, woodlands with unique characteristics, and/or woodlands that support economic values, cultural values, or other ecosystem services. It is generally the responsibility of the applicable planning authority to designate significant woodland on a comprehensive basis; however, where appropriate, identification of candidate significant woodland can be undertaken on a site-specific basis using standardized criteria endorsed by the province and/or the planning authority.

The rear of the property is contained within a 'Core Environmental Feature', which can include significant woodlands. Additionally, Regional open data layers depict the limits of a significant woodland feature extending onto the southern portion of the property (**Figure 2**). It is apparent that this layer requires updating as it currently encompasses a built residential dwelling on the adjacent property to the south that does not represent woodland. It also overlaps portions of the subject property that do not present support woodland cover.

In terms of current, on-the-ground conditions, there is a narrow strip of woodland along the rear property line that is composed primarily of immature and/or non-native shrub/low tree species, such as Common Buckthorn and Common Lilac. The average woodland 'patch width' on the property and adjoining parcels to the north is approximately 15-20 m. These factors are not generally aligned with what is typically representative of a significant woodland feature; however, other factors must also be considered, such as important bank stabilization and fish habitat support functions supported by this wooded area.

Other larger woodland patches, such as that located west of the Nith River and further south onto the adjacent parcel, are larger, more mature, and more representative of natural forest ecosites. These areas are more clearly representative of significant woodland.

For the purposes of our assessment, we delineate what represents the limit of existing woodland cover on the property on **Figure 3**. This includes a technical 'dripline' of canopy-height trees, as well as a secondary area of shrub/sapling-dominant cover extending slightly further east into the parcel. We do not provide an exact recommended limit of significant woodland; however, we suggest that areas technically representing significant woodland are likely limited to adjacent lands.

Additional discussion, including a review of potential impacts to woodland resulting from implementation of the proposed plan, is provided in **Section 5.3**.

4.6 Habitat of Endangered and Threatened Species

To assess the potential presence of individuals and/or habitat for endangered and threatened species within the study area, Aster Environmental staff conducted the following:

- Review the range maps for all species designated as endangered and threatened in Ontario, as per Schedules 2 and 3 of Ontario Regulation 230/08 [(Species at Risk in Ontario List (SARO List)], located here: https://www.ontario.ca/laws/regulation/080230. In our experience, the potential presence of most provincially endangered and/or threatened species can be ruled out based on their limited geographical ranges in the province and/or a lack of specific habitat conditions that are required to carry out key life processes.
- Reviewed the NHIC database for existing records of element occurrences for endangered or threatened species (17NH4392 and adjoining squares). Databases of iNaturalist, OBBA, and ORAA were also reviewed as of Dec 2024.

- On-site investigation undertaken in 2024, during which vegetation conditions were characterized for habitat-based assessment.

Information from the above assessment process was used to inform a site-specific screening, as contained in **Appendix 3**. The screening is based on a list of species that are known to occur within the regional jurisdiction (*i.e.*, Waterloo Region). Through this screening, the species discussed below were identified as having the potential to be present within the study area. Where relevant, potential impacts to these species are discussed further in **Section 5**.

4.6.1 At-Risk Aquatic Species

There are multiple aquatic species listed under the ESA as threatened that have the potential to occur within the study area: Black Redhorse (*Moxostoma duquesnei*), Silver Shiner (*Notropis photogenis*), and Wavy-rayed Lampmussel (*Lampsilis fasciola*). All occur in various large river system across southern Ontario, including the Grand River and some of its tributaries. The Nith River is known to support extant habitat for Black Redhorse and Silver Shiner; it was at least historically considered habitat for Wavy-rayed Lampmussel.

Based on our review of background resources (e.g., recovery strategy reports), critical/protected habitat for all of these species is acknowledged as occurring or potentially occurring within the study area. This review did not incorporate any site-specific sampling or comprehensive habitat analysis that would otherwise be necessary to demonstrate these species are absent. Therefore, we assume that each could be present and that any associated habitat regulations/protections are applicable.

Further discussion, including an assessment of potential impacts to individuals of these species resulting from implementation of the proposed plan, is provided in **Section 5.4.**

4.6.2 Endangered Bat Species

There are multiple bat species listed under the ESA as endangered, and three of these have the potential to occur within the study area: Little Brown Bat (*Myotis lucifugus*), Northern Long-eared Bat (*M. septentrionalis*), and Tri-colored Bat (*Perimyotis subflavus*). These species are assessed herein as a species guild (related species with similar habitat characteristics).

Bats are highly mobile; however, individuals and groups of the noted bat species are also recognized as having some degree of fidelity to suitable local sites for daily and seasonal ‘roosting’ activities. While some species (*i.e.*, *Myotis lucifugus*) exhibit a preference for roosting in anthropogenic structures, natural roosting sites are also important. Natural roosting sites are generally associated with mature forests containing a sufficient density of large trees in various stages of decay, otherwise known as ‘snags’. Snags provide features such as cavities and/or loose bark, on which bats rely for shelter and thermoregulation throughout the active season. One of the noted species, *Perimyotis subflavus*, exhibits a unique preference for roosting in hanging clusters of dead leaves, particularly associated with Oak trees.

Portions of the study area support established tree cover, as described in **Section 3.4**. Based on our qualitative review, tree cover within the property itself is not well suited to supporting bat roosting habitat. The on-site tree canopy is relatively young and lacking large, older trees that are typically best suited to supporting bat roosts.

During our on-site assessment, we did not observe any high-quality roosting trees within the narrow strip of woodland that overlaps the subject property. Notwithstanding, adjacent lands could support trees with cavities or other potential roosting features. We also acknowledge that it would be impossible to state that individual bats could not occur during the active season in any area containing tree cover.

Further discussion, including an assessment of potential impacts to individuals of endangered bat species resulting from implementation of the proposed plan, is provided in **Section 5.4.**

4.7 Significant Wildlife Habitat

Significant wildlife habitat (SWH) represents a range of habitat features that are recognized as providing specialized or otherwise important functions for various forms of wildlife. Designation of confirmed SWH is generally the responsibility of the relevant planning authority. Alternatively, candidate SWH can be identified on a site-specific basis, often triggered through a proposed change in land use or a large-scale development application.

To ensure due diligence in this regard, Aster Environmental has reviewed applicable technical guidance for the identification of specific SWH features and functions as contained in the SWH Criteria Schedules for Ecoregion 7E (MNRF 2015). A preliminary assessment of the criteria schedules is contained within **Appendix 4**. As outlined in the screening, the results of Aster Environmental's field program and background review indicate that the following SWH features/functions have the potential to occur within the study area, though not necessarily within the subject property.

4.7.1 Waterfowl Stopover & Staging Areas (Aquatic)

Larger rivers and in-channel pools can support this form of habitat during migration periods. The Nith River and its floodplain may be capable of support large aggregations of multiple waterfowl species. In the absence of targeted survey effort, we assume this function could occur in association with the study area.

4.7.2 Shorebird Migratory Stopover Areas

Larger rivers with exposed banks, flats, and bars can support this form of habitat during migration periods. The Nith River and its floodplain may be capable of support large aggregations of multiple shorebird species. In the absence of targeted survey effort, we assume this function could occur in association with the study area.

4.7.3 Bat Maternity Colonies

This function may occur in association with forests across the local and regional landscape, including within the study area. Refer to **Section 4.6.2** for discussion regarding the potential for bat maternity habitat to be present on the subject property. While the discussion in **Section 4.6.2** is provided specifically for endangered bat species, the assessment and conclusions are comparable to species that are not protected under the ESA.

4.7.4 Waterfowl Nesting Areas

Upland forests and riparian areas adjacent to the Nith River channel could support nesting habitat for one or more waterfowl species during the breeding season. In the absence of targeted survey effort, we assume this function could occur in association with the study area.

4.7.5 Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat

Forested shorelines adjacent to the Nith River channel could support nesting and/or perching habitat for Bald Eagle and/or Osprey. The Nith River channel would represent an ideal foraging location for either species. While formal surveys were not undertaken in this regard, we do note that a mature Bald Eagle was observed flying over the river valley during the site investigation. No large stick nests (active or otherwise) were observed during the site investigation. In the absence of further survey effort, we assume this function could occur in association with the study area.

4.7.6 Turtle Nesting Areas

Upland and riparian areas adjacent to the Nith River channel could support nesting habitat for one or more turtle species during the breeding season. It is noted that no evidence of past turtle nesting was observed within the subject property during the site investigation. In the absence of broader targeted survey effort, we assume this function could occur in association with the study area.

4.7.7 Special Concern and Rare Wildlife Species

AES conducted a review of the list of species designated as special concern in Ontario, as per Schedule 4 of Ontario Regulation 230/08, located here: https://www.ontario.ca/laws/regulation/080230. We further reviewed several biodiversity databases for existing records of element occurrences for special concern or rare species, including: NHIC, iNaturalist, OBBA, and ORAA. The primary basis for this review is NHIC, and we include discussion on all observations of relevant species within the overlapping 1km^2 data square, as well as records from all adjoining squares. The following species have been recorded locally or otherwise have the potential to occur based on observed habitat conditions.

Table 1. Special Concern & Rare Species with potential to occur in the study area.

Species	Status	Discussion
Green Dragon (*Arisaema dracontium)*	Special Concern	The NHIC database contains local records for these two plant species, both of which are regarded as 'carolinian' species, generally restricted to floodplains and riparian zones in southern Ontario. Ohio Buckeye is quite rare but apparently does occur locally in the Nith River floodplain, potentially a disjunct natural population. We did not observe any individuals on the subject property, although it is possible that individuals do occur on adjacent lands. Green Dragon is a fairly conservative herbaceous species of shaded, seepy hillsides. While our survey was not timed appropriately for a comprehensive plant survey, the observed conditions associated with the subject property are not representative of suitable habitat for this species.
Ohio Buckeye (*Aesculus glabra*)	S1	
Monarch (*Danaus plexippus*)	Special Concern	The iNaturalist database contains several local records for Monarch. This species is generally reliant on meadow-type environments, including wetlands, that provide sources of nectar throughout the active season. They are more specifically dependent on Milkweed (*Asclepias*) species as a host plant for larval stage development. We did not observe any evidence of Milkweed species on the property, although several species are very common and likely to occur on the local landscape.
Elktoe (*Alasmidonta marginata*)	S3	The NHIC database contains local records for these aquatic species (fish and mussel). As with other threatened aquatic species (discussed under **Section 4.6.1**), we assume there is potential for each of these species to occur in association with local reaches of the Nith River.
Greater Redhorse (*Moxostoma valenciennesi*)	S3	
American Brook Lamprey	S3	

(*Lethenteron appendix*)		
Snapping Turtle (*Chelydra serpentina*)	Special Concern	Snapping Turtle and Midland Painted Turtle rely on open water wetlands and exposed mineral substrates to carry out key life process such as basking, nesting, and overwintering. In general, we expect that either turtle species could be present within the study area, but generally restricted to the Nith River and adjacent natural areas. There is minimal expectation that the property itself would support any functional habitat for either species.
Midland Painted Turtle (*Chrysemys picta marginata*)	Special Concern [SARA, but not ESA]	
Bald Eagle (*Haliaeetus leucocephalus*)	Special Concern	The iNaturalist database contains a local record for Bald Eagle. A mature individual eagle was also observed flying over the study area during the on-site investigation. While no nests or obvious perching sites were observed on the subject property, it is highly likely that Bald Eagles use the local Nith River valley to fulfill various life processes.
Grasshopper Sparrow (*Ammodramus savannarum*)	Special Concern	There are NHIC records on the local landscape for Grasshopper Sparrow, a species which requires open grassland-type habitat for breeding. The study area is limited to residential areas, woodlands, and the Nith River valley, conditions which are not regarded as suitable for this species.
Eastern Wood-Pewee (*Contopus virens*	Special Concern	Eastern Wood-Pewee are common woodland birds that are ubiquitous in many areas of woodland cover on the local landscape. The narrow strip of woodland on the subject property is not reflective the habitat conditions preferred by either species; however, larger patches of woodland to the south and to the west of the Nith River could support habitat.

In general, there is potential for several special concern and/or rare plant and wildlife species to occur in association with the study area. Importantly, it is highly unlikely that any of the above-noted species would be associated with terrestrial portions of the subject property. If these species do occur in the study area, habitat would be associated with the Nith River and riparian areas to the west, and/or the more intact forested areas south of 70 Rose St. Additional discussion, including a review of potential impacts to habitat functions for one or more these species resulting from implementation of the proposed plan, is provided in **Section 5.5.**

4.8 Regional Designations (Landscape-Level System, Environmentally Sensitive Policy Area, Core & Supporting Environmental Features

According to local and region OP schedules, the subject property is not located within any Environmentally Sensitive Landscape, nor is it located within the Provincial Greenbelt NHS or a Regional Recharge Area. The study area is associated with a Significant Valleyland (as discussed above under **Section 4.4**), which is considered part of the Landscape Level System designation.

Map 5A to the Township OP depicts areas identified as Core Environmental Features associated with the subject property and adjacent lands. Based on data layers available from the Region, we estimate that Core Environmental Features in the study area are a combination of significant valleylands, significant woodland, and Environmentally Sensitive Policy Areas. The latter of these is a large mapped forest patch west of the Nith River known as the 'Ayr Forest' (see **Figure 1** and **Figure 2**).

The Core Environmental Features overlay may also be assigned to reflect known or suspected habitat for threatened/endangered species.

All of the features encompassed within the above regional designations are discussed individually in report sections above. Potential development-related impacts to each of these features is discussed individually below under **Section 5**.

5) IMPACT ASSESSMENT & RECOMMENDATIONS

It is our understanding that the proponent is preparing an application to construct a two storey, single detached dwelling measuring 232.47 m^2. The dwelling would be accessed via existing gravel driveway from Rose St. This EIS has been requested by the Township of North Dumfries to accompany an application for Zoning Bylaw Amendment (ZBA) to support the proposal. It is assumed that ZBA approval is required as the current applicable zone [Urban Residential (Flood Plain)] is restrictive of certain types and sizes of structures, presumably due to identified constraints related to the Nith River floodplain.

Importantly, this review is strictly focused on natural heritage and does not include an assessment of floodplain hazards. The need for an EIS relates to the ZBA requirement, which triggers review of local and regional official plan policies. Such policies include requirements for submission of an EIS when development would occur within or proximate to certain natural heritage-related features/designations. In this case, the property is located in an area designated as Core Environmental Areas, including Significant Valleylands, which we assume is the basis for the EIS request.

Aster Environmental's impact assessment below is intended to inform a review of the proposal by the appropriate approval authority. Our assessment is based on a review of existing conditions at the time of site investigation, as illustrated on **Figure 3** and in the photo record contained in **Appendix 2**. As discussed in **Section 4**, multiple significant natural heritage features/areas are confirmed or have the potential to occur within the study area. The primary purpose of this report is to assess impacts and support impact mitigation for all features that receive protections under applicable environmental planning policies and regulations. The potential for negative impacts on all identified features is discussed in the sections below, and several recommendations are listed to support a scenario of no net negative impacts.

In assessing and identifying potential negative impacts through any development or related process, it is important to highlight how the PPS defines negative impacts, *i.e.*:

> "…*degradation that threatens the health and integrity of the natural features or ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities*"

Importantly, as stated in Section 13.2 of the Natural Heritage Reference Manual (for Natural Heritage Policies of the PPS):

> *The PPS definition for "negative impacts" does not state that all impacts are negative, nor does it preclude the use of mitigation to prevent, modify or alleviate the impacts to the significant natural heritage feature or area*".

Our impact assessment is intended to be reflective of the above guidance, with consideration for the integrity and function of each feature, and in acknowledgement that not all development and site alteration represents a negative impact.

5.1 Watercourses (Nith River) & Fish Habitat

The Nith River supports a diverse aquatic community and habitat for a variety of fish and aquatic species, including several at-risk or otherwise rare species. The primary risk to the aquatic environment and associated fish habitat in a development context is typically associated with those activities that take place near or in water. In general, development and/or site alteration activities that occur proximate to watercourses have the potential to cause negative impacts via the following pathways:

- Alterations of surface water and/or groundwater contributions to that may result from:
    - Construction staging requirements (*e.g.,* dewatering, etc.);
    - Increased post-construction coverage of impervious surfaces (*e.g.,* roads, roofs, etc.); and,
    - Permanent modifications to existing topography or drainage alignments;
- Loss of riparian vegetation cover that supports thermal mitigation and aquatic wildlife habitat;
- Increased sediment and/or nutrient loadings to features via runoff exiting the development area from construction to post-completion of the project. This may adversely affect water quality via increased turbidity, nutrient enrichment, contamination by toxic substances, changes in pH, etc.;
- Disruption or loss of habitat for aquatic fish and wildlife, as well as constructed-related impacts to such fish and wildlife during the construction process; and,
- Increased human activity/encroachment within the waterbody post construction, which may result in decreased use by dependent fish and wildlife.

Based on our assessment, we expect that the proposed development can avoid impacts to the aquatic environment through the various potential impact pathways described above. Given the small scale of development and general hydrologic setting, there is no expectation that construction will require any de-watering. While the development will result in a post-construction increase in pervious surfaces, the scale of this can reasonably be considered negligible in relation to the existing water balance within the associated catchment. The general drainage pattern on the local landscape will not be changed, as any surface flows will continue to be infiltrated or directed generally towards the river.

Additionally, the proposed development is not expected to require any removal of natural vegetation cover associated with the riparian area/river valley, as discussed in sections below. The proposed development will be supported by local municipal servicing and will not require installation of any septic infrastructure that could lead to increased nutrient inputs to the river. The post-construction land use is consistent with existing land uses on immediately adjacent lands. Therefore, we do not anticipate that the proposal will introduce new influences (e.g., low-impact human presence) that did not previously exist. No part of the construction process involves or requires access to within the aquatic environment or associated vegetated corridor.

The only foreseeable potential impact to the aquatic environment and fish habitat would be associated with possible introduction of sediments and pollutants. The proposed development presents various pathways of potential impacts to the aquatic environment via construction processes. Based on our understanding of the proposal and review of on-site conditions, it is our opinion that impacts to the river and associated fish habitat can be avoided through diligent mitigation planning. The following recommendations are provided to support mitigation of potential impacts to fish habitat during all phases of the project.

5.1.1 Recommended Pre-Construction Mitigation Measures

Mitigation begins prior to the start of on-site construction processes. There are several planning measures and physical preparations that must be implemented prior to any mobilization of construction equipment, contractors, etc. The following measures represent the steps for pre-construction mitigation.

- **Identify a staging area for the daily storage of machinery, fuel, and waste materials. This should be set back in a designated area a minimum of 30 m from the top of bank to the watercourse. Following installation of the structure foundation, construction vehicles should be staged and stored east of the dwelling footprint.**
- **Identify and demarcate pathways from staging areas to working areas prior to the start of construction. These pathways should be clearly marked and communicated to on-site workers.**
- **Install heavy-duty silt fence barriers immediately downgradient of the western-most limit of proposed disturbance, per provincial standard (OPSD 219.130 – see Figure 3 and Appendix 6).**
    - **Silt fencing should be installed to isolate all construction staging and material storage areas.**
    - **Additional sediment fencing and appropriate control measures must be available on site so that any breach can be immediately repaired.**
- **Prepare a spill response kit in advance of construction. The kit shall include, at a minimum, absorbent materials to support clean up (e.g., sand), shovel(s), protective equipment for spill responders (e.g., gloves), suitable waste material storage bags/containers, and any other materials or tools that may be necessary to respond to a hazardous material spill (scope and scale to reflect site-specific construction materials).**
- **Develop a spill response plan, including assigning roles to on-site contractors to implement necessary actions in the event of a hazardous material spill.**
- **Source non-treated and non-toxic materials for construction, including non-treated lumber, where feasible.**

5.1.2 Recommended Construction Mitigation Measures

The following steps outline protocols and procedures to be implemented for the duration of the construction process.

- **Any machinery should arrive to site washed and in good working order, inspected for fuel or fluid leaks prior to entering the site.**
- **All machinery should arrive free of invasive plant materials per the Ontario Invasive Plant Council Clean Equipment Protocol for Industry: https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/Clean-Equipment-Protocol_June2016_D3_WEB-1.pdf**
- **Machinery must be refueled, washed, and serviced within a pre-designated area isolated by sediment fencing.**
- **Locate all fuel and other potentially deleterious substances within the area isolated by sediment fencing.**

- **Offloading of construction and aggregate/fill materials (where required) should be completed during fair weather conditions.**
- **Temporary storage locations of aggregate/fill material (if/where required) should be located within the area isolated by sediment fencing. All stockpiled topsoil/overburden (where required) should be maintained in low piles and stabilized as quickly as possible (e.g., erosion-prone areas covered with textile) to minimize the potential for runoff.**
- **All machinery is to be operated within the ESC barriers. Machinery should avoid accessing the area west of the structure envelope to avoid incidental impacts to existing vegetation.**
- **The contractor is required to maintain all machinery in proper working order, with daily monitoring to occur, including daily start-up checks for fuel leaks. Re-fueling and maintenance works should occur within the designated machinery and material storage areas.**
- **Any spills of deleterious substances and materials should be cleaned immediately. Any waste materials generated from clean up of spills are to be removed immediately from the work site and properly disposed of. Any spills of oil, fuel, or other deleterious substances whether directly or indirectly into a waterbody are to be promptly reported to the Ontario Spills Action Center (1-866-663-8477). Any deposit of deleterious substances within fish habitat must also be reported to DFO through the Fish and Fish Habitat Protection Program – Ontario office (Telephone: 1-855-852-8320; Email: FisheriesProtection@dfo-mpo.gc.ca). The DFO directs that action be taken immediately to remedy issues related to deposit of deleterious substances (i.e., do not wait for a response from DFO following reporting of a spill before taking action).**
- **Regular inspection and monitoring will be necessary to ensure that the structural integrity and continued functioning of the sediment control measures is maintained. Sediment fencing should be inspected daily and prior to precipitation events, with necessary remedial actions occurring as issues are identified.**
- **An on-site supervisor shall be assigned the responsibility of daily inspections of the sediment and erosion control measures. The inspector must record the time and date of inspections, the status of the mitigation measures, and any repairs undertaken.**
- **Following completion of construction, the following steps should be implemented.**
    - **Any disturbance from temporary construction pathways should be mitigated/stabilized through further application of woody vegetation, mulch, and/or a site-appropriate stabilization seed mix.**
    - **If there is insufficient time remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) with any necessary permanent measures to be implemented the following spring.**
- **Removal of non-biodegradable erosion and sediment control materials should occur once construction is complete, and the site is stabilized.**

5.2 Significant Valleylands

In an area containing valleylands and associated sloping topography, the largest risk from development-related impacts would be from direct encroachment into the defined limits of the valleyland, and/or from de-stabilization of valley slopes. Development within valleylands can also disrupt important wildlife movement corridors and add risk of induced negative impacts to associated watercourse features and vegetated corridors.

The proposed development would be set back from the river top of bank by an estimated 18-20 m (see **Figure 3**). According to Regional open data, the delineated limited of the significant valleyland is represented by the approximate top of bank. Therefore, the development would not occur within the identified limits of significant valleylands, and would be set back by up to 20 m.

Importantly, there is no expectation that the proposal will disrupt any wildlife usage or movement functions that may be associated with the valleyland. The dwelling footprint would be located within an existing disturbed area lacking natural vegetation, and is not expected to require any tree or vegetation removals. The dwelling would not be situated in a connective corridor or between areas of natural cover.

We cannot speak to geotechnical risks that can be associated with development proximate to valleylands; however, the proposed development appears to be located on a stable terrace. Ultimately, we defer to geotechnical professionals to determine potential risk in this regard, if required.

Lastly, we note that construction staging and earthworks are associated with several potential impact pathways, such as impacts to stabilizing vegetation and migration of sediment. The exposure, importation, and/or stockpiling of soils/fill within or near valleylands can result in migration of materials down slopes and into the surrounding natural environment. Despite being associated with a valleyland, the central portion of the property is relatively level, representing a break in the continuous valley slope to the primary river corridor. This should aid in mitigating the risk of sediment transport toward the lowest elevations of the valley. Most importantly, a robust construction mitigation plan (as discussed in **Section 5.1**) is required to avoid potential impacts related to sediment migration.

In general, provided that development adhere to all mitigation measures recommended in this report, there is no expectation that the proposal will result in negative impacts to any natural heritage functions associated with the valleyland.

5.3 Woodlands/Significant Woodlands

Existing mapping by the Region indicates that significant woodlands are present locally (see **Figure 2**); however, the exact limits of the feature warrant site-specific interpretation. While the narrow configuration of the wooded strip at the rear of the property may not be structurally representative of significant woodland, we note that this area is providing important functions (e.g., bank stabilization, fish habitat value). This area of woodland is also subject to protections as part of the associated significant valleyland, and as potential habitat for one or more Species at Risk. A woodland dripline is depicted on **Figure 3**, with an additional area of successional vegetation (shrubs, young saplings) extending slightly further from the established dripline.

Examples of direct impacts to woodlands from development can include removal of individual trees, fragmentation of canopy coverage, and direct loss of woodland-dependent wildlife habitat. Indirect impacts may include new anthropogenic influences (e.g., trails, garbage dumping), introduction of invasive species, requirements for removal of hazard trees, etc. Where feasible, woodland setbacks may be employed to buffer the influences of development on a woodland feature and its associated wildlife habitat functions.

The proposed development would occur proximate to the woodland, within an estimated range of 2-10 m from the dripline edge (see **Figure 3**). At its closest point, the rear deck on the dwelling would extend directly to the edge of the additional vegetated area that extends beyond the dripline. The proposal requires no creation of new canopy gaps, loss of interior woodland, or loss of high-functioning, rare, or sensitive woodland features. We also note that the forest structure on and adjacent to the property is considered successional and already exhibits degradation by invasive species (Common Buckthorn, Barberry, Periwinkle, etc.), as described in **Section 3.4**. This narrow

strip of woodland does not appear amenable to supporting habitat for rare flora or fauna and is not regarded as a 'high quality' or otherwise sensitive forest type.

Most importantly, the building would be contained within the existing disturbed area, with no requirement to remove additional tree cover. There is potential for partial root zone encroachment toward one or more trees (Black Walnut) near the NW corner of the dwelling; however, we estimate this is unlikely to result in direct or immediate death of any trees.

Given the small size of the parcel, there does appear to be a lack of available alternatives for siting the structure further from the woodland at the rear of the lot. Due to the relatively minimal setback to woodland, it is recommended that some active planting take place within the very limited available space between the dwelling and the current woodland limit. Planting of native species can support minor expansion of the on-site canopy and may aid in mitigating the dominant influence of existing non-native species on the property.

Based on the above, it is our opinion that the proposal can avoid negative impacts to adjacent woodland features or associated functions. We recommend the following as general mitigation measures pertaining to woodlands.

- **Construction should strive to retain all trees located adjacent to the proposed structure footprint. If any conflicts with adjacent trees are identified, this should be mitigated through branch/root pruning rather than defaulting to tree removal. If removal is ultimately determined to be required, we recommend re-planting of the same or equivalent species at a 2:1 ratio (two tree planted for the single tree removed, if applicable).**
- **In addition to the recommendation above, we recommend that 5 native tree saplings be installed to the rear of the proposed dwelling, post-construction. These can be installed along the eastern edge of the dripline, within unvegetated areas and/or within the small non-treed area that currently extends from the dripline. It is recommended that planting use a combination of any of the following species: Black Walnut, Bur Oak, and/or Common Hackberry. Installed trees should be a minimum 2 m to promote competition with existing on-site vegetation cover.**
- **Any additional post-construction landscaping (if applicable) should utilize native, site-appropriate species only to avoid further degradation of the adjacent woodland through non-native species introductions. We note that the current site plan proposes installation of Japanese Maple and Burning Bush for post-construction landscaping. This is not advisable as these species (particularly Burning Bush) are not native to the local landscape and may pose a current or future risk to surrounding natural areas. Suitable alternatives could include attractive native species such as Alternate-leaved Dogwood (*Cornus alternifolia*), Serviceberry (*Amelanchier canadensis*), and/or Witch Hazel (*Hamamelis virginiana*).**

5.4 Habitat of Endangered & Threatened Species

As per Section 10 of the ESA, areas of identified habitat for any endangered or threatened species are protected from destruction, unless otherwise authorized. Additionally, Section 9 of the ESA protects individuals of endangered or threatened species, prohibiting individuals from being killed, harmed, or harassed without appropriate authorizations. In many cases, mitigation planning is sufficient to promote consistency with the above provisions. The following section(s) provide an assessment of potential impacts to any endangered or threatened species considered relevant to the development application, as determined through our screening exercise (**Appendix 3**) and subsequent assessment in **Section 4.6**.

5.4.1 Aquatic Species at Risk

The section of the Nith River occurring within the study area is considered critical habitat for Black Redhorse and Silver Shiner under the federal Species at Risk Act (SARA; DFO 2022). For these species, the provincial ESA adopts the SARA area of critical habitat as the area recommended for developing a provincial habitat regulation. Specifically, the critical habitat for Black Redhorse is defined as the areas between the top of bank from one side of the river to the other. For Silver Shiner, this extends to cover vegetated riparian areas associated with the meanderbelt and vegetated riparian areas 30 m from the meanderbelt limit.

The ESA provides a specific habitat regulation for Wavy-rayed Lampmussel, which is very similar to that for the species above. Habitat for this species is defined, in part, as:

1. *In the geographic areas of Brant, Chatham-Kent, Huron, Lambton, Middlesex, Oxford, Perth, Waterloo and Wellington,*
    - i. *any part of a river, stream or other watercourse, other than the St. Clair River, up to the high water mark, that is being used, or has been used at any time in the past, by a wavy-rayed lampmussel,*
    - ii. *any part of a river, stream or other watercourse, up to the high water mark, that is,*
        - A. *within the same watercourse segment as the area described in subparagraph i, and*
        - B. *of a stream order greater than two,*
    - iii. *the area adjacent to the part of a river, stream or other watercourse described in subparagraphs i or ii that is,*
        - A. *an area consisting primarily of vegetation that occurs naturally or with minimal human intervention, such as a forest, woodland, thicket, wetland, old field, pasture or meadow, and*
        - B. *within 30 metres of the relevant high water mark*.

Essentially, protected habitat for all three of these species includes the aquatic habitat within the river, the area up to and including the top of bank, and for Silver Shiner and Wavy-rayed Lampmussel, areas of riparian or otherwise natural vegetation within 30 m from the meanderbelt limit or high-water mark. These are the areas that should be considered ‘protected’ under provincial and federal legislation, though activities that may otherwise impact the habitat (even if occurring outside of protected habitat areas) are still considered subject to regulatory restrictions.

The footprint of the proposed dwelling would occur within a portion of the property that has been previously disturbed and presently lacks any riparian or otherwise natural vegetation. While the development would occur proximate to the watercourse, it appears that areas of existing vegetation above the top of bank to the Nith River will be preserved. On this basis, it would not appear that the proposal conflicts with areas of habitat protected/regulated under the SARA or ESA.

Notwithstanding the statement above, there is real potential that the development could result in impacts to aquatic habitat if strict construction mitigation measures are not implemented. As discussed with respect to other natural heritage features (including ‘fish habitat’ in general), a diligent plan for erosion and sediment control and vegetation preservation is necessary to avoid impacts to fish habitat functions. Provided that development adhere to all measures recommended herein, it is our opinion that negative impacts to the above species can be avoided.

5.4.2 Endangered Bats

Forested ecosites within the study area may be expected to support some level of seasonal bat activity, which may include endangered bat species. It is noted that this is a generic conclusion that would be drawn for any area containing tree cover. In conducting a wildlife habitat assessment, it is rarely a question of whether bats are present within a forested area, but more a question of the quality and functionality of the habitat.

Based on a qualitative review conducted during our general vegetation assessment, no trees were observed on the property that would appear likely to support functional roosting habitat. However, there is almost certainly individual trees or groupings of trees on the adjacent landscape that could support bat roosting. Moreover, it would be impossible to say that individuals of endangered bat species could not occur on the property, even if obvious roosting sites were not observed.

No trees are expected to require removal to accommodate the proposed dwelling. Therefore, there is no anticipated impacts to individuals or habitat of endangered bat species. If any individual trees do ultimately require removal, we recommend the following to ensure ESA compliance.

- **If any tree removal is determined to be required for the purposes of development, this shall only occur in the fall, winter, and early spring (from October 1 to April 15). This timeframe is outside of the typical maternal roosting period. This means that no tree clearing shall occur between April 15-Oct 1 of any given year.**

5.5 Significant Wildlife Habitat

Section 4.7 describes one or more significant wildlife habitat functions that have the potential to occur within the study area based on a review of applicable criteria and background information sources. These include the following:

- Seasonal Concentration Areas of Animals
    - Waterfowl Stopover and Staging Areas (Aquatic)
    - Shorebird Migratory Stopover Areas
    - Bat Maternity Colonies
- Specialized Habitats for Wildlife
    - Waterfowl Nesting Area
    - Bald Eagle and Osprey Nesting, Foraging, and Perching Habitat
    - Turtle Nesting Areas
- Habitat of Species of Conservation Concern
    - Special Concern and Rare Wildlife Species

The study area has the potential to support one or more of the above habitat functions, all of which would be generally restricted to natural features associated with the Nith River valley corridor. Specifically, several of these functions could be associated with floodplain zones, riverbanks, and terrestrial ecosites within the valley. Such functions would be most likely to occur in association with low-lying forested areas to the west of the Nith River, as well as more intact forested areas to the south of 70 Rose St. While the subject property contains a narrow strip of degraded woodland vegetation, the potential for any of the above-noted functions to occur within terrestrial portions of the property is estimated to be low.

The development concept is expected to avoid requirement for natural area encroachment or tree removals within natural woodland ecosites. The land use associated with the property is consistent with existing uses on adjacent lands, meaning that the proposed new structure will not result in introduction of any new anthropogenic influences that did not previously exist.

Given the above context, it is our opinion that the proposed development presents no potential for any negative impacts to wildlife and wildlife habitat functions, including those regarded as SWH. Summarized recommendations for general wildlife impact mitigation are provided below.

- **Avoid removal of any vegetation, including residential/ornamental plantings, between April – August of any given year. If vegetation removals must occur during this period, a nest survey should be conducted by a qualified biologist prior to commencement of construction activities to identify and locate active nests of migratory bird species covered by the MBCA or FWCA. If a nest is located or evidence of breeding noted, then a mitigation plan should be developed to address any potential impacts on migratory birds or their active nests. Mitigation may require establishing appropriate buffers around active nests or delaying construction activities until the conclusion of the nesting season. Note: see extended vegetation removal timing windows pertaining to bats under Section 5.4.2.**
- **Exterior lighting on the new structure should be designed with motion-sensors and downward-facing directional lighting to avoid negative impacts to nocturnal wildlife. Permanent night-lighting should not be installed on any portion of the structure backing onto the river valley.**
- **Design of the new structure should incorporate installation of wildlife-window collision deterrents.**

6) COMPLIANCE WITH ENVIRONMENTAL LEGISLATION AND POLICIES

The following sections outline the federal, provincial, and municipal environmental legislation, including plans, regulations, and/or bylaws that are understood to be applicable to the proposal. Aster Environmental provides a list of policies and provisions and summarizes how the proposal can demonstrate conformity and consistency. Where potential conformity issues exist, we cite recommended mitigation strategies that are intended to guide the proposal toward meeting the intent of relevant requirements. Our interpretations regarding planning policy conformity are provided for consideration and verification by the applicable approval authority.

6.1 Federal *Fisheries Act*, R.S.C. 1985

The Federal Fisheries Act states that:

34.4 (1) No person shall carry on any work, undertaking or activity, other than fishing, that results in the death of fish.

35. (1) No person shall carry on any work, undertaking or activity that results in harmful alteration, disruption or destruction of fish habitat.

DFO further states that “under subsection 35(1) a person may carry on such works, undertakings or activities without contravening this prohibition, provided that they are carried on under the authority of one of the exceptions listed in subsection 35(2), and in accordance with the requirements of the appropriate exception. In most cases, this exception would be Ministerial authorizations granted to proponents in accordance with the *Authorizations Concerning Fish and Fish Habitat Protection Regulations.”*

The study area contains fish habitat associated with the Nith River valley, including habitat for sensitive aquatic communities and aquatic Species at Risk. The proposed development would not occur within areas of direct or indirect fish habitat, nor within vegetated riparian zones. Based on our

understand of definitions for aquatic SAR critical/regulated habitat, it does not appear that the proposal will occur in such definable areas. Several important mitigation measures are outlined in this report that are intended to ensure the development does not result in indirect impacts through the construction process. Provided that these recommended are implemented, it is the opinion of Aster Environmental that the proposal will not result in the death of fish or the harmful alteration, disruption, or destruction of fish habitat.

6.2 Federal Migratory Birds Convention Act (1994)

Part 1, Section 5 of the Migratory Birds Regulations under the *Migratory Birds Convention Act, 1994* (MBCA) prohibits the disturbance or destruction of nests, eggs, or nest shelters of a migratory bird. The provincial *Fish and Wildlife Conservation Act, 1997* (FWCA) extends the protection of bird nests and eggs to species that are not listed under the Migratory Birds Regulations (e.g., Corvids).

For most migratory bird species, nest protections under the MBCA apply for the duration of time that a nest is occupied; however, protections extend beyond the period of occupation for several species that may be common locally, including Pileated Woodpecker, Green Heron, and Great Blue Heron, amongst others (see Schedule 1 under the Act for full list). For the species listed under Schedule 1, specific conditions must be met in order to damage/remove a nest, including providing notice to the minister in charge, and demonstrating that the nest has not been occupied by an applicable species for a time period specified under Schedule 1.

Based on our assessment, there does not appear to be any potential conflict between the proposed development and suitable nesting habitat of any species listed under Schedule 1 to the MBCA. If any future vegetation removals within the study area are determined to be required, restricting clearing of vegetation to times outside of the period of April 1 to August 31 inclusive, will avoid destruction of other species' nests and prevent contravention of Section 5 of the regulations. If vegetation removal must occur during this period, a nest survey should be conducted by a qualified avian biologist prior to commencement of construction activities to identify and locate active nests of migratory bird species covered by the MBCA or FWCA. If a nest is located or evidence of breeding noted, then a mitigation plan should be developed to address any potential impacts on migratory birds or their active nests. Mitigation may require establishing appropriate buffers around active nests or delaying activities until the conclusion of the nesting season.

6.3 Provincial *Endangered Species Act,* S.O. 2007, c. 6

The ESA protects designated endangered and threatened species in Ontario from being killed, harmed, or harassed (s. 9) or having their habitat damaged or destroyed (s. 10). **Section 4.6** identified one or more species or its habitat having the potential to occur within or adjacent to the study area. **Section 5.4** provided a subsequent discussion of potential impacts to such species and/or associated habitat features, should those species be present within or adjacent to the study area.

Based on this assessment, and assuming full implementation of mitigation measures (if/where recommended), it is the opinion of Aster Environmental that no endangered or threatened species or their habitat are expected to be negatively impacted if the application is approved. On this basis, there is no expectation that the proposal will result in a contravention of the ESA. It is noted that this assessment does not represent 'clearance' with respect to ESA compliance. It remains a proponent's continued and sole responsibility to ensure that a project does not result in a contravention of the ESA.

6.4 Provincial Planning Statement, pursuant to the *Planning Act*, 2024

The Provincial Planning Statement (PPS) is promulgated under the *Planning Act* and provides direction to municipalities on matters of provincial interest related to land-use planning. The PPS was

most recently updated in October 2024. Municipal OP's must be consistent with the PPS. Key natural heritage-related provisions of the PPS, as assessed in this report, are listed below:

> **4.1.4** Development and site alteration shall not be permitted in:
>
> a) significant wetlands in Ecoregions 5E, 6E, and 7E1; and
> b) significant coastal wetlands.
>
> **4.1.5** Development and site alteration shall not be permitted in:
>
> a) significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E[1];
> b) significant woodlands in Ecoregions 6E and 7E;
> c) significant valleylands in Ecoregions 6E and 7E;
> d) significant wildlife habitat;
> e) significant areas of natural and scientific interest; and
> f) coastal wetlands in Ecoregions 5E, 6E and 7E[1] that are not subject to policy 2.1.4(b)
>
> unless it has been demonstrated that there will be *no negative impacts on the natural features or their ecological functions.*
>
> **4.1.6** Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.
>
> **4.1.7** Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.
>
> **4.1.8** Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 4.1.4, 4.1.5, and 4.1.6 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.

Based on the results of the impact assessment contained herein, and contingent on the implementation of the recommendations outlined in **Section 5**, it is the opinion of Aster Environmental that the development can be accomplished in a manner that is consistent with Sections 4.1.4 to 4.1.8 of the PPS.

6.5 Grand River Conservation Authority Regulation 41/24, pursuant to the *Conservation Authorities Act*, R.S.O. 1990

GRCA's regulatory jurisdiction extends to areas within and adjacent to valley and stream corridors, shorelines, hazard lands (*i.e.,* floodplains, valley slopes), watercourses, and wetlands as provided for under O. Reg. 41/24 of the *Conservation Authorities Act, 1990*. GRCA's current mapped regulated area encompasses a large portion of the study area and most or all of the subject property. Given the current extent of regulated coverage on the property, it is evident that the application requires a permit from the GRCA. Based on our assessment herein, the proposal can be accomplished without resulting in adverse impacts to regulated natural heritage features. We defer to others as required to comment on any potential constraints related to hazard features (e.g., floodplain).

6.6 Region of Waterloo Official Plan, 2015

According to Map 3E of the Regional OP, the subject property is contained within the 'Built-Up Area' within the urban area of Ayr. Map 4 further identifies elements of 'Landscape-Level Systems' (Significant Valleys) as well as one or more Core Environmental Features.

Chapter 7 of the OP outlines various policies for development within the 'Greenlands Network', which encompasses these various environmental/natural heritage designations.

As discussed in this report, the study area contains one Landscape-Level System, i.e., a Significant Valleyland. Policies 7.C.1-7.C.8 are specifically focused on defining the limits of Core Environmental Features (which also include significant valleylands). Other Core Environmental Features contained within the study area include significant woodlands, 'Environmentally Sensitive Policy Area', and habitat for endangered and/or threatened species. The limits of these features are not always definable; however, where feasible, this report has sought to determine the limits as pre-defined by the Region and/or provide recommendations for refinement to such limits. Additional development-related policies under Section 7 of the OP have been reviewed, with **those considered applicable to the application** listed below and interpretation provided accordingly.

- ***Regional OP Policy 7.C.9*** *Development or site alteration will not be permitted within Core Environmental Features, except for:*

    a) *forest, fish or wildlife management and conservation;*

    b) *flood or erosion control projects demonstrated to be in the public interest and for which no other alternative is feasible;*

    c) *minor alterations to legal non-conforming land uses within Core Environmental Features;*

    d) *infrastructure projects in accordance with Policies 7.C.12 and 7.C.13; or*

    e) *mineral aggregate operations in accordance with the policies in Chapter 9; Any application for development or site alteration for the above uses will require the submission of an Environmental Impact Statement, to the satisfaction of the Region, to determine the mitigation measures to be implemented, as appropriate, through the development review process*.

AES Interpretation: Based on the result of this assessment, the proposed development will not occur within the limits of Core Environmental Features.

- ***Regional OP Policy 7.C.10*** *Development or site alteration will only be permitted on lands contiguous to a Core Environmental Feature where an Environmental Impact Statement, or similar study, submitted in accordance with the policies in Section 7.G has determined to the satisfaction of the Region, Area Municipalities, the Grand River Conservation Authority and/or the Province, as appropriate, that approval of the proposed development or site alteration would not result in adverse environmental impacts on the features and ecological functions of the Core Environmental Feature. The Region may require conditions of approval to implement such recommendations*.

AES Interpretation: This report has been prepared to satisfy the requirement for an Environmental Impact Statement. Based on the result of this assessment, the proposed development can avoid negative impacts to Core Environmental Features and associated functions. Various mitigation measures are provided in this report to support this conclusion.

- ***Regional OP Policy 7.C.11*** *An Environmental Impact Statement submitted in accordance with Policies 7.C.9 or 7.C.10 will identify appropriate buffers to Core Environmental Features, to the satisfaction of the Region, in consultation with Area Municipalities and the Grand River Conservation Authority. Such buffers will not only serve to protect Core Environmental Features from adverse environmental impacts but will also provide opportunities for net habitat enhancement to enhance or, wherever feasible, restore the ecological functions of the Core Environmental Feature. The location, width, composition and use of buffers will be in accordance with the approved Environmental Impact*

Statement, with buffers being a minimum of 10 metres as measured from the outside boundary of the Core Environmental Feature and established and maintained as appropriate self-sustaining native vegetation.

AES Interpretation: This assessment has discussed the proposed placement of the dwelling, noting that buffers to features are limited; however, opportunities for increased buffers are also limited bysite context. Mitigation measures have been proposed in this report to ensure that limited buffers support functional avoidance of impacts. This report recommends minor restoration measures, such as tree planting, to support on-site ecological enhancement.

- ***Regional OP Policy 7.D.1*** *Development or site alteration will not be permitted within fish habitat, except in accordance with Provincial and Federal requirements to the satisfaction of the Federal Department of Fisheries and Oceans, or its delegate*.

  AES Interpretation: Based on the result of this assessment, the proposed development will not occur within fish habitat and is not expected to negatively impact fish habitat.

- ***Regional OP Policy 7.E.1*** *Supporting Environmental Features are those environmental features not meeting the criteria for recognition as being regionally significant. Supporting Environmental Features play an important role in maintaining the ecological functions provided by the Greenlands Network and will be maintained, enhanced or, wherever feasible, restored*.

  AES Interpretation: Based on the result of this assessment, the subject property may contain areas representative of 'Supporting Environmental Features', such as woodlands that may not technically constitute significant woodland. This report has recommended measures for retention and avoidance of impacts to such areas/features.

- ***Regional OP Policy 7.E.7*** *Area Municipalities will require the incorporation of any linkages, identified in accordance with Policy 7.E.6, into the design of new development to maintain, enhance or, wherever feasible, restore linkages among environmental features*.

  AES Interpretation: The proposed development is not located within a linkage area; areas to the west of the property associated with the Nith River valley will not be impacted by the proposal and will continue to support linkage functions.

6.7 Township of North Dumfries Official Plan, 2018 Consolidation

The property appears to be zoned as 'Urban Residential (Flood Plain)' and designated in Map 2.1 to the Township OP as 'Open Space'. Map 5A to the Township OP further identifies portions of the property and/or adjacent lands as part of a 'Significant Valley' and 'Core Environmental Feature'.

These designations are consistent with applicable planning resources of the Region. The policies contained within the Township OP are generally consistent with the Regional OP with respect to natural heritage features and resources. To avoid redundancy, we defer to the discuss provided above pertaining to Regional OP policies. This report has been prepared to satisfy Township OP policy requirements for an Environmental Impact Statement/Study. The information and opinions contained herein are provided for consideration by the Township in review of the application for zoning bylaw amendment.

7) CONCLUSIONS

The preceding report provides the results of our scoped EIS. This report includes details regarding existing physical and ecological conditions within the study area, a description of the development

proposal, an assessment of potential impacts to identified features, a general mitigation plan, and a general assessment of consistency and conformity with relevant municipal, provincial, and federal environmental policies.

Based upon the findings presented in this report and contingent upon the implementation of and adherence to the recommendations made herein, it is our conclusion that the proposal can be accomplished without negatively impacting the functions of identified natural heritage features or the broader natural heritage system of the Township/Region. We advise that any recommended mitigation/preventative measures outlined in **Section 5** be implemented through appropriate planning mechanism as determined by the approval authority.

8) REFERENCES

Armstrong, D. K. and J. E. P. Dodge. 2007. Paleozoic geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 219.

Lee, H. T., W. D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig, and S. McMurray. 1998. Ecological land classification for Southern Ontario: first approximation and its application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch.

Cadman, M. D., D. A. Sutherland, G. G. Beck, D. Lepage, and A. R. Couturier. 2007. Atlas of the Breeding Birds of Ontario, 2001–2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, Ontario Nature, Toronto.

Chapman, L. and D. F. Putnam. 2007. Physiography of southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 228.

Dobbyn, J. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists. Toronto.

Fisheries and Oceans Canada. 2024. Fish and Fish Habitat Protection Program resources, available at: https://www.dfo-mpo.gc.ca/pnw-ppe/ffhpp-ppph-eng.html

Fisheries and Oceans Canada. 2013. Fisheries Protection Policy Statement. Fisheries and Oceans Canada.

Fisheries and Oceans Canada. 2022. Recovery Strategy and Action Plan for the Black Redhorse (Moxostoma duquesnei) in Canada. Species at Risk Act Recovery Strategy Series. Fisheries and Oceans Canada, Ottawa. vi + 63 pp.

Fisheries and Oceans Canada. 2022. Recovery Strategy and Action Plan for the Silver Shiner (Notropis photogenis) in Canada. Species at Risk Act Recovery Strategy Series. Fisheries and Oceans Canada, Ottawa. vi + 51 p.

Gao, C., J. Shirota, R. I. Kelly, F. R. Brunton, and S. van Haaften. 2006. Bedrock topography and overburden thickness mapping, southern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 207.

Presant, E.W. & R.E. Wicklund. 1971. The Soils of Waterloo County. Report No. 44, Ontario Soil Survey. Canada Department of Agriculture, University of Guelph, Ontario Department of Agriculture. 147 pp.

OMNR. 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second edition. Toronto: Queen's Printer for Ontario.

OMNR. 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E. Ontario Ministry of Natural Resources. January 2015.

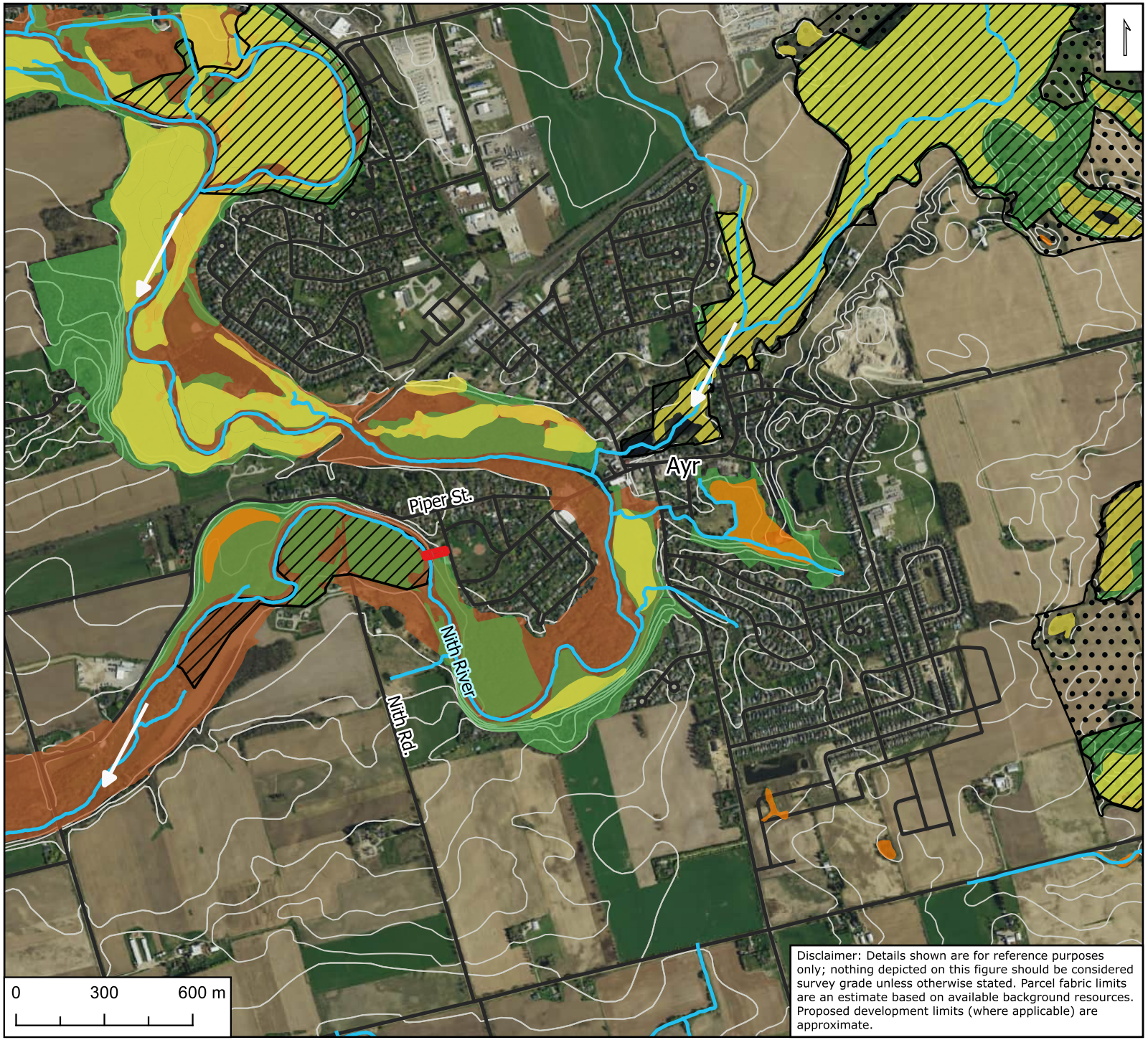


Figure 1:
Property Location & Landscape Context

Legend

- Subject Property
- Local Road Network
- Contours - 5m
- Local Drainage Network
- Provincially Significant Wetland
- Unevaluated Wetland
- Significant Valleylands (Regional Data)
- Significant Woodlands (Regional Data)
- Environmentally Sensitive Landscapes (Regional Data)
- Environmentally Sensitive Policy Area (Regional Data)

Project No & Description:

AES24050

Rose St., Ayr - Environmental Impact Statement

Date Prepared: Dec 19, 2024	Prepared By: MF
Last Revision: N/A	Checked By: N/A

Basemap/Data Reference:

ON Geohub; SWOOP 2015; Region of Waterloo Open Data Portal

ASTER ENVIRONMENTAL SERVICES LTD.

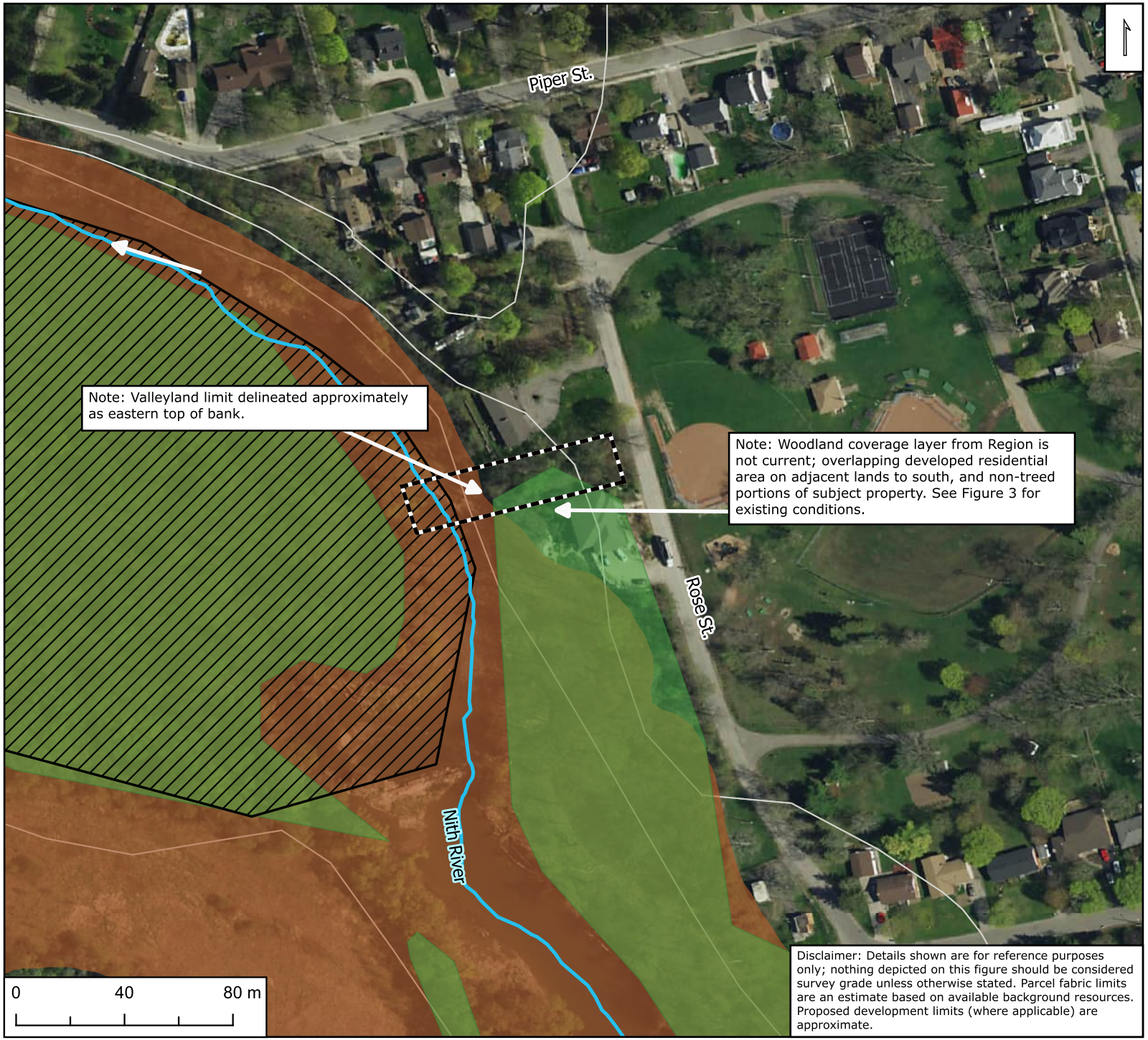


Figure 2: Regional Core Environmental Feature Context

Legend

- Subject Property
- Contours - 5m
- Local Drainage Network
- Significant Valleylands (Regional Data)
- Significant Woodlands (Regional Data)
- Environmentally Sensitive Policy Area (Regional Data)

Project No & Description:

AES24050

Rose St., Ayr - Environmental Impact Statement

Date Prepared: Dec 19, 2024	Prepared By: MF
Last Revision: N/A	Checked By: N/A

Basemap/Data Reference:

ON Geohub; SWOOP 2015; Region of Waterloo Open Data Portal

ASTER ENVIRONMENTAL SERVICES LTD.

Figure 3: Documented Conditions, Proposed Development, and Recommendations.

Legend

- Subject Property
- Woodland Cover Dripline (Deciduous Forest/Cultural Woodland - FOD/CUW)
- Additional Vegetation (Successional, Shrub-height)
- Top of Bank
- Recommended Sediment/Tree Protection Fencing (Conceptual - to be field-fitted)
- Recommended Tree Installation (Conceptual - To be field-fitted)

Disclaimer: Details shown are for reference purposes only; nothing depicted on this figure should be considered survey grade unless otherwise stated. Parcel fabric limits are an estimate based on available background resources. Proposed development limits (where applicable) are approximate.

Project No & Description:

AES24050

Rose St., Ayr - Environmental Impact Statement

Date Prepared: Dec 19, 2024	Prepared By: MF
Last Revision: N/A	Checked By: N/A

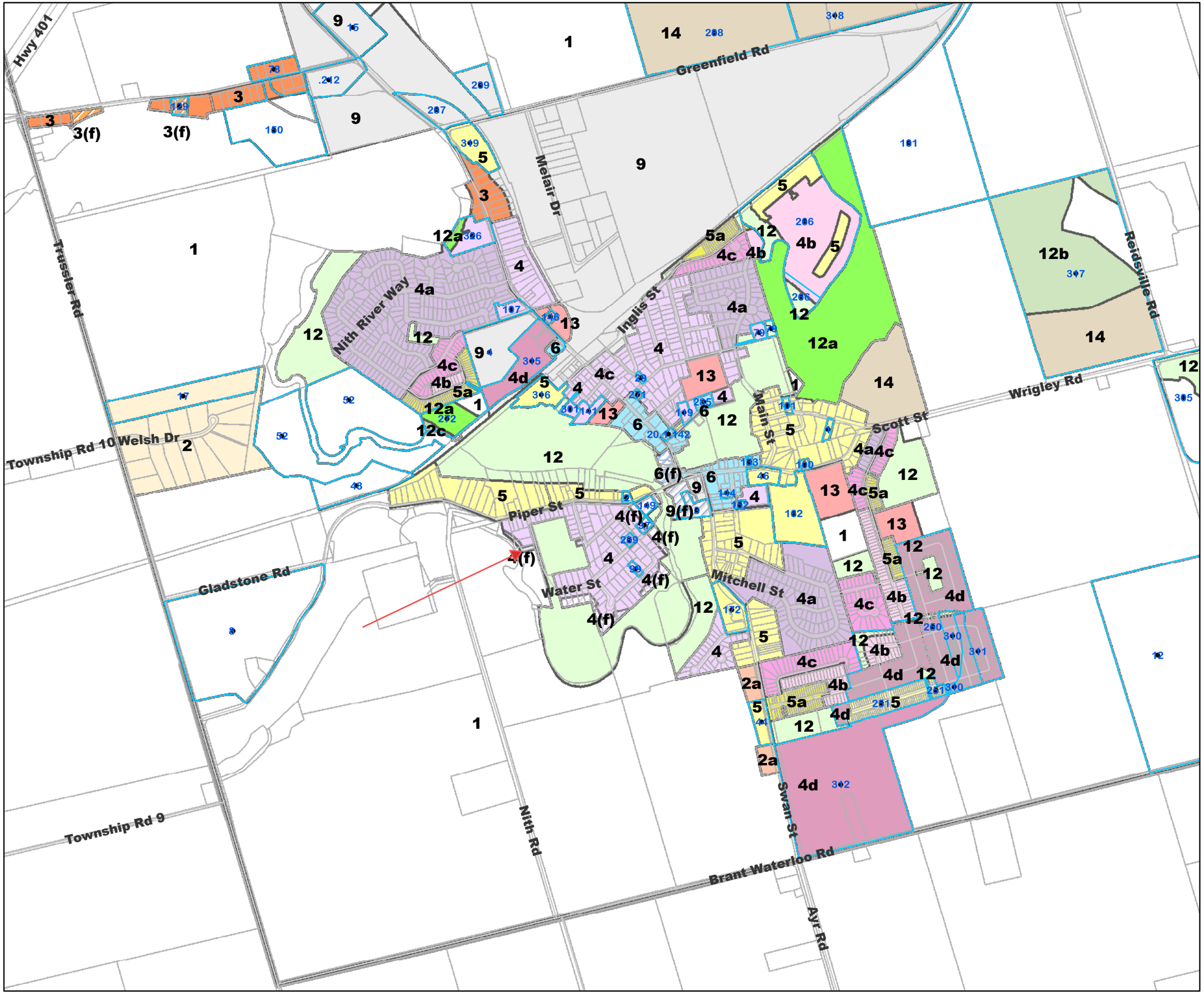
Basemap/Data Reference:

ON Geohub; SWOOP 2015; Region of Waterloo Open Data Portal

ASTER ENVIRONMENTAL SERVICES LTD.

Appendix 1. Land Use Schedules.

Ayr Zoning Map



Legend

The TOWNSHIP of NORTH DUMFRIES

text By-Law Exemption No.

Zoning Category

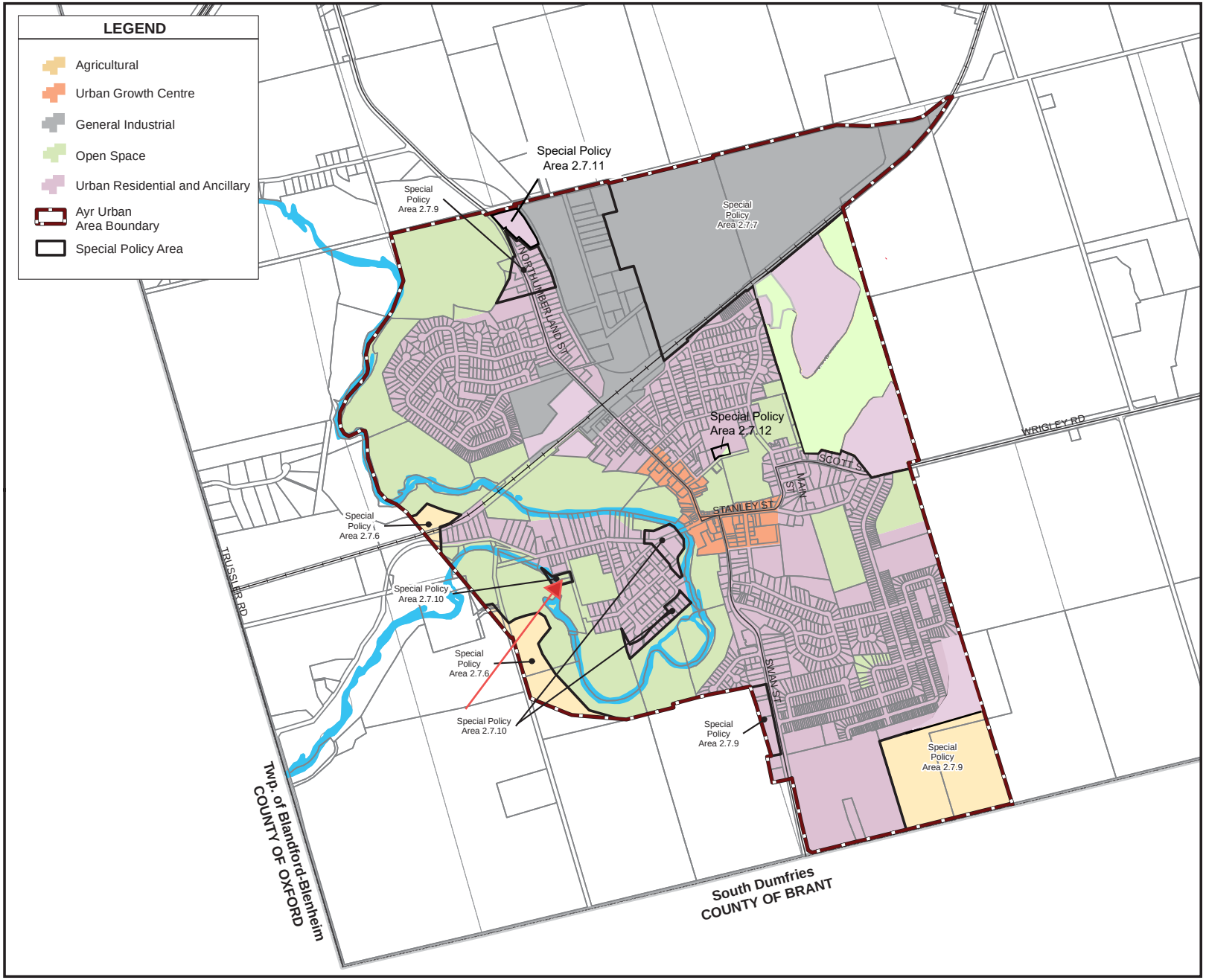
Zoning Code Text Symbol

Zone Code

- Zone 1 - Agriculture
- Zone 2 - Rural Residential
- Zone 2a - Rural Residential
- Zone 2af - Rural Residential (flood plain)
- Zone 3 - Rural Residential
- Zone 3f - Rural Residential (flood plain)
- Zone 4 - Urban Residential
- Zone 4f - Urban Residential (flood plain)
- Zone 4a - Urban Residential
- Zone 4b - Urban Residential
- Zone 4c - Urban Residential
- Zone 4d - Urban Residential
- Zone 5 - Urban Residentia
- Zone 5a - Urban Residential
- Zone 6 - Urban Commercial
- Zone 6f - Urban Commercial (flood plain)
- Zone 7 - Rural Commercial
- Zone 8 - Service Station
- Zone 9 - Industrial
- Zone 9f - Industrial (flood plain)
- Zone 10 - Industrial
- Zone 11 - Industrial
- Zone 12 - Open Space
- Zone 12a - Envronmental Protection 1
- Zone 12b - Envronmental Protection 2
- Zone 12c - Envronmental Protection Overlay
- Zone 13 - Institutional
- Zone 14 - Mineral Aggregates
- Zone 15 - Mobile Home Development
- Regional Municipal Boundaries

N

This map is provided for illustrative purposes only and may have errors. Reference should be made to Schedules A and B of General Zoning By-law 689-83. In the case of a descrepancy between this map, and the Zoning By-law and any amendments, the Zoning By-law and any amendements will be used. (July 2019)



TOWNSHIP OF NORTH DUMFRIES

OFFICIAL PLAN

MAP 2.1
AYR URBAN AREA
LAND USE DESIGNATIONS

LEGEND

- Provincial Highway
- Regional Road
- Local Road
- River
- Municipal Boundary
- Railway

0 0.1 0.2 0.4 Km

Sources: Region of Waterloo

* Built-Up Area includes all lands within the built boundary, as established by the Province.

Note:
This map forms part of the Official Plan of the Township of North Dumfries and must be read in conjunction with the other maps and policies of this Plan.

LEGEND

Landscape Level Systems

- Significant Valleys
- Environmentally Sensitive Landscape
- Provincial Greenbelt Natural Heritage System
- Regional Recharge Areas (also shown on Map 4)

Core Environmental Features

- Core Environmental Features

Supporting Environmental Features

- Supporting Environmental Features

TOWNSHIP OF NORTH DUMFRIES

OFFICIAL PLAN

MAP 5A GREENLANDS NETWORK

LEGEND

- Provincial Highway
- Regional Road
- Local Road
- River
- Municipal Boundary
- Railway

0 0.5 1 2 Km

Note:
This map forms part of the Official Plan of the Township of North Dumfries and must be read in conjunction with the other maps and policies of this Plan.

Produced by:
Information & Technology Services
150 Frederick Street, 5th Floor
Kitchener, Ontario N2G 4J3

LEGEND

Environmental Constraint Areas

TOWNSHIP OF NORTH DUMFRIES

OFFICIAL PLAN

MAP 5B ENVIRONMENTAL CONSTRAINT AREAS

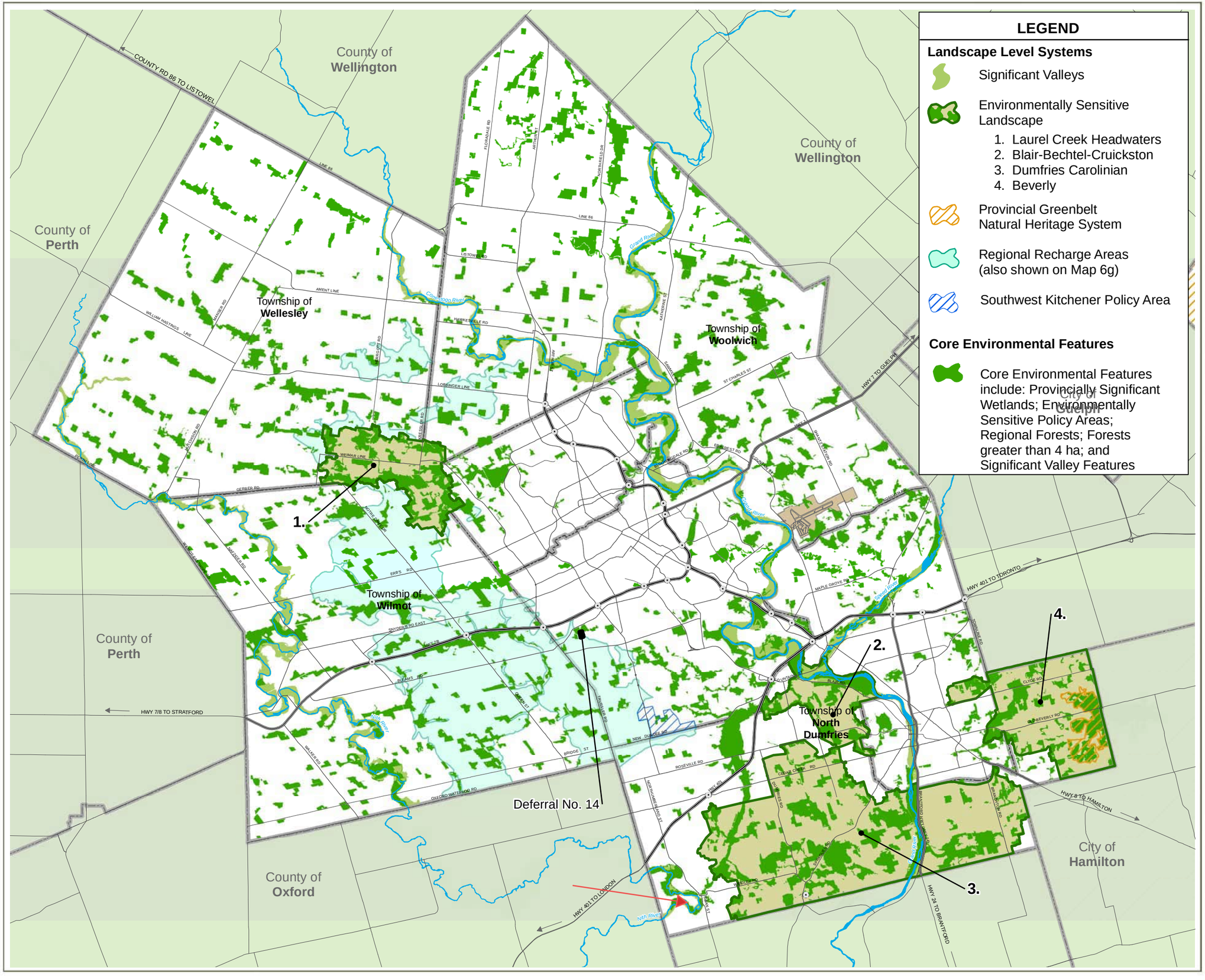
LEGEND

- Provincial Highway
- Regional Road
- Local Road
- River
- Municipal Boundary
- Railway

0 0.5 1 2 Km

Sources: Region of Waterloo

Note:
This map forms part of the Official Plan of the Township of North Dumfries and must be read in conjunction with the other maps and policies of this Plan.



LEGEND

Landscape Level Systems

- Significant Valleys
- Environmentally Sensitive Landscape
  1. Laurel Creek Headwaters
  2. Blair-Bechtel-Cruickston
  3. Dumfries Carolinian
  4. Beverly
- Provincial Greenbelt Natural Heritage System
- Regional Recharge Areas (also shown on Map 6g)
- Southwest Kitchener Policy Area

Core Environmental Features

- Core Environmental Features include: Provincially Significant Wetlands; Environmentally Sensitive Policy Areas; Regional Forests; Forests greater than 4 ha; and Significant Valley Features

Region of Waterloo

Regional Official Plan
SHAPING OUR FUTURE

MAP 4

GREENLANDS NETWORK

LEGEND

- Provincial Highway
- Regional Road
- River
- Region of Waterloo International Airport
- Municipal Boundary
- Railway

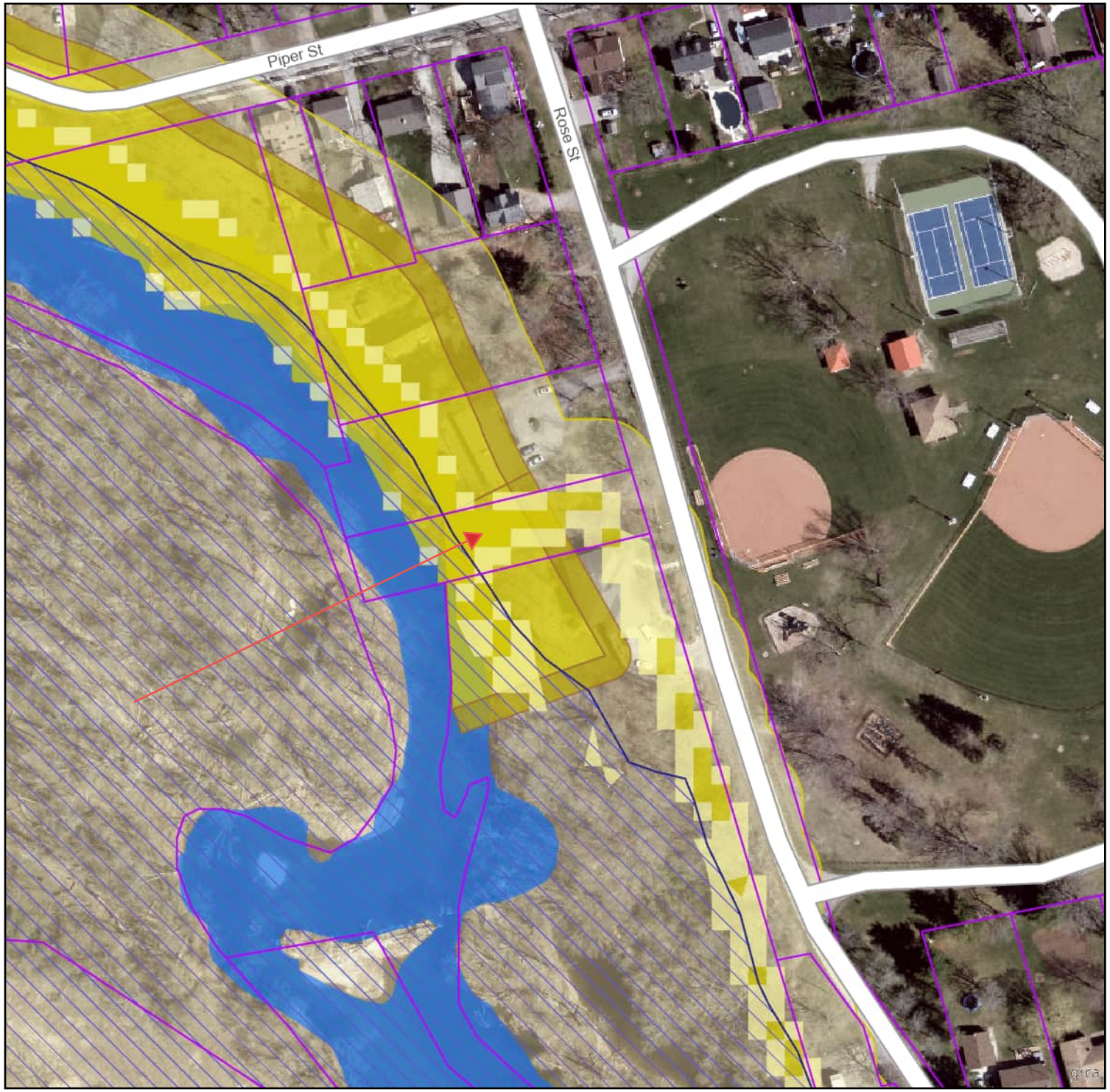
0 1 2 4 Km

Sources: Region of Waterloo, Ministry of Natural Resources

2015

Note: Permanent and intermittent watercourses are identified in the Technical Appendix for Landscape Level Systems and Core Environmental Features

Note: This map forms part of the Official Plan of the Regional Municipality of Waterloo and must be read in conjunction with the policies of this Plan.



Grand River Conservation Authority

Date: Nov 10, 2024

Rose St., Ayr

Legend

- Floodplain (GRCA)
  - Engineered
  - Estimated
  - Approximate
- Floodplain - Special Policy Area (GRCA)
- Slope Erosion (GRCA)
  - Steep
  - Oversteep
  - Toe
- Slope Valley (GRCA)
  - Steep
  - Oversteep
- Regulated Watercourse (GRCA)
- Regulated Waterbody (GRCA)
- Wetland (GRCA)
- Lake Erie Flood (GRCA)
- Lake Erie Shoreline Reach (GRCA)
- Lake Erie Dynamic Beach (GRCA)
- Lake Erie Erosion (GRCA)
- Parcel - Assessment (MPAC/MNRF)
- Regulation Limit (GRCA)

Scale 1:1,525

NAD83 UTM zone 17 (EPSG:26917)

Map Centre (X,Y): 543919.69, 4792372.75 | Map Link

This map is not to be used for navigation | 2020 Ortho (ON)

Appendix 2. Photos of Representative Site Conditions.

Photo 1. Existing driveway entry, facing west.

Photo 2. Adjacent residential property to north with existing dwelling.

Photo 3. Adjacent residential property to south with existing dwelling.

Photo 4. Prominent slope from adjacent property to north.

Photo 5. Central portion of property; small number of removed trees at rear of proposed dwelling footprint.

Photo 6. Facing east across property frontage; proposed dwelling footprint.

Photo 7. Successional vegetation to rear of proposed dwelling.

Photo 8. Successional vegetation and some scattered trees toward rear of property, along river frontage.

Photo 9. Typical degraded groundcover at rear of property (invasive Periwinkle).

Photo 10. Slope along north property boundary.

Photo 11. Scattered mature trees along slope adjacent to river, primarily Black Walnut.

Photo 12. Composition of slope along northern property boundary; indicative of imported fill.

Photo 13. View downstream from top of slope above Nith River.

Photo 14. View upstream from top of slope above Nith River.

Photo 15. View directly across Nith River from top of slope.

Photo 16. Vegetation composition along slope to river.

Photo 17. Aerial view of subject property with adjacent built residential properties and Nith River in background.

Photo 18. Direct overhead aerial view of subject property and adjacent residential properties.

Photo 19. Aerial view of subject property, facing east.

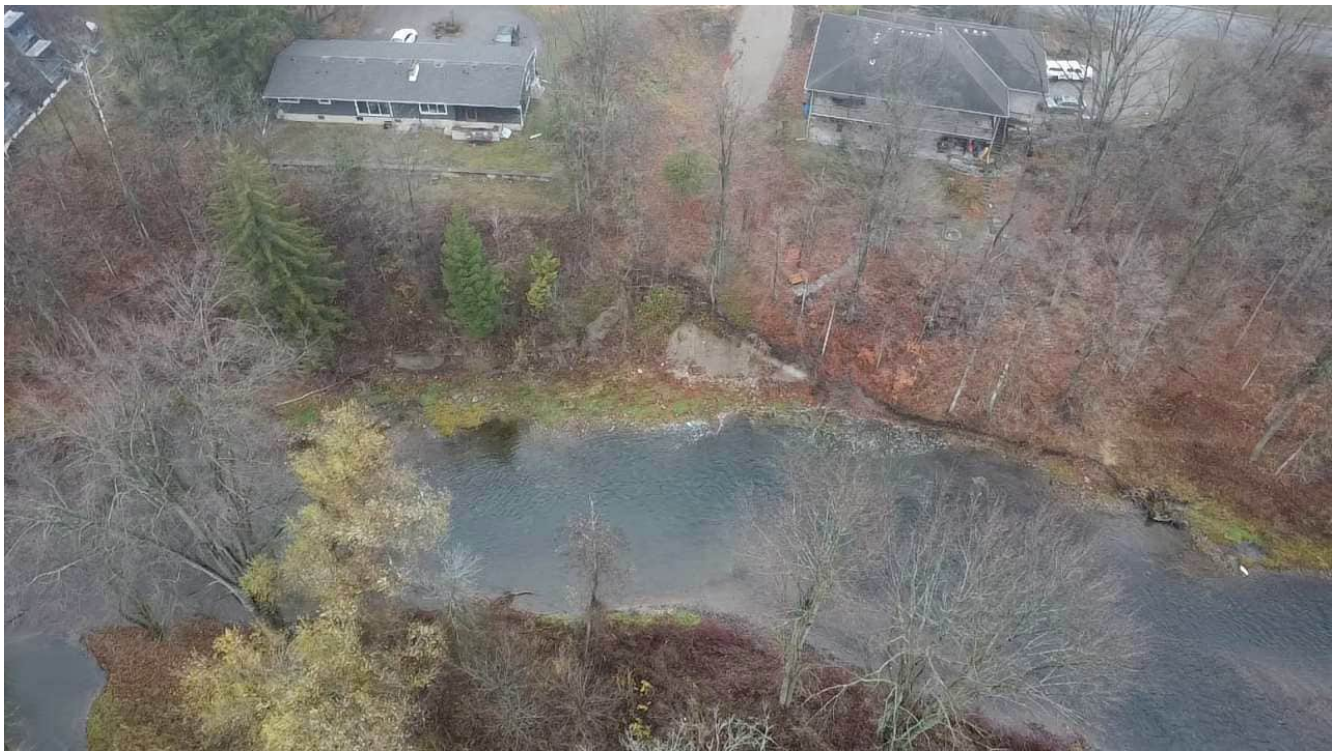


Photo 20. Aerial view of subject property and adjacent reach of Nith River; erosive bank visible along rear of property.

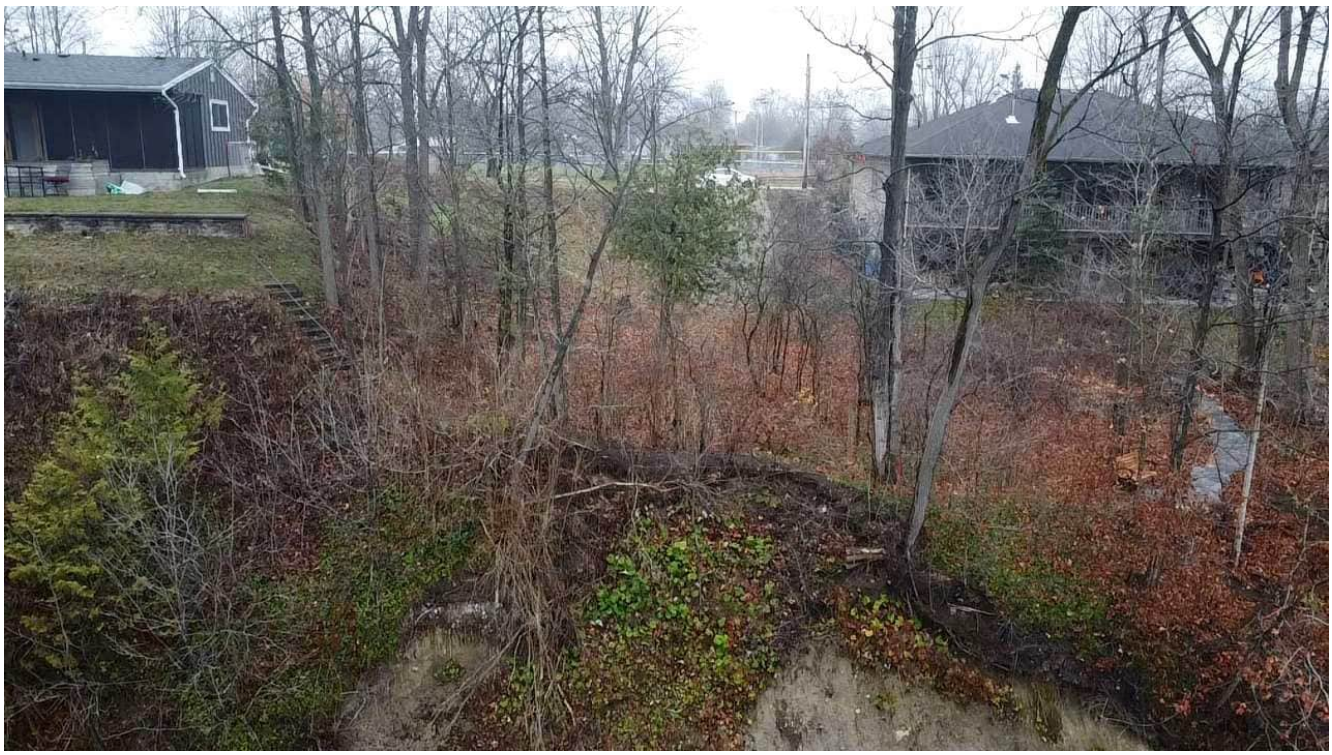


Photo 21. Top of river slope at rear of property.

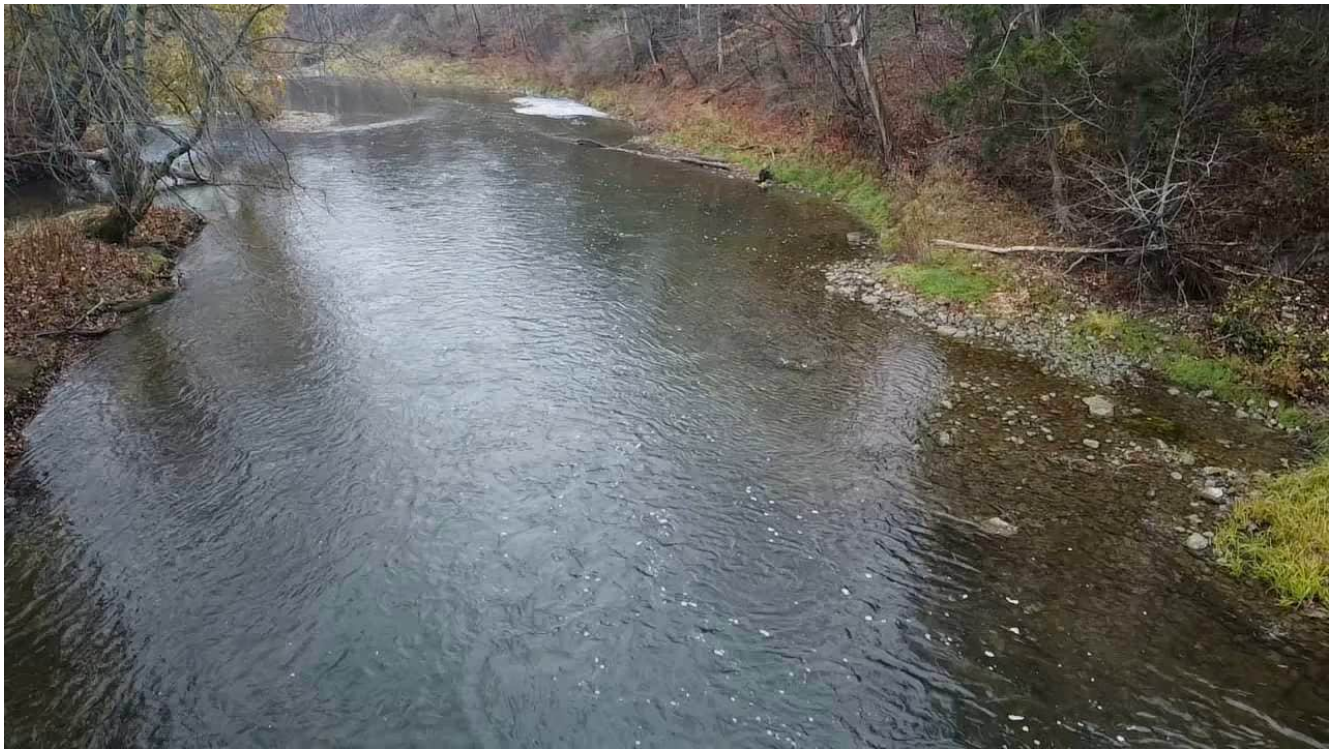


Photo 22. Facing downstream from above Nith River at rear of property.

Appendix 3. Endangered and Threatened Species Screening.

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y,N)
Acadian Flycatcher (*Empidonax virescens*): **Endangered**	The Acadian Flycatcher is native to the Carolinian forests of Southern Ontario. It is area sensitive and prefers mature woodlands >25 ha in areas with >30% forest cover. Nesting habitats are deciduous or mixed woodlands with closed canopies, open understories, and limited groundcover. They prefer to nest near permanent or ephemeral ponds or streams.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species. Applicable local databases provide a mix of results; the OBBA database displays multiple records within the overlapping 10x10km grid square. The NHIC database contains no records within the overlapping 1x1 km grid square and no records within adjoining squares. The iNaturalist database contains no records on the local landscape. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the study area is not considered suitable for this species. **Survey Result:** No indicators of suitable habitat observed. **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N
American Badger (*Taxidea taxus*): **Endangered**	American Badger occurs where there was historically tallgrass prairie and now prefer to den in the margins of agricultural landscapes. The population is concentrated near the north shore of Lake Erie where deep soils are appropriate for excavating dens. Some badgers occur in Grey and Bruce counties.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species. Applicable local databases (NHIC) contain local records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the study area is not considered suitable for this species. **Survey Result:** No individuals were observed during our on-site investigation. No indicators of suitable habitat observed. **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N
American Chestnut (*Castanea dentata*): **Endangered**	The American Chestnut is a large, shade tolerant tree that occurs in the Carolinian zone. It is considered very rare due to historic population loss from disease. It may be found in oak-dominated forests with canopy closure > 70% and well-drained acidic soils.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species. Applicable local databases (NHIC, iNaturalist) do not contain local records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within portions of the study area is marginally suitable for this species. **Survey Result:** No individuals were observed during our on-site investigation that included a survey of vascular plants. **Conclusion:** Based on a lack of local records and no on-site observations, there is no expectation that this species occurs in the study area. No further evaluation or site-specific mitigation required.	N

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y,N)
American Ginseng (*Panax quinquefolius*): **Endangered**	American Ginseng requires well-drained but moist acidic to neutral soils generally overlying calcareous bedrock. They are obligate understory plants found in undisturbed mature deciduous and mixed forests, and occasionally in coniferous forests and swamps.	**Local Range Context & Database Review:** The local landscape is potentially within the range of this species. Applicable local databases (NHIC) do not contain records for this species (which would be listed as Restricted). **Habitat Structural Suitability:** The forest structure observed within the study area is not considered suitable for this species. **Survey Result:** No individuals were observed during our on-site investigation. No indicators of suitable habitat observed. **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N
Bank Swallow (*Riparia riparia*): **Threatened**	The Bank Swallow is a small aerial insectivore bird that nests colonially in burrows they excavate within banks. Colonies will nest in bluffs, riverbanks, aggregate pits, roadside embankments, and topsoil piles near open habitat that provides a steady source of insects, such as wetlands.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species. Applicable local databases (OBBA, NHIC) contain records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the study area is considered suitable for this species. **Survey Result:** No individuals were observed during our on-site investigation. No indicators of suitable habitat observed. Banks of the Nith River were surveyed, with no observations of potential nesting sites. **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N
Black Ash (*Fraxinus nigra*): **Endangered**	The Black Ash grows everywhere in Ontario except the Far North. These trees require moisture, and are commonly found in northern swampy woodlands, from eastern Manitoba, throughout Ontario, and as far east as Newfoundland.	**Local Range Context & Database Review:** The local landscape is within the range of this species. Applicable local databases do not contain records for this species. **Habitat Structural Suitability:** The habitat observed within portions of the study area may be considered suitable for this species. **Survey Result:** No individuals were observed during our on-site investigation that included a survey of vascular plants. **Conclusion:** Based on a lack of on-site observations, there is no expectation that this species occurs in the study area. No further evaluation or site-specific mitigation required.	N

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y,N)
Black Redhorse (*Moxostoma duquesnei*): **Threatened**	The Black Redhorse is a small member of the sucker family. Their Ontario habitat is within the tributaries of Lake Huron, St. Clair, and Erie. They prefer medium-sized oxygen rich watercourses that are less than 2 meters deep, with minimal vegetation and moderate flow riffles and shallow pools. They use cobble or gravel substates to feed and spawn on gravel.	**Local Range Context & Database Review:** The local landscape is within the range of this species. At least one applicable local database (NHIC) contains records for this species. **Habitat Structural Suitability:** The aquatic habitat structure observed within the study area is considered suitable for this species. **Survey Result:** N/A. **Conclusion:** There is potential for this species to occur in portions of the study area. See report for further discussion.	Y
Blanding's Turtle (*Emydoidea blandingii*): **Threatened**	Blanding's Turtle are semi-aquatic and use wetland habitats with shallow water and abundant vegetation. Their habitat includes a broad range of wetlands, forest clearings, and meadows. They breed in aquatic habitat and nest in open natural and anthropogenic upland areas.	**Local Range Context & Database Review:** The local landscape is within the provincial range of this species. Applicable local databases provide a mix of results; the ORAA database displays records within the overlapping 10x10km grid square. The NHIC database contains no records within the overlapping 1x1 km grid square and no records within adjoining squares. The iNaturalist database contains no records on the immediate local landscape. **Habitat Structural Suitability:** The habitat structure observed within the study area is generally not considered suitable for this species. **Survey Result:** N/A. **Conclusion:** In general, it is not expected that this species would occur within the study area. The background records context suggests that populations are locally sparse or absent, and ideally suitable conditions are not present in the study area. No further evaluation or mitigation required.	N
Bobolink (*Dolichonyx oryzivorus*): **Threatened**	Nests and forages in meadows, grasslands, hayfields, and pastureland. Fields must have 25% or less woody plant cover. They typically require large fields (>4ha) and avoid small, fragmented habitats. They also avoid habitat within 75 m of a forest edge.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species. At least one applicable local database (OBBA) contains records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the study area is not considered suitable for this species. **Survey Result:** N/A. **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y,N)
Butternut (*Juglans cinerea*): **Endangered**	Butternut is shade intolerant and grows in rich, moist, well-drained loams often along streambanks. Butternut is also found in well-drained gravel sites. It is often found at forest edges where it can access abundant sunlight.	**Local Range Context & Database Review:** The local landscape is within the range of this species. Applicable local databases (NHIC) do not contain records for this species. **Habitat Structural Suitability:** The forest structure observed within the study area is potentially suitable for this species. **Survey Result:** No individual plants were observed during our on-site investigation that included a survey of vascular plants. **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N
Chimney Swift (*Chaetura pelagica*): **Threatened**	The Chimney Swift historically nested and roosted in large hollow trees, rock walls, and other vertical surfaces. They now use human-made structures like uncapped chimneys and have high site fidelity to nesting chimneys. 95% of nests are within 1 km of a waterbody.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species. Applicable local databases (OBBA) contain records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the study area is not considered suitable for this species. No anthropogenic structures on the subject property that could provide habitat. **Survey Result:** N/A. **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N
Downy Yellow False Foxglove (*Aureolaria virginica*): **Threatened**	Downy Yellow False Foxglove is a hemi-parasite that prefers oak species. It is found in dry, semi-open, upland oak forests. It is somewhat shade intolerant. The species is perennial and flowers multiple times a year. There are five confirmed subpopulations in Niagara, Norfolk, Hamilton, Brant and Waterloo.	**Local Range Context & Database Review:** The local landscape may be within the range of this species. Applicable local databases (NHIC, iNaturalist) do not contain local records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within portions of the study area may be suitable for this species. **Survey Result:** No individuals or indications of potential habitat were observed during our on-site investigation. **Conclusion:** Based on a lack of local records and observed suitable habitat, there is no expectation that this species occurs in the study area. No further evaluation or site-specific mitigation required.	N

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y,N)
Eastern Meadowlark (*Sturnella magna*): **Threatened**	Nests and forages in meadows, grasslands, shrubby fields, hayfields and pastureland. Prefers habitat with >80% grass cover. Needs a minimum of 5 ha of continuous habitat.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species. At least one applicable local database (OBBA) contains records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the study area is not considered suitable for this species. **Survey Result:** N/A. **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N
Eastern Small-footed Myotis (*Myotis leibii*): **Endangered**	Eastern Small-footed Myotis overwinter in caves and mines in Ontario and do not disperse far from their hibernacula during the summer. They can be found roosting in rocky habitats singly or in groups but will also use human structures as day roosts. They are aerial insectivores and forage in forests, rocky habitats, and ponds.	**Local Range Context & Database Review:** The local landscape is assumed to be within the range of this species. Applicable local databases (NHIC) do not contain records for this species. **Habitat Structural Suitability:** The habitat structure observed within the study area is not ideally suited for this species. The property contains no rock exposures, notable crevices, talus slopes, or other ideal roosting opportunities. **Site-specific Survey Result:** No individuals or evidence of habitat was observed during our on-site investigation that included a general habitat-based wildlife survey. **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N
Eastern Whip-poor-will (*Antrostomus vociferus*): **Threatened**	The Eastern Whip-poor-will forages in open natural and anthropogenic habitats and nests in semi open forests and forest edges with well-drained soils and moderate vegetation cover. Habitat immediately at the nest will be a short herbaceous plant, shrub, or sapling providing cover and shade with nearby perches for adults.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species but outside of core areas of occurrence. Applicable local databases provide a mix of results; the OBBA database displays very sparse records within the overlapping 10x10km grid square. The NHIC database contains no records within the overlapping 1x1 km grid square and no records within adjoining squares. The iNaturalist database contains no records on the local landscape. **Habitat Structural Suitability:** The vegetation structure and anthropogenic setting observed with the study area is not considered suitable for this species. **Site-specific Survey Result:** N/A. **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or site-specific mitigation required.	N

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y,N)
Fern-leaved Yellow False Foxglove (*Aureolaria pedicularia*): **Threatened**	Fern-leaved Yellow False Foxglove is a hemi-parasite that prefers Black Oak. It is found in dry, semi-open upland oak forests. It is short-lived and flowers once. There are six subpopulations in Ontario within the Pinery and Turkey Point area.	**Local Range Context & Database Review:** The local landscape may be within the range of this species. Applicable local databases (NHIC, iNaturalist) do not contain local records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within portions of the study area may be suitable for this species. **Survey Result:** No individuals or indications of potential habitat were observed during our on-site investigation. **Conclusion:** Based on a lack of local records and observed suitable habitat, there is no expectation that this species occurs in the study area. No further evaluation or site-specific mitigation required.	N
Henslow's Sparrow (*Ammodramus henslowii*): **Endangered**	Henslow's Sparrows' current breeding habitat is generally limited to Prince Edward County and the Regional Municipality of Halton. Their habitat is open grasslands with dense vegetation at least 30 cm tall, thick standing dead material, <1% shrub cover, and intermediate moisture. They prefer larger, continuous grasslands and are sensitive to edge effects.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species but outside of core areas of occurrence. Applicable local databases provide a mix of results; the OBBA database displays records within the overlapping 10x10km grid square. The NHIC database contains no records within the overlapping 1x1 km grid square or within adjoining squares. The iNaturalist database contains no records on the local landscape. **Habitat Structural Suitability:** The vegetation structure and anthropogenic setting observed with the study area is not considered suitable for this species. **Site-specific Survey Result:** N/A. **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or site-specific mitigation required.	N
Jefferson Salamander (*Ambystoma jeffersonianum*): **Endangered**	Jefferson Salamanders have aquatic egg and larval stages in predatory fish-free ponds within deciduous and mixed forests. Once they metamorphose into adults they disperse up to a kilometer from their natal pond and use shaded forest habitats with thick leaf litter and high soil moisture. They use stone and woody debris as refugia.	**Local Range Context & Database Review:** The local landscape is considered outside the range of this species. Applicable local databases do not contain records for this species. **Habitat Structural Suitability:** N/A **Survey Result:** N/A **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y,N)
Lake Sturgeon (*Acipenser fulvescens*): **Endangered**	Lake Sturgeon need large continuous habitats in river and lake systems to provide habitat for all life stages. Spawning takes place in shallow fast flowing headwaters where a natural or man-made barrier occurs. Spawning substrates are gravel, rock, hardpan, or sand.	**Local Range Context & Database Review:** The local landscape is generally outside of the provincial range of this species. Applicable local databases (NHIC) do not contain records for this species. **Habitat Structural Suitability:** N/A **Site-specific Survey Result:** N/A **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N
Least Bittern (*Ixobrychus exilis*): **Threatened**	Breeds in large marshes within Southern Ontario. Creates nest platforms from tall, dense emergent vegetation within 10m of water and prefers Typha spp. Needs 200 ha of wetland for nesting and foraging but does not need to be continuous wetland. Prefers complexes of smaller wetlands.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species but outside of core areas of occurrence. Applicable local databases provide a mix of results; the OBBA database displays sparse records within the overlapping 10x10km grid square. The NHIC database contains no records within the overlapping 1x1 km grid square or within adjoining squares. The iNaturalist database contains no records on the local landscape. **Habitat Structural Suitability:** The vegetation structure and anthropogenic setting observed with the study area is not considered suitable for this species. **Site-specific Survey Result:** N/A. **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or site-specific mitigation required.	N
Little Brown Myotis (*Myotis lucifugus*): **Endangered**	Their hibernacula are within caves and abandoned mines, wells, and tunnels. Maternity colonies are within a few kilometers of hibernacula within snag trees, rock crevices, exfoliating tree bark, and anthropogenic structures. Roosts and swarming sites are in similar areas around the hibernacula.	**Local Range Context & Database Review:** The local landscape is within the range of this species. Applicable local databases (NHIC) do not contain records for this species. **Habitat Structural Suitability:** The habitat structure observed within the study area is potentially suitable for this species. **Site-specific Survey Result:** Detailed inventory of snags or species-specific surveys (i.e., acoustic detection) were not considered necessary. **Conclusion:** There is potential for this species to occur within the study area. Mitigation measures are provided in the report accordingly.	Y

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y,N)
Northern Myotis/Northern Long-eared Bat (*Myotis septentrionalis*): **Endangered**	Northern Myotis are found below the tree line in Canada and are mostly absent from the prairies. They use live and dead trees near water in forest habitats when active and migrate to caves and abandoned mines for hibernation.	**Local Range Context & Database Review:** The local landscape is within the range of this species. Applicable local databases (NHIC) do not contain records for this species. **Habitat Structural Suitability:** The habitat structure observed within the study area is potentially suitable for this species. **Site-specific Survey Result:** Detailed inventory of snags or species-specific surveys (i.e., acoustic detection) were not considered necessary. **Conclusion:** There is potential for this species to occur within the study area. Mitigation measures are provided in the report accordingly.	Y
Queensnake (*Regina septemvittata*): **Endangered**	The Queensnake is found along and west of the Niagara Escarpment. They prefer rocky watercourses with rock or gravel bottoms but sometimes use marshes, lakes, quarries, ponds, and wet meadows. They feed primarily on crayfish and require abundant prey. They are found within 5 m of water.	**Local Range Context & Database Review:** The local landscape is generally outside of the provincial range of this species. There are three observations from 1988 in the overlapping 10km2 ORAA data square; however, there are no current observation records for the local landscape in applicable databases (NHIC, ORAA, iNaturalist). **Habitat Structural Suitability:** The habitat structure observed within the subject property is not reflective of preferred or specialized habitat for this species. **Site-specific Survey Result:** N/A **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N
Red-Headed Woodpecker (*Melanerpes erythrocephalus*): **Endangered**	The Red-headed Woodpecker lives in open woodland and woodland edges and is often found in parks, golf courses and cemeteries. These areas typically have many dead trees, that the bird uses for nesting and perching. The Red-headed Woodpecker is found across southern Ontario, where it is widespread but rare.	**Local Range Context & Database Review:** The local landscape is generally within the range of this species. Applicable local databases provide a mix of results; the OBBA database displays records within the overlapping 10x10km grid square. The NHIC database contains no records within the overlapping 1x1 km grid square or within adjoining squares. The iNaturalist database contains no records on the local landscape. **Habitat Structural Suitability:** The vegetation and landscape structure observed within portions of the study area is potentially suitable for this species; however, observed forest structure would not be considered optimal, lacking prominent mast species coverage, open woodland settings, or prominent cavity trees. **Survey Result:** No individuals were observed during our on-site investigation; however, no targeted in-season surveys were undertaken. **Conclusion:** There is a low likelihood that this species or any associated regulated habitat occurs within the study area. The background records context suggests that the species is not known to occur in the immediate local area. No further evaluation or site-specific mitigation required.	N

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y,N)
Short-eared Owl (*Asio flammeus*): **Threatened**	The Short-eared Owl breeds in northern Ontario and is found year-round in southern Ontario. They use open habitats (tundra, grassland, pasture) to nest on the ground and overwinter in open areas with nearby roosting trees. They shelter from inclement weather in conifers and emergent wetland vegetation.	**Local Range Context & Database Review:** The local landscape is generally outside of the typical provincial range of this species. Local databases (OBBA, NHIC) do not contain records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within the subject property and adjacent lands is not considered suitable for this species. **Site-specific Survey Result:** No individuals were observed during our on-site investigation. **Conclusion:** There is no expectation that this species occurs on the subject property. No further evaluation or mitigation required.	N
Silver Shiner (*Notropis photogenis*): **Threatened**	The Silver Shiner is in the Grand River, Thames River, Bronte Creek, and Sixteen Mile Creek. Larvae use slow, warm water over gravel shoals. Adults are found over sand and gravel substrates, in water velocities 0.25 to 0.49 m/s, at depths of 0.8 to >1m.	**Local Range Context & Database Review:** The local landscape is within the range of this species. At least one applicable local database (NHIC) contains records for this species. **Habitat Structural Suitability:** The aquatic habitat structure observed within the study area is considered suitable for this species. **Survey Result:** N/A. **Conclusion:** There is potential for this species to occur in portions of the study area. See report for further discussion.	Y
Smooth Yellow False Foxglove (*Aureolaria flava*): **Threatened**	The Smooth Yellow False Foxglove is a hemi-parasitic plant preferring White Oak but will also parasitize Black and Red Oak. They grow in dry, open to semi-open upland oak forests, woodlands, and savannahs. They are shade intolerant and grow in areas of sun exposure.	**Local Range Context & Database Review:** The local landscape may be within the range of this species. Applicable local databases (NHIC, iNaturalist) do not contain local records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within portions of the study area may be suitable for this species. **Survey Result:** No individuals or indications of potential habitat were observed during our on-site investigation. **Conclusion:** Based on a lack of local records and observed suitable habitat, there is no expectation that this species occurs in the study area. No further evaluation or site-specific mitigation required.	N

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y,N)
Spiny Softshell (*Apalone spinifera*): **Threatened**	The Spiny Softshell is found in watersheds and coastlines of Lakes St. Clair, Erie, and Huron. They are mainly aquatic and use large waterbodies with sandbars, mudflats, submerged logs, and aquatic vegetation. Soft substrate is important to nesting and overwintering.	**Local Range Context & Database Review:** The local landscape may be within the range of this species. Applicable local databases (NHIC, iNaturalist) do not contain local records for this species. **Habitat Structural Suitability:** The vegetation and landscape structure observed within portions of the study area is marginally suitable for this species. **Survey Result:** N/A. **Conclusion:** Based on our understanding of range/distribution and a lack of local records, there is no expectation that this species occurs in the study area. No further evaluation or site-specific mitigation required.	N
Spotted Turtle (*Clemmys guttata*): **Endangered**	The Spotted Turtle uses a mix of terrestrial and aquatic habitats. Aquatic habitats include wetlands, ponds, vernal pools, creeks, streams, sheltered bay edges, stormwater ponds, and man-made channels. Their terrestrial habitats are shorelines, rocky outcrops, upland forests, open fields, and meadows.	**Local Range Context & Database Review:** The local landscape may be within the historic range of this species; however, location information for this species is extremely confidental. Applicable local databases (NHIC) do not appear to contain records for this species (which would be listed as Restricted). **Habitat Structural Suitability:** The habitat structure observed within the study area is not considered suitable for this species. **Site-specific Survey Result:** N/A. **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N
Tricolored Bat (*Perimyotis subflavus*): **Endangered**	The Tri-colored Bat have a scattered distribution and are found as far north as Sudbury. They are found in a variety of forested habitats They overwinter alone in caves and mines and roost in dead vegetation clumps and lichen in forested habitats near water.	**Local Range Context & Database Review:** The local landscape is within the range of this species. Applicable local databases (NHIC) do not contain records for this species. **Habitat Structural Suitability:** The habitat structure observed within the study area is potentially suitable for this species; low densities of potential habitat trees (Oaks) were identified on the subject property. **Site-specific Survey Result:** Detailed inventory of habitat trees or species-specific surveys (i.e., acoustic detection) were not considered necessary. **Conclusion:** There is potential for this species to occur within the study area. Mitigation measures are provided in the report accordingly.	Y

Species & Status	General Description of Habitat & Range	Project-Specific Evaluation & Discussion	Applicable to Study (Y,N)
Unisexual Ambystoma - Jefferson Salamander dependent population (*Ambystoma laterale - (2) jeffersonianum*): **Endangered**	Unisexual Ambystoma have egg and larval stages in predatory fish-free ponds within deciduous and mixed forests. Once they metamorphose into adults they disperse up to a kilometer from their natal pond and use shaded forest habitats with thick leaf litter and high soil moisture. They use stone and woody debris as refugia.	**Local Range Context & Database Review:** The local landscape is on the periphery of the range of this species/complex. Applicable local databases provide a mix of results; the ORAA database displays records within the overlapping 10x10km grid square; however, it is noted that Jefferson Salamander records are not present within this square. The NHIC database contains no records within the overlapping 1x1 km grid square or within adjoining squares. The iNaturalist database contains no records on the local landscape. **Habitat Structural Suitability:** The habitat structure observed within the study area is not considered suitable for this species. **Survey Result:** N/A **Conclusion:** There is no expectation that this species occurs within the study area. No further evaluation or mitigation required.	N
Wavy-rayed Lampmussel (*Lampsilis fasciola*): **Threatened**	The Wavy-rayed Lampmussel is found in the upper Grand River and its tributaries, the upper Thames River, Maitland River, a small part of the Ausable River, and the Lake St. Clair delta. They use small to medium clear rivers with riffles over clean sand and gravel substrates. They parasitize Largemouth Bass, Smallmouth Bass, Mottled Sculpin, and Brook Stickleback.	**Local Range Context & Database Review:** The local landscape is within the range of this species. At least one applicable local database (NHIC) contains records for this species. **Habitat Structural Suitability:** The aquatic habitat structure observed within the study area is considered suitable for this species. **Survey Result:** N/A. **Conclusion:** There is potential for this species to occur in portions of the study area. See report for further discussion.	Y

Appendix 4. Significant Wildlife Habitat Screening.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Category 1: Seasonal Concentration Areas for Wildlife Species					
Waterfowl Stopover and Staging Areas (Terrestrial)	American Black Duck, Green-winged Teal, Blue-winged Teal, Northern Pintail, Northern Shoveler, American Wigeon, Gadwall, Tundra Swan	CUM1, CUT1, in addition to evidence of spring flooding	Fields flooded with sheet water during Spring (mid March to May)	**Studies Confirm**: Annual mixed species aggregations of 100 or more total birds **Area of SWH Defined As:** Ecosite plus 100-300m radius	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.
Waterfowl Stopover and Staging Areas (Aquatic)	Canada Goose, Cackling Goose, Snow Goose, American Black Duck, Northern Pintail, Northern Shoveler, American Wigeon, Gadwall, Green-winged Teal, Blue-winged Teal, Hooded Merganser, Common Merganser, Lesser Scaup, Greater Scaup, Long-tailed Duck, Surf Scoter, White-winged Scoter, Black Scoter, Ring-necked Duck, Common Goldeneye, Bufflehead, Redhead, Ruddy Duck, Red-breasted Merganser, Brant, Canvasback	MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, SWD1, SWD2, SWD3, SWD5, SWD6, SWD7	Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Reservoirs managed as large ponds qualify.	**Studies Confirm**: Mixed species aggregations of 100 or more total birds for 7 days, **and/or** annual use by Ruddy Ducks, Canvasbacks, or Redheads **Area of SWH Defined As:** Ecosites plus 100m radius, includes wetlands and shorelines	Portions of the Nith River within the study area may support this habitat function. See report for further discussion.
Shorebird Migratory Stopover Areas	Greater Yellowlegs, Lesser Yellowlegs, Marbled Godwit, Hudsonian Godwit, Black-bellied Plover, American Golden-Plover, Semipalmated Plover, Solitary Sandpiper, Spotted Sandpiper, Semipalmated Sandpiper, Pectoral Sandpiper, White-rumped Sandpiper, Baird's Sandpiper, Least Sandpiper, Purple Sandpiper, Stilt Sandpiper, Short-billed Dowitcher, Red-necked Phalarope, Whimbrel, Ruddy Turnstone, Sanderling, Dunlin	BBO1, BBO2, BBS1, BBS2, BBT1, BBT2, SDO1, SDS2, SDT1, MAM1, MAM2, MAM3, MAM4, MAM5	Shorelines of lakes, rivers and wetlands, including beach areas, bars, groynes, armour rock, and seasonally flooded, muddy and un-vegetated shoreline habitats.	**Studies Confirm**: Mixed species aggregations of 3 or more listed species with >1000 shorebirds counted over the migration period, **and/or** any site with >100 Whimbrel for 3 or more years **Area of SWH Defined As:** ELC shorelines plus 100m radius	Portions of the Nith River within the study area may support this habitat function. See report for further discussion.
Raptor Wintering Area	Rough-legged Hawk, Red-tailed Hawk, Northern Harrier, American Kestrel, Snowy Owl **Special Concern**: Short-eared Owl, Bald Eagle	**Hawks/Owls**: one each from forest (FOD, FOM, FOC) and upland (CUM, CUT, CUS, CUW) **Bald Eagle**: forest (FOD, FOM, FOC, SWD, SWM, SWC) on shorelines of large water bodies	Combination of fields and woodlands that provide roosting, foraging and resting habitats; **Hawks/Owls**: >20 ha with a combination of forest and upland; >15ha field habitat; field area windswept with limited snow depth; **Bald Eagle**: open water, large trees and snags	**Studies Confirm: 1** or more Short-eared Owls, 1 or more Bald Eagles, or at least 10 individuals and 2 of the listed species **and** used ≥3 times in 5 years for a minimum of 20 days **Area of SWH Defined As:** n/a	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Bat Hibernacula	Big Brown Bat, Tri-coloured Bat	CCR1, CCR2, CCA1, CCA2 (Buildings are not SWH)	Caves, mine shafts, underground foundations, Karsts Does not include active mines	**Studies Confirm:** confirmed hibernating bats **Area of SWH Defined As:** 200m radius around hibernaculum entrance, 1000m radius for wind farms	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.
Bat Maternity Colonies	Big Brown Bat, Silver-haired Bat	All Ecosites in Community Series: FOD, FOM, SWD, SWM (Buildings are not SWH)	Tree cavities and snags; deciduous or mixed stands with >10/ha >25cm dbh trees, Silver-haired Bats prefer forests with 21 snags/ha	**Studies Confirm:** confirmed use by >10 Big Brown Bats **or** >5 adult female Silver-haired Bats **Area of SWH Defined As:** entire woodland/forest ELC **or** Ecoelement containing maternity colonies	Woodland areas within the study area have the potential to support this habitat function. See report for further discussion.
Turtle Wintering Areas	Midland Painted Turtle **Special Concern**: Northern Map Turtle, Snapping Turtle	**Snapping and Midland Painted Turtles**: Community classes SW, MA, OA, SA, ELC Community Series FEO, BOO **Northern Map Turtle**: open water areas with current (Not sewage lagoons or stormwater ponds)	Water deep enough to not freeze, soft mud substrates; permanent water bodies, large wetlands, bogs or fens with adequate Dissolved Oxygen	**Studies Confirm:** 5 over-wintering Midland Painted Turtles, **or** 1 or more overwintering Northern Map Turtles or Snapping Turtles **Area of SWH Defined As:** ELC with overwintering turtles, if site is within a stream or river only the deep-water pool is protected	There is potential for this habitat function to occur in associaton with the Nith River; however, no suitable deep-water pools were observed in portions of the river adjacent to the subject property. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Reptile Hibernaculum	**Snakes**: Eastern Gartersnake, Northern Watersnake, Northern Red-bellied Snake, Northern Brownsnake, Smooth Green Snake, Northern Ring-necked Snake **Special Concern**: Milksnake, Eastern Ribbonsnake	**Snakes:** any forest ecosite other than very wet ones; talus, rock barrens, crevice, cave, and alvar sites; rock piles or slopes, stone fences, crumbling foundations	**Snakes:** sites with access below the frost line, wetlands with hummocks	**Studies Confirm:** use by ≥5 individuals from one species **or** use by individuals from ≥2 species; congregation of ≥5 individuals from one species **or** individuals from ≥2 species near potential hibernacula; if SC species are present site is SWH **Area of SWH Defined As:** feature containing hibernacula plus 30m radius	The study area does not contain any features that may support this habitat function. Site investigations did not identify any rock outcrops, stone fencerows, organic wetlands or other features that typically support such functions. No further assessment provided - not SWH.
Colonially-nesting Bird Breeding Habitat (Bank and Cliff)	Cliff Swallow, Northern Rough-winged Swallow	Found in CUM1, CUT1, CUS1, BLO1, BLS1, BLT1, CLO1, CLS1, CLT1	Exposed banks, sandy hills, borrow pits, steep slopes, sand piles that are undisturbed or naturally eroding Does not include man-made structures or active aggregate pits	**Studies Confirm:** 1 or more nesting sites with ≥8 Cliff Swallow pairs **and/or** Rough-winged Swallow Pairs during the breeding season **Area of SWH Defined As:** colony and 50m radius from peripheral nests	Eroded banks are present on the property; however, we observed no evidence of previously used nesting sites. No further assessment provided - not SWH.
Colonially-nesting Bird Breeding Habitat (Tree/Shrubs)	Great Blue Heron, Black-crowned Night Heron, Great Egret, Green Heron	SWM2, SWM3, SWM5, SWM6, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7, FET1	Live or dead standing trees in wetlands, lakes, islands, peninsulas, may use shrubs or other emergent vegetation; most nests 11-15m from ground	**Studies Confirm:** ≥2 active Great Blue Heron or other listed species nests **Area of SWH Defined As:** colony plus 300m radius **or** extent of forest ecosite containing colony **or** any island <15ha with a colony	Areas west of the Nith River within ths study area support suitable vegetation characteristics; however, we observed no evidence of stick nests or other features indicative of this function. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Colonially-nesting Bird Breeding Habitat (Ground)	Herring Gull, Great Black-backed Gull, Little Gull, Ring-billed Gull, Common Tern, Caspian Tern, Brewer's Blackbird	MAM1-6, MAS1-3, CUM, CUT, CUS **Brewer's Blackbird**: close to watercourses in open fields	**Gulls and Terns:** rocky islands or peninsulas in open water, marshy areas **Brewer's Blackbird:** near streams and irrigation ditches in farmland	**Studies Confirm:** >25 active nests of Herring Gulls or Ring-billed Gulls, >5 active nests of Common Terns, >2 active nests of Caspian Terns, ≥5 Brewer's Blackbird pairs, any active nesting colony of Little Gulls or Great Black-backed Gulls **Area of SWH Defined As:** colony plus 150m radius **or** extent of ecosites containing colony **or** any island <3ha	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.
Migratory Butterfly Stopover Areas	Painted Lady, Red Admiral **Special Concern**: Monarch	One Community Series each from field (CUM, CUT, CUS) and forest (FOC, FOD, FOM, CUP)	Minimum 10ha combination of field and forest located within 5km of Lake Erie or Lake Ontario	**Studies Confirm**: >5000 Monarch Use Days (days a site is used * the number of individuals), **or** >3000 Monarch Use Days with Painted Ladies or Red Admirals present **Area of SWH Defined As**: n/a	The study area is located beyond the applicable distance from a great lakes shoreline. No further assessment provided - not SWH.
Landbird Migratory Stopover Areas	All migratory songbirds and raptors	Community Series FOC, FOM, FOD, SWC, SWM, SWD	Woodlots > 5ha within 5km of Lake Erie and Lake Ontario; significance increases with proximity to shoreline and size	**Studies Confirm**: use by > 200 birds/day with > 35 species, **and** at least 10 species recorded on 5 different survey days **Area of SWH Defined As**: n/a	The study area is located beyond the applicable distance from a great lakes shoreline. No further assessment provided - not SWH.
Deer Winter Congregation Areas	White-tailed Deer	Community Series FOC, FOM, FOD, SWC, SWM, SWD, conifer plantations	Woodlots > 100ha, smaller woodlots can be SWH based on MNRF assessment	**Confirm Studies**: mapping by MNRF, all woodlots >100ha are significant **Area of SWH Defined As**: n/a	The study area is not mapped by MNRF as deer wintering habitat. Overlapping woodlands are not of sufficient size to support this function. No further assessment provided - not SWH.
Category 2: Rare Vegetation Communities					
Cliffs and Talus Slopes		Community Series TAO, CLO, TAS, CLS, TAT, CLT	Any cliff > 3m or talus slope	**Confirm Studies:** any ELC for cliffs or talus slopes **Area of SWH Defined As:** n/a	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Sand Barren		SBO1, SBS1, SBT1	Exposed sand, sparsely vegetated, <60% tree cover	**Confirm Studies:** confirmed ELC for Sand Barrens >0.5ha in size, <50% exotic vegetative cover **Area of SWH Defined As:** n/a	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.
Alvar	**Indicator species**: Carex crawei, Panicum philadelphicum, Eleocharis compressa, Scutellaria parvula, Trichostema brachiatum	ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2	Level calcerous bedrock, rock pavement, overlain by thin veneer of soil, <60% tree cover	Confirm Studies: >0.5ha, at least 4 indicator species, <50% exotic vegetative cover, in good condition **Area of SWH Defined As**: n/a	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.
Old Growth Forest		Community Series FOD, FOC, FOM, SWD, SWC, SWM	Woodland area >0.5ha	**Studies Confirm**: dominant trees are >140 years old, no recognizable forestry activities **Area of SWH Defined As**: combined ecosites or ecoelements with old growth characteristics	Woodlands within the study area are not representative of old growth forest. No further assessment provided - not SWH.
Savannah	See Appendix N of the Significant Wildlife Habitat Technical Guide.	TPS1, TPS2, TPW1, TPW2, CUS2	Tallgrass prairie with 25-60% tree cover, cannot be remnant site	**Studies Confirm**: ≥1 Savannah indicator species **and** <50% exotic vegetative cover **Area of SWH Defined As**: ecosite	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.
Tallgrass Prairie	See Appendix N of the Significant Wildlife Habitat Technical Guide.	TPO1, TPO2	Dominated by prairie grasses, <25% tree cover	**Studies Confirm**: ≥1 Prairie indicator species **Area of SWH Defined As**: ecosite	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.
Other Rare Vegetation Communities		Provincially Rare S1, S2, and S3 vegetation communities in Appendix M of the SWHTG	Beaches, Fens, Forest, Marsh, Barrens, Dunes, Swamps	**Studies Confirm**: confirmed ELC from Appendix M of the SWHTG **Area of SWH Defined As**: ELC	The study area does not contain any applicable ELC ecosites. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Category 3: Specialized Habitats for Wildlife					
Waterfowl Nesting Area	American Black Duck, Northern Pintail, Northern Shoveler, Gadwall, Blue-winged Teal, Green-winged Teal, Wood Duck, Hooded Merganser, Mallard	Upland habitat adjacent to MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SWT1, SWT2, SWD1, SWD2, SWD3, SWD4	Area extending 120m from >0.5ha wetland, **or** a cluster of ≥3 <0.5ha wetlands, adjacent upland areas at least 120m wide, trees >40cm dbh with nesting cavities	**Studies Confirm:** ≥3 nesting pairs from listed species excluding Mallards, **or** ≥10 nested pairs including Mallards, **or** active nesting American Black Ducks **Area of SWH Defined As:** wetland and 120m boundary, boundary may vary to provide nesting habitat	Natural areas adjacent to the Nith River within the study area may support this habitat function. See report for further discussion.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Osprey **Special Concern**: Bald Eagle	Community Series FOD, FOM, FOC, SWD, SWM, SWC	Forested shorelines along lakes, ponds, rivers, or wetlands **Osprey**: nest at the top of tree **Eagle**: nest in notch of super canopy tree (Does not include nests on man-made structures)	**Studies Confirm:** one or more active nests in area, nest must be used annually, must be inactive ≥3 years to be non-significant **Area of SWH Defined As:** Osprey nest and 300m radius or contiguous woodland stand Bald Eagle nest and 400-800m radius plus perching and foraging habitat	Natural areas adjacent to the Nith River within the study area may support this habitat function. We did not observe any nests; however, a mature Bald Eagle was observed during the site investigation. See report for further discussion.
Woodland Raptor Nesting Habitat	Northern Goshawk, Cooper's Hawk, Sharp-shinned Hawk, Red-shouldered Hawk, Barred Owl, Broad-winged Hawk	All forested Ecosites, also SWC, SWM, SWD, CUP3	Natural or conifer plantation stands >30ha with >4ha of interior habitat with 200m edge buffer, stick nests found in conifer, deciduous, or mixed forests, Coopers Hawk nest on forest edges	**Studies Confirm:** 1 or more active nests from listed species **Area of SWH Defined As:** active Red-shouldered Hawk, Northern Goshawk nest and 400m radius or 28ha of suitable habitat; or Active Barred Owl nest and 200m radius; or Active Broad-winged Hawk, Coopers Hawk nest and 100m radius; or Active Sharp-shinned Hawk nest and 50m radius	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Turtle Nesting Areas	Midland Painted Turtle **Special Concern**: Northern Map Turtle, Snapping Turtle	MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, BOO1, FEO1	Close to water with open, sunny areas containing sand and gravel turtles can dig in, does not include road shoulders	**Studies Confirm:** ≥5 nesting Midland Painted Turtles, **or** ≥1 nesting Northern Map Turtle or Snapping Turtle **Area of SWH Defined As:** area/areas with exposed mineral soils plus 30-100m radius, including travel routes from wetland to nesting area	Natural areas adjacent to the Nith River within the study area may support this habitat function. See report for further discussion.
Seeps and Springs	Wild Turkey, Ruffed Grouse, Spruce Grouse, White-tailed Deer, Salamander spp.	Any forested ecosite near headwaters	Forested area with <25% meadow/field/pasture within headwaters of river or stream	**Studies Confirm: ≥**2 seeps/springs **Area of SWH Defined As:** area containing seeps/springs	No seepage zones were documented during on-site investigations.
Amphibian Breeding Habitat (Woodland)	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Gray Treefrog, Spring Peeper, Western Chorus Frog, Wood Frog	Community Series FOC, FOM, FOD, SWC, SWM, SWD	Wetland, pond, pool >500m^2 within 120m of a woodland	**Studies Confirm**: breeding by ≥1 listed newt/salamander species **or** ≥2 listed frog species with at least 20 adults or egg masses **or** ≥2 listed frog species with Call Level Codes of 3 **Area of SWH Defined As**: wetland plus 230m radius of woodland, including travel corridor	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.
Amphibian Breeding Habitat (Wetlands)	Eastern Newt, American Toad, Spotted Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Western Chorus Frog, Northern Leopard Frog, Pickerel Frog, Green Frog, Mink Frog, Bullfrog	ELC Classes SW, MA, FE, BO, OA, SA	Wetlands >500m^2, bullfrogs require permanent waterbodies	**Studies Confirm**: breeding by ≥1 listed newt/salamander species **or** ≥2 frog/toad species with at least 20 adults or egg masses **or** ≥2 frog/toad species with Call Level Codes of 3 **Area of SWH Defined As**: ELC ecosite and shoreline are SWH	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.

Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Woodland Area-Sensitive Bird Breeding Habitat	Yellow-bellied Sapsucker, Red-breasted Nuthatch, Veery, Blue-headed Vireo, Northern Parula, Black-throated Green Warbler, Blackburnian Warbler, Black-throated Blue Warbler, Ovenbird, Scarlet Tanager, Winter Wren, Pileated Woodpecker **Special Concern**: Cerulean Warbler, Canada Warbler	Community Series FOC, FOM, FOD, SWC, SWM, SWD	Habitats where interior forest birds are breeding, typically forests >30ha and >60 years old; interior forest habitat is at least 200 m from forest edge habitat.	**Studies Confirm**: breeding pairs/nesting by ≥3 listed species, any site with breeding Cerulean Warblers or Canada Warblers **Area of SWH Defined As**: n/a	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.
Category 4: Habitats of Species of Conservation Concern					
Marsh Bird Breeding Habitat	American Bittern, Virginia Rail, Sora, Common Moorhen, American Coot, Pied-billed Grebe, Marsh Wren, Common Loon, Sandhill Crane, Green Heron, Trumpeter Swan **Special Concern**: Black Tern, Yellow Rail	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SAS1, SAM1, SAF1, FEO1, BOO1 **Green Heron:** SW, MA, CUM1	Shallow water with emergent vegetation **Green Heron:** edge of sluggish streams, ponds, marshes sheltered by shrubs and trees	**Studies Confirm: ≥**5 nesting pairs of Sedge Wren or Marsh Wren **or** 1 pair of Sandhill Cranes, **or** breeding by ≥5 of the listed species, **or** ≥1 pairs of Trumpeter Swans, Black Terns, Green Herons, or Yellow Rails **Area of SWH Defined As:** area of ELC used for breeding	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.
Open Country Bird Breeding Habitat	Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, Northern Harrier, Savannah Sparrow **Special Concern**: Short-eared Owl	CUM1, CUM2	Grassland areas >30ha, includes cultural fields and meadows, agricultural land not used for farming in last 5 years	**Studies Confirm:** nesting/breeding of ≥2 listed species **or** ≥1 breeding Short-eared Owls **Area of SWH Defined As:** contiguous grassland ELC	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.
Shrub/Early Successional Bird Breeding Habitat	**Indicator Species**: Brown Thrasher, Clay-coloured Sparrow **Common Species**: Field Sparrow, Black-billed Cuckoo, Eastern Towhee, Willow Flycatcher **Special Concern**: Yellow-breasted Chat, Golden-winged Warbler	CUT1, CUT2, CUS1, CUS2, CUW1, CUW2	Large fields >10ha succeeding to shrub and thicket, shrub thickets >10ha	**Studies Confirm:** nesting/breeding of ≥1 Indicated Species **and** at least 2 Common Species, **or** breeding Yellow-breasted Chat or Golden-winged Warbler **Area of SWH Defined As:** contiguous field/thicket ELC	The study area does not contain any features that may support this habitat function. No further assessment provided - not SWH.

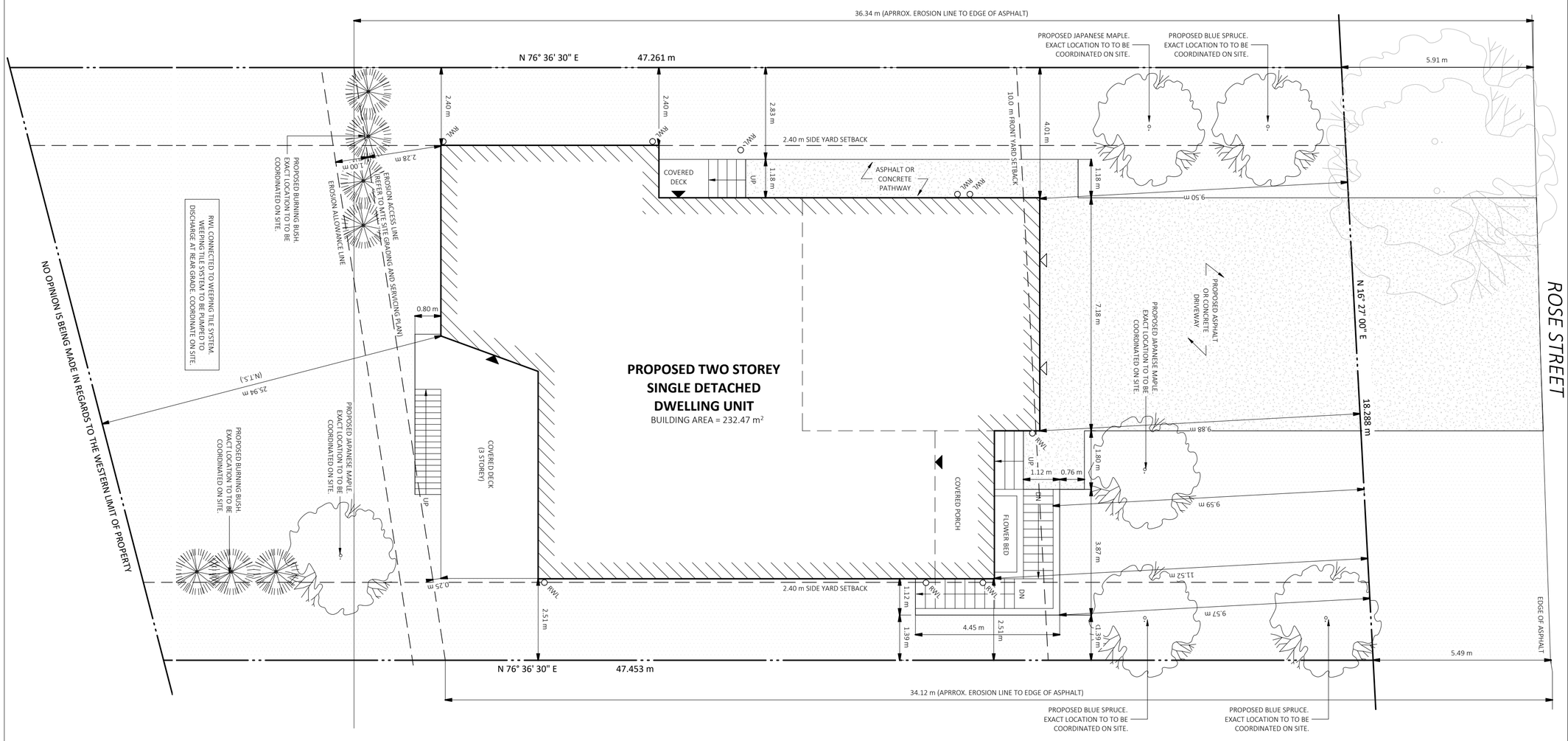
Habitat Type	Applicable/Indicator Species	Candidate SWH		Confirmed SWH	Discussion
		ELC Ecosites	Other Habitat Criteria	Defining Criteria	
Terrestrial Crayfish	Chimney or Digger Crayfish, Devil or Meadow Crayfish	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3, SWD, SWT, SWM, CUM1 with inclusions of meadow marsh or swamp	Wet meadow/shallow marsh edges	**Studies Confirm**: ≥1 individuals or burrows in suitable habitat **Area of SWH Defined As**: area of ELC with burrows	No crayfish burrows were documented during the on-site investigation.
Special Concern and Rare Wildlife Species	Species tracked by NHIC	n/a	ELC surrounding recorded occurrence	**Studies Confirm:** confirmation species is present **Area of SWH Defined As:** area of habitat to the finest ELC scale that protects habitat form and function	The study area has the potential to support habitat for one or more special concern or rare species. See report for further discussion.
Category 5: Animal Movement Corridors					
Amphibian Movement Corridors	Eastern Newt, American Toad, Spotted Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Western Chorus Frog, Northern Leopard Frog, Pickerel Frog, Green Frog, Mink Frog, Bullfrog	Any ecosite associated with water	Corridor linking summer and breeding habitat	**Studies Confirm:** confirmed Amphibian Breeding Habitat-Wetland, at least 15m of vegetation on both sides of waterway **or** up to 200m wide **Area of SWH Defined As:** corridor is part of buffer surrounding Amphibian Breeding Habitat- Wetland	N/A
Significant Wildlife Habitat Exceptions for Ecodistricts within EcoRegion 7E					
7E-2	Bat Migratory Stopover Area	N/A	Known migratory stopover areas.	Long Point has been identifed as a significant stopover habitat for fall migrating Silver-haired Bats.	N/A

Appendix 5. Site Plan/Survey.

No.	CHRONOLOGY	DATE
1	ISSUED FOR BUILDING PERMIT	2023.10.10

PROJECT NORTH

TRUE NORTH



No.	REVISIONS	DATE

FINE LINE DRAFTING & DESIGN INC

FINE LINE DRAFTING AND DESIGN INC.
519-871-4299
rodneyf@finelinedraftingdesign.ca
finelinedraftingdesign.ca

The undersigned has reviewed and takes responsibility for this design, and has the qualifications and meets the requirements set out in the Ontario Building Code to be a designer.

Rodney Friesen
Personal BCIN: 114065
Firm BCIN: 126303

CLIENT

SDIS GROUP INC.

PROJECT NAME

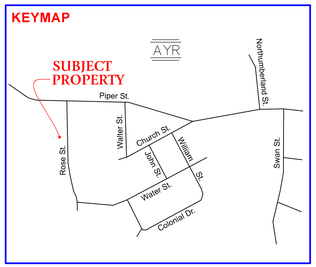
CHMELAR RESIDENCE
30 ROSE STREET, AYR,
ONTARIO N0B 1E0

DRAWING TITLE

SITE PLAN

DATE 2024.10.10	SHEET NO. **SP1.1**
SCALE 1/8" = 1'-0"	
PROJECT NO. 2024-053	

2024-10-29 1:54:40 PM



CALL BEFORE YOU DIG

THE LOCATION OF SERVICES ON THIS DRAWING ARE ONLY APPROXIMATE AND BASED ON SURFACE FEATURES LOCATED AT THE TIME OF THE TOPOGRAPHIC SURVEY. PRIOR TO ANY CONSTRUCTION IT IS THE RESPONSIBILITY OF THE CONTRACTOR/BUILDER TO ENSURE THE EXACT LOCATION OF ALL UTILITIES.

SUMMARY REPORT:

CLIENT:
THIS PLAN WAS PREPARED FOR SDIS GROUP INC.
AND THE UNDERSIGNED ACCEPTS NO RESPONSIBILITY FOR USE BY OTHER PARTIES.

DESCRIPTION OF PROPERTY:
ADDRESS: No. 30 ROSE STREET
PIN 22718-0031 (LT)
PART OF LOT 1, REGISTERED PLAN 663
GEOGRAPHIC VILLAGE OF AYR
TOWNSHIP OF NORTH DUMFRIES
REGIONAL MUNICIPALITY OF WATERLOO

EASEMENTS:
-NONE FOUND IN REGISTRY OFFICE.

PARTIAL SURVEYOR'S REAL PROPERTY REPORT
PLAN OF SURVEY OF
PART OF LOT 1, REGISTERED PLAN 663
GEOGRAPHIC VILLAGE OF AYR
TOWNSHIP OF NORTH DUMFRIES
REGIONAL MUNICIPALITY OF WATERLOO

SCALE 1 : 100

0 1 2 3 4 5 10 metres

VAN HARTEN SURVEYING INC.

THE INTENDED PLOT SIZE OF THIS PLAN IS 915mm IN WIDTH BY 610mm IN HEIGHT WHEN PLOTTED AT A SCALE OF 1:100

SURVEY INFORMATION:

BENCHMARK REFERENCE:
ELEVATIONS ARE BASED ON GNSS OBSERVATIONS FROM PERMANENT REFERENCE STATIONS IN THE NAD83 (CSRS-2010) COORDINATE SYSTEM, WITH HEIGHTS CONVERTED TO ORTHOMETRIC ELEVATIONS ON THE CGVD28 DATUM (1978 ADJUSTMENT) WITH GEOID MODEL HTv2.0, AS SUPPLIED BY NATURAL RESOURCES CANADA.

SITE BENCHMARK:
1. SPIKE IN UTILITY POLE IN FRONT OF SUBJECT PROPERTY HAVING AN ELEVATION OF 289.20 METRES.
2. SPIKE IN TREE NORTHEAST OF SUBJECT PROPERTY HAVING AN ELEVATION OF 289.52 METRES.

BEARING AND COORDINATE NOTE:
1. BEARINGS ARE GRID BEARINGS AND ARE DERIVED FROM GNSS OBSERVATIONS AND ARE REFERRED TO THE UTM PROJECTION, ZONE 17, NAD 83 (CSRS-2010) ADJUSTMENT.
2. DISTANCES SHOWN ON THIS PLAN ARE ADJUSTED GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY AN AVERAGED COMBINED SCALE FACTOR OF 0.999585.
3. COORDINATES ON THIS PLAN ARE UTM, ZONE 17, NAD83 (CSRS-2010) ADJUSTMENT AND ARE BASED ON GNSS OBSERVATIONS FROM A NETWORK OF PERMANENT GNSS REFERENCE STATIONS.

BEARING COMPARISONS:
FOR THE PURPOSES OF BEARING COMPARISONS, PREVIOUS SURVEYS HAVE BEEN ROTATED TO UTM BEARINGS BY THE ANGLES SHOWN BELOW.

PLAN	ROTATION FOR NORTHEAST BEARINGS
P1	-0°58'20"

LEGEND:
- DENOTES SURVEY MONUMENT SET
- SURVEY MONUMENT FOUND
- SIB .025 X .025 X 1.20 STANDARD IRON BAR
- IB .015 X .015 X 0.60 IRON BAR
- VH VAN HARTEN SURVEYING INC., O.L.S.'S
- 1192 J.S. CAMPBELL O.L.S.
- P1 DEPOSITED PLAN 67R- BY (1192)
- TF= TOP OF FOUNDATION

OVERHEAD UTILITIES — DH — DH — DH —
SANITARY SEWER — — — — SAN — — — —
EXISTING ELEVATION 425.55
UTILITY POLE UP
MANHOLE MH
DECIDUOUS TREE
BUILDING
CONCRETE

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT, AND THE REGULATIONS MADE UNDER THEM.
2. THIS SURVEY WAS COMPLETED ON THE 21st DAY OF MARCH, 2024.

DATE: APRIL 5, 2024

JOHN S. SCOTT
ONTARIO LAND SURVEYOR

THIS PLAN OF SURVEY RELATES TO AOLS PLAN SUBMISSION FORM NUMBER 2214914.

METRIC:
DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

Van Harten
LAND SURVEYORS - ENGINEERS

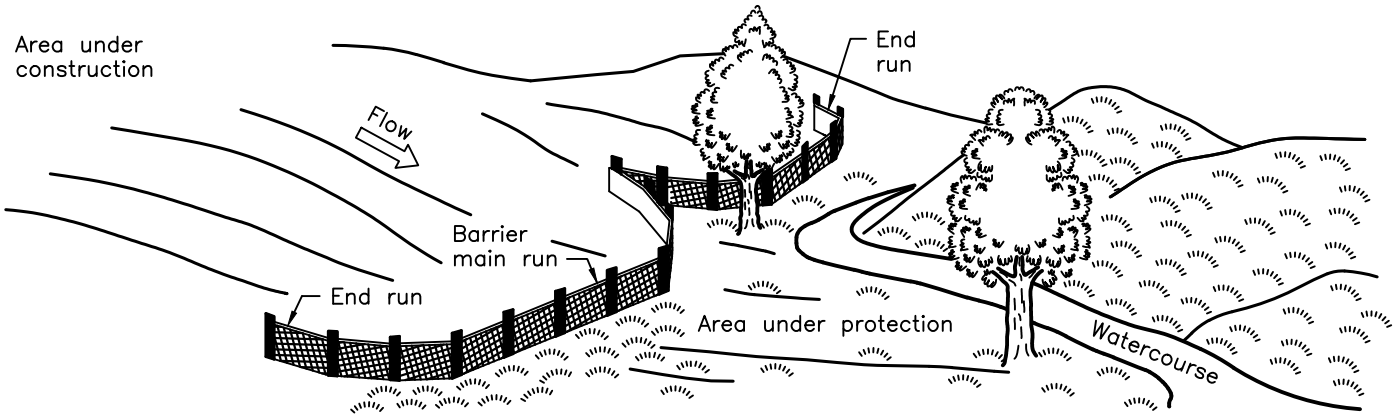
Kitchener/Waterloo	Guelph	Orangeville
Ph: 519-742-8371	Ph: 519-821-2763	Ph: 519-940-4110

www.vanharten.com info@vanharten.com

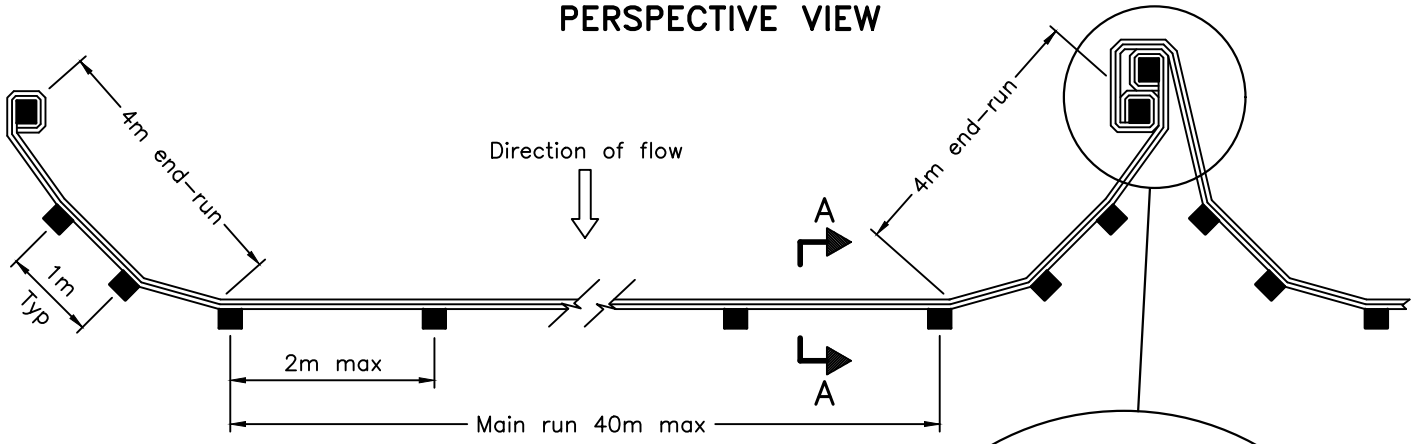
DRAWN BY: D.R.D.	CHECKED BY: J.S.S.	PROJECT No. 33188-24

Apr 5, 2024-11:38:34 AM
G:\AYR\663\ACAD\SRPR TOPO PT LT 1 (SDIS GROUP- 33188-24) UTM 2010.dwg

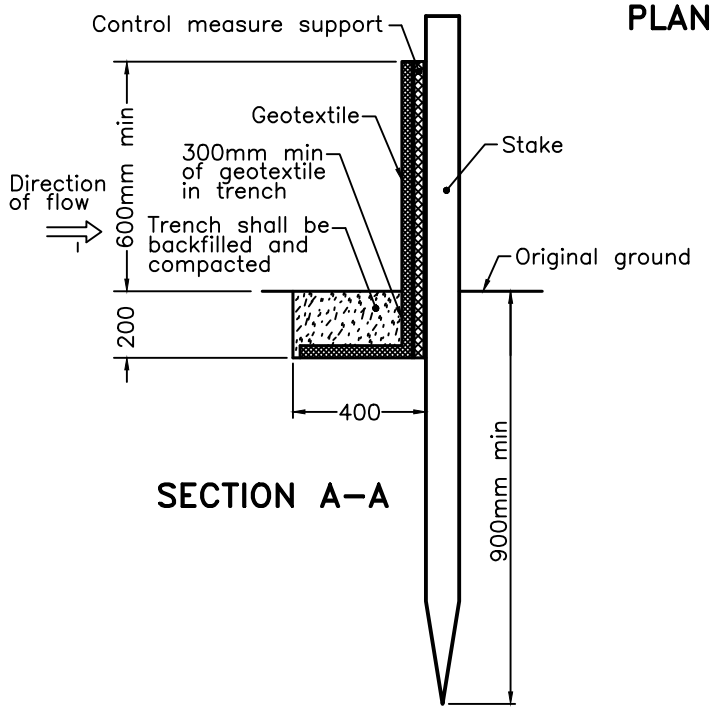
Appendix 6. Sediment Fencing Standard (Example).



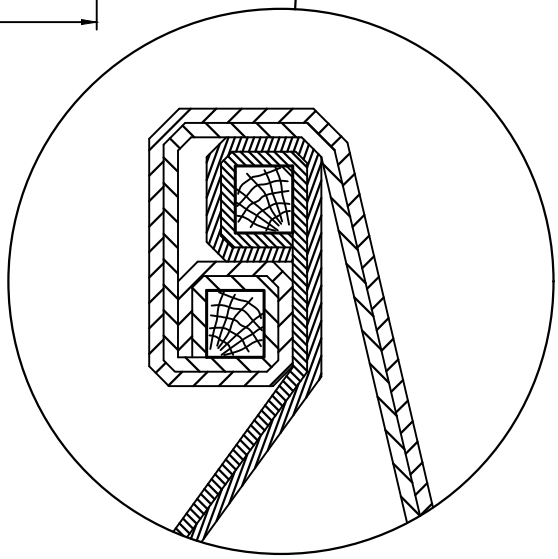
PERSPECTIVE VIEW



PLAN



SECTION A–A



JOINT DETAIL

NOTE:

A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2021	Rev	3
HEAVY–DUTY SILT FENCE BARRIER			
	OPSD 219.130		