

Greenfield Mill Inc.

Scoped Environmental Impact Study

**3089 Greenfield Road, Township of North Dumfries,
Ayr, ON**

May 22, 2026

Scoped Environmental Impact Study
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Prepared By:

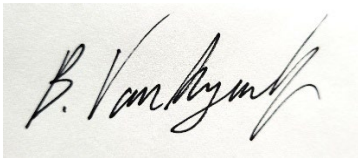
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Version Control

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1	0A	March 5, 2026	vii + 42 + Appendices	Initial draft submission for client review.	Barbra Hard, Brenda Van Ryswyk
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Acronyms and Abbreviations

Arcadis	Arcadis Professional Services (Canada) Inc.
DBH	Diameter at Breast Height
ELC	Ecological Land Classification
GRCA	Grand River Conservation Authority
NHIC	Natural Heritage Information Centre
Project, the	The proposed re-development of the old mill property
SAR	Species at Risk
SCA	Species Conservation Act, 2025
Site	3089 Greenfield Road, Township of North Dumfries, Ayr, Ontario, Canada
Study Area	The Site and the adjacent lands in the surrounding 120 m
SWH	Significant Wildlife Habitat

Executive Summary

Arcadis Professional Services (Canada) Inc. (Arcadis) has been retained by Greenfield Mill Inc. to prepare this *Scoped Environmental Impact Study* (EIS) for the proposed re-development of the old mill property (the Project) located at 3089 Greenfield Road, Ayr, Ontario, within the Township of North Dumfries in the Regional Municipality of Waterloo (the Site). The Site is approximately 1.79 ha, irregularly shaped, and largely composed of a former mill with associated informal parking areas and sparsely treed lands. The site contains some treed areas but the majority of the site is anthropogenically influenced. The majority of the site is occupied by former parking area and the former mill structure itself. Some areas of steep slope and the majority of the site is regulated by the Grand River Conservation Authority due to the steep slopes and flooding hazards present on site. The proposed reconstruction of the mill would result in the loss of some treed areas which could be offset through the planting of new trees and landscaping with native vegetation on site.

1 Introduction

Arcadis Professional Services (Canada) Inc. (Arcadis) has been retained by Greenfield Mill Inc. to prepare this *Scoped Environmental Impact Study* (EIS) for the proposed re-development of the old mill property (the Project) located at 3089 Greenfield Road, Ayr, Ontario, within the Township of North Dumfries in the Regional Municipality of Waterloo (the Site) (**Figure 1**). The Site is approximately 1.79 ha, irregularly shaped, and largely composed of a former mill with associated informal parking areas and sparsely treed lands. The property is situated along the south side of Greenfield Road (approximately 30 m frontage) and approximately 242 m southwest of the Greenfield Road and Northumberland Street intersection (MNR 2025). The property is abutted on the east side by an unused road right of way.

The Site is currently zoned as Core Environmental Features, Environmental Constraint Areas, Hazard Lands, and Prime Agricultural Area, as identified in Maps 5a, 5b, 5c, and 7 of the Township of North Dumfries *Official Plan* (Township OP), respectively. The property is also located just outside the Ayr Urban Area Boundary (identified in Map 2 of the Township OP) (**Appendix A**).

1.1 Study Area

This report describes the natural heritage features within the Site (3089 Greenfield Road) and the lands within 120 m of the Site (collectively referred to as the Study Area), to account for policy requirements and setback distances outlined in the *Provincial Planning Statement* (PPS 2024) and the accompanying *Natural Heritage Reference Manual* (MNR 2010; **Figure 1**). As necessary, consideration has been given to wildlife occurrences, including Species at Risk (SAR) reported up to 10 km away, due to the nature of desktop resources (i.e., online databases and atlases) with data presented in a 10 km x 10 km grid.

1.2 Background and Objective

Greenfield Mill Inc. has proposed the redevelopment of the old mill property located at 3089 Greenfield Road in the community of Ayr, Ontario.

The Township requires that an Environmental Impact Study (EIS) be completed when development or site alteration is proposed on or adjacent to environmentally sensitive lands or other features outlined in the Township's Greenlands Network that encompasses a system of woodlands, wetlands, watercourses, recharge areas and other natural heritage areas that are connected or will be connected through a series of linkages. The Greenlands Network and associated environmental features provide a variety of ecological functions and contribute to the overall environmental health of the Township and the Grand River watershed.

The Terms of Reference for this EIS was prepared in consultation with the Township of North Dumfries and the Grand River Conservation Authority (**Appendix B**). This EIS has been prepared as a scoped EIS due to some field surveys identified as not being warranted based on the proposed Site Plan and existing site conditions on the Site.

This Scoped EIS has been prepared to consider the most recent federal, provincial, and municipal policies and legislation at the time of writing and is based on field surveys conducted in 2025 by Arcadis Ecologists. The objective of the EIS was to evaluate the potential for environmental impacts associated with the proposed Project and recommend mitigation measures and compensation measures, as required, to protect natural heritage features and offset impacts, respectively.

The findings in this report are based on 2025 desktop screening results, review of site-specific documents completed by subconsultants, two Arcadis site visits in 2024 and four Arcadis site visits conducted in 2025.

1.3 Land Acknowledgement


Arcadis would like to respectfully acknowledge that the Subject Site located in the community of Ayr, Ontario, is the traditional territory of the Mississaugas of the Credit First Nation, Anishinabewaki, Ho-de-no-sau-nee-ga (Haudenosaunee), Attiwonderonk (Neutral), and Mississauga. The Subject Site is also within the area of the Haldimand Treaty and Treaty 3, 1792 (Native Land Digital 2025). We recognize the enduring connection of Indigenous peoples to this land and their role as land stewards and caretakers of the land and waters within this territory in perpetuity.

2 Scope

The following sections describe the approach and methods used in preparation of this EIS.

2.1 Study Approach

The following approach has been developed for this EIS to provide a clear methodological direction towards characterizing the natural environment and assessing the potential for impacts to species and habitats within the Study Area. This approach also includes the identification of potential for impacts to natural heritage features and mitigation measures to lessen or negate those impacts.



Relevant Policy and Legislative Framework	This section outlines the policies and legislation that apply to the protection of natural heritage features within and near the Study Area and identifies the resources used to determine applicability to the Project.
Background Review	This section provides a natural heritage screening based on background information. It describes the natural heritage features and Significant features that have been reported within the Study Area. The resources reviewed include supporting documents for the relevant environmental policies and legislation.
Field Investigation Methodology	This section provides a summary of the specific protocols and methods used to perform field investigations into natural heritage features on the Site.
Field Investigation Results	This section provides a summary of the observations of the natural heritage site visits as they relate to the Significant Natural Heritage Features listed in the <i>Provincial Planning Statement, 2024</i> .
Description of the Proposed Project	This section provides a summary of the Project, including the activities which may impact the natural environment.
Impact Assessment and Mitigation	This section provides an assessment of the proposed Project development impacts on existing natural heritage features and species. The mitigation measures proposed in this section are aimed at reducing or eliminating potential impacts to natural heritage features. Where avoidance or mitigation may not be possible, compensation may be proposed.
Recommendations	This section discusses potential restoration and natural heritage enhancement measures. As necessary, the application of these recommendations should be discussed with the agencies having jurisdiction.

Summary and Conclusions

This section provides a summary of the report findings and identifies the Project’s conformity with applicable legislation and policies and next steps.

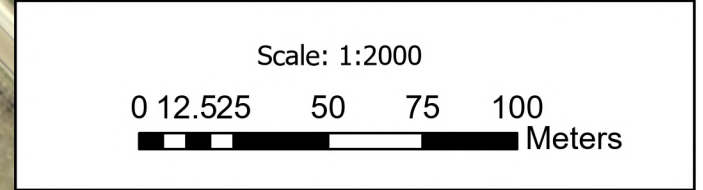
3 Relevant Policy and Legislative Framework

This ESI references the regulatory agencies and legislative authorities mandated to protect natural heritage features within Canada, Ontario, and the local municipality (**Table 1**). Details regarding the Project’s conformance with this framework will be detailed near the end of this report once the Project activities are discussed, impacts are assessed, and mitigation measures are recommended.

Table 1: Relevant Environmental Policies and Legislation

Policy / Legislation	Governing Body, Guidelines, and Resources
Federal Government of Canada	
Migratory Birds Convention Act, 1994 (S.C. 1994, c. 22) (MBCA)	Environment and Climate Change Canada (ECCC) <ul style="list-style-type: none"> - <i>Migratory Birds Regulations, 2022</i> - <i>Guidelines to Avoid Harm to Migratory Birds</i> (ECCC 2023)
Species at Risk Act, 2002 (S.C. 2002, c. 29) (SARA)	ECCC <ul style="list-style-type: none"> - <i>Federal Species at Risk Public Registry</i> - ECCC Open Data: Range Map Extents, and Critical Habitat for Aquatic SAR, Provincial SAR, and National SAR (ECCC 2025)
Fisheries Act, 1985 (R.S.C., 1985, c. F-14)	Fisheries and Oceans Canada (DFO) <ul style="list-style-type: none"> - <i>The Fish and Fish Habitat Protection Program (FFHPP) Regulatory Review Process Map</i> (DFO 2020) - Canadian Aquatic Species-at-Risk mapping resource (DFO 2025)
Provincial Government of Ontario	
Fish and Wildlife Conservation Act, 1997 (S.O. 1997, c. 41) (FWCA)	Ministry of Natural Resources (MNR; formerly MNR) <ul style="list-style-type: none"> - Wildlife Schedules (O. Reg. 669/98)
Conservation Authorities Act, 1990 (R.S.O. 1990, c. C.27)	Grand River Conservation Authority (GRCA) <ul style="list-style-type: none"> - Prohibited Activities, Exemptions, and Permits (O. Reg. 41/24) - GRCA Web-GIS Application (GRCA 2025) - Planning and development policies and guidelines - GRCA’s administration of O. Reg. 41/24 – Prohibited Activities, Exemptions and Permits (GRCA 2024)
Species Conservation Act, 2025 (S.O. 2025, c. 4, Sched. 10) (SCA)	Ministry of the Environment, Conservation and Parks (MECP) <ul style="list-style-type: none"> - Recently enacted under the Protect Ontario by Unleashing Our Economy Act, 2025 (Bill 5) the SCA replaces the Endangered Species Act, 2007 (ESA) as of March 30, 2026. - Protected Species in Ontario List (O. Reg. 60/26) - MNR Natural Heritage Information Centre (NHIC) Database (MNR 2025a): Species at Risk occurrence records, Mapping of Natural Heritage Features
Planning Act, 1990 (R.S.O. 1990, c. P.13)	Ministry of Municipal Affairs and Housing <ul style="list-style-type: none"> - Provincial Planning Statement, 2024 - MNR Ontario Watershed Information Tool (OWIT) Database (MNR 2025b): Watershed Mapping
	MNR Natural Heritage Information Centre (NHIC) Database (MNR 2025a): <ul style="list-style-type: none"> - Species at Risk occurrence records - Species of Conservation Concern occurrence records - Mapping of Natural Heritage Features

Policy / Legislation	Governing Body, Guidelines, and Resources
	<p>Other Resources:</p> <ul style="list-style-type: none"> - Ecological Land Classification for Southern Ontario, First Approximation, and its Application (Lee et al. 1998) - Significant Wildlife Habitat Technical Guide (MNR 2000) - Significant Wildlife Habitat Ecoregion 6E Criteria Schedule (MNRF 2015) - Ontario Breeding Bird Atlas (BSC 2001; BSC et al. 2006) - Ontario Reptile and Amphibian Atlas (Ontario Nature 2019) - Ontario Butterfly Atlas (TEA 2024) - iNaturalist observation records (iNaturalist 2025) - eBird HotSpot species lists (eBird 2025) - Atlas of the Mammals of Ontario (Dobbyn 1994)
Local Municipality	
Region of Waterloo Official Plan	<p>Region of Waterloo</p> <ul style="list-style-type: none"> - Region of Waterloo Official Plan (Region of Waterloo 2024)
Township of North Dumfries Official Plan	<p>Township of North Dumfries</p> <ul style="list-style-type: none"> - North Dumfries Official Plan – 2018 consolidation (Township of North Dumfries 2018)



Legend

- Subject Site
- Study Area (120 m)
- Watercourse (GEO, Arcadis)

Client: **Greenfield Mill Inc.**

Project: 3089 Greenfield Road, Ayr

Title: **Figure 1 : Subject Site**

Prepared By: **ARCADIS**

Project: 30257790 - 147018 Date: 2026-05-22

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Region of Waterloo, Vantor

4 Background Review

A desktop review of the existing natural environment features identified within the Study Area was completed to inform the creation of this report.

A variety of secondary sources were reviewed, the primary of which include:

- Ontario wildlife atlases and observation records:
 - Natural Heritage Information Centre (NHIC) Database (MNR 2022);
 - Ontario Breeding Bird Atlas (BSC et al. 2006);
 - Ontario Reptile and Amphibian Atlas (Ontario Nature 2020);
 - Ontario Butterfly Atlas (TEA 2024);
 - iNaturalist observation records (iNaturalist 2024);
 - eBird Hotspot species lists (eBird 2024); and
 - Atlas of the Mammals of Ontario (Dobbyn 1994).
- Grand River Conservation Authority resources:
 - Conservation Authority Online mapping and Open Data (GRCA 2025)
 - Conservation Authority Online Natural Heritage reports.
- Region of Waterloo online mapping resources:
 - Region of Waterloo Official Plan (Region of Waterloo 2024);
- Species-specific resources (such as recovery strategies etc.), as required; and
- Agency Consultation, as required.

This section outlines the relevant natural heritage background from secondary source review.

4.1 Historic Land Use

A Desktop review of recent and historic aerial imagery shows little change in land use and habitat over the years (Figure 2). The red line on the air photos below represents the Site and the changes on site over time from 2006 until 2023, showing minor changes to the parking areas around the mill.



May 2006



June 2017



June 2020



June 2023

Figure 2: Land Use Changes

4.2 Landform, Geology, and Soils

A review of the provincial soil maps show the Study Area is dominated by Caledon sandy loam with a portion of Burford gravelly loam. Areas near the Nith River to the south are made up of modern alluvial deposits while areas on the north portion of the study area are glacial fluvial deposits. These soils are generally coarse and medium textured soils formed by outwash and shallow lacustrine deposits and are considered to have good drainage.

4.3 Hydrogeologic Studies

A hydrogeological report has been completed and can be found under a separate cover; *Scoped Hydrogeological Assessment, Proposed Mill Redevelopment, 3089 Greenfield Road, Ayr, Ontario* by Chung & Vander Doelen Engineering Limited (Chung & Vander Doelen, 2026). A short summary of their findings is below, see the full report for further details. Groundwater levels across the Site have been measured to vary from 283.82 to 289.49 height above mean sea level (mASL) (approximately $0.6\pm$ to $4.1\pm$ m below existing grade) between April 2025 and April 2026, with peak groundwater levels at each monitoring well location varying from 285.16 to 289.49 height above mean sea level (mASL) as measured on March 7 and 8, 2026. Fluctuations at individual monitoring wells varied by up to $1.45\pm$ m (Chung & Vander Doelen, 2026). The overall groundwater flow direction is towards the south of the property in the direction of the Nith River and generally follows the topography of the Site. Groundwater also travels towards the Nith River tributary which crosses the Site from west to east and wraps around the southeastern corner of the property.

4.4 Aquatic Environment

4.4.1 Waterbodies

No waterbodies occur within the Site or surrounding Study Area.

4.4.2 Watercourses / Drainage Features

Two drainage features were identified within the Study Area. The first is represented by a former water diversion channel previously mapped for the property that historically brought water from the Nith River through the mill and was discharged to the second drainage feature/ ditch located to the east of the Site. The ditch east of the Subject Site contains a seep/spring fed small watercourse which flows to the south (**Figure 1**).

Remnants of the diversion channel exist to the west of the Site which no longer conveys flows and contains areas of standing water between the Nith River and the Site. This channel does not continue onto the Site due to the former landowner installing a clay berm and concrete retaining wall at the property line. The location of the former channel on the Site has been filled in and is currently a gravel parking and storage/staging area. The Nith River occurs approximately 250 m southwest of the Site.

4.4.3 Floodplain and Regulated Limit

Nearly the entire site is encompassed within the Regulated Limit of the Grand River Conservation Authority (GRCA) due to the vicinity of both the Nith River to the southwest, steep slopes to the north and Provincially Significant Wetlands (PSW) areas to the southeast and southwest (**Figure 3**).

Regulated features on the Site include floodplain hazards and slope hazards.

4.4.4 Fish Habitat

No direct fish habitat is mapped to occur within the Site; however, the wetlands within the southeast portion of the Study Area likely provides indirect fish habitat as it is expected to convey flows downstream to direct fish habitat outside the Study Area, represented by the Nith River to the southwest.

The Nith River represents confirmed direct fish habitat due to the presence of fish communities within this watercourse, including the following species documented from Government of Ontario Aquatic Resource Area feature layer data seen in **Table 2**.

Table 2: Nith River Fish Community

English Name	Scientific Name	S Rank (Provincial)	Conservation Status	
			SARA Schedule 1	SARO
Black Redhorse*	<i>Moxostoma duquesnei</i>	S2		THR
Blacknose Dace	<i>Rhinichthys atratulus</i>	S5		
Blacknose Shiner	<i>Notropis heterolepis</i>	S5		
Blackside Darter	<i>Percina maculata</i>	S4		
Bluntnose Minnow	<i>Pimephales notatus</i>	S5		
Brook Stickleback	<i>Culaea inconstans</i>	S5		
Brown Bullhead	<i>Ameiurus nebulosus</i>	S5		
Carps and Minnows	N/A			
Central Stoneroller	<i>Campostoma anomalum</i>	S4		
Common Carp	<i>Cyprinus carpio</i>	SNA		
Golden Redhorse	<i>Moxostoma erythrurum</i>	S4		
Greater Redhorse	<i>Moxostoma valenciennesi</i>	S3	SC	SC
Greenside Darter	<i>Etheostoma blennioides</i>	S4		
Hornyhead Chub	<i>Nocomis biguttatus</i>	S4		
Johnny Darter	<i>Etheostoma nigrum</i>	S5		
Johnny Darter x Tessellated Darter	N/A			
Common Shiner	<i>Luxilus cornutus</i>	S5		
Creek Chub	<i>Semotilus atromaculatus</i>	S5		
Fantail Darter	<i>Etheostoma flabellare</i>	S4		
Largemouth Bass	<i>Micropterus salmoides</i>	S5		
Least Darter	<i>Etheostoma microperca</i>	S4		
Longnose Dace	<i>Rhinichthys cataractae</i>	S5		
Mimic Shiner	<i>Notropis volucellus</i>	S5		
Northern Hog Sucker	<i>Hypentelium nigricans</i>	S4		
Northern Pike	<i>Esox lucius</i>	S5		
Pumpkinseed	<i>Lepomis gibbosus</i>	S5		
Rainbow Darter	<i>Etheostoma caeruleum</i>	S4		
Rainbow Trout	<i>Oncorhynchus mykiss</i>	SNA		
River Chub	<i>Nocomis micropogon</i>	S4		
Rock Bass	<i>Ambloplites rupestris</i>	S5		
Rosyface Shiner	<i>Notropis rubellus</i>	S4		
Shorthead Redhorse	<i>Moxostoma macrolepidotum</i>	S5		
Silver Shiner*	<i>Notropis photogenis</i>	S2S3		THR
Smallmouth Bass	<i>Micropterus dolomieu</i>	S5		
Stonecat	<i>Noturus flavus</i>	S4		
Striped Shiner	<i>Luxilus chrysocephalus</i>	S4		
White Sucker	<i>Catostomus commersonii</i>	S5		
Yellow Perch	<i>Perca flavescens</i>	S5		

* Denotes a SAR

Review of the DFO aquatic SAR mapping resource identified that the Nith River also contains Critical Habitat for four aquatic SAR, including two Threatened fish species (Black Redhorse and Silver Shiner), and two Special Concern freshwater mussel species (Rainbow – *Villosa iris* and Wavy-rayed Lampmussel – *Lampsilis fasciola*).

Therefore, the PSW within the Study Area has the potential to provide indirect fish habitat by contributing flows downstream to the Nith River, representing confirmed Critical Habitat of four aquatic SAR (DFO 2025).

4.5 Terrestrial Environment

4.5.1 Wetlands

No wetlands occur within the Site; however, a large PSW is mapped by NHIC and GEO within the southeastern extent of the Study Area, located 20 m from the property line (**Figure 3**).

GRCA mapping shows this wetland as being much smaller in size and over 65 m from the southern tip of the Site. The GRCA mapping is likely a more accurate and up to date mapping set (**Figure 3**).

4.5.2 Woodlands

According to NHIC, some woodland areas occur within the Site, particularly along the western portion of the property, as well as a small area along the eastern property line. Areas within the surrounding Study Area to the south and west along the Nith River corridor are well treed and are also mapped as woodlands by MNR's NHIC and the provincial GEO dataset (**Figure 3**).

Air photo interpretation shows trees along the slopes on the north side of the site and west side of the site but due to a tornado on August 17, 2024, most of the mature trees on the Site's west and northwest side were destroyed.

4.5.3 Valleylands

The Study Area does occur within the valley of the Nith River. There are some steep slopes within the Study Area then a long flat lowland plateau area between the Site and the Nith River. A portion of the Site that was the location of the former channel is mapped as Significant Valleylands in the Region of Waterloo mapping (**Figure 4**), but current air photos show the former channel is now filled in and so the valley lands would be limited to the very edges of the Site (**Figure 6**).

4.5.4 Areas of Natural and Scientific Interest

There are no Areas of Natural and Scientific Interest present within the Study Area.

4.5.5 Wildlife and Wildlife Habitat

A review of current and historic aerial photos (dating back to April 2006) of the Study Area and observations by Arcadis Ecologists were used to identify potential wildlife habitat. Several species of fauna common to the region, including both rural and urban areas, are known to occur in the habitats present within the Study Area. These species may include, but are not limited to:

- **Mammals:** Northern Raccoon (*Procyon lotor*), Eastern Gray Squirrel (*Sciurus carolinensis*), Eastern Cottontail (*Sylvilagus floridanus*), among others.

- **Reptiles and Amphibians:** Eastern Gartersnake (*Thamnophis sirtalis sirtalis*), American Toads (*Anaxyrus americanus*), among others.
- **Birds:** American Crow (*Corvus brachyrhynchos*), American Robin (*Turdus migratorius*), Northern Cardinal (*Cardinalis cardinalis*), American Goldfinch (*Spinus tristis*), Black-capped Chickadee (*Poecile atricapillus*), Blue Jay (*Cyanocitta cristata*), among others.

Turtle species may also occur within the Study Area due to the presence of nearby aquatic habitat (i.e., wetland, shallow marsh communities).

4.6 Species at Risk (Endangered/Threatened) and Their Habitat

A desktop review identified the potential for twenty-six Threatened or Endangered species to occur within and adjacent to the Study Area. Under the Species Conservation Act (SCA), all species listed as Threatened or Endangered on the Protected Species in Ontario List receive immediate ‘general habitat protection’. This includes places that are used as dens, nests, hibernacula, or other residences. For some species, agencies have defined general habitat descriptions that provide science-based criteria for the habitat to be protected for some SAR species.

A review of aerial imagery was used to identify general candidate habitat for SAR based on the description of habitat provided and eleven are expected to have a moderate or high potential to occur within the vicinity of the Study Area. The Endangered and Threatened species identified as having moderate or high potential to occur within the vicinity of the Study Area are included in **Table 3**. A complete assessment of potential for SAR and/or SAR habitat occurrence, based on the species’ preferred habitat descriptions, are included in **Appendix C**.

Table 3: Species at Risk with Moderate to High Probability of Occurrence in the Study Area

English Name	Scientific Name	Conservation Status		
		S Rank (Provincial)	SARA Schedule 1	SCA
Birds				
Wood Thrush	<i>Hylocichla mustelina</i>	S4B	THR	Not Listed
Reptiles				
Blandings Turtle	<i>Emyonidea blandingii</i>	S3	END	THR
Mammals				
Eastern Red Bat	<i>Lasiurus borealis</i>	S3	END	END
Eastern Small-footed Myotis	<i>Myotis leibii</i>	S2S3		END
Little Brown Myotis	<i>Myotis lucifugus</i>	S3	END	END
Hoary Bat	<i>Lasiurus cinereus</i>	S3		END
Tricolored Bat	<i>Perimyotis subflavus</i>	S3?	END	END
Northern Myotis	<i>Myotis septentrionalis</i>	S3	END	END
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	S3		END
Insects				
Monarch	<i>Danaus plexippus</i>	S2N,S4B	END	Not Listed

Plants

Black Ash	<i>Fraxinus nigra</i>	S4	END	END
Butternut	<i>Juglans cinerea</i>	S2?	END	END

4.7 Significant Natural Heritage Features

The provincially-designated Significant Natural Heritage Features listed under the Provincial Planning Statement, 2024, include the following in this Ecoregion 6E:

- Fish Habitat;
- Significant Wetlands;
- Significant Woodlands;
- Significant Valleylands;
- Habitat of Endangered and Threatened Species;
- Significant Wildlife Habitat (SWH); and
- Significant Areas of Natural and Scientific Interest (ANSIs).

The *Natural Heritage Reference Manual* (MNR 2010) and *Significant Wildlife Habitat Criteria Schedules* (MNRF 2015) are the technical documents used to define and set out the criteria for the determination and designation of Provincially Significant Natural Heritage Features. Some of these Significant Natural Heritage Features have been designated by MNR (e.g., PSWs, ANSIs, and specific SWH such as Deer Yarding Areas), while others may be designated as Regionally Significant by the municipality having jurisdiction. For features that have not been identified as Significant, site-specific findings are used for evaluation against criteria detailed by MNR.

When projects are proposed, the identification of these features is essential to promote protection through the applicable guidelines, regulations, and policies.

Referencing provincial and municipal resources, some (provincially or regionally) Significant Natural Heritage Features are reported in the Study Area, described below.

4.7.1 Significant Wetlands

The PSW is mapped by MNR’s NHIC as occurring within the southeastern extent of the Study Area, situated 20 m east of the eastern Site boundary. GRCA mapping shows this wetland as being much smaller in size and over 65 m from the southern tip of the Site. The GRCA mapping is likely a more accurate and up to date mapping set. No portion of the PSW occurs within the Site itself (**Figure 3**).

4.7.2 Significant Woodlands

The Region of Waterloo (2025) and Township of North Dumfries (2018) map some areas as “Significant Woodlands” within their Official Plans (**Figure 3**). A review of the arial imagery shows that some of the areas mapped as “Significant Woodlands” are no longer treed therefore the mapping is proposed to be updated to reflect current site conditions (**Figure 6**).

4.7.3 Significant Wildlife Habitat (SWH)

The Ontario SWH Criteria Schedules for Ecoregion 6E (MNR 2015) defines the following four categories of SWH for Southeastern Ontario:

- Seasonal Concentration Areas of Animals;
- Rare Vegetation Communities or Specialized Habitats for Wildlife;
- Habitat for Species of Conservation Concern (Excluding Endangered or Threatened Species); and
- Animal Movement Corridors.

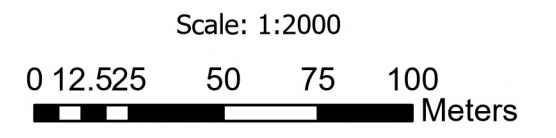
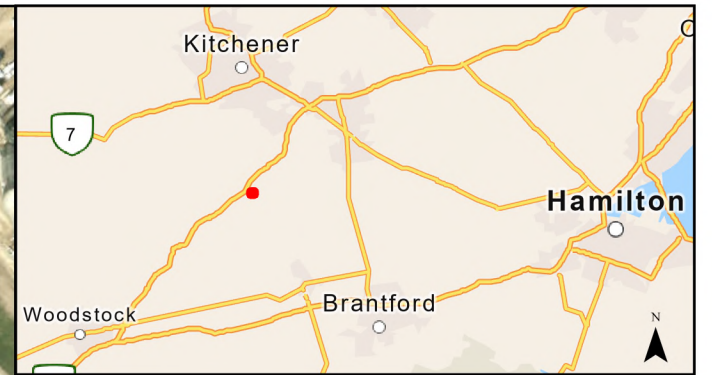
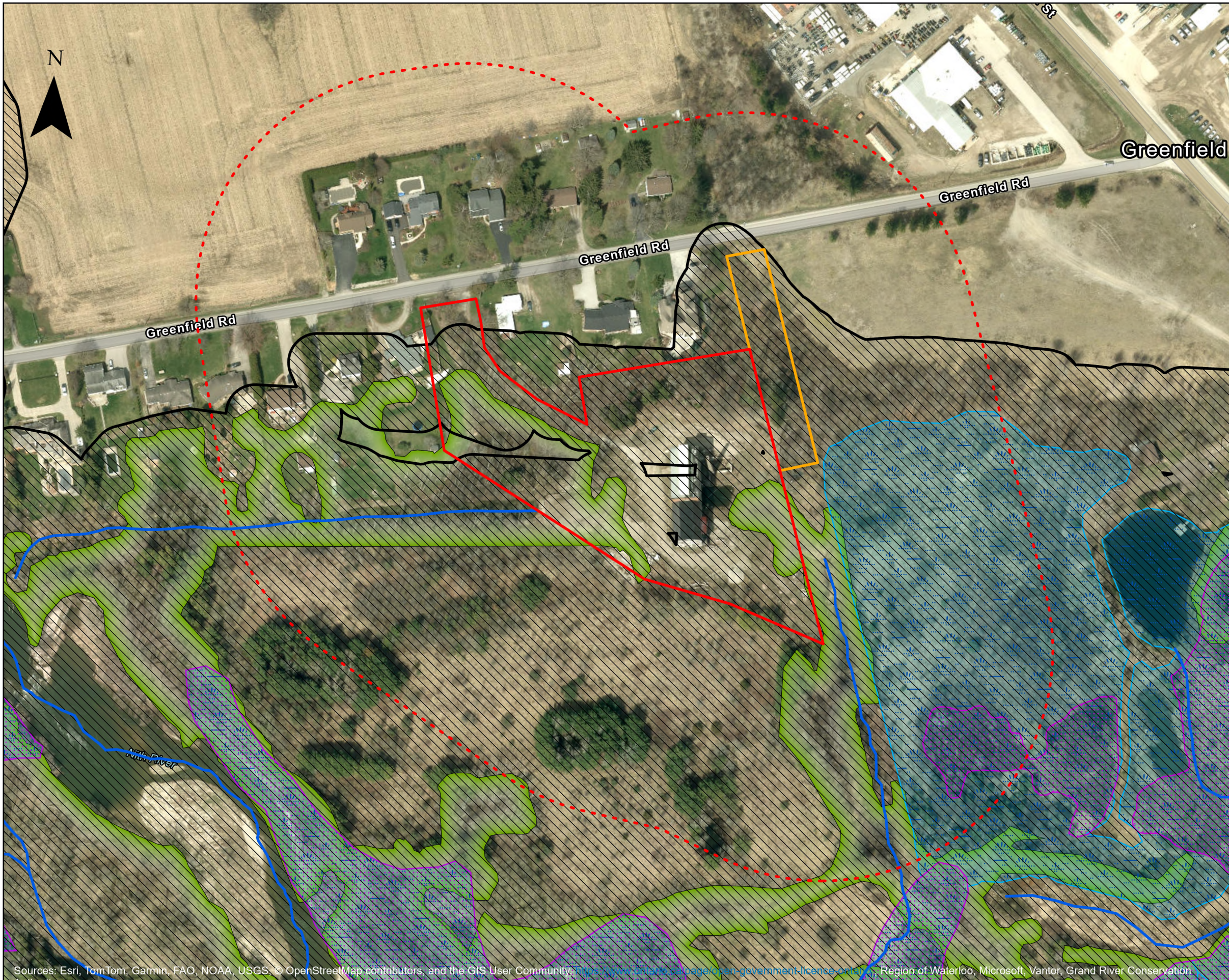
A desktop review of available online resources indicates the following Candidate SWH has the potential to occur within the Study Area:

Habitat for Species of Conservation Concern (Excluding Endangered and Threatened Species)

This SWH has the potential to occur within the Study Area due to the reported occurrence of five Species of Conservation Concern (Special Concern) within the vicinity of the Site. Based on habitat needs and availability, three of these species have the potential to occur within the Study Area (Eastern Wood-pewee, Snapping Turtle and Midland Painted Turtle) (**Table 4**).

Table 4: Species of Conservation Concern that have a Moderate to High Probability of Occurrence in the Study Area

English Name	Scientific Name	Conservation Status		
		S Rank (Provincial)	SARA Schedule 1	SARO
Eastern Wood-Pewee	<i>Contopus virens</i>	S4B	SC	SC
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	S4	SC	SC
Snapping Turtle	<i>Chelydra serpentina</i>	S4	SC	SC



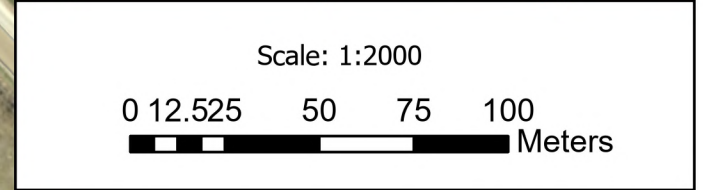
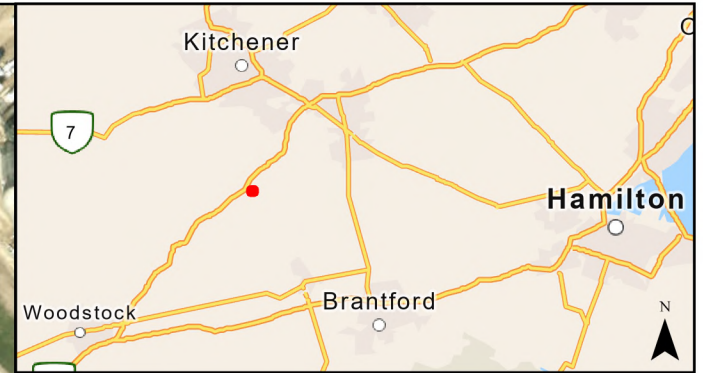
Legend

- Subject Site
- Study Area (120 m)
- Right of Way
- Watercourse (GEO, Arcadis)
- Regulation Limit (GRCA)
- Wetland (GRCA)
- Wetland (GEO)
- Wooded Area (GEO)

Client: **Greenfield Mill Inc.**
 Project: 3089 Greenfield Road, Ayr

Title: **Figure 3 :
 Provincial Natural Heritage Features**

Prepared By: **ARCADIS**



Legend

- Subject Site
- Study Area (120 m)
- Right of Way
- Watercourse (GEO, Arcadis)
- Environmentally Sensitive Policy Area (ESPA) (Region of Waterloo)
- Significant Valleys (Region of Waterloo)
- Significant Woodlands (Region of Waterloo)

Client: **Greenfield Mill Inc.**

Project: 3089 Greenfield Road, Ayr

Title: **Figure 4 :
Municipal Natural Heritage Features**

Prepared By: **ARCADIS**

Project: 30257790 - 147018 | Date: 2026-05-22

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Region of Waterloo, Vantor

5 Field Investigation Methodology

Based on the current understanding of the existing natural environment and the proposal at the time of scoping this EIS, the natural heritage surveys described below have been scoped to reflect the habitat present on the Site and assess the impacts of the proposed re-development on the natural environment. These surveys will follow industry standard protocols, and the results will be used to evaluate the potential for negative impacts resulting from the proposed Project.

Physical surveys will only be undertaken within the Site. As necessary, natural features within the larger Study Area will be evaluated from a distance or via air-photo interpretation. It is assumed that Significant Wildlife Habitat is present within the treed portion of the Study Area and this area will be treated as such and appropriate setbacks will be applied. Thus, the following surveys have been scoped to reflect this assumption.

5.1 Aquatic Environment

Field investigations pertaining to the aquatic environment were determined to be unwarranted for this Project as no aquatic features occur within the Site itself.

5.2 Terrestrial Environment

5.2.1.1 Ecological Land Classification (ELC)

Vegetation communities within the Study Area were characterized and mapped using the ELC system for Southern Ontario (Lee et al. 1998). The ecological community boundaries were determined through the review of aerial imagery and then further refined through on-site vegetation surveys within the Site, as specified by the protocol.

The ELC protocol recommends that a vegetation community be a minimum of 0.5 ha in size before they are defined as a discrete community. The vegetation on this site often does not comprise communities greater than 0.5 ha; therefore, we have applied the ELC at a smaller scale than recommended to provide vegetation community mapping for the Site.

5.2.1.2 Botanical Survey

Vegetation was surveyed in tandem with other surveys and a corresponding vascular plant list was compiled. In addition, the vascular plants observed at the time of survey have been used to screen for any provincially rare species or SAR not previously identified within the Study Area.

5.2.1.3 Pileated Woodpecker

Pileated Woodpecker is listed under Schedule 1 of the Migratory Birds Regulations (MBR 2022) and receives year-round nest protection. Furthermore, Pileated Woodpecker nest cavities must be protected unless proven unoccupied, by any migratory bird, for at least 36 months. Pileated Woodpecker nests may only be removed with a permit from ECCC.

Cavity nest searches were conducted in November 2024 and 2025 during leaf-off conditions to search for any potential Pileated Woodpecker nest cavities.

5.3 Species at Risk (Endangered / Threatened) and Their Habitat

5.3.1.1 Bat Habitat Assessment

In Ontario, bats use two strategies for roosting during the day. Most species roost in small spaces or crevices found in loose bark, hollow trees, rock faces, and human structures such as attics, walls, and bat boxes (MNR 2011); however, Tri-colored Bat establishes maternity roosts within live and dead foliage within or below the canopy of oak and/or maple trees (MNR 2017) while the Eastern Red Bat and Hoary Bat will roost in the foliage of many species of deciduous or evergreen trees. Although bat SAR primarily roost in trees within wooded ecosites, they may occasionally roost in trees outside of wooded areas, particularly when suitable roosting sites are present near a sufficient insect population for feeding (e.g., insects attracted to lights).

During the November 2024 (for the main property) and November 2025 (for the eastern Right of Way) site visits, the Site and the trees within it were surveyed for evidence of candidate bat SAR roosts in accordance with MNR criteria. Features searched for that would provide habitat include loose or flaking bark, cracks, cavities, or woodpecker cavities (MNR 2011).

Two visits were made during June and July 2025 to assess the exterior of the building for bat use and perform visual bat exit surveys. A handheld bat detector was used to identify the species of bats flying overhead as these visual exit surveys were undertaken. A follow-up visit was conducted in August 2025 to assess the interior of the building for bat use.

5.4 Incidental Wildlife

Any incidental observations of wildlife as well as other wildlife evidence such as dens, tracks, and scat were documented by means of observational notes and photographed when possible.

6 Field Investigation Results

The following subsections outline the findings of Arcadis' field surveys conducted in 2024 and 2025.

6.1 Field Survey Summary

Fieldwork conducted for this scoped EIS took place between May 2024 and November 2025, when weather conditions and timing were suitable based on the survey protocols being implemented. Any incidental wildlife observations made during the surveys were also documented. The details for all Arcadis field surveys are listed below in **Table 5**. A selection of site photos from these site visits can be found in **Appendix D**.

Table 5: Summary of Field Surveys

Purpose of Visit	Date dd/mm/yyyy	Time	Personnel	Weather Conditions	Air Temp. (°C)
Initial Site Visit and Vegetation Communities	29/05/2024	4:00 PM – 5:00 PM	B. Van Ryswyk	Mostly cloudy, dry, light wind	18
Bat Habitat Assessment (Snag Trees) main property	11/19/2024	1:30 PM - 4:00 PM	B. Van Ryswyk	Cloudy, occasional drizzle, little breeze	8
Bat Habitat Assessment (Snag Trees) and Pileated Woodpecker Cavity Nest Search - eastern Road ROW	11/21/2025	1:00 PM – 4:00 PM	B. Van Ryswyk	Cloudy, light breeze	10
Bat Exit Survey (Building Exterior)					
Survey #1	11/06/2025	8:50 PM - 10:20 PM	B. Van Ryswyk & M. Mandrak	Partly cloudy, little breeze	21
Survey #2	16/07/2025	8:30 PM - 10:10 PM	B. Van Ryswyk & M. Mandrak	Partly cloudy, little breeze	27
Building Interior Inspection and Vegetation Communities	26/08/2025	1:45 PM – 3:00 PM	B. Van Ryswyk & E. Hellinga	Cloudy, occasional drizzle	15
Pileated Woodpecker Cavity Nest Survey main property	11/19/2024	1:30 PM - 4:00 PM	B. Van Ryswyk	Cloudy, occasional drizzle, little breeze	8
Hydrologic / Hydrogeologic Assessment	2025 - 2026	N/A	Sub-consultant: GHD , CVD	N/A	N/A

6.2 Hydrogeologic and Geologic Description

A hydrogeological report has been completed and can be found under a separate cover; *Scoped Hydrogeological Assessment, Proposed Mill Redevelopment, 3089 Greenfield Road, Ayr, Ontario* by Chung & Vander Doelen Engineering Limited (Chung & Vander Doelen, 2026). Chung & Vander Doelen found that groundwater levels across the Site varied between 283.82 and 289.49 height above mean sea level (mASL) between April 2025 and April 2026, with peak water levels across all monitoring events recorded between 258.16 to 289.49 height above mean sea level (mASL), and concluded that since spring high groundwater level measurements from April 2025 and April 2026 are of similar magnitude, the data collected provides an accurate representation of peak on-Site groundwater elevations (Chung & Vander Doelen, 2026).

Preliminary groundwater chemistry testing identified exceedances of several polycyclic aromatic hydrocarbons (PAHs) as well as iron and arsenic and these compounds were interpreted to be relics of the historical industrial land use. A recommendation was made that sufficient pre-treatment measures be implemented to improve

discharge water quality prior to discharge into the natural environment if temporary construction dewatering is required to facilitate construction (Chung & Vander Doelen, 2026).

According to Chung & Vander Doelen’s preliminary water budget assessment, the target recharge quantity for matching in post-development is estimated at 2,924 m3/yr. Chung & Vander Doelen recommended that detailed stormwater management plans be provided prior to final recommendations, but suggested that potential Low Impact Development infrastructure measures to maintain on-site water balance may include a communal infiltration trench, and / or the collection / direction of rooftop and stormwater runoff towards the adjacent wetlands via stormwater drains.

6.3 Terrestrial Environment

6.3.1 Ecological Land Classification (ELC) and Botanical Surveys

During the initial site visit in spring 2024 Arcadis Ecologists observed that the Site was dominated by anthropogenic communities with small pockets of treed areas along the driveway, northern and northeastern boundaries. There were some cultural meadow areas along the east side of the Site where mowing had discontinued for a few years. On August 17, 2024, a tornado passed through the Site and resulted in the loss of most of the trees along the driveway and west side of the Site leaving very little tree cover remaining in the Cultural Woodland areas.

The ELC survey divided the Study Area into fourteen ELC polygons, and the Site into five ELC polygons, of which 4 unique vegetation communities were identified (Table 6, Figure 5). ELC data outside the Site was compiled from air photo interpretation and by surveying from the property line.

There are no wetlands within the Site. The former diversion channel immediately to the west of the Site contains some small pockets of ponding water remain in the former channel. A seep below the slope in the right of way to the southeast of the Site creates a wet area and forms a small headwater stream.

Table 6: Ecological Land Classification Communities

ELC Type	Community Description
Deciduous Forest (FOD)	
FOD3-1 Dry – Fresh Poplar Deciduous Forest Type	This is a small portion of Deciduous Forest within the Site at the north edge of property line and to the east of the Site along the road right of way. It is dominated by poplar but has a few other species mixed in such as Black Cherry and Hackberry. This community is very narrow and has anthropogenic influence from past activities (former building ruins, railway ties from former rail line, historic garbage dumping).
FOD Deciduous Forest	Portions of Deciduous Forest occur along the slope south of the former agricultural area east of the Site and northeast portion of the study area north of the road between the businesses and the residential houses. Other areas of forest occur within the west side of the Study

Area near the former diversion channel and to the south along the road right of way and headwater stream south of the site.

Anthropogenic (ANT)

ANT Anthropogenic	Anthropogenic areas of human disturbances or built-up areas that are not natural and do not have ELC designations such as buildings, rural residential lawns, industrial lots, roadway and parking areas etc.
------------------------------------	---

Cultural (CU)

CUW Cultural Woodland	<p>Cultural Woodlands made up of a lower canopy cover than a forest. This area within the Site had a lower number of trees even before the impacts from the tornado, after the tornado there are few mature trees left standing and the area dominated by young trees with some shrubs.</p> <p>Cultural Woodland dominate the areas within the Study Area to the south of the Site and are comprised of a mix of planted conifer trees and regenerating deciduous trees.</p>
--	--

CUM1-1 Dry-Fresh Old Field Meadow Type	The Cultural Meadows are comprised mainly of weedy species common to disturbed areas. Was not mown in 2024 and was dominated by taller grass and weeds with some goldenrod present, it was mown in 2025. Main species observed in this area was grass, alfalfa, birdsfoot trefoil and mustard species.
--	--

CUM	This cultural meadow area occurs on the northeast corner of the Study Area and appears to be former agricultural lands dominated by grasses.
------------	--

Swamp (SW)

SWT Thicket Swamp	This area occurs within the southeast corner of the Study Area and is wet with some water visible on the air photos and appears dominated by shrubs.
------------------------------------	--

6.3.2 Pileated Woodpecker

No Pileated Woodpecker nest cavities were observed during the 2024-2025 field visits.

6.3.3 Wildlife and Wildlife Habitat

Bat exit surveys of the old mill building showed that Big Brown Bats were utilizing the building as a roosting structure in June and July. Big Brown Bats appeared to be exiting the building on the west side near the roofline of the wooden portion of the building, adjacent to where the wooden portion of the building joins the brick portion of the building.

A handheld bat detector was used in conjunction with the visual exit surveys to identify the species of bat exiting the building and only Big Brown Bats were detected during the period when bats were exiting the building. Later in the evening some Little Brown Myotis were detected feeding along the treeline at the south edge of the property.

Incidental wildlife observations confirmed the presence of White-tailed Deer (*Odocoileus virginianus*) and Northern Raccoon (*Procyon lotor*) on the site as well as common bird species such as Rock Pigeon (*Columba livia*), Northern Cardinal (*Cardinalis cardinalis*), and Dark-eyed Junco (*Junco hyemalis*).

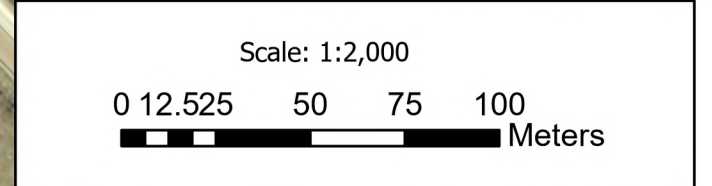
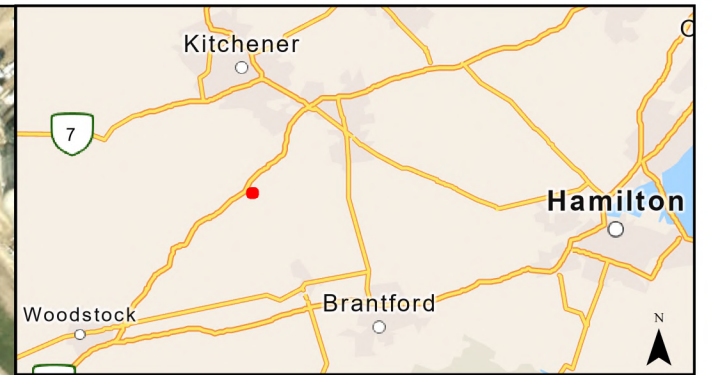
6.4 Species at Risk (Endangered/Threatened) and Their Habitat

Chimney Swifts were observed using the chimney during the July 2025 evening site visit, confirming the chimney is utilized by this species for roosting.

Bat exit surveys of the old mill building did not detect any SAR bats utilizing the building. The bat habitat assessment did not find any maternity snag trees within the Site but one snag with woodpecker feeding holes was observed and could provide day roosting habitat. Trees within the Site, especially Sugar Maples and Oaks, may be used by foliage roosting bats. An old rock wall on the east side of the Mill may provide habitat to Small-footed Bats. Therefore suitable habitat for bat SAR is present within the Site.

A Little Brown Myotis was detected feeding along the treeline at the south edge of the property late in the evening of the July visit.

No other SAR were observed.



Legend

- Subject Site
- Study Area
- Right of Way
- Site Watercourse (GEO, Arcadis)

Ecological Land Classification (air photo interpretation)

- ANT - Anthropogenic
- CUM - Cultural Meadow
- CUT - Cultural Thicket
- CUW - Cultural Woodland
- FOD - Deciduous Forest
- SWT - Thicket Swamp

Client: **Greenfield Mill Inc.**

Project: 3089 Greenfield Road, Ayr

Title: **Figure 5 : Ecological Land Classification**

Prepared By: **ARCADIS**

Project: 30257790 - 147018 | Date: 2026-05-22

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Region of Waterloo, Microsoft, Vantor

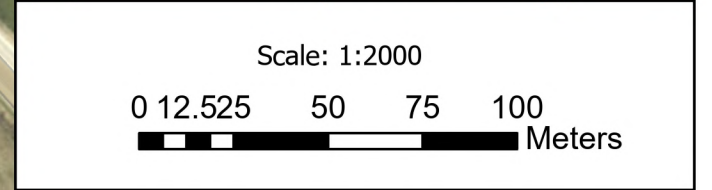
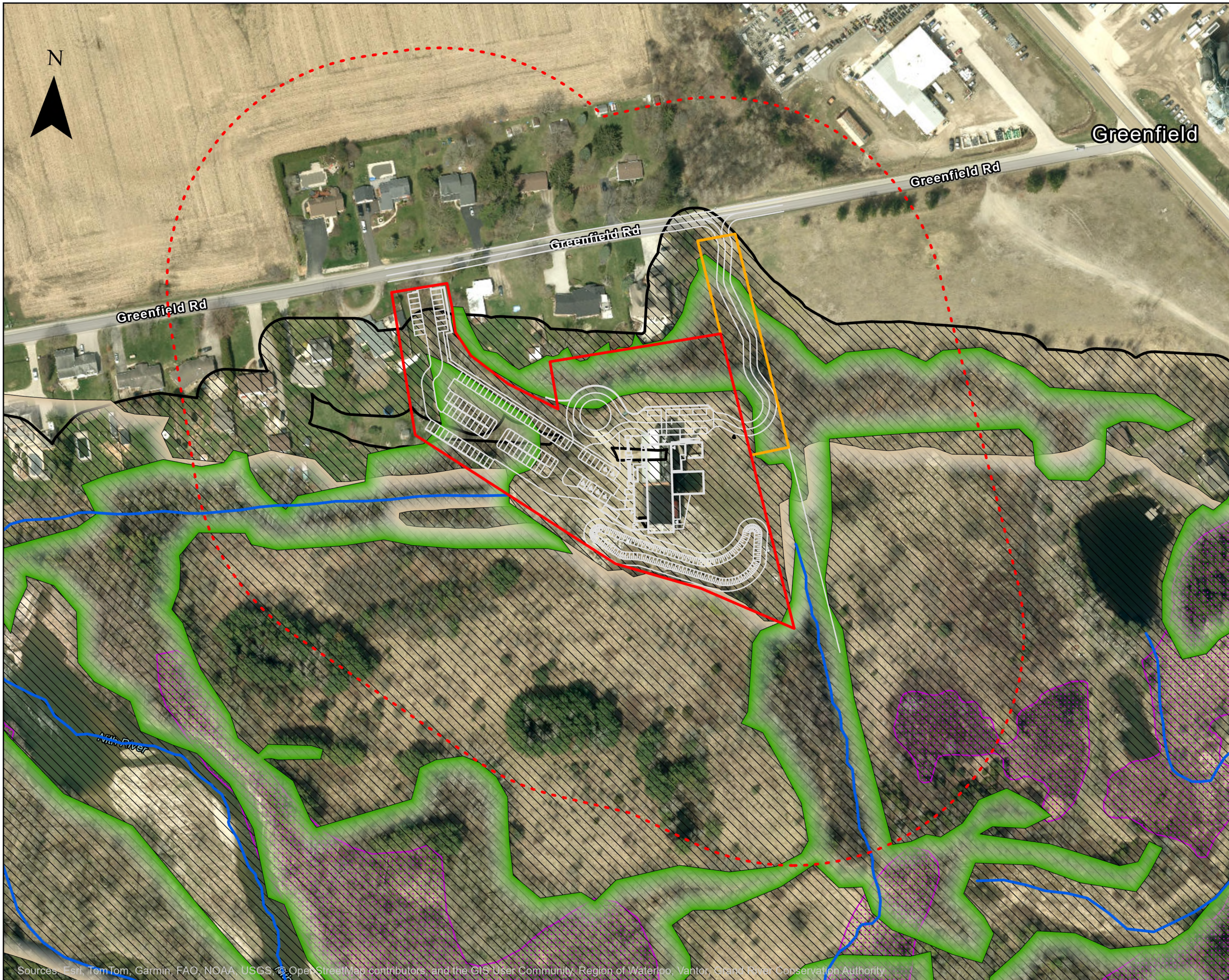
7 Description of Proposed Project

7.1 Construction Activities

Construction activities will include the clearing of vegetation and trees and regrading of the Site to accommodate the renovations of the old mill building and installation of new supporting infrastructure such as driveway and parking areas. Construction activities are proposed to include the clearing of vegetation and trees along the eastern right of way to install a new driveway into the Site (the existing entrance will be closed). The Anthropogenic and Cultural Meadow areas of the Site will be cleared to accommodate parking area and patio areas. Preliminary concept plans indicate a retaining wall may be required at the northern edge of the Site to ensure slope stabilization. A roundabout will allow for vehicle turning and entrance into the parking area. The majority of the western portion of the site will be parking areas with barrier free parking closest to the building and some additional overflow parking on the northwest portion of the property (where the current entrance lay out is). A storm water management pond will be constructed in the southeast corner of the property.

The old mill building will be renovated and updated to be an event venue. Part of these works will include sealing the building to prevent any wildlife from entering the building.

Refer to **Figure 6** for a depiction of the Area impacted by the proposed development.



Legend

- Subject Site
- Study Area (120 m)
- Right of Way
- Site Plan (Proposed)
- Watercourse (GEO, Arcadis)
- Significant Woodlands (Arcadis)
- Significant Valleylands (Arcadis)
- Regulation Limit (GRCA)
- Wetland (GRCA)

Client: **Greenfield Mill Inc.**

Project: 3089 Greenfield Road, Ayr

Title: **Figure 6 : Potential Impacts**

Prepared By: **ARCADIS**

8 Impact Assessment and Mitigation

The following sections describe the anticipated environmental impacts associated with the proposed development (**Figure 6**) and the mitigation measures that should be implemented.

This impact assessment and associated mitigation measures consider both temporary (i.e., construction-related) impacts and permanent impacts associated with the long-term occupation of the development.

8.1 Hydrogeologic and Geologic Description

The proposed development will increase impervious surface coverage, which is anticipated to modify natural infiltration, recharge, and groundwater flow conditions. These changes, coupled with grading and soil disturbance, may alter existing hydrogeological and geological functions of the site. Site-specific hydrogeological investigations can be found under a separate cover Chung & Vander Doelen, 2026.

Potential Impacts – Construction Implementation

- Removal of vegetation and construction activities may expose underlying soils to erosion, leading to sediment transport and potential instability.
- Improper handling of fuels, lubricants, or construction materials may introduce contaminants into subsurface soils and groundwater.

Proposed Mitigation Measures – Design Phase

- ✓ Grading and drainage plans should be designed to maintain pre-development water balance, incorporate Low Impact Development infrastructure measures where feasible and preserve natural recharge where feasible.
- ✓ Geotechnical assessments should inform foundation design and earthworks to avoid settlement, instability, or groundwater-related issues.

Proposed Mitigation Measures – Construction Implementation

- ✓ A site-specific erosion and sediment control plan shall be implemented to prevent sedimentation / siltation of groundwater and adjacent features.
- ✓ Site grading should be avoided during wet periods which may contribute to slope instability or sedimentation.
- ✓ A site-specific Spill Plan shall be prepared and available on-site during construction to prevent contamination of soils, surface water, and groundwater.
- ✓ Stabilize exposed soils and stockpiles with coverings, vegetation, or other erosion-prevention measures; stockpiles shall be located away from drainage pathways.

8.2 Aquatic Environment

The floodplain functions contribute to local hydrology, water quality, and flood management. Consultation with GRCA for works within the regulated area shall ensure that functions are maintained.

8.2.1 Floodplain and Regulated Limit

Due to the location of the Site within the GRCA regulated area (associated with the floodplain hazard and slope hazard), consultation and a permit / authorization from GRCA will be required for Project activities.

Potential Impacts – Construction Implementation

- Grading activities and vegetation / tree removals could lead to sedimentation / siltation into adjacent areas.
- Changes to on-site drainage patterns and volumes may alter surface water flow to the adjacent wetlands, potentially affecting hydrologic inputs and wetland function.
- Changes to on site soil volumes may alter floodplain capacity.

Proposed Mitigation Measures – Design Phase

- ✓ Project activities shall not occur within the regulated area without GRCA approval.
- ✓ Grading and drainage shall be designed to maintain existing surface water flows to the wetland and avoid altering floodplain storage capacity.
- ✓ Grading and site alteration shall be designed in consultation with GRCA to maintain adequate floodplain capacity.

Proposed Mitigation Measures – Construction Implementation

- ✓ A site-specific erosion and sediment control plan shall be implemented to prevent sedimentation / siltation of groundwater and adjacent features.

Due to the location within the GRCA regulated area a permit/authorization from GRCA will be required.

8.3 Terrestrial Environment

To accommodate construction, the ELC communities proposed for removal (i.e., located within the development area) is the anthropogenic community class (e.g., infrastructure, buildings, roadways, and mowed lawn), Cultural Meadow class, and Cultural Woodland class. Recent proposed design changes would propose to remove a small portion of Deciduous Forest proposed to accommodate a new entrance driveway along the east right of way into the Site.

8.3.1 Vegetation Communities

To accommodate the construction of the proposed development, the Site will be further cleared as necessary, and the property will be graded. Approximately 0.4 ha of cultural meadow area and 0.4 ha of cultural woodland will be removed to accommodate the development. Approximately 0.7 ha of anthropogenic will be altered to accommodate the development. A proposed new entrance driveway along the east right of way would require the clearing of 0.25 ha of deciduous forest.

Potential Impacts – Construction Implementation

- The permanent loss of or disturbance to vegetation / trees.
- Permanent loss of approximately 0.4 ha of the Cultural Meadow and 0.25 ha Deciduous Forest communities.
- Increased heat retention due to replacement of vegetated areas with infrastructure / pavement.
- Changes in natural drainage patterns.
- Potential for on-site erosion and deposition of sediment into adjacent vegetation communities.

Proposed Mitigation Measures – Planning and Design Stage

- ✓ Tree removals within the Significant Woodland requires a permit in accordance with Region of Waterloo's Woodland Conservation Bylaw 08-026 (Region of Waterloo 2008).

- ✓ Landscaping plans should incorporate native vegetation and plantings to increase the abundance of native vegetation species on the site and to offset any loss of species from tree removals.
- ✓ Replanting of native tree species on site to offset the loss of trees due to the development should occur in the northeast corner of the Site.
- ✓ Incorporate permeable or light-coloured surfaces wherever possible to reduce heat retention.

Proposed Mitigation Measures – Construction Implementation

- ✓ Orange snow fencing or other suitable fencing should be used to delineate the construction limits from the setback on the adjacent Cultural Woodland and Deciduous Forest.
 - This will prevent encroachment of construction activities into natural heritage features. This fencing should be monitored weekly to ensure it is functioning properly. Any deficiency in the fencing should be dealt with within 48 hours of notification.
- ✓ A site-specific erosion and sediment control plan should be implemented to prevent on-site erosion and sedimentation / siltation outside of work areas.
- ✓ Machinery will arrive on site in a clean condition and will be free of fluid leaks, invasive species, and noxious weeds.

Proposed Mitigation Measures – Post-Construction

- ✓ All excess construction material shall be removed from the Site and disturbed areas shall be restored in accordance with site-specific plans upon Project completion.

With the successful implementation of the mitigation measures outlined above, a low decrease in native terrestrial vegetation is anticipated due to a minor amount of vegetation proposed for removal. These impacts can be mitigated through the planting of new native vegetation on Site or near the Site.

8.3.2 Woodlands

To accommodate the construction of the proposed development, the Site will be further cleared of herbaceous vegetation as necessary, and the property will be graded. A proposed new entrance driveway along the east right of way would require the clearing of 0.25 ha of deciduous forest.

Potential Impacts – Construction Implementation

- The permanent loss of or disturbance to vegetation / trees.
- Permanent loss of approximately 0.25 ha of the Deciduous Forest and 0.4 ha of Cultural Woodland communities.
- Increased heat retention due to replacement of vegetated areas with infrastructure / pavement.
- Changes in natural drainage patterns.
- Potential for on-site erosion and deposition of sediment into adjacent vegetation communities.

Proposed Mitigation Measures – Planning and Design Stage

- ✓ Tree removals within the Significant Woodland (the Deciduous Forest and much of the Cultural Woodland communities) requires a permit in accordance with Region of Waterloo's Woodland Conservation Bylaw 08-026 (Region of Waterloo 2008).
- ✓ Landscaping plans should incorporate native vegetation and plantings to increase the abundance of native vegetation species on the site and to offset any loss of species from tree removals.

- ✓ Replanting of native tree species on site to offset the loss of trees due to the development should occur in the northeast corner of the Site.
- ✓ Incorporate permeable or light-coloured surfaces wherever possible to reduce heat retention.

Proposed Mitigation Measures – Construction Implementation

- ✓ Clearing of trees / snags should be avoided during the active bat and breeding bird seasons (i.e., March 15 through November 30, inclusive).
- ✓ All Ash (Fraxinus sp) trees removed should be treated as infected by the Emerald Ash Borer beetle and appropriately disposed of so not to infect other areas.
- ✓ Orange snow fencing or other suitable fencing should be used to delineate the construction limits from the adjacent natural areas.
 - This will prevent encroachment of construction activities into natural heritage features. This fencing should be monitored weekly to ensure it is functioning properly. Any deficiency in the fencing should be dealt with within 48 hours of notification.

Proposed Mitigation Measures – Post-Construction

- ✓ Post-construction tree maintenance methods should be used to repair any damage caused to trees by construction activities. These may include, but is not limited to: treating trunk and crown injuries, irrigation and drainage, mulching, and aeration of root zone; and,
- ✓ Within 12 months of completion of construction, an assessment of preserved trees should be conducted. Trees that are dead, in poor health, or hazardous should be removed or pruned, as determined by an ISA Certified Arborist. Tree removal, if necessary, should occur promptly to avoid foreseeable risk of trees falling and causing damage or harm to people and/or property.

With the successful implementation of the mitigation measures outlined above, a minor decrease in tree and woodland cover is anticipated due to a minor amount of vegetation proposed for removal. These impacts can be mitigated through the planting of new trees on Site and compensation areas on or near to the Site.

8.3.3 Wildlife and Wildlife Habitat (including Species at Risk)

Loss of wildlife is not anticipated due to project activities. A small loss of wildlife habitat (such as nesting or foraging habitat) is expected though the removal of trees and cultural meadow area. The following direct and indirect impacts on wildlife (including breeding birds, bats, and other mammals) are a possible result of the proposed development.

Potential Impacts – Construction Implementation

- Limited loss of nesting and foraging habitat from vegetation / tree removal within the property.
- Potential physical harm to wildlife nests during clearing and construction activities.
- Displacement, injury, or death resulting from contact with heavy equipment during clearing and grading activities.
- Loss of general natural habitat suitable for the life processes of common urban and rural wildlife.
- Disturbance to wildlife resulting from noise and vibrations associated with construction activities, particularly during breeding periods.
- The increased potential for fatal bird collisions associated with facility windows following construction.

Proposed Mitigation Measures – Planning and Design Stage

- ✓ “Bird-friendly” building design principals should be considered in the design of the development. For example, general building design should incorporate anti-reflection / anti-collision bird friendly glass (FLAP Canada 2022).
- ✓ Vegetation planting should consider bird breeding, wildlife shelter, and wildlife foraging habitat within the Site.

Proposed Mitigation Measures – Construction Implementation

- ✓ Impacts to natural vegetation should be minimized to the extent possible.
- ✓ Clearing of trees / snags should be avoided during the active bat season (i.e., March 15 through November 30, inclusive), also encompassing the breeding bird season (i.e., April 1 to August 31, inclusive).
- ✓ Idling of construction machinery should be limited to reduce disturbance to resident wildlife.
- ✓ Should wildlife enter the work area, activities in that area shall cease and the wildlife shall be allowed to vacate the site under its own power.
- ✓ If any wildlife are injured or found injured during construction, a qualified wildlife rehabilitation centre should be contacted. Injured wildlife should be transported to a qualified facility for care with a small donation of money to help pay for their care.

With the successful implementation of the mitigation measures outlined above, a low decrease in wildlife habitat is anticipated due to a minor amount of vegetation proposed for removal. It is expected that these impacts will be negligible and that these impacts can be mitigated through the planting of new native vegetation on Site.

8.4 Species at Risk (Endangered / Threatened) and Their Habitat

If the proposed driveway through the east right of way is implemented this could impact SAR bat habitat through the removal of 0.25 ha of treed habitat and removal of maple or oak trees within the Site would remove foliage roosting opportunities. Bat acoustic monitoring should be completed for 10 days in June-July to assess the species of bats that may be using the forested area or the old rock walls of the structures. If SAR bats are detected then registration with MECP will be required. Anticipated mitigation measures are listed below:

Potential Impacts – Construction Implementation

- The permanent loss of or disturbance to vegetation / trees.
- Permanent loss of approximately 0.25 ha of the deciduous forest and 0.4 ha of cultural woodland community.

Proposed Mitigation Measures – Planning and Design Stage

- ✓ Tree removals within the Significant Woodland requires a permit in accordance with Region of Waterloo’s Woodland Conservation Bylaw 08-026 (Region of Waterloo 2008).
- ✓ Landscaping plans should incorporate native vegetation and plantings to increase the abundance of native vegetation species on the site and to offset any loss of species from tree removals.
- ✓ Replanting of native tree species on site to offset the loss of trees due to the development should occur in the northeast corner of the Site.

Proposed Mitigation Measures – Construction Implementation

- ✓ Clearing of trees / snags should be avoided during the active bat and breeding bird seasons (i.e., March 15 through November 30, inclusive).

Proposed Mitigation Measures – Post-Construction

- ✓ Post-construction tree maintenance methods should be used to repair any damage caused to trees by construction activities. These may include, but is not limited to: treating trunk and crown injuries, irrigation and drainage, mulching, and aeration of root zone; and,
- ✓ Within 12 months of completion of construction, an assessment of preserved trees should be conducted. Trees that are dead, in poor health, or hazardous should be removed or pruned, as determined by an ISA Certified Arborist. Tree removal, if necessary, should occur promptly to avoid foreseeable risk of trees falling and causing damage or harm to people and/or property.
- ✓ Installation of a bat rocket box to replace lost roosting habitat.

There is potential for direct impacts to Endangered SAR bats and their habitat. Registration with MECP is recommended prior to any woody vegetation/tree clearing. These impacts can potentially be mitigated for through the mitigation measures above but consultation and registration with MECP will determine the final mitigation requirements.

8.5 Significant Natural Heritage Features

There are seven categories of provincially-designated Significant Natural Heritage Features listed under the Provincial Planning Statement, 2024 (**Section 4.7**). Relevant to this Project there are two: Habitat of Endangered and Threatened Species, and SWH. Both these categories may apply to the treed areas of the Site. At the time of scoping this report no impacts were anticipated to the forested area on the east side of the Site therefore, no breeding bird surveys or bat acoustic were completed. Late in 2025 a new laneway was proposed to be installed in the right of way on the east side of the Site which cuts through an area of Deciduous Forest (**Figure 5**). Further investigation may be required to determine if there is SWH present within the right of way Deciduous Forest.

Potential Impacts – Construction Implementation

- The permanent loss of or disturbance to vegetation/trees.
- Permanent loss of 0.25 ha Deciduous Forest communities.
- Increased light and noise pollution into the natural areas.

Proposed Mitigation Measures – Planning and Design Stage

- ✓ Tree removals within the Significant Woodland requires a permit in accordance with Region of Waterloo's Woodland Conservation Bylaw 08-026 (Region of Waterloo 2008).
- ✓ Landscaping plans should incorporate native vegetation and plantings to increase the abundance of native vegetation species on the site and to offset any loss of species from tree removals.
- ✓ Replanting of native tree species on site to offset the loss of trees due to the development should development occur in the northeast corner of the Site.
- ✓ Planting of native trees and shrubs around the perimeter of the development in order to reduce noise and light pollution into the natural area.

Proposed Mitigation Measures – Construction Implementation

- ✓ Orange snow fencing or other suitable fencing should be used to delineate the construction limits from the setback on the adjacent Cultural Woodland and Deciduous Forest.
 - This will prevent encroachment of construction activities into natural heritage features. This fencing should be monitored weekly to ensure it is functioning properly. Any deficiency in the fencing should be dealt with within 48 hours of notification.

Proposed Mitigation Measures – Post-Construction

- ✓ All excess construction material shall be removed from the Site and disturbed areas shall be restored in accordance with site-specific plans upon Project completion.

There is potential for impacts to Significant Natural Heritage Features but with the successful implementation of the mitigation measures outlined above, a minor decrease in potential significant wildlife habitat is anticipated due to a minor amount of vegetation proposed for removal. It is expected that these impacts will be negligible and that these impacts can be mitigated through the planting of new native vegetation on Site.

9 Recommendations

The following recommendations have been suggested to support the proposed Project while reducing impacts and enhancing surrounding natural heritage features:

- ✓ Landscaping plans should incorporate native vegetation and plantings to increase the abundance of native vegetation species on the site and provide foraging and habitat opportunities for local wildlife.
- ✓ Replanting of native tree species on site to offset the loss of trees due to the development with a focus on replanting around the outer edges of the property. This could provide valuable wildlife habitat while also providing a buffer to the natural area from the anthropogenic area to reduce noise and light pollution into the adjacent natural areas.
- ✓ Installation of a bat rocket box to provide bat roosting habitat. Even if no SAR bats are present on site the installation of a bat rocket box could provide habitat to other species of bat and increase the habitat available to them in the area. Bats provide many beneficial services by reducing pest levels and are important components of local ecosystems.
- ✓ Maintenance of the chimney for Chimney Swift roosting and/or nesting. While no nesting behavior was observed during the 2025 field investigations, the chimney was seen to be used by Chimney Swifts for roosting and migration. Maintaining the chimney as it is, and preventing any deterioration of the chimney will positively benefit Chimney Swifts and could provide interesting social and educational opportunities to visitors to the mill. A “Swift Night Out” social evening where visitors can attend to watch swifts enter the chimney for the night can provide an interesting and educational experience many people do not have an opportunity to observe.

10 Summary and Conclusion

Given the proposed development on a former mill site largely composed of anthropogenic features (a former mill with associated informal parking areas) it is expected that the impacts to the natural environment will be limited and restricted to areas previously impacted by anthropogenic activities. The biggest impact will be the loss of some mature trees within the road right of way. Native tree plantings can be utilized to offset the negative impacts

of this loss of trees from the development. If native tree and vegetation plantings occur in the south portion of the Site it could increase the size and diversity of the natural area on property to the south of the Site. Ongoing use and maintenance of the mill will ensure the chimney remains in good condition and available for Chimney Swifts to utilize.

10.1 Policy Conformity and Next Steps

Project-specific details and next steps, to help ensure adherence to the applicable policies and legislation, are included below:

Migratory Birds Convention Act, 1994

Any vegetation removal should avoid the breeding bird season: April 1 to August 31, inclusive, to reduce the potential for incidental take of active bird nests.

Fish and Wildlife Conservation Act, 1997

In the case that wildlife is observed within the work area, all work in the area shall stop until the animal has left the area on its own. In the case that wildlife relocation is required, consultation with MNR would be required to obtain the necessary permits and approvals under the FWCA.

Species Conservation Act, 2025

Due to the presence of day roosting habitat and the potential presence of foliage-roosting bat Species at Risk, registration with MECP will be required and any tree removals should avoid the active bat season: March 15 to November 30, inclusive.

GRCA Permit

Due to the location of the Site within the GRCA regulated area (associated with the floodplain hazard and slope hazard), consultation and a permit/authorization from GRCA will be required for Project activities.

Region of Waterloo Woodland By-law

Tree removals within the Significant Woodland requires a permit in accordance with Region of Waterloo's Woodland Conservation Bylaw 08-026 (Region of Waterloo 2008).

11 References

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Appendix A

Township Official Plan Maps

LEGEND

Landscape Level Systems

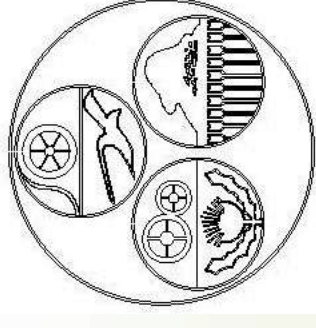
-  Significant Valleys
-  Environmentally Sensitive Landscape
-  Provincial Greenbelt Natural Heritage System
-  Regional Recharge Areas (also shown on Map 4)

Core Environmental Features

-  Core Environmental Features

Supporting Environmental Features








-  Supporting Environmental Features



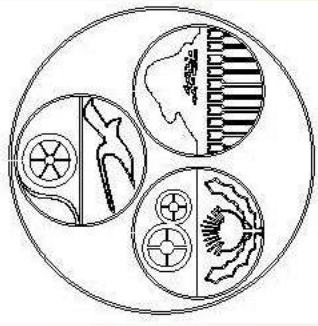
**TOWNSHIP
OF
NORTH DUMFRIES**

**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.



TOWNSHIP OF NORTH DUMFRIES

OFFICIAL PLAN

MAP 5B ENVIRONMENTAL CONSTRAINT AREAS


LEGEND	
	Provincial Highway
	Regional Road
	Local Road
	River
	Municipal Boundary
	Railway
Sources: Region of Waterloo	

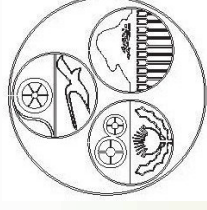
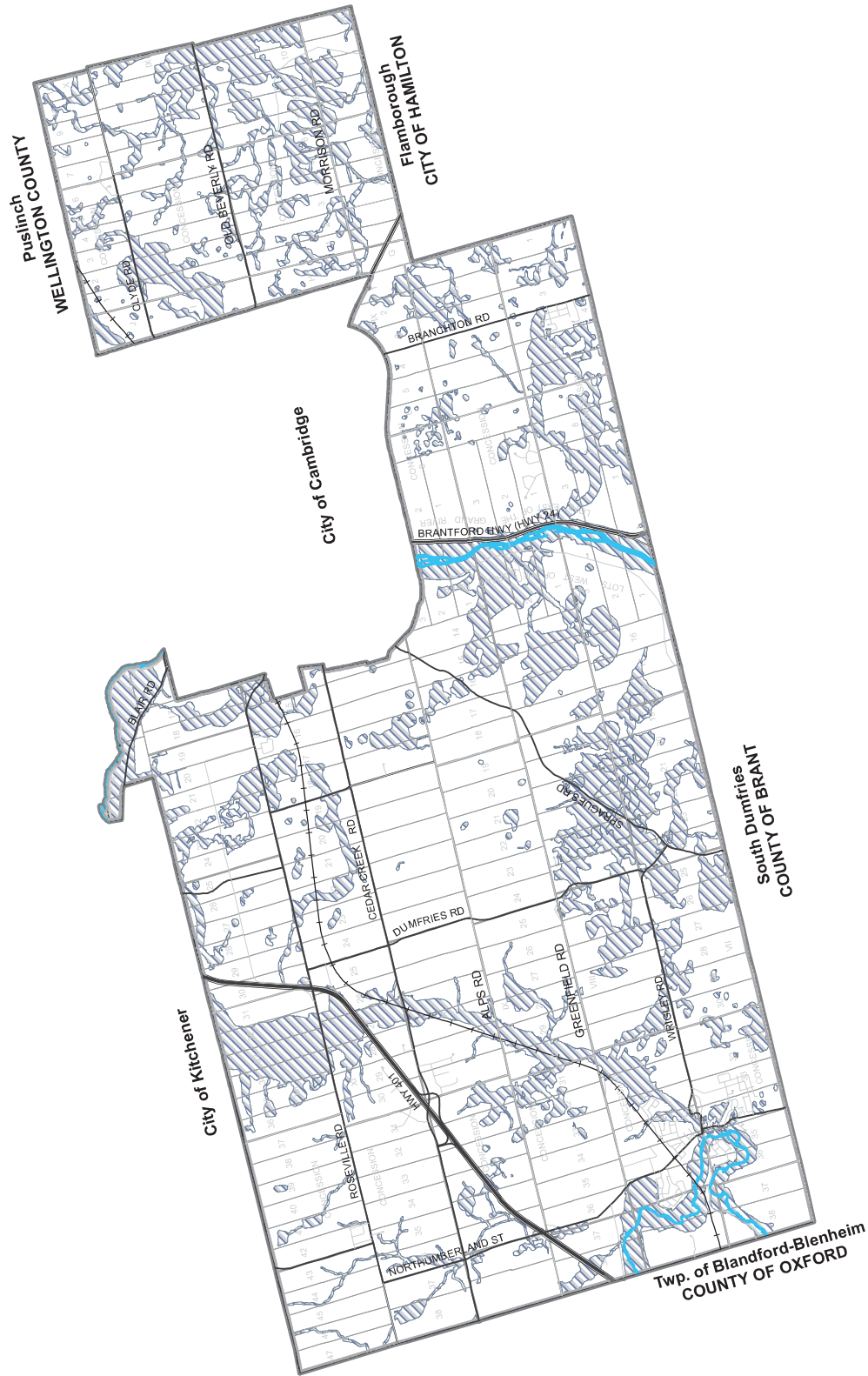
Note:
This map forms part of the Official Plan of the Township of North Dumfries and must be read in conjunction with the other maps and policies of this Plan.

LEGEND	
	Environmental Constraint Areas








Twp. of Blandford-Blenheim
COUNTY OF OXFORD

LEGEND
 Hazard Lands



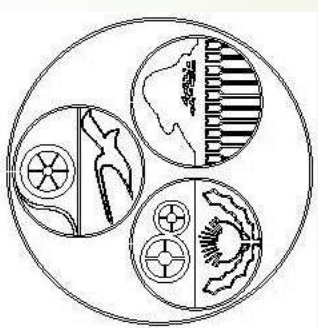
**TOWNSHIP
OF
NORTH DUMFRIES
OFFICIAL
PLAN**

**MAP 5C
HAZARD LANDS**

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.



TOWNSHIP OF NORTH DUMFRIES

OFFICIAL PLAN

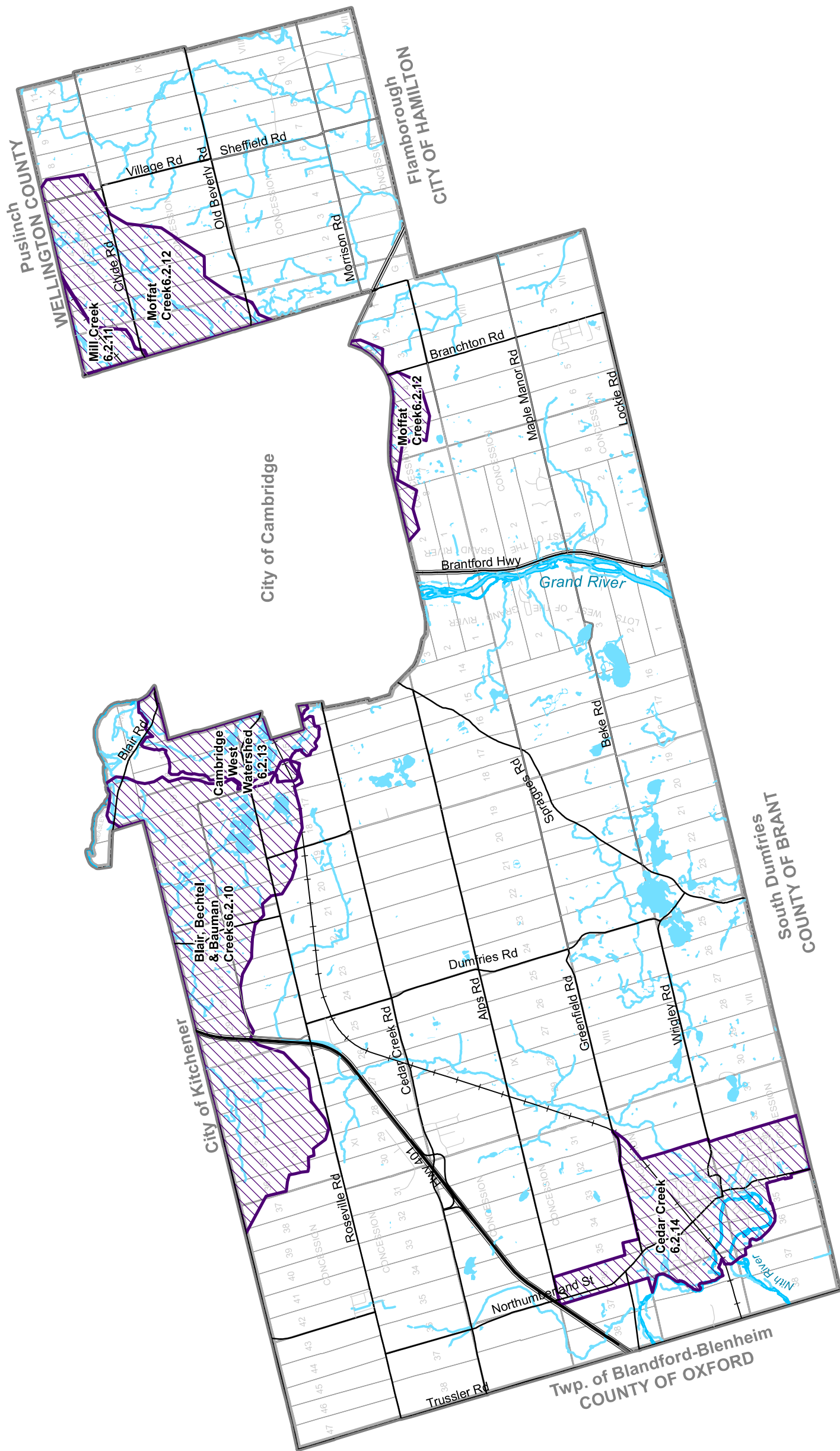
MAP 6 WATERSHED STUDY AREAS

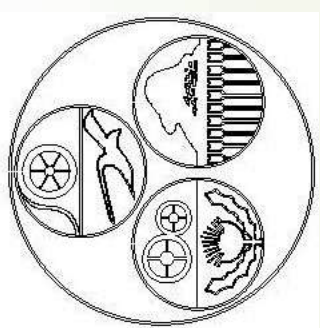
LEGEND	
	Provincial Highway
	Regional Road
	Local Road
	River
	Municipal Boundary
	Railway

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 & Technical Services
150 Frederick Street, 5th Floor
Kitchener, Ontario N2G 4J3
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Township of North Dumfries, Ministry of Infrastructure
Author: E.Arup

LEGEND	
	Study Area





TOWNSHIP OF NORTH DUMFRIES

OFFICIAL PLAN

MAP 7 THE COUNTRYSIDE

LEGEND	
	Provincial Highway
	Regional Road
	Local Road
	River
	Municipal Boundary
	Railway

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.

Prepared by:
Planning & Technical Services
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Kitchener, Ontario N2G 4J3
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Township of North Dumfries, Ministry of Infrastructure

LEGEND	
	Protected Countryside
	Prime Agricultural Area
	Rural Areas
	Countryside Line



Appendix B

Terms of Reference

Memo

**SUBJECT**

Scoped Environmental Impact Study Terms of Reference
– 3089 Greenfield Road, North Dumfries

TO

Greenfield Mill Inc. c/o Kurt Fried

DATE

September 8, 2025

PROJECT NUMBER

30257790 - 147018

COPIES TO

Stefanie Pratt, Arcadis

NAME

Erin M. Hellinga
Erin.Hellinga@arcadis.com

Introduction

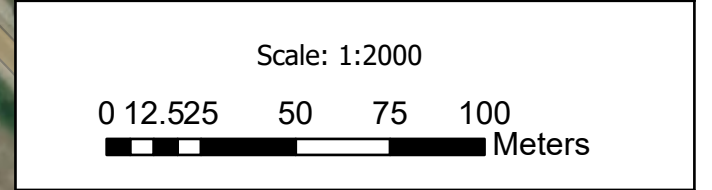
This document details the Scoped Environmental Impact Study (EIS) Terms of Reference (TOR) in support of the proposed re-development of the old mill property (the Project) at 3089 Greenfield Road, Ayr, Ontario, within the boundaries of the Township of North Dumfries in the Regional Municipality of Waterloo (the Subject Site).

Arcadis Professional Services (Canada) Inc. (Arcadis) has been retained by Greenfield Mill Inc. to prepare this Scoped EIS TOR to scope the work required for natural heritage studies and reporting. The Scoped EIS will meet the requirements of the Grand River Conservation Authority (GRCA; 2005) *Environmental Impact Study Guidelines and Submission Standards for Wetlands* and the Township of North Dumfries Official Plan (2018 Consolidation), as applicable.

The Scoped EIS will identify the nature and extent of ecological features and their functions and assess the Site Plan, under preparation by Arcadis, and proposed Project activities to determine potential impacts (direct, indirect, and cumulative) to the natural environment. The Scoped EIS will also identify mitigation measures to avoid, minimize, or compensate for potential impacts based on the current proposed Site Plan and determine requirements to ensure adherence to relevant policies and legislation.

Background

This Scoped EIS TOR has been prepared to scope the work required for natural heritage studies and biological assessment services to be completed for the proposed re-development of the old mill property within the Subject Site at 3089 Greenfield Road, Ayr and the lands within 120 metres (collectively identified as the Study Area; **Figure 1**). The Subject Site is approximately 1.79 hectares and largely composed of a former mill, associated informal parking areas, and sparsely treed lands.



Legend

- - - Study Area (120 m)
- ▭ Subject Site
- Watercourse (GEO)

N
▲

Client: **Greenfield Mill Inc.**

Project: 3089 Greenfield Road, North Dumfries

Title: **Figure 1 : Subject Site and Study Area**

Prepared By: **ARCADIS**

Project: 147018 | Date: 2025-02-14

Province of Ontario, Esri Canada, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, NPS, USFWS, NRCan, Parks Canada, Esri Community Maps Contributors, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, NRCan, Parks Canada, Maxar

Environmental Impact Study Terms of Reference

The Scoped EIS will ensure an accurate assessment of the natural heritage features and functions and will determine requirements to ensure adherence to all relevant policy and legislative obligations.

The following sections provide a Scoped EIS TOR outlining the content required to report the natural heritage features and assess and avoid, mitigate, or compensate for the potential impacts of the proposed Project.

Executive Summary

A brief executive summary will be included at the front of the report to describe the proposed development, and provide a concise overview of the key findings, conclusions, and recommendations of the study. The executive summary is intended to provide a clear and concise understanding of the environmental consequences of the proposed project, and to facilitate informed decision-making.

Introduction

As an introduction to the proposed Project, this section of the Scoped EIS will:

- Identify the purpose of the proposed Project;
- Provide background and context for the proposed project;
- Describe and illustrate the size and location of the Subject Site;
- Provide property information for the Subject Site; and
- Describe the Scoped EIS process by clearly defining the scope and objectives of the Scoped EIS.

Study Area

The Study Area for this Project will include the area within 120 m of the Subject Site to account for policy requirements and setback distances outlined in the *Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005* (MNR 2010). Specific Species at Risk (SAR) and natural heritage features may be considered up to 10 km, based on applicable wildlife atlases and government resources.

Relevant Policy and Legislative Framework

This study will reference the regulatory agencies and legislative authorities mandated to protect different elements of the natural heritage system, features, and functions within the Township of North Dumfries, Ontario, and Canada. The applicable policies and legislation for the protection of natural heritage features (including but not limited to watercourses, wetlands, and SAR) within these jurisdictions will be reviewed and their implications relevant to the Project will be discussed throughout the appropriate sections of the Scoped EIS.

Relevant policies and legislation will include, but may not be limited to the following, as amended:

- *Fisheries Act, R.S.C., 1985, c. F 14*
- *Species at Risk Act, S.C. 2002, c. 29*
- *Migratory Birds Convention Act, 1994, S.C. 1994, c. 22*
- *Endangered Species Act, 2007, S.O. 2007, c. 6*
- *Fish and Wildlife Conservation Act, 1997, S.O. 1997, c. 41*

- *Conservation Authorities Act, R.S.O. 1990, c. C.27*
- *Prohibited Activities, Exemptions, and Permits (O. Reg. 41/24)* administered by GRCA
- *Planning Act, R.S.O. 1990, c. P.13*
- *Provincial Planning Statement, 2024*
- *Township of North Dumfries Official Plan, 2018 Office Consolidation*

Background Review

The desktop review of background information will include a search of a variety of online sources made available to organizations, private individuals, consultants, and developers. This information is often considered under various pieces of legislation or as part of regulatory approvals and planning processes. In addition to the relevant policies and legislation, and their guidelines and supporting documents, review of background information and studies will include, but may not be limited to, the following:

- Ontario wildlife atlases and observation records;
- Species-specific resources, as required;
- GRCA resources; and
- Agency consultation, as required.

Through the desktop review, details of the natural environment such as species lists and mapping of natural heritage features and associated hazards will be generated. At a minimum, findings from secondary source review will be summarized and discussed in the following report sections:

1. Historic Land Use

- The landscape will be described based on recent and historic aerial imagery, including and beyond the Study Area limits, to understand the context of the natural environment and changes over time

2. Landform, Geology, and Soils

- The Scoped EIS will include a description of the landforms, surficial geology, and soils based on a review of available mapping and literature. Topographical information will be provided, as available.

3. Hydrogeological Studies

- Groundwater interactions with any present drainage or natural heritage features within the Study Area will be confirmed by others and briefly discussed in the Scoped EIS. All other hydrogeological information will be discussed under separate cover.

4. Aquatic Environment

- As available, details of the existing aquatic environment will be summarized.

5. Terrestrial Environment

- As available, details of the existing terrestrial environment will be summarized. The Township has identified that the Study Area is within a Significant Valleyland. As such, tree removal should be minimized and compensation planting should be provided to ensure the environmental and scenic value of the area is preserved in accordance with the policies of the Township and Regional Official Plans.
- As necessary, staking of the top of valley will be completed with Grand River Conservation Authority staff.

6. Species at Risk (SAR) and Species of Conservation Concern

- A Species at Risk Screening will be completed in accordance with the Ministry of the Environment, Conservation and Parks' (MECP) 2019 Draft *Client's Guide to Preliminary Screening for Species at Risk*.
- Probability of occurrence of SAR and Species of Conservation Concern and their habitat will be summarized and illustrated, as needed.

Field Investigation Methodology

In support of the proposed Project, field surveys will be completed to identify and assess the natural heritage features within the Study Area. The Scoped EIS will identify and analyze the existing natural heritage features and functions of the Study Area identifying biodiversity, habitat, vegetation structure, connections and linkages, proximity to water, hazard areas, etc. Specific requirements for natural heritage inventories and field assessments will depend on the presence of natural features, gaps in existing data, and specifications of the relevant policy and legislative framework.

Scope of Work

Based on the current understanding of the existing natural environment, the natural heritage surveys described below have been scoped to reflect the habitat present on the Subject Site and assess the impacts of the proposed re-development on the natural environment. These surveys will follow industry standard protocols, and the results will be used to evaluate the potential for negative impacts resulting from the proposed Project.

Physical surveys will only be undertaken within the Subject Site. As necessary, natural features within the larger Study Area will be evaluated from a distance or via air-photo interpretation. It is assumed that Significant Wildlife Habitat is present within the treed portion of the Study Area and this area will be treated as such and appropriate setbacks will be applied. Thus, the following surveys have been scoped to reflect this assumption.

The following text identifies the need for, and status of, field surveys for the Project:

Aquatic Environment

- No additional aquatic field surveys are required, based on the lack of aquatic features within the Subject Site. The historic mill race was previously filled and graded and is no longer present on the Subject Site.

Terrestrial Environment

- Preliminary Site Visit (Completed Fall 2024); and
- Pileated Woodpecker cavity nest search (Completed Fall 2024).

Species at Risk

- Targeted Species at Risk search for protected trees and herbaceous species; and
- Bat exit surveys and acoustic surveys (June and July).

Incidental Wildlife

All field surveys will include records of incidental wildlife observations by sight, vocalization, tracks, and scat. Wildlife use of the site as noted by trails / corridors and nesting activity will also be recorded.

Field Investigation Results

Through the completion of field surveys, baseline details of the natural environment will be reported. Results will be summarized and discussed in report sections mirroring those listed under methodology, as appropriate. All surveys will be summarized in a table to identify purposes, date, attendees, etc. The findings will be illustrated in a series of figures to clearly delineate known natural heritage features and associated hazards and identify the location of key field data that may present additional constraints to development (e.g., SAR habitat).

Description of Proposed Project

This section will include a complete description of the proposed Project such that development constraints and enhancement opportunities can be determined, and impacts can be assessed.

Project details should include, but not be limited to, the following:

- Location and size of buildings, structures, parking areas, driveways, etc. (shown in a figure including the Site Plan);
- Ground disturbance, including permanent and temporary grade changes;
- Location of stormwater management facilities and low impact development features, as applicable; and
- Timing of construction activities.

Impact Assessment and Mitigation

The impact assessment will identify the manner in which the proposed development may impact the natural heritage features, and their ecosystem functions, within the Study Area. Where appropriate, these impacts will be directly associated with avoidance, mitigation, and restorations strategies to address the potential impacts of the proposed development.

Mitigation Measures

With the hierarchical goal of avoiding, minimizing, mitigating, and compensating for predicted environmental impacts, this section of the Scoped EIS will identify the methods through which natural heritage features and their ecosystem functions within the Study Area can be protected.

Where possible, mitigation measures will include identification and detailed explanation of alternative options to mitigate predicted environmental impacts. This may include modifications to the development proposal to avoid effects on key features or functions, and/or methods to restore features or functions that may be impacted.

Ultimately, the proponent will be responsible for assessing the feasibility of the proposed mitigation measures and ensuring that they can be incorporated into the re-development proposal. Based on the current conceptual plan, the re-development is expected to have minimal impact on natural heritage features and standard mitigation measures (e.g., erosion and sediment control) are anticipated to provide sufficient protection.

Recommendations

Where practicable, recommendations will include:

- Additional protection or habitat enhancement for SAR and/or Species of Conservation Concern that are confirmed present.
- Proposed improvements to the identified Natural Heritage Network and significant natural heritage features and their ecosystem functions; and
- Proposed enhancement areas to support lands that add to or connect to core features.

Summary and Conclusion

This section of the Scoped EIS will summarize the net effects of the Project following the implementation of mitigation measures, compensation, recommendations, and monitoring.

Policy Conformity

Referring to the Relevant Policy and Legislative Framework (including applicable regulations), this section will assess the potential impacts, post mitigation and compensation, to determine policy conformity and next steps, as required.

References

All literature cited within the Scoped EIS will be included.

Appendices

Site-specific data, photos, and correspondence records (as applicable) will be included in appendices.

Closure

Following acceptance of this Scoped EIS TOR by the Township of North Dumfries and GRCA, Arcadis will complete the required studies and prepare the Scoped EIS for the Project. Arcadis will prepare a draft Scoped EIS and circulate for review. Upon feedback, Arcadis will revise and circulate a final Scoped EIS to review agencies.

This Scoped Environmental Impact Study Terms of Reference has been provided by Arcadis with the understanding that the methodology applied for desktop and field studies and the assessments described herein are required to meet industry standards and the expectations of all stakeholders.

References

Grand River Conservation Authority (GRCA). 2005. Environmental Impact Study Guidelines and Submission Standards for Wetlands. Cited online: https://www.grandriver.ca/media/fl2ojiqd/eis_guidelines_august05.pdf
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Ministry of Natural Resources (MNR). 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005. Second Edition. Toronto: Queen's Printer for Ontario. 248 pp.

Township of North Dumfries. 2018. Township of North Dumfries Official Plan. Cited online: <https://www.northdumfries.ca/en/doing-business/resources/Documents/2018-Oct-North-Dumfries-Official-Plan.pdf>. Last Accessed March 2025.

Appendix C

Species at Risk Screening Table

English Name	Scientific Name	Habitat assessment	Conservation Status			Source	Probability of Occurrence within Study Area
			S Rank (Provincial)	SARA Schedule 1	SCA		
Birds							
Acadian Flycatcher	<i>Empidonax virescens</i>	Found in mature, shady forests with ravines, or in forested swamps with lots of maple and beech trees where they nest in the lower branches of trees. (Ontario 2026)	S1B	END	Not Listed	OBBA	Low - Forest habitat on the site is young and too open canopy to provide habitat for this species.
Bank Swallow	<i>Riparia riparia</i>	Sand, clay or gravel river banks or steep riverbank cliffs; lakeshore bluffs of easily crumbled sand or gravel; gravel pits, road-cuts, grassland or cultivated fields that are close to water; nesting sites are limiting factor for species presence (MNR 2000).	S4B	THR	Not Listed	NHIC, eBird	None - No bluff habitat present within the study area. Likely to far from any bluff habitat to provide foraging area.
Barn Swallow	<i>Hirundo rustica</i>	Farmlands or rural areas; cliffs, caves, rock niches; buildings or other man-made structures for nesting; open country near body of water (MNR 2000).	S5B	THR	Not Listed	OBBA, eBird	None - No suitable buildings in the study area. May provide foraging habitat if there is nesting nearby.
Bobolink	<i>Dolichonyx oryzivorus</i>	Large, open expansive grasslands with dense ground cover; hayfields, meadows or fallow fields; marshes; requires tracts of grassland >50 ha (MNR 2000).	S4B	THR	Not Listed	OBBA	None - Small meadow present in the study area does not meet the size requirements of this species.
Cerulean Warbler	<i>Setophaga cerulea</i>	Mature, deciduous forests with large, tall trees and an open under storey. (Ontario 2026)	S2B	END	Not Listed	OBBA	Low - Forest habitat on the site is young and too open canopy to provide habitat for this species.
Chimney Swift	<i>Chaetura pelagica</i>	Urban areas near buildings; nests in hollow trees, crevices of rock cliffs, chimneys; highly gregarious; feeds over open water (MNR 2000).	S4B,S4N	THR	Not Listed	OBBA, eBird	None - No suitable buildings with chimneys in the study area. May provide foraging habitat if there is nesting nearby.
Common Nighthawk	<i>Chordeiles minor</i>	Breeds in a wide range of open habitats, such as beaches, recently logged or burned-over areas, forest clearings, short-grass prairies, pastures, open forests, marshes, lakeshores, gravel roads, river banks, rocky outcrops or barrens, railways and urban parks (COSEWIC 2007b).	S4B	SC	Not Listed	eBird	Low - No flat roof buildings with suitable roofing materials within the study area.
Eastern Meadowlark	<i>Sturnella magna</i>	A bird most common in native grasslands, pastures and savannas. It also uses a wide variety of other anthropogenic grassland habitats. As with other grassland bird species, the suitability of grassland habitat for this species involves a combination of landscape and patch characteristics (COSEWIC 2011b).	S4B	THR	Not Listed	OBBA	Low - Small meadow present in the study area does not meet the size requirements of this species.
Eastern Wood-Pewee	<i>Contopus virens</i>	Open, deciduous, mixed or coniferous forest; predominated by oak with little understory; forest clearings, edges; farm woodlots, parks (MNR 2000).	S4B	SC	Not Listed	OBBA, eBird	High - There is some woodland habitat and forest and forest edge habitat within the study area that may provide habitat.
Henslow's Sparrow	<i>Centronyx henslowii</i>	Prefers extensive, dense, tall grasslands where it can more easily conceal its small ground nest. But also been found in abandoned farm fields, pastures, and wet meadows. (Ontario 2026)	S1B	END	Not Listed	OBBA	Low - The meadow habitat in the Study Area contains high levels of shrubs and young trees.
Least Bittern	<i>Botaurus exilis</i>	Least bittern is found in a variety of wetland habitats, but strongly prefers cattail marshes with a mix of open pools and channels. This bird builds its nest above the marsh water in stands of dense vegetation, hidden among the cattails. The nests are almost always built near open water, which is needed for foraging. (Ontario 2026)	S4B	THR	Not Listed	OBBA	Low - The wetland habitat in the Study Area may provide limited habitat but appear to be shrub dominated rather than the cattails preferred by this species.
Wood Thrush	<i>Hylocichla mustelina</i>	Undisturbed moist mature deciduous or mixed forest with deciduous sapling growth; near pond or swamp; hardwood forest edges; must have some trees higher than 12 m (MNR 2000).	S4B	THR	Not Listed	OBBA	Moderate - Some woodland habitat within the Study Area adjacent to wetlands could provide habitat.

Reptiles

Blandings Turtle	<i>Emyonidea blandingii</i>	Blanding's turtles inhabit shallow lakes, ponds and wetlands with mucky bottoms. This species hibernates in the soft bottoms of water bodies. Other habitat features include rocks, logs or substrates in sunny locations that provide basking opportunities (COSEWIC 2005).	S3	END	THR	ORAA	Moderate - Some wetlands within the Study Area could provide habitat.
Midland Painted Turtle	<i>Chrysemys picta marginata</i>	Quiet, warm, shallow water with abundant aquatic vegetation such as ponds, large pools, streams, ditches, swamps, marshy meadows; eggs are laid in sandy places, usually in a bank or hillside, or in fields; basks in groups; not territorial (MNR 2000).	S4	SC	Not Listed	ORAA, NHIC	High - Wetland habitat, stream and storm water management ponds within the Study Area could provide habitat.
Queensnake	<i>Regina septemvittata</i>	Area adjacent to a river, stream or other body of water (e.g., pond, drainage canal, ditch) or marsh having overhanging shrubby vegetation and/or low-lying broad-leaved plants and grass-like plants as well as open rocky areas along the shore for sunning. Only occurs within southern Ontario. (Ontario 2026)	S2	END	END	ORAA	Low - The riverbank area to the south is outside the Study Area and the small ditch to the east of the Subject Site is likely to small to provide habitat.
Snapping Turtle	<i>Chelydra serpentina</i>	Permanent, semi-permanent fresh water; marshes, swamps or bogs; rivers and streams with soft muddy banks or bottoms; often uses soft soil or clean dry sand on south-facing slopes for nest sites; may nest at some distance from water; often hibernate together in groups in mud under water; home range size ~28 ha (MNR 2000).	S4	SC	Not Listed	ORAA	High - Wetland habitat, stream and storm water management ponds within the Study Area could provide habitat.

Mammals

Eastern Red Bat	<i>Lasiurus borealis</i>	Nearly any treed habitat can have potential for roosting habitat. Red Bats prefer roosting in leaves of maple and oak species but may also roost in small spaces or crevices found in loose bark and hollow trees. (Ontario 2026)	S3	END	END	OMA	Moderate - The treed habitats to the south and east within the Study Area could provide roosting habitat.
Eastern Small-footed Myotis	<i>Myotis leibii</i>	Roosts in caves, mine shafts, crevices or buildings that are in or near woodland; hibernates in cold dry caves or mines; maternity colonies in caves or buildings; hunts in forests (MNR 2000).	S2S3		END	OMA	Moderate - There is limited amounts of the preferred rock, cave and crevices habitat within the Study Area but the old stone rock walls of the old mill and adjacent structures could provide habitat.
Little Brown Myotis	<i>Myotis lucifugus</i>	Uses caves, quarries, tunnels, hollow trees or buildings for roosting; winters in humid caves; maternity sites in dark warm areas such as attics and barns; feeds primarily in wetlands, forest edges (MNR 2000).	S3	END	END	OMA	Moderate - The treed habitats to the south and east within the Study Area could provide roosting habitat.
Hoary Bat	<i>Lasiurus cinereus</i>	Nearly any treed habitat can have potential for roosting habitat. Bats will roost in small spaces or crevices found in loose bark and hollow trees. (Ontario 2025)	S3		END	OMA	Moderate - The treed habitats to the south and east within the Study Area could provide roosting habitat.
Tricolored Bat	<i>Perimyotis subflavus</i>	Nearly any treed habitat can have potential for roosting habitat. Bats will roost in small spaces or crevices found in loose bark and hollow trees. (Ontario 2025)	S3?	END	END	OMA	Moderate - The treed habitats to the south and east within the Study Area could provide roosting habitat.
Northern Myotis	<i>Myotis septentrionalis</i>	Nearly any treed habitat can have potential for roosting habitat. Bats will roost in small spaces or crevices found in loose bark and hollow trees (MNR 2000).	S3	END	END	OMA	Moderate - The treed habitats to the south and east within the Study Area could provide roosting habitat.
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	Nearly any treed habitat can have potential for roosting habitat. Bats will roost in small spaces or crevices found in loose bark and hollow trees. (Ontario 2025)	S3		END	OMA	Moderate - The treed habitats to the south and east within the Study Area could provide roosting habitat.

Insects

Monarch	<i>Danaus plexippus</i>	A combination of field and forest and provides locations to feed and to rest. Caterpillars eat exclusively milkweed and adults require the nectar of wildflowers to feed (Ontario 2023a).	S2N,S4B	END	Not Listed	OBA	Moderate - There is a small meadow area that could provide habitat.
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Fish

Black Redhorse	<i>Moxostoma duquesnei</i>	Pools and riffle areas of medium-sized rivers and streams that are usually less than two metres deep. These rivers usually have few aquatic plants, a moderate to fast current, and a sandy or gravel bottom. (Ontario 2026)	S2	THR	Not Listed	NHIC, DFO	None - No habitat for this species within the Study Area. Habitat occurs in the Nith River to the south.
Greater Redhorse	<i>Moxostoma valenciennesi</i>	Medium to large-size rivers that have moderate to swift flows and with coarse substrate. (Ontario 2026)	S3	SC	Not Listed	NHIC, DFO	None - No habitat for this species within the Study Area. Habitat occurs in the Nith River to the south.
Silver Shiner	<i>Notropis photogenis</i>	Medium to large size streams with swift currents that are free of weeds and have clean gravel or boulder bottoms. (Ontario 2026)	S2S3	THR	Not Listed	NHIC, DFO	None - No habitat for this species within the Study Area. Habitat occurs in the Nith River to the south.

Freshwater Mussels

Rainbow Mussel	<i>Villosa iris</i>	Small to medium-sized rivers with moderate to strong flows and sand, rocky, or gravel bottoms, in riffles or along vegetated shoreline. (Ontario 2026)	S2S3	END	Not Listed	DFO	None - No habitat for this species within the Study Area. Habitat occurs in the Nith River to the south.
Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	Small to medium rivers with clear water, in shallow riffle areas with clean gravel or sandy substrate. (Ontario 2026)	S1	SC	THR	DFO	None - No habitat for this species within the Study Area. Habitat occurs in the Nith River to the south.

Plants

Black Ash	<i>Fraxinus nigra</i>	Grows best in rich, moist, and well-drained soils often found along streams (FGCA, 2011).	S4	END	END	NHIC, iNat	Moderate - Habitat for this species could occur within the wetter portions of the Study Area such as the wetlands to the southeast.
Butternut	<i>Juglans cinerea</i>	Deciduous forests in small clearings, or along forest edges and treed fence lines. Prefers moist but well drained soils. (Ontario 2026)	S2?	END	END	iNat	Moderate - The open woodlands and woodland edge habitat could provide habitat for this species.

Legend

For the above Species List Tables

Conservation Status:

- END = Endangered
- THR = Threatened
- SC = Special Concern
- S-Rank = Provincial Rank
- S2 = Very rare in Ontario; usually between 5 and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation
- S3 = Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances. Most species with an S3 rank are assigned to the watch list, unless they have a relatively high global rank.
- S4 = Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.
- S5 = Very common and demonstrably secure in Ontario.
- SNA = Species is non-native to Ontario
- E = Introduced / Exotic in Ontario
- B = S-Rank refers to the breeding population of the species in the province.
- N = S-Rank refers to the non-breeding population of the species in the nation or state/province.

- eBird = eBird.org
- OBBA = Ontario Breeding Bird Atlas
- OBA = Ontario Butterfly Atlas
- OMA = Ontario Mammal Atlas
- iNat = iNaturalist.org
- NHIC = Ontario Natural Heritage and Information Network

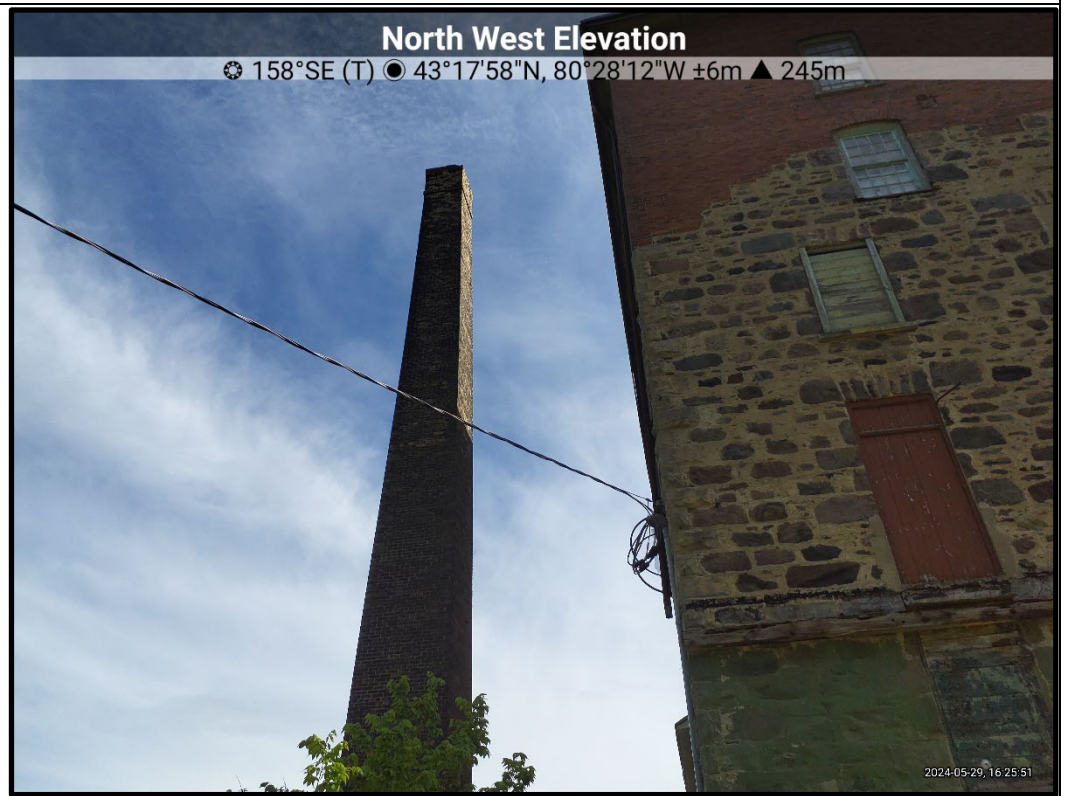
Appendix D

Photo Record

Photo 1: May 29, 2024
The west side of the
old mill structure.



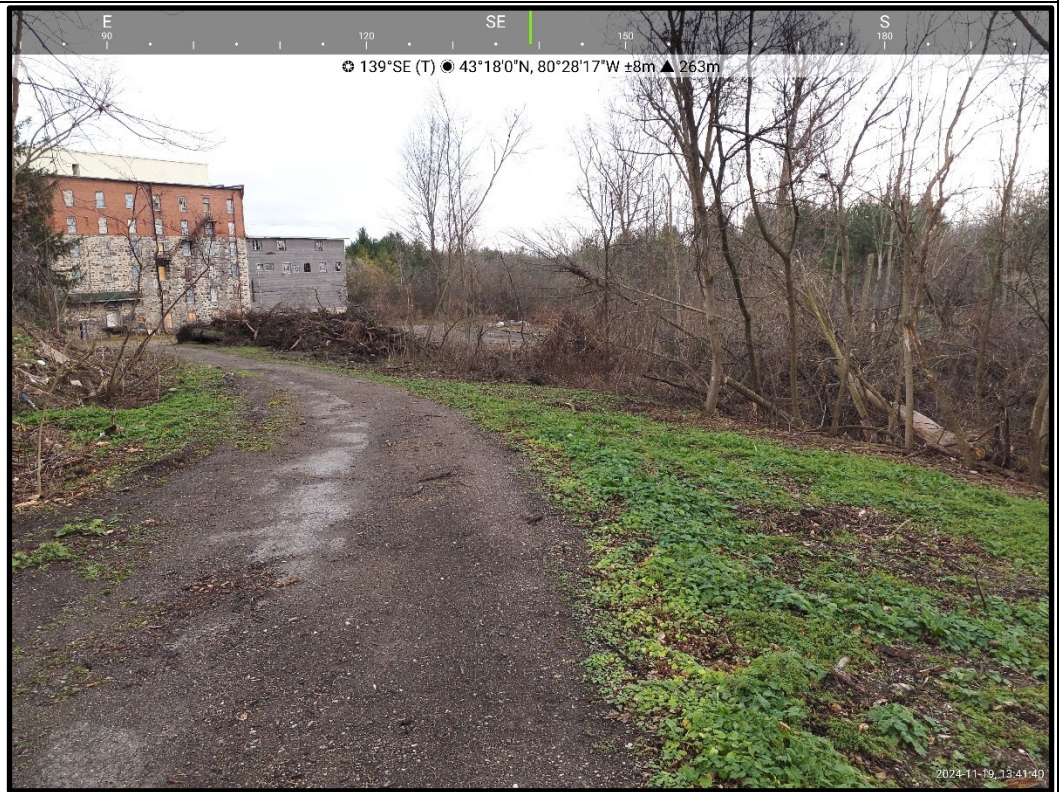
Photo 2: May 29, 2024
Large chimney on the
east side of the mill
structure.



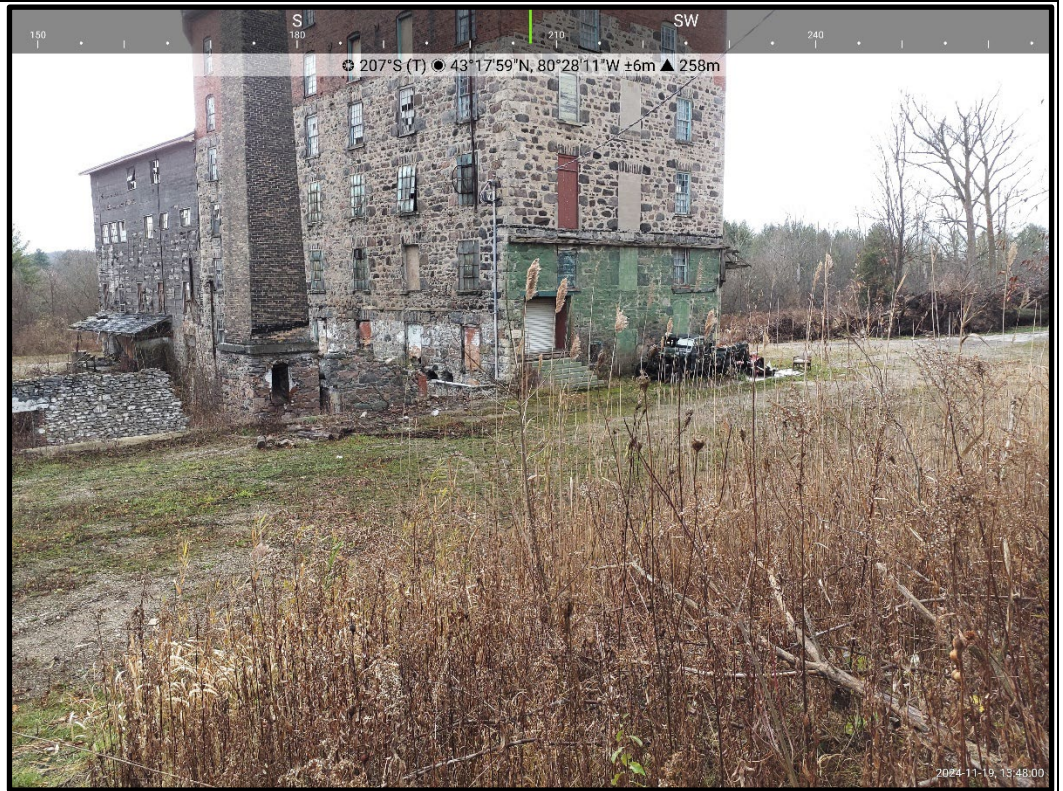
*Photo 3: Nov 19, 2024
Existing laneway, view
from road looking
south, showing some
of the tornado damage
to the trees.*



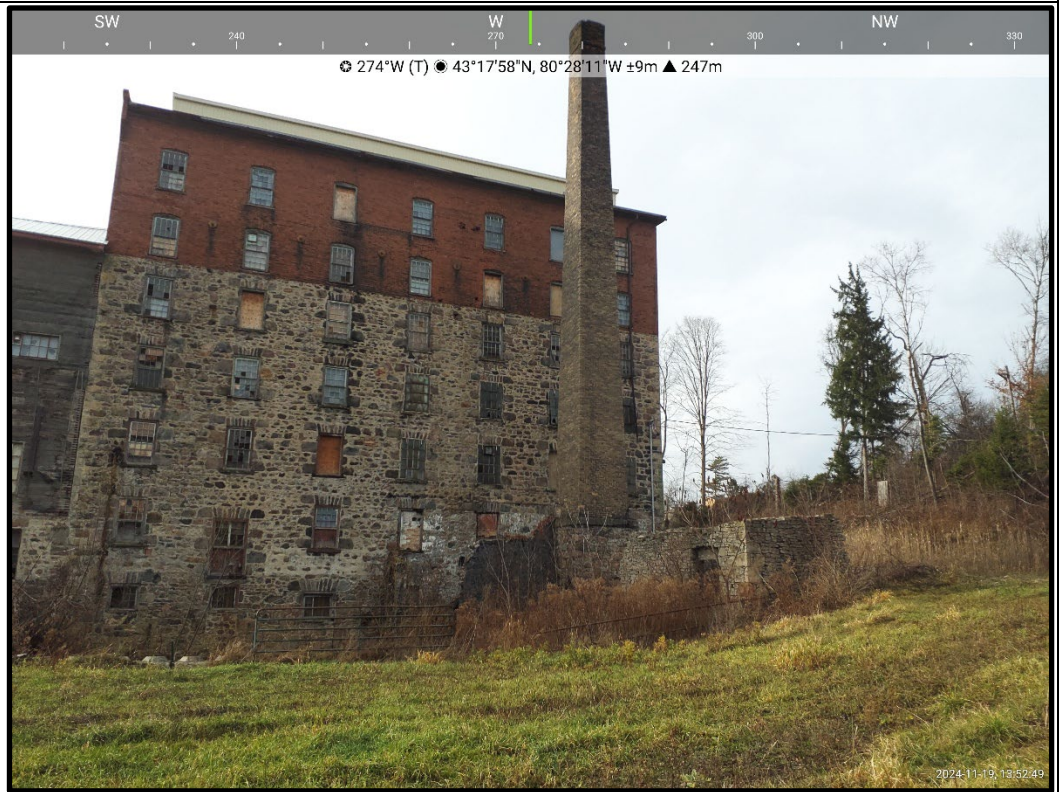
*Photo 4: Nov 19, 2024
Partway down the
existing laneway
looking southeast.
Showing some of the
tornado damage to the
western treed area.*



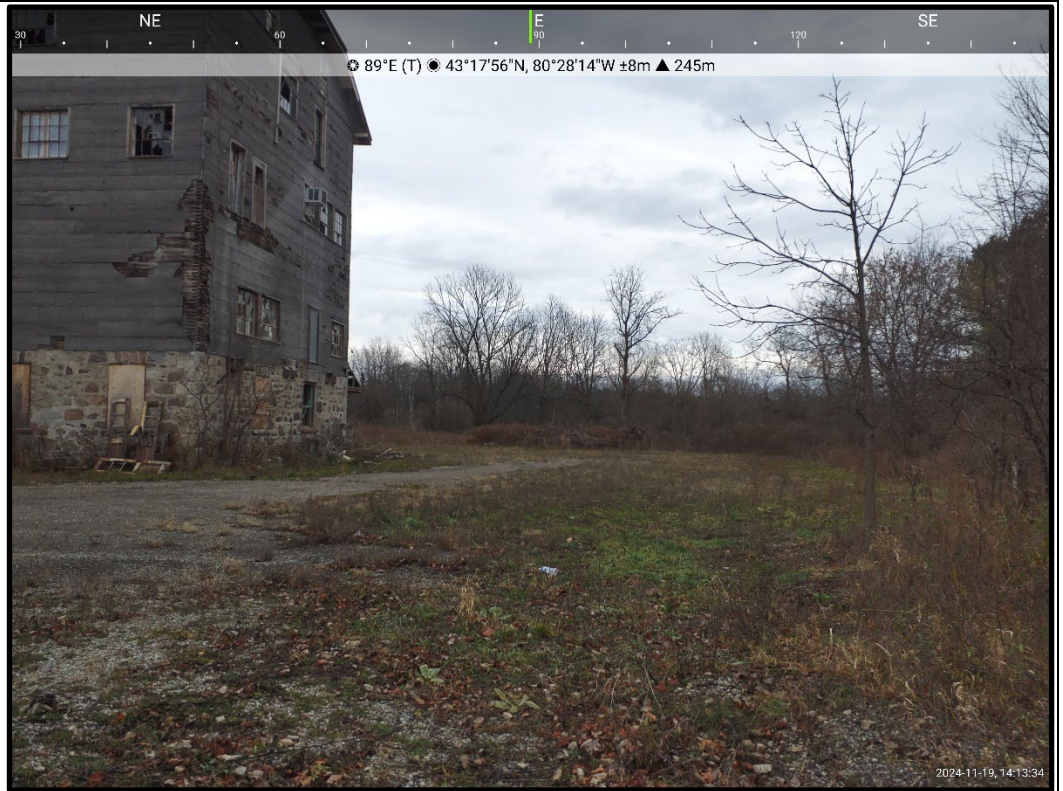
*Photo 5: Nov 19, 2024
North side of the mill
structure and base of
the chimney, looking
south-southwest.*



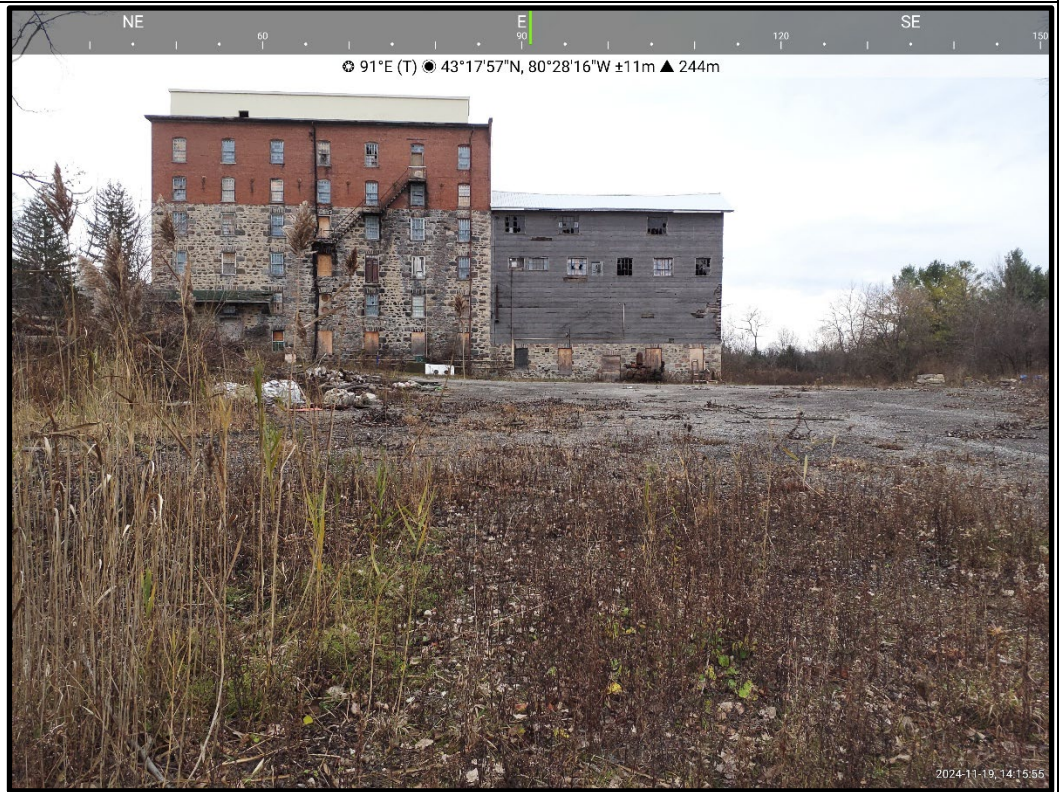
*Photo 6: Nov 19, 2024
The east side of the
mill structure and large
chimney and former
spillway area, looking
west.*



*Photo 7: Nov 19, 2024
South side of the Site,
looking east.*



*Photo 8: Nov 19, 2024
The west side of the
mill structure, standing
at the former spillway
entrance looking east
(former spillway now
blocked at property
edge and used as a
parking area).*



*Photo 9: Nov 19, 2024
Southwest portion of
the Site, showing
existing gravel
parking/loading area,
looking southeast.*



*Photo 10: Aug 26,
2025 A view of the
laneway and west side
of the Site from the
upper floor of the mill
looking west.*



Photo 11: Aug 26, 2025 A view of the existing gravel parking area on the west side of the site and former spillway, from the upper level of the mill looking west.



Photo 12: Aug 26, 2025 A view of the southwest portion of the site from the upper level of the mill, looking southwest.



Photo 13: Aug 26, 2025 A view of the southeast portion of the Site from the upper levels of the mill, looking southeast.

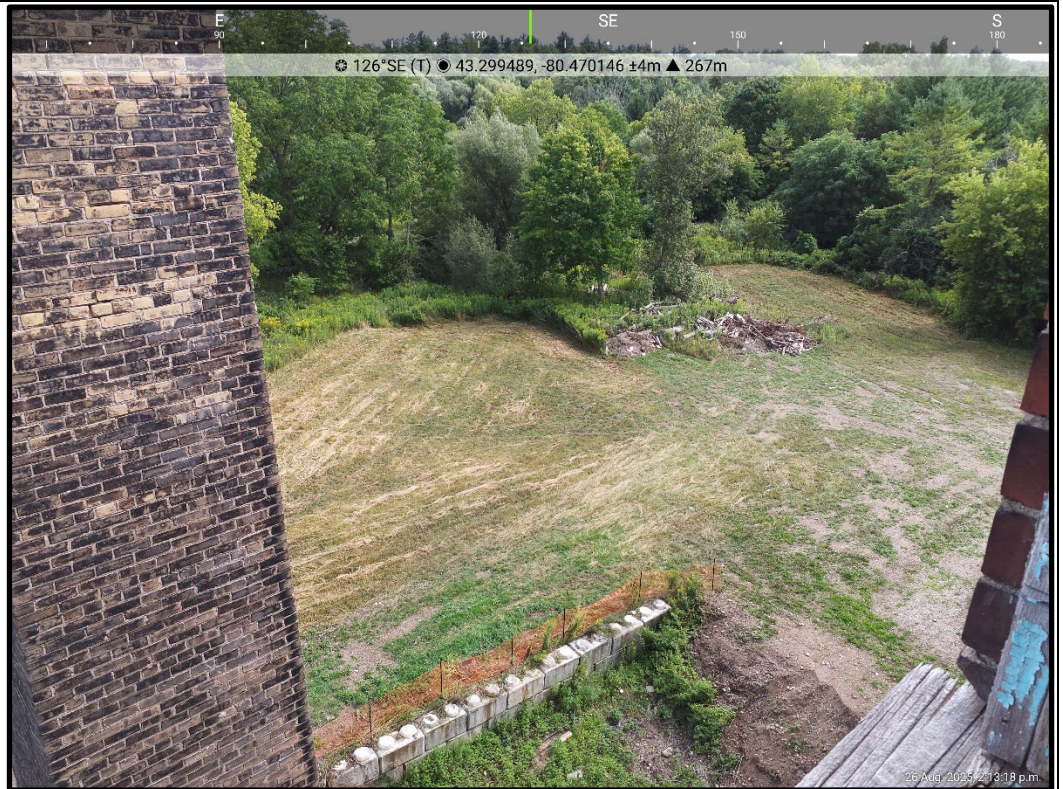


Photo 14: Aug 26, 2025 Some old stone walls and a portion of the former spillway on the east side of the mill structure, looking north.

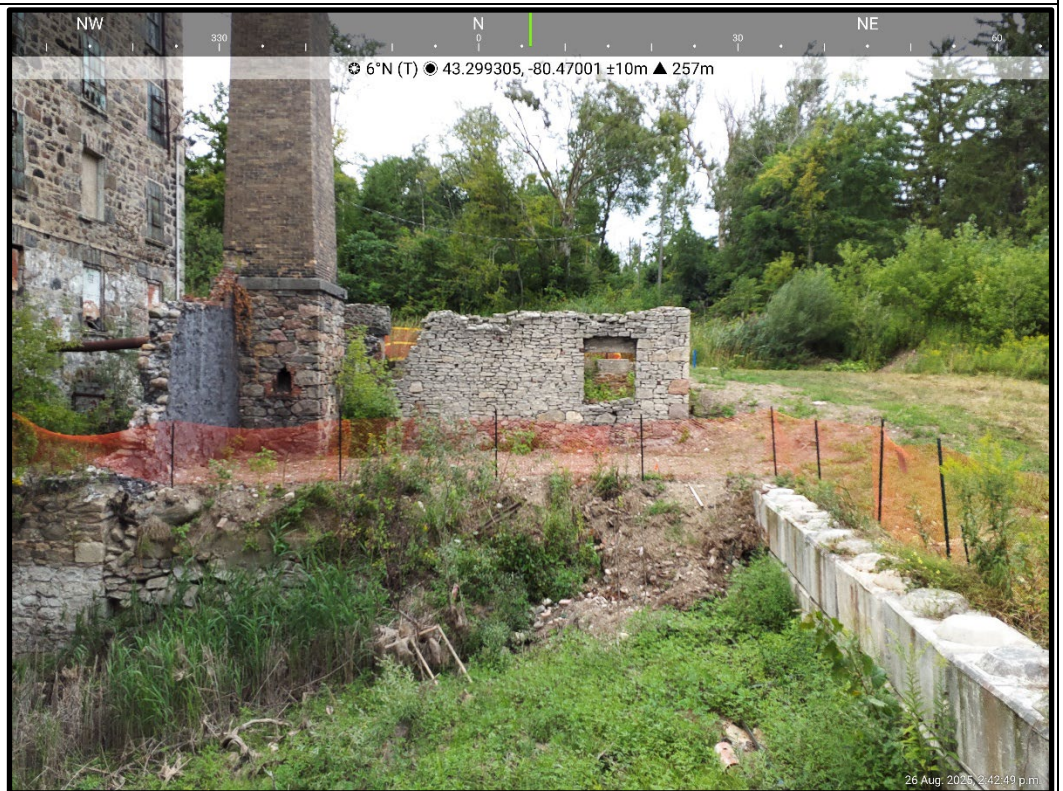


Photo 15: Aug 26, 2025 The former spillway on the east side of the mill looking north-northeast towards the right of way.



Photo 16: Aug 26, 2025. The former spillway east of the mill and treed right of way to the east of the Site, looking northeast.



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