

**AGRICULTURAL IMPACT ASSESSMENT
UPDATE FOR ARKELL SUBDIVISION**

PREPARED FOR:

Timberworx Custom Homes Inc.
376 Maltby Rd. E,
Guelph, ON
&
Sloot Construction Ltd.
661 Watson Road S
Puslinch ON
&
John Sloot Investments Ltd.

PREPARED BY:



STOVEL AND ASSOCIATES INC.

651 Orangeville Road
Fergus, ON
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MAY 2026

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1.0 INTRODUCTION

1.1 Site Location and Purpose

Stovel and Associates Inc. (“SAI”) was retained by Timberworx Custom Homes Inc. (Timberworx), Slood Construction Ltd. (Slood), and John Slood Investments Ltd. to complete an Agricultural Impact Assessment (“AIA”) of a proposed residential subdivision in the Township of Puslinch (Arkell). Additional lands have been conditionally purchased by the ownership group to provide for an entrance onto Arkell Road. These additional lands are approximately 1.6 ha in size and are owned by Victor Satzewich and Linda Mahood (605 Arkell Road). The project is referred to as Arkell Subdivision. The lands proposed for residential development (including a portion of the Satzewich/Mahood parcel) are approximately 18.8 ha in size and are located on Part of Lots 7, 8 and 9, Concession 10.

Watson Road abuts the property on the southwestern limits of the site and Wellington County Road 37 (also known as Arkell Road) is located on the west/northwestern limits of the site (see Figure 1).

In the context of this report, the lands in question are referred to as the site, subject lands or subject property.

The purpose of this AIA is to evaluate potential impacts on agriculture from the proposed residential subdivision and identify mitigation measures to abate these impacts to the extent feasible.

This report generally follows the direction provided with the Province’s *Draft Agricultural Impact Assessment Guidance Document*, released in March 2018 by the Ministry of Agriculture, Food, and Rural Affairs (“OMAFRA”), *Agricultural Impact Assessment (AIA) Guidance Document (Publication 861)* by the Ontario Ministry of Agriculture, Food and Agribusiness and the AIA direction set out in the County of Wellington Official Plan (“County OP”). The report also addresses the planning policies related to the consideration and protection of agricultural resources, as set out in the Provincial Planning Statement, 2024, and the County of Wellington Official Plan.

1.2 History

In 2006, Mr. Tom Kukovica (the owner of the subject property at the time) applied for Draft Plan of Subdivision, Official Plan Amendment and Zoning Bylaw Amendment. The applications were deemed complete in September 2006. The proposal included 35 residential lots (minimum 1 acre in size) serviced by private individual wells and septic systems. The application was circulated to public agencies for comment and to landowners within 120m of the site. Following the receipt of the comments, replies were prepared by the Kukovica consulting team.

Astrid J. Clos Planning Consultants (“AJC Planning”) conducted a review of the Municipal Comprehensive Review from The County of Wellington – Progress Report #3. The letter prepared by Astrid Clos. requests that the Proposed Kukovica Subdivision be considered as a Hamlet Expansion (March 19, 2021). The following excerpt from AJC Planning summarizes the proposal:

“JOHN SLOOD INVESTMENTS LIMITED and SLOOD CONSTRUCTION LTD. is the owner of the property abutting the Arkell Hamlet and is legally described as Part of Lots 7, 8 and 9, Concession 10, Township of Puslinch. County Official Plan Amendment, Zone Change and Draft Plan of Subdivision applications were deemed to be complete in September 2006 for this property.

Please find this documentation attached for your reference.

These applications propose to expand the Arkell Hamlet to the east by approximately 18.2 hectares and change the zoning to implement a proposed residential Draft Plan of Subdivision to permit 35 residential lots. The area breakdown is provided below:

1.65 hectares (area of 3 severed lots)

1.83 hectares (area within the Hamlet)

18.2 hectares (area of Hamlet expansion)

21.68 hectares (Total Draft Plan Area)”

In 2021, the current ownership group engaged with the Township of Puslinch and County of Wellington to resolve technical issues associated with the proposed development. Updated technical analysis was submitted to the municipality for technical peer review. The findings of these updated reports are summarized in this document. The updated reports include the following:

- *Planning Justification Report (SAI, 2026).*
- *Nitrate Impact Assessment (Crozier, 2024).*
- *Functional Servicing and Stormwater Management Report (Crozier, 2025).*
- *Groundwater Supply Assessment (ARL Groundwater Resources Ltd, 2023).*
- *Water Balance Assessment (Crozier, 2025).*
- *Traffic Impact Study (Crozier, 2025).*

This AIA incorporates relevant information from these aforementioned reports.

1.3 Data Collection and Review

In addition to the plans and reports that were specifically prepared for the submission of the planning applications, the following background materials were also reviewed:

- Soil data resource information which includes Ontario Soil Survey reports and mapping, the provincial digital soil resource database, Canada Land Inventory Agricultural Capability mapping, and information from on-site investigations;
- Aerial photography (historic and recent drone survey) with scale of 1:10,000 or smaller;
- OMAFRA's Agricultural System Portal for information on specialty crops, drainage, surrounding crops and livestock, etc.;
- OMAFRA's constructed and agricultural Artificial Drainage Mapping; and
- Parcel mapping/fabric of the area.

An agricultural land use survey was also conducted (2023 and 2024), with additional information gathered from Google Satellite Imagery. Aerial photographic mapping and roadside images have been utilized to gain a better understanding of the agricultural operations and activities in both the primary and secondary study areas (see Section 2.0). Farm Data Sheets were also delivered to all potential livestock operations in

the Secondary Study area (Appendix A). A summary of the results of the agricultural land use survey is provided in Section 2.0 of this report.

1.4 Overview of Subdivision Proposal

The subject land is designated Hamlet, Prime Agricultural and Secondary Agricultural (Figure 2). The subject land is zoned Agriculture (Figure 3).

The proposed development is comprised of 44 lots suitable for the construction of single detached dwellings (See Figure 4 below). The lots are proposed to be created through a Plan of Subdivision. The residential lots will be serviced utilizing advanced tertiary septic systems and private, drilled individual wells. Proposed lot sizes range from approximately 0.2 to 0.4 ha in size (with one Block +/- 4.5 ha). Lot frontages range from 30-43 m, not including the lots on curves or cul de sacs. Each home is expected to have a double-car garage with additional parking for a minimum of two cars within each driveway.

The proposed development will have two entrances; one access onto Watson Road and one access onto Arkell Road. The road cross-section utilizes a urban section with pavement, curb, and gutter. The road section has been designed using a standard 20m right of way.

The internal road network sets out the following:

- There is approximately 1200m of road in the proposed subdivision;
- The roads are mainly double-loaded.
- Three cul de sacs are proposed.

The engineering proposal includes design elements to capture additional runoff water and to promote infiltration. A stormwater management pond is proposed at the northeast portion of the site.

The current conceptual layout for the proposed development includes a Park in the southwestern portion of the site. Discussions with the municipality will be required to determine if a Park is required or if the municipality will require cash in lieu for parkland dedication.

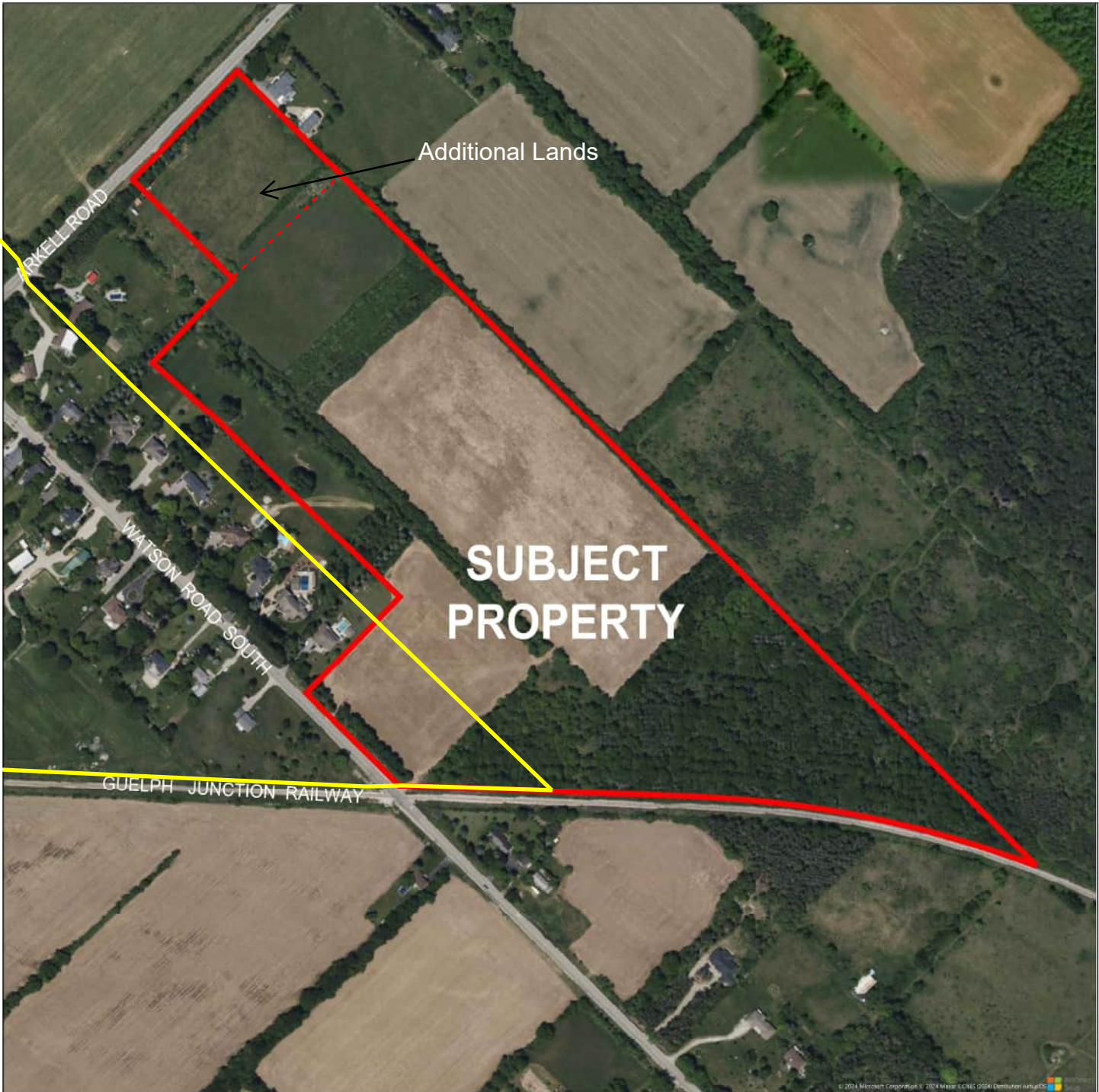


Figure 1
Site Location

- Legend**
- Site Boundary
 - Hamlet of Arkell Limits

Part of Lots 7,8 & 9 Concession 10
Township of Puslinch,
Wellington County Arkell, Ontario

Date: March 5, 2024

50 0 Meters 50 100
1:5000



Sources:
Aerial Imagery Provided By Microsoft Corporation @
2024 Maxar CNES (2024) Distribution Airbus DS.

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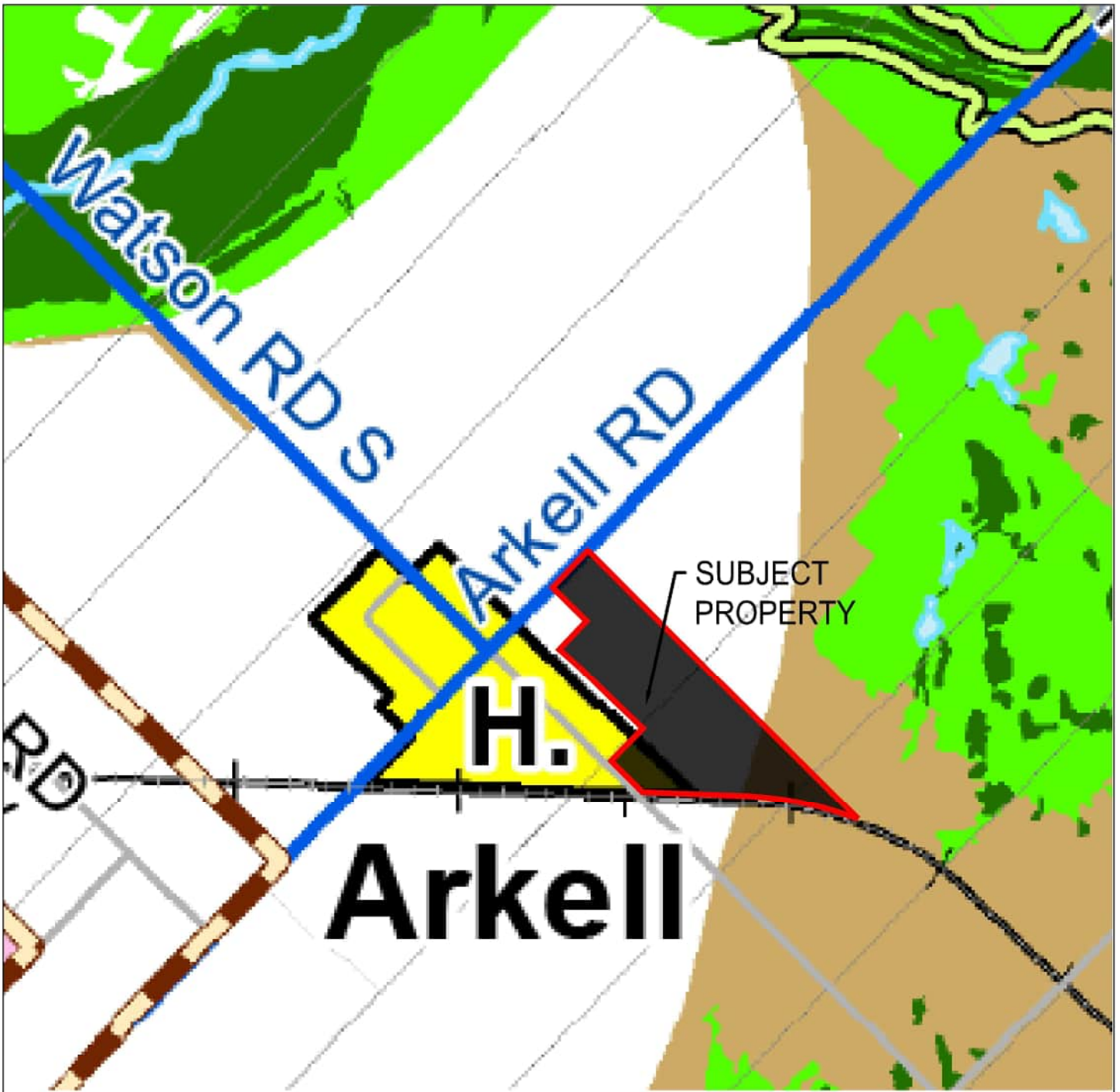


Figure 2
County Official Plan
Land Use Designation

Sources:

County of Wellington Official Plan
Schedule B7 - Land Use - Puslinch

The Greenlands System

- Core Greenlands
- Greenlands
- Earth Science ANSI

The Rural System

- Prime Agricultural
- Secondary Agricultural
- Hamlet Area
- Secondary Urban Centre
- Mineral Aggregate Area
- Recreational
- Rural Employment Area
- Country Residential
- Policy Area
- Regionally Significant Economic Development Study Area

- Site Boundary

Other

- Landfill Site
- Proposed Interchange
- Proposed Major Roadways
- County Roads
- Provincial Highway
- Railways
- Waterbody
- Watercourse

Part of Lots 7,8 & 9 Concession 10
Township of Puslinch,
Wellington County Arkell, Ontario

Date: March 5, 2024

NOT TO SCALE
N.T.S.

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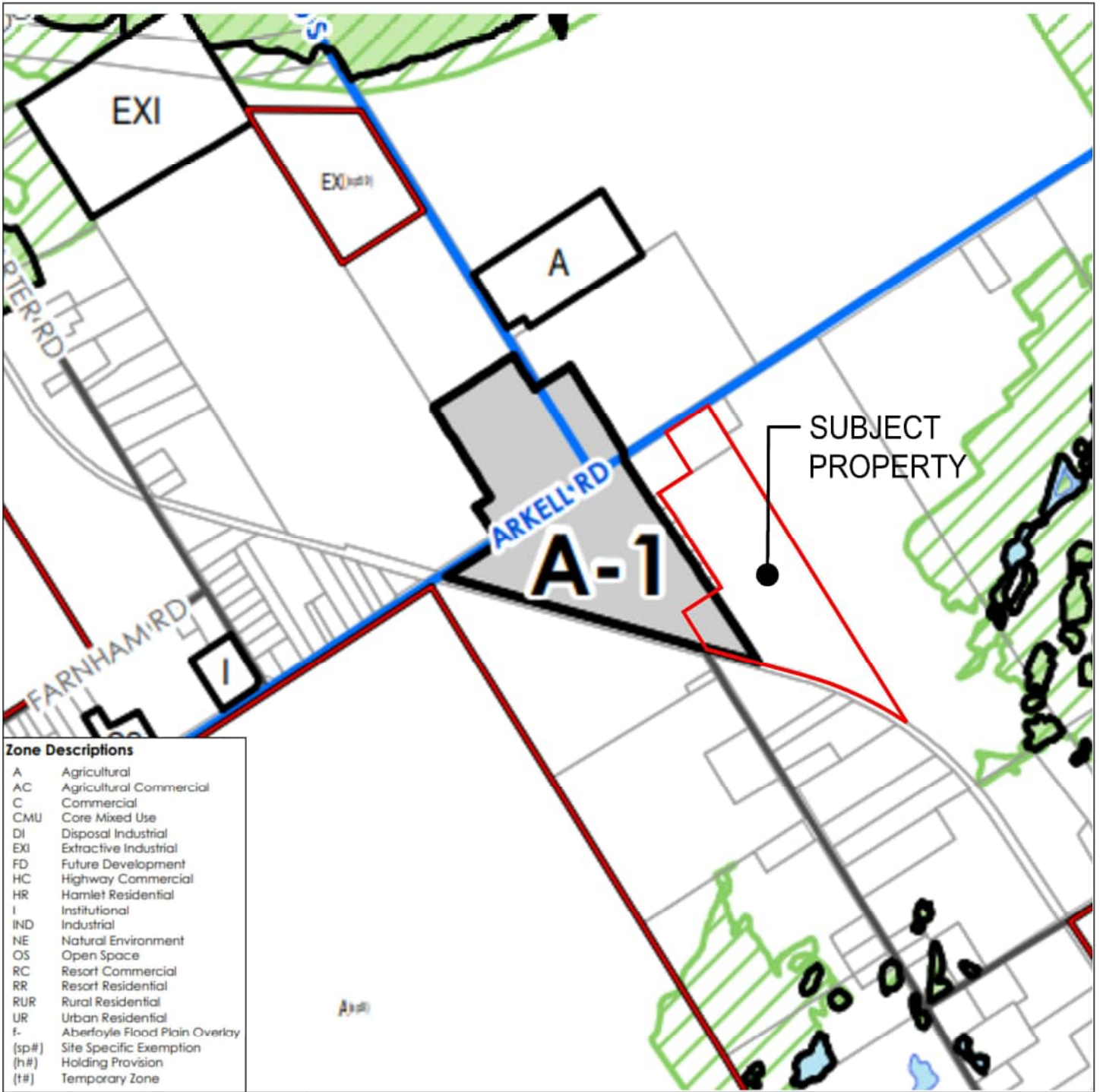


Figure 3
Zoning By-Law

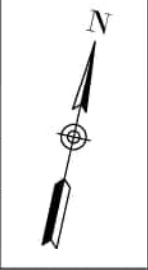
Legend

- ZONING LIMITS
- ENVIRONMENTAL PROTECTION OVERLAY
- NATURAL ENVIRONMENT
- SITE BOUNDARY

Part of Lots 7,8 & 9 Concession 10
Township of Puslinch,
Wellington County
Arkell, Ontario

Date: March 5, 2024

125 0 125 250
Meters
1:15000

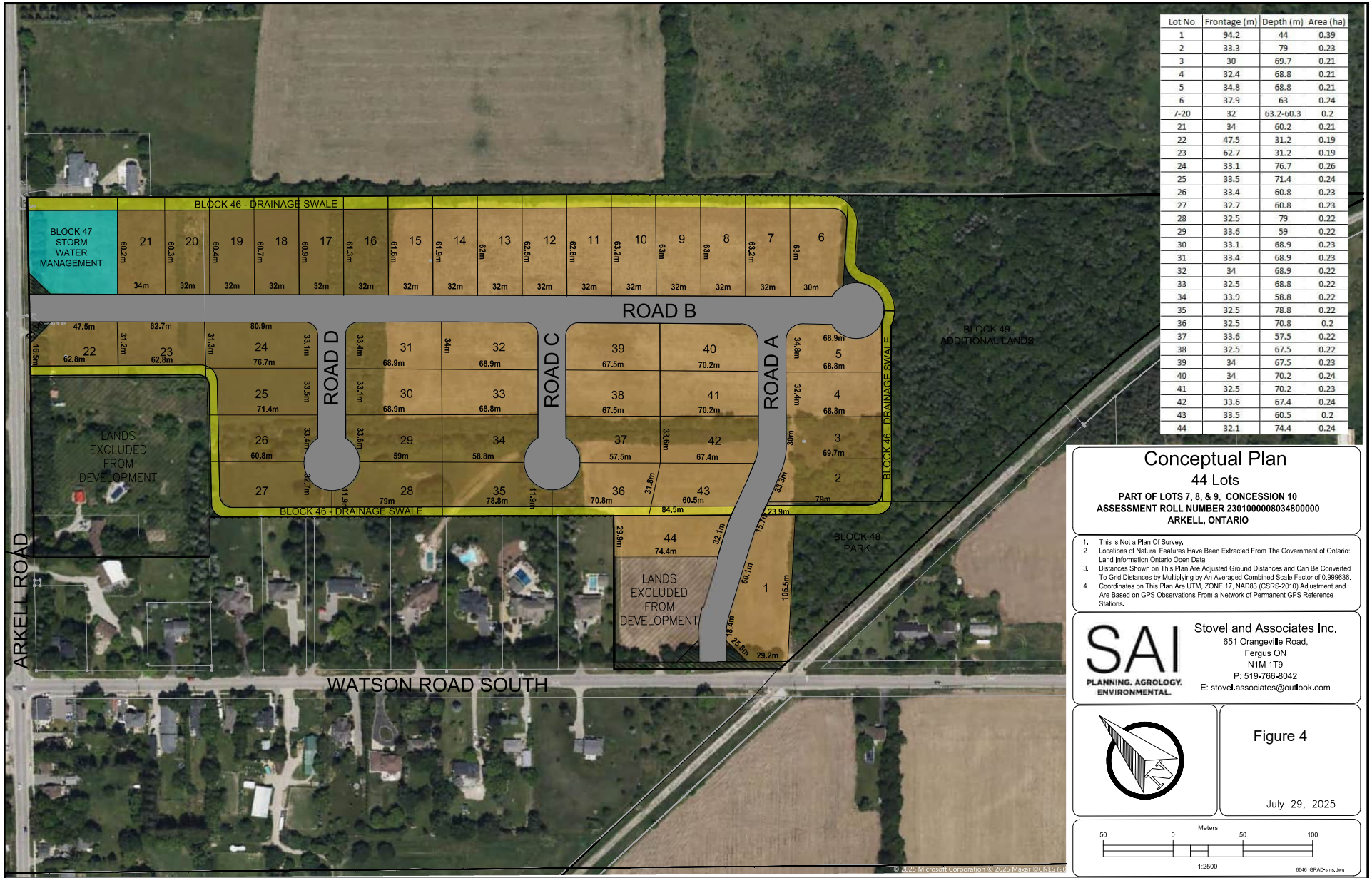


Sources:

TOWNSHIP OF PUSLINCH - ZONING BY-LAW
No. 023-18 SCHEDULE 'A'

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Lot No	Frontage (m)	Depth (m)	Area (ha)
1	94.2	44	0.39
2	33.3	79	0.23
3	30	69.7	0.21
4	32.4	68.8	0.21
5	34.8	68.8	0.21
6	37.9	63	0.24
7-20	32	63.2-60.3	0.2
21	34	60.2	0.21
22	47.5	31.2	0.19
23	62.7	31.2	0.19
24	33.1	76.7	0.26
25	33.5	71.4	0.24
26	33.4	60.8	0.23
27	32.7	60.8	0.23
28	32.5	79	0.22
29	33.6	59	0.22
30	33.1	68.9	0.23
31	33.4	68.9	0.23
32	34	68.9	0.22
33	32.5	68.8	0.22
34	33.9	58.8	0.22
35	32.5	78.8	0.22
36	32.5	70.8	0.2
37	33.6	57.5	0.22
38	32.5	67.5	0.22
39	34	67.5	0.23
40	34	70.2	0.24
41	32.5	70.2	0.23
42	33.6	67.4	0.24
43	33.5	60.5	0.2
44	32.1	74.4	0.24

Conceptual Plan
44 Lots
 PART OF LOTS 7, 8, & 9, CONCESSION 10
 ASSESSMENT ROLL NUMBER 230100008034800000
 ARKELL, ONTARIO

1. This is Not a Plan Of Survey.
2. Locations of Natural Features Have Been Extracted From The Government of Ontario: Land Information Ontario Open Data.
3. Distances Shown on This Plan Are Adjusted Ground Distances and Can Be Converted To Grid Distances by Multiplying by An Averaged Combined Scale Factor of 0.999636.
4. Coordinates on This Plan Are UTM, ZONE 17, NAD83 (CSRS-2010) Adjustment and Are Based on GPS Observations From a Network of Permanent GPS Reference Stations.

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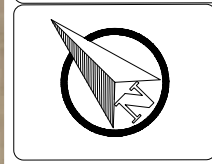
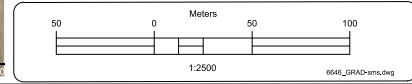


Figure 4
 July 29, 2025



2.0 DESCRIPTION OF AGRICULTURAL RESOURCE BASE

The following paragraphs describe the agricultural resource base on the site and surrounding area. The description is divided into the following categories:

- Agricultural land uses and agricultural operations.
- Parcel size.
- Soils and soil capability for agriculture.
- Microclimate; and
- Agricultural drainage.

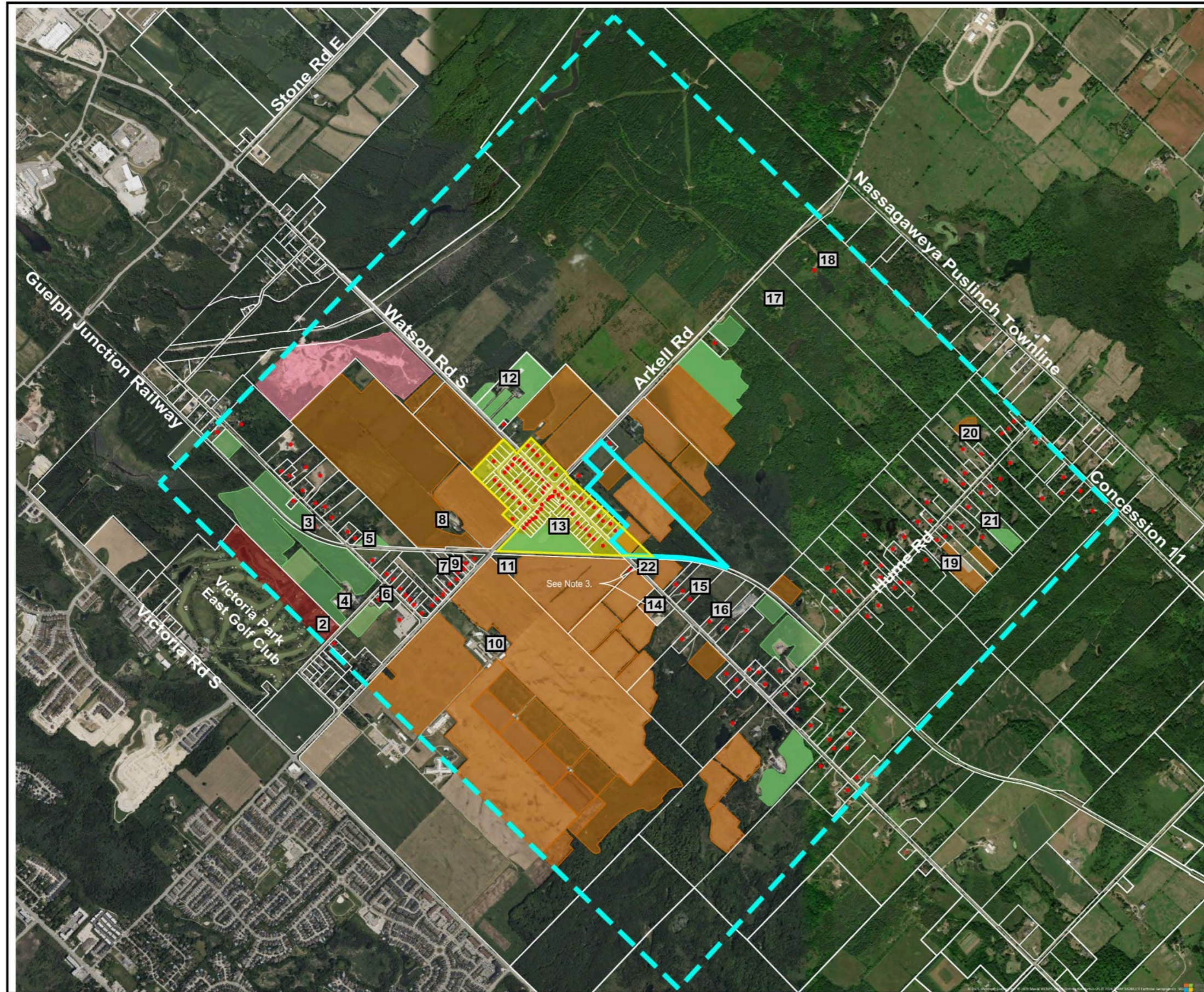
The examination is based on a study area comprised of a 'Primary Study Area' and a 'Secondary Study Area'. The Primary Study Area ("PSA") is the area for consideration for redesignation to a settlement area, or in this case, the PSA is the subject lands.

The Secondary Study Area ("SSA") includes a larger area surrounding the Primary Study Area. For this assessment, a SSA of approximately 1.5 km from the subject lands was established.

Figure 5 provides the Agricultural Land Use Map. Figure 5 identifies the adjacent properties, existing crops, barns, other forms of agricultural infrastructure, non-farm land uses, and residential structures within the SSA. The inventory of existing agricultural land uses, cropping patterns, and structures is based on observations made during reconnaissance surveys in 2023 and 2024. A review of historic aerial photography was also undertaken to confirm that the agricultural production patterns and livestock types in the Primary and Secondary Study Areas remain relatively consistent over the last two decades.

It is noted that a significant portion of the SSA is included in the settlement boundaries of Arkell. Approximately 30 Hectares of the SSA is included in the settlement boundary. Residential land uses predominate in this area. Over the past two decades, several residential units have been added to Arkell, including a subdivision in the northwestern portion of Arkell.

Accompanying the Agricultural Land Use Map is an Agricultural Operations Summary. Each agricultural operation that was observed in the field was summarized. The description of these operations includes the following: type of operation, associated crop type, a brief description of onsite infrastructure, and other related notes about the agricultural operation. Appendix B provides a photograph of the agricultural operation noted on the Agricultural Land Use Map.



Agricultural Land Use Map Figure 5

Agricultural Impact Assessment
Part of Lots 7, 8 & 9 Concession 10
Township of Puslinch,
Wellington County
Arkell, Ontario

Legend

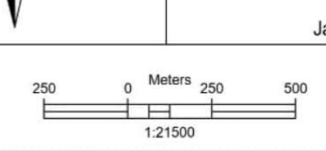
- Subject Lands (Primary Study Area)
- Secondary Study Area
- Hamlet
- Agricultural Operation Number
- Non-Agricultural Uses**
 - Aggregate Extraction
 - Non-farm Residence
 - Woodland / Old Field / Scrubland
 - Victoria Park East Golf Course
- Cropping Pattern**
 - Row Crop
 - Pasture/Forage
 - Cultivated

Notes

1. PROPERTY BOUNDARIES AND DELINEATION OF THE ARKELL HAMLET BOUNDARY HAVE BEEN EXTRACTED FROM WELLINGTON COUNTY BASE DATA.
2. AIRPHOTO - 2026 MICROSOFT CORPORATION & MAXAR CNES AIR DISTRIBUTION AIRBUS.
3. AGRICULTURAL OPERATIONS NO. 22 AND 14 HAVE BEEN REMOVED SINCE THE INITIAL FIELD VISIT.
4. CITY OF GUELPH, MAXAR, CITY OF GUELPH, PROVINCE OF ONTARIO, ESRI CANADA, ESRI, TOMTOM, GARMIN, SAFEGRAPH, GEOTECHNOLOGIES, INC, METI/NASA, USGS, EPA, NPS, USDA, NRCAN, PARKS CANADA.



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January 16, 2026

2.1.1 Primary Study Area – Agricultural Land Use

The Primary Study Area (PSA) includes the subject lands. No active agricultural buildings or other forms of capital investment related to agriculture are located onsite.

There are no agricultural operations in the PSA.

Agricultural land uses comprise approximately 7.1 ha or 41 % of the PSA. The agricultural uses within the PSA are primarily cash crop land. Additional land uses on the PSA include old fields, hedgerows, and a plantation.

The land uses immediately adjacent to the PSA include:

- Residential lots in Arkell,
- Non-farm residential units,
- Guelph-Junction Railway corridor,
- Old fields,
- Plantation/Woodlands/Scrublands, and
- Common Field Croplands.

2.1.2 Secondary Study Area – Agricultural Land Use

The Secondary Study Area (SSA) includes a portion of the Hamlet of Arkell and several non-agricultural land uses (i.e. rural residential lands, recreational lands associated with the GRCA-operated Starkey's Hill (37 ha), a gravel pit and old field/reforestation area managed by the City of Guelph). Several active agricultural or agricultural-related operations, including agricultural research station associated with the University of Guelph. This operation is described as follows:

- 700 Acres
- Horses:
 - 60 Medium-framed
 - Manure Type: V1 (Very Low Storage Odour Potential, Solid, inside, bedded pack) + V2 (Very Low Storage Odour Potential, Solid, outside, covered).
- Swine:
 - 350 Sows with litter
 - 120 Breeder gilts
 - 1000 Weaners
 - 500 Feeders
 - Manure Type: V5 (Very Low Storage Odour Potential, Liquid, inside, underneath slatted floor) + M1 (Medium Storage Odour Potential, Liquid, outside, no cover, straight walled storage)
- Chickens:
 - 6000 Layer Hens
 - 3000 Layer Pullets
 - 1000 Broiler breeder growers
 - 1000 Broiler breeder layers
 - 3000 Broilers on any length of cycle
 - Manure Type: V2
- Turkeys
 - 500 Broilers
 - 500 Hens
 - 500 Toms

- Manure Type: V2
- Unoccupied Livestock Barn:
 - 1000 Housing Capacity
 - Manure Type: V1 + V2

The residential and commercial/institutional uses associated with the settlement of Arkell exist west and north of the site.

Table 1 provides a summary of agricultural cropping systems in the Secondary Study Area. There are no speciality crop lands on the subject property or in the Secondary Study Area. The area estimates associated with this Table are derived from field investigations conducted by SAI and supplemented by background mapping and aerial photography.

Table 1 - Summary of Agricultural Cropping Systems

Crop Type	Subject Lands (ha)	%	Subject Lands Within Hamlet (ha)	%	Secondary Study Area (ha)	%	Totals (ha)	%
ROW CROP	7.1	41.0%	1.1	73.0%	281.2	20.6%	289.4	21.0%
PASTURE/FORAGE	0.0	0.0%	0.0	0.0%	56.4	4.2%	56.4	4.1%
SMALL GRAINS	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
SPECIALTY CROP	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
REMAINING AREA	10.2	59.0%	0.4	27.0%	1023.0	75.2%	1034	75.0%
TOTAL	17.3	100.0%	1.5	100.0%	1361.0	100.0%	1379.8	100.0%

The Agricultural Land Use mapping and aerial breakdown in Table 1 illustrates that this portion of the Township of Puslinch is representative of a non-prime agricultural area. The extent of non-agricultural land uses is significant. Overall, both the Primary and Secondary Study Areas are not representative of normal agricultural production land uses in the Township of Puslinch and County of Wellington.

The University of Guelph research facility (which is approximately 800 m south west of the subject property) represents the most significant agricultural use and agricultural-related use in the Secondary Study Area.

Background information (OMAFA. Ontario Agricultural Systems – Dairy Cattle and Milk Production Heat Map) indicates a dairy farm at 86 Farnham Road. However, a recently obtained Farm Data Sheet (October 17, 2022 – Appendix A) for this property indicates that there is no livestock at the property and all structures are used for hay and equipment storage purposes.

A review of environmental approvals for agricultural purposes indicates that there are no Permits to Take Water for agricultural use in the SSA and there is a Pesticides Operator at 142 Hume Road.

2.2 Parcel Size

Parcel size mapping was reviewed for the PSA and SSA. The PSA and SSA are highly fragmented due to historic severance activity in the area. In addition, both the PSA and SSA are included in the Hamlet of Arkell. In addition, the GJR has also resulted in a severed (and oddly shaped) parcel fabric for a portion of the PSA and SSA.

The two largest parcels in the SSA are owned by government institutions, not farmers. The largest parcel in the SSA is owned by the City of Guelph and is not used for agricultural production (310.4 ha). The University of Guelph Research facility is set on a land base of 245.83 ha.

The minimum farm parcel size in the Prime Agricultural Area (as set out in the County of Wellington Official Plan) is 35 ha (10.3.2). The average parcel size in the SSA is 6.1 ha and the average size of agricultural parcels in the SSA is 28.1 ha.

Based on an analysis of the property fabric data, it is concluded that the PSA and SSA is fragmented with a significant proportion of non-local ownership. The parcel size and land ownership characteristics of the PSA and SSA are not consistent with a prime agricultural area.

2.3 Soil and CLI – Soil Capability for Agriculture

Soils in the Secondary Study Area consist of three soil series: Dumfries sandy loam, Burford loam, and Guelph loam. The following description of these soils has been taken from the Soil Survey of Wellington County. Report No. 35. of the Ontario Soil Survey (1963). Figure 6 illustrates the soils mapped in the Secondary Study Area, and the associated Canada Land Inventory – Soil Capability for Agriculture classification for these soil series. Based on this background mapping, approximately 53.6% of the Secondary Study Area is mapped as prime agricultural lands. The PPS defines prime agricultural land as *specialty crop areas and/or Canada Land Inventory (CLI) Class 1, 2, and 3 lands, as amended from time to time, in this order of priority for protection*. This estimate does not exclude lands that have been removed from agricultural production, such as residential lots associated with the Hamlet of Arkell or rural residential lots.

Dumfries loam

“The Dumfries soils have developed from stony soil material derived mainly from limestone. The material is therefore calcareous and free carbonates can be found at depths of 18 to 24 inches except in places of severe erosion where they occur at the soil surface.

The topography is hilly; slopes are steep, irregular and short; depressions or "potholes" are common. Since water runs rapidly off the steep slopes or readily percolates through the stony materials the Dumfries soils are well drained. However, within the areas shown on the soil map there are often areas of poorly drained soils too small to be delineated. These potholes contain water during a large part of the year, cannot be easily drained and therefore are not arable.

Surface erosion has occurred on most of the cultivated slopes. Indeed, the soil loss has been so great on many of the knolls that the whole profile has been removed and only the light grey parent materials remain. Erosion is slight where the land has been kept under grass or tree cover. Stones and boulders are numerous both on the surface and throughout the soil mass. As a result, stone removal becomes an annual chore and the presence of frequent stone piles interferes with cultivation.” (Pages 23-24).

Within the Secondary Study Area, background mapping illustrates the location of the Dumfries loam in the southern and eastern portion. Mapping of Canada Land Inventory (“CLI”) – Soil Capability for Agriculture illustrates these soils as Class 6T and Class 3FM (50%)/Class 5PT (50%) (AgMaps, 2024). The southern portion of the subject lands is mapped as Dumfries sandy loam with a complex polygon unit of Class 3FM/Class 5PT.

The Burford loam soils occur over much of the Secondary Study Area, including the subject lands.

“Burford loam soils are well-drained, consisting of loam surface horizons on gravel deposits. The gravel was deposited by glacial meltwaters in the form of spillways that are most common in the southern part of the County the largest of which occurs on the terraces that border the Speed River. The deposits are stratified with a considerable range in the size of the material from one stratum to another. The materials vary in size from fine sand to cobbles and where these deposits occur adjacent to the stony till of the Dumfries soils, strata consisting of large stones are found.

The topography is gently undulating except along the edge of the terraces where slopes are often steep. Gravel, stones, and cobbles are usually present on the soil surface and throughout the soil profile but they usually do not interfere with cultivation. Where the loam surface is thin stones are more numerous and may interfere with cultivation, especially in those areas associated with the Dumfries soils.

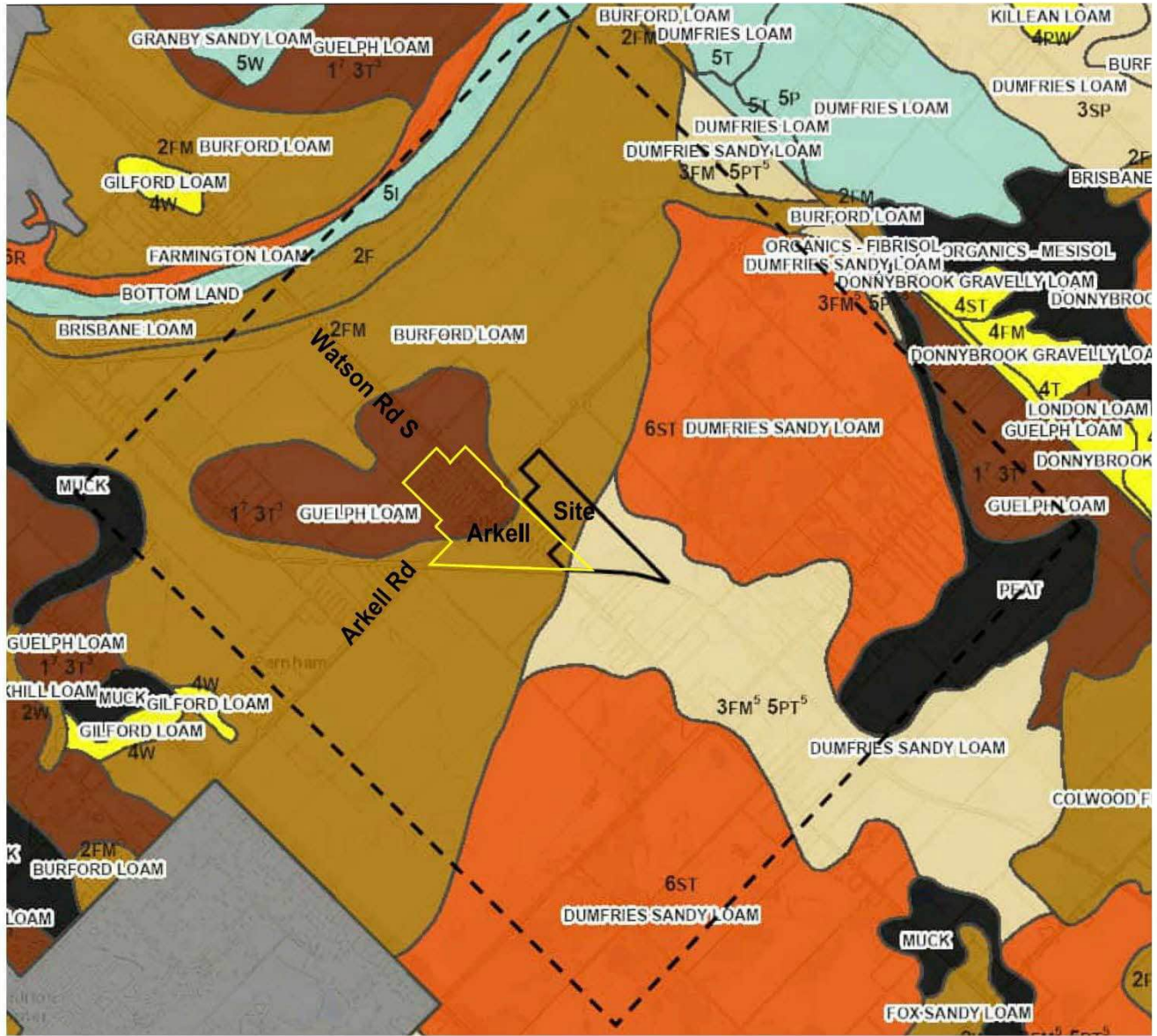


Figure 6
CLI Soil Capability for Agriculture

Legend

- Subject Lands (Primary Study Area)
- - - Secondary Study Area
- Hamlet of Arkell Limits

Soil Capability for Agriculture

- Unclassified
- Class 1
- Class 2
- Class 3
- Class 4
- Class 5
- Class 6
- Class 7

Agricultural Impact Assessment

Part of Lots 7, 8 & 9 Concession 10
Township of Puslinch,
Wellington County
Arkell, Ontario

Date: January 16, 2026

0 200 400
Meters
1:31961.364



Sources:
SHAPEFILE PROVIDED BY THE ONTARIO
MINISTRY OF AGRICULTURE, FOOD AND RURAL
AFFAIRS (OMAFRA) AGMAPS (2024).

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The Burford soils are classified as Grey-Brown Podzolic and have a very dark greyish-brown surface soil about four inches thick. Immediately below the surface is a yellowish-brown Ae horizon which is thin and slightly acidic. As in many Grey-Brown Podzolic soils, this horizon is browner in the upper portion than in the lower. However, in cultivated fields the brown layer is often absent and the horizon is a uniform colour. The B horizon is always located immediately above the calcareous gravel. It is dark brown and contains a considerable concentration of translocated clay. The depth of the profile to the underlying gravel varies from 12 to 30 inches within very short distances.

The Burford soils are producing crops such as spring grains, winter wheat, hay, pasture, and silage corn. They are suitable for orchards and certain canning crops but are not being used for these crops to any great extent. For the most part, the agriculture on these soils is of the generalized type. Dairying is not developed intensively except in the vicinity of Guelph where there is a continuous demand for dairy products. The underlying gravel is in demand for the construction of highways and county roads and the manufacture of certain building materials. Most of the deposits are deep and well-sorted. Large gravel pits are located on the outskirts of Guelph.

Because of the open nature of the Burford soils, moisture deficiencies exist during every growing season. The Burford soils also have a low to medium content of essential plant nutrients.” (Pages 34-35).



Within the Secondary Study Area, background mapping illustrates the location of the Burford loam in the western and northern portions. On the subject lands, the Burford loam is mapped in the north-central portion of the site. Background mapping of CLI-Soil Capability for Agriculture illustrates these soils as Class 2FM.

Guelph loam

The Guelph loam soils occur around the City of Guelph. Within the Secondary Study Area, Guelph loam soils are mapped in proximity to the settlement of Arkell (north and northwest of the settlement). Guelph loam soils are amongst some of best agricultural soils in Ontario.

“The Guelph loam soil parent material consists of glacial till derived from the grey and brown limestones of the underlying rock strata. The soils are predominantly loams although some small areas of sandy loam occur east of Oustic. The higher sand content in these soils may be due to the influence of the outwash sands that completely surround them.

In general, there are very few field stones or boulders; the only handicap to cultivation is the frequency and steepness of slopes. The soils are well drained both internally and externally but retain adequate amounts of moisture for the needs of crops. Erosion hazard is great on the steep slopes.

The surface soil is dark greyish brown and moderately high in organic matter content. Below the surface layer is a brown layer which becomes lighter in colour with depth and rests on a dark brown to dark yellowish brown layer containing more clay than the layers above or below it. The depth of soil to the unaltered parent material is approximately twenty-four inches except where water erosion has removed the upper portion of the soil. The Guelph soils are classified as Grey-Brown Podzolic.” (Page 25).

Table 2: Canada Land Inventory – Soil Capability for Agriculture

CLI CLASS	SSA (ha)	%	PSA (ha)	%
Class 1	72.7	5.3%	0.0	0.0%
Class 2	548.3	40.3%	8.9	47.3%
Class 3*	101.4	7.5%	4.2	22.3%
Class 4	0.0	0.0%	0.0	0.0%
Class 5*	90.6	6.7%	4.2	22.3%
Class 6	459.4	33.8%	0.0	0.0%
Class 7	0.0	0.0%	0.0	0.0%
Class O	58.6	4.3%	0.0	0.0%
Hamlet	30.0	2.2%	1.5	8.1%
Total	1361	100.0%	18.8	100%

*The southern portion of the subject land is mapped as complex polygon unit of Dumfries sandy loam with a Class 3FM(50%)/Class 5PT(50%). The size of this polygon is estimated to be 8.4 ha, therefore 4.2 ha were attributed to Class 3 & Class 5 in Table 2.

2.4 Microclimate for Speciality Crop Production

Climate data from the OMAFA document titled “*Agronomy Guide for Field Crops - publication 811 (June 2009)*” was reviewed. The subject lands are located within 2700-2900 average accumulated crop heat units (CH-MI) available for corn production in Ontario. The crop heat units (CHU) index was originally developed for field corn and has been in use in Ontario for 30 years. The CHU ratings are based on the total accumulated crop heat units for the frost-free growing season in each area of the province. CHU averages range between 2500 near North Bay to over 3500 near Windsor. The higher the CHU value, the longer the growing season and the greater the opportunities for growing high-value crops. The subject property is located within the 2700-2900 average accumulated crop heat units (CH-MI) and as such, the agricultural lands are not subject to special climate conditions. Given the typical climatic conditions, there are limited opportunities for growing speciality crops on a large commercial basis in the Secondary Study Area and therefore there are no properties that have been identified as a specialty crop area in the County of Wellington Official Plan (as they do not meet the criteria as identified by the Province).

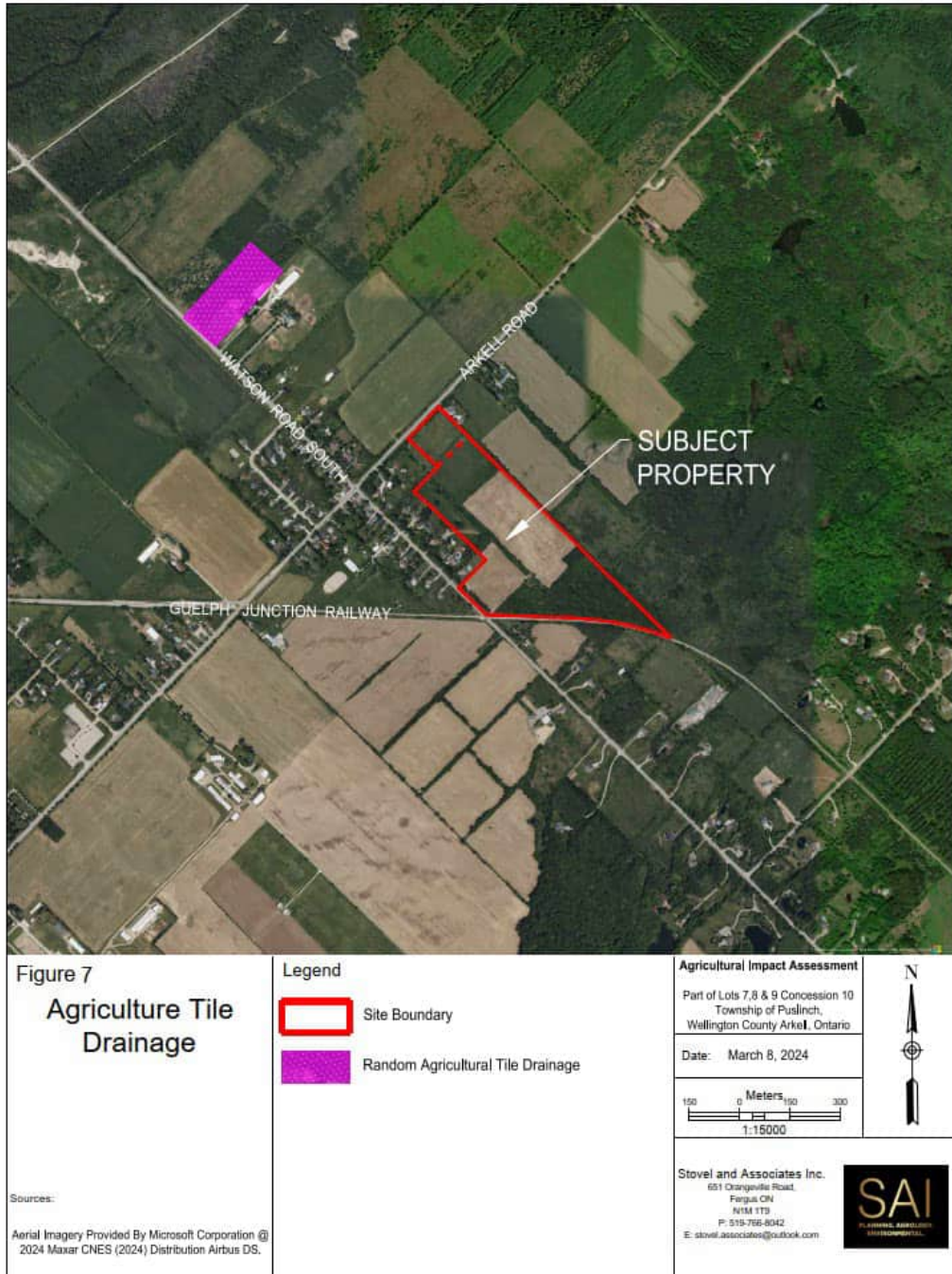


Figure 1-1. Crop heat units (CHU-M1) available for corn production.

This map is based on weather data from 1971–2000 with a common season start date across the province of May 1.
Source: Weather Innovations Inc. (WIN)

2.5 Agricultural Tile Drainage

Figure 7 illustrates the distribution of tile drainage (random tile drainage) in the study area. There are no systematic tile drainage or constructed drains in the Secondary Study Area. Approximately 4.25 ha of random tile drainage are reported in the Secondary Study Area. The subject lands are not tile drained



3.0 IMPACT ASSESSMENT AND MITIGATION MEASURES

The following section discusses the potential for agricultural impacts resulting from the proposed residential development operation. The impact assessment has been subdivided into two sections: direct impacts and indirect impacts. Mitigation measures are described, where relevant, to ensure that the impact on agriculture is minimized.

3.1 Direct Impacts

Direct impacts relate to considerations such as the removal of agricultural structures and infrastructure related to agriculture and the consumption of agricultural lands.

Agricultural Structures

The proposed residential subdivision will not result in the removal of any agricultural structures or infrastructure related to agriculture.

No mitigation measures are required.

Consumption of Prime Agricultural Lands in a Prime Agricultural Area

The proposed develop would result in the consumption of approximately 13 ha of Class 2-3 soils. A portion of these lands are already located within the Hamlet of Arkell settlement area.

The agricultural capability of soils on the site is comparatively low due to inherent low fertility and moisture holding deficiencies. The lands associated with the Paris Galt Moraine (south and east of the site) are constrained by steep, undulating topography and are not considered to be prime agricultural lands. The orientation and size of the remaining agricultural fields is relatively small, and the lands are not considered to be large enough to be a viable farm parcel.

As previously stated, the subject lands and the SSA are highly fragmented and not reflective of a prime agricultural area when compared with prime agricultural areas in the County of Wellington and Township of Puslinch.

Consideration of Alternative Locations

Alternative locations were assessed by SAI for a Proposed Expansion of the Hamlet of Arkell. (SAI, Jan 06, 2023 – Letter Report submitted to Meagan Ferris, Manager of Planning and Environment). A copy of this report is included in Appendix C.

Six properties were selected for comparison purposes. Each parcel immediately abuts the existing Hamlet boundary. All six parcels are comprised of higher-capability agricultural lands than the subject property. From an agricultural perspective, the subject property represents the lowest priority option for protection.

It is important to recognize that existing, active livestock operations are located on lands north and west of the Hamlet of Arkell. There is an existing horse farm to the north of Arkell. The MDS I setback from this facility would impact potential settlement expansions in this general area. The University of Guelph agricultural research farm is located west of Arkell. The MDS I setback for westerly expansion of Arkell would not be feasible given the size of this livestock operation. The completed MDS I analysis demonstrates that the proposed development can comply with the applicable MDS I setbacks.

3.2 Indirect Impacts

Indirect impacts relate to the potential for creating land use conflicts with adjacent agricultural operations and the potential for influencing water levels/wells, traffic, noise. These are addressed in the following paragraphs.

Land Use Conflicts

Land use conflicts can occur when non-agricultural land uses are established in agricultural areas. The main type of concern relates to odour, and in Ontario, OMAFA has developed the Minimum Distance Separation (MDS) formulae to identify potential land use conflicts. MDS I setbacks are calculated based on several factors such as the size of livestock operation (i.e. livestock numbers and/or size of land base of the farm), type of livestock operation, method of storing manure, and the type of non-agricultural land use being proposed.

As previously noted, agricultural operations in proximity to the subject property were inventoried. Farm Data Sheets were delivered to all agricultural operations. Livestock operations were identified on the Agricultural Land Use Map (Figure 5). There are no livestock operations mapped in proximity to the subject property.

Several small livestock operations were recorded in the Secondary Study Area, including:

- #5 – small hobby farm (horse),
- #12 – large equestrian facility,
- #13 – small hobby farm (horse),
- #14 – barn has been removed,
- #22 – structure has been removed.

To further assess potential land use conflicts associated with livestock operations, Minimum Distance Separation (MDS I) calculations were completed utilizing the OMAFA AgriSuite MDS Formulae Implementation Guidelines.

MDS I calculations were completed for the livestock facilities located at 756 Watson Road South and 930 Watson Road. The calculations identified MDS I setbacks of approximately 322 m and 177 m, respectively. Mapping illustrating the MDS I arcs in relation to the subject lands and existing Hamlet of Arkell boundary is included on Figure 8 below and the calculations can be found in Appendix D.

The MDS I analysis demonstrates that the proposed subdivision is not constrained by applicable MDS I setbacks associated with existing livestock operations. Existing non-agricultural land uses and existing settlement development within Arkell are located closer to the identified livestock facilities than portions of the proposed development.

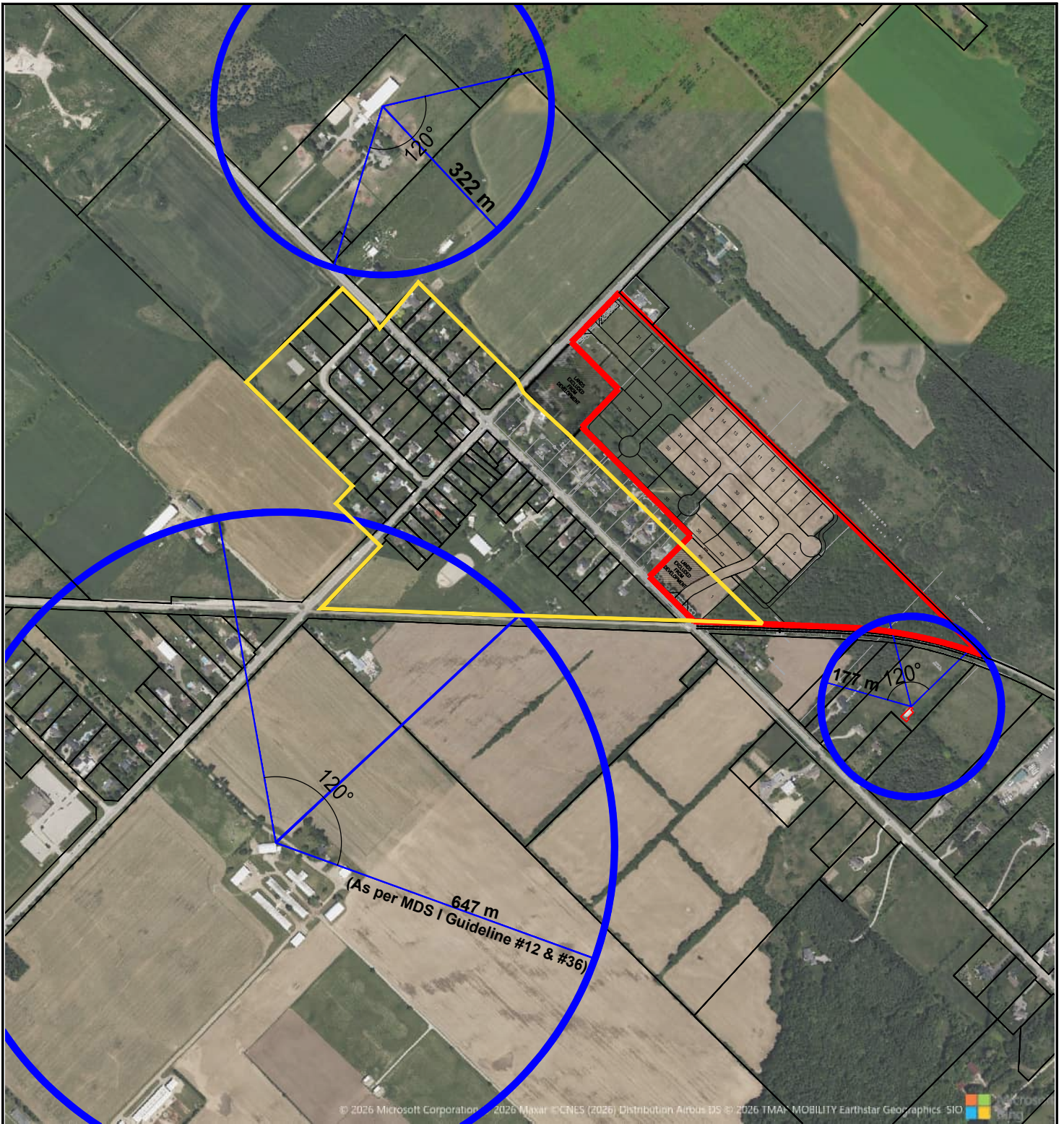
The MDS I analysis was completed in accordance with the OMAFA Minimum Distance Separation Formulae Implementation Guidelines, including Guideline #12 and Guideline #36 related to expanding settlement area boundaries and existing non-agricultural uses.

#12. Existing Uses that Do Not Conform to MDS

An MDS I setback is required for proposed development or dwellings, even though there may be existing or approved development or dwellings nearby that do not conform to MDS I requirements.

However, a reduced MDS I setback may be permitted provided there are four, or more, non-agricultural uses, residential uses and/or dwellings closer to the subject livestock facility than the proposed development or dwellings and those four or more non-agricultural uses, residential uses and/or dwellings are:

- *located within the intervening area (120° field of view shown in [Figure 4](#) in Section 7 of this MDS Document) between the closest part of the proposed development or dwelling and the nearest livestock facility or anaerobic digester;*
- *located on separate lots; and*
- *of the same or greater sensitivity (i.e., Type A or Type B in accordance with Implementation Guidelines #33 and #34) as the proposed development or dwelling.*



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Legend

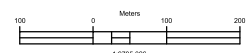
- EXISTING HAMLET BOUNDARY LIMIT
- SUBJECT LANDS
- ⤵ 176m MDS ARC

Figure 8: MDS

PART OF LOTS 7, 8, & 9 CONCESSION 10
 ASSESSMENT ROLL NUMBER 2301000008034800000
 ARKELL, ONTARIO

SAI
 PLANNING. AGROLOGY.
 ENVIRONMENTAL.

Stovel and Associates Inc.
 651 Orangeville Road
 Fergus, Ontario
 N1M 1T9
 T: 519-766-8042
 E: stovel.associates@outlook.com



DATE:
 28-May-26



If ALL of the above conditions are met, the MDS I setback for the proposed development or dwelling may be reduced such that it is located no closer to the livestock facility or anaerobic digester than the furthest of the four non-agricultural uses, residential uses and/or dwellings as shown in Figure 4.

#36. Non-Application of MDS Within Settlement Areas

MDS I setbacks are NOT required for proposed land use changes (e.g., consents, rezonings, redesignations, etc.) within approved settlement areas, as it is generally understood that the long-term use of the land is intended to be for non-agricultural purposes.

The proposed development will not result in an MDS I impact on the local agricultural community. A *Minimum Distance Separation (MDS) Analysis* can be found in Appendix D.

Water

ARL Groundwater Resources Ltd. (“ARL”) completed a Groundwater Supply Assessment to address impacts related to servicing the proposed development. ARL concluded that:

Construction of new supply wells associated with a multi-lot residential development on the property has the potential for interference to occur among individual wells as the development is built out. This interference could come in the form of (a) turbidity interference resulting from the process of well drilling and development and (b) water level interference when the wells are operating. The turbidity interference is a temporary problem that should dissipate after the well drilling and development operations are complete. Notification of adjacent well owners and monitoring when each new well is constructed will help to mitigate potential turbidity interference. Measures to minimize the effects of water level interference include optimizing the pump settings to maximize drawdown in each of the individual wells. Consideration could also be given to implementing an outdoor water use bylaw or similar instrument to manage water use during the warm weather months of the year when water demand is higher.

Given that there are no active livestock operations in proximity to the subject property, potential impacts related to water levels/water quality in private wells on agricultural properties is not anticipated to be a concern. The proposed monitoring plan set out by ARL will be satisfactory to ensure no negative impacts.

Traffic

Traffic from the proposed residential development was assessed by Crozier's in a Traffic Impact Study (“TIS”). The proposed entrances for the residential subdivision (primary entrance on Watson Road and secondary entrance on Arkell Road) were assessed and determined to meet the minimum sight line distance requirements. No additional road improvements were recommended in the TIS.

Given the low number of agricultural operations in proximity to the subject lands, there are no significant impacts anticipated from traffic from the proposed residential subdivision on the agricultural operations in the Secondary Study Area.

Noise

A Noise and Vibration Feasibility Study was completed by HGC Noise Vibration Acoustics (April 7, 2026) to assess potential impacts associated with rail traffic from the Guelph Junction Railway (GJR), as well as traffic noise from Arkell Road and Watson Road South. The study concluded that rail traffic represents the primary source of transportation noise affecting the proposed development, while roadway traffic is considered a secondary source.

The study determined that the proposed residential subdivision is feasible from a noise perspective, subject to the implementation of recommended mitigation measures. Recommended measures include upgraded window glazing for select dwellings, central air conditioning or provision for future air conditioning, acoustic warning clauses, masonry/brick veneer construction for dwellings adjacent to the railway corridor, and a localized acoustic barrier for the southernmost dwelling closest to the rail line.

The study also included a vibration assessment associated with rail operations. The findings concluded that a minimum setback of 45 m from the railway right-of-way for the closest dwelling façades is appropriate to address vibration impacts. Subject to the implementation of the recommended mitigation measures and warning clauses, the proposed development is considered compatible with the surrounding transportation infrastructure.

3.3 Mitigation

The potential for impacts on the agricultural community is relatively low, given that there are no livestock operations near the site. Lower impact mitigation measures that should be considered as part of conditions of draft plan approval and site design include the following:

- Disclosure statements to notify potential purchasers of property that the land is in a prime agricultural area where periods of dust, noise, odour, and other impacts associated with nearby farms are common.

Edge planning measures are not deemed necessary given the fact that there are no livestock operations of adjacent lands and the site is well buffered by existing vegetation (i.e. plantation to the south, and hedgerow to the east). If the easterly hedgerow is removed (due to completion of a by-pass swale), edge planning measures will be required including the consideration of rear lot fencing and planting of native trees and shrubs (i.e., Lots 6-21).

4.0 PLANNING POLICY FRAMEWORK

The following documents were reviewed as part of this AIA:

- Provincial Planning Statement, 2024,
- County of Wellington Official Plan.

The following summarizes the main agricultural policies that were considered in this AIA.

4.1 Provincial Planning Statement 2024

The 2024 Provincial Planning Statement (PPS) was issued under Section 3 of the Planning Act and came into effect on October 20, 2024. The PPS establishes the policy foundation for regulating the development and use of land in the province and provides policy directions on matters of provincial interest related to land use planning and development. It provides a vision for land use planning in Ontario that encourages efficient use of land, resources and public investment in infrastructure. The PPS strongly encourages development that would provide long-term prosperity, environmental health, and social well-being. The 2024 PPS applies to planning decisions made on or after the effective date and applies to the consideration of the proposed official plan and zoning bylaw amendment applications. The following is a summary of the PPS policies that are relevant to the proposed development application.

The PPS is to be read in its entirety and applicable policies are to be applied to specific situations/applications. The following table provides a summary of relevant policies of the PPS and describes how the proposed development is consistent with this policy direction.

PPS (2024) policy 2.3.2 provides the following direction regarding settlement boundary expansions:

2.3.2 New Settlement Areas and Settlement Area Boundary Expansions

1. *In identifying a new settlement area or allowing a settlement area boundary expansion, planning authorities shall consider the following:*
 - a. *the need to designate and plan for additional land to accommodate an appropriate range and mix of land uses;*
 - b. *if there is sufficient capacity in existing or planned infrastructure and public service facilities;*
 - c. *whether the applicable lands comprise specialty crop areas;*
 - d. *the evaluation of alternative locations which avoid prime agricultural areas and, where avoidance is not possible, consider reasonable alternatives on lower priority agricultural lands in prime agricultural areas;*
 - e. *whether the new or expanded settlement area complies with the minimum distance separation formulae;*
 - f. *whether impacts on the agricultural system are avoided, or where avoidance is not possible, minimized and mitigated to the extent feasible as determined through an agricultural impact assessment or equivalent analysis, based on provincial guidance; and*
 - g. *the new or expanded settlement area provides for the phased progression of urban development.*
2. *Notwithstanding policy 2.3.2.1.b), planning authorities may identify a new settlement area only where it has been demonstrated that the infrastructure and public service facilities to support development are planned or available.*

The following table documents conformity of the proposed development with policy 2.3.2.1 of the PPS, 2024.

Table 3: Assessment of Settlement Area Boundary Expansions (Policy 2.3.2.1)

Policy 2.3.2.1	Conformity	Analysis
<i>a) the need to designate and plan for additional land to accommodate an appropriate range and mix of land uses</i>	Yes	The County of Wellington has examined rural residential growth as part of the Official Plan Review (Committee Report prepared by Jameson Pickard, September 12, 2024). Land Need Analysis conducted by the County of Wellington sets out the need for 250 units in the Township of Puslinch. The proposed development (44 units) provides approximately 17% of the needed growth.
<i>b) if there is sufficient capacity in existing or planned infrastructure and public service facilities</i>	Yes	There is not existing or planned infrastructure and public services facilities in the municipality. Capacity for private servicing was assessed by a Qualified Professional.
<i>c) whether the applicable lands comprise specialty crop areas</i>	Yes	Development is not comprised of Specialty Crop Areas.
<i>d) the evaluation of alternative locations which avoid prime agricultural areas and, where</i>	Yes	An alternate site location analysis was completed. The settlement of Arkell is

<i>avoidance is not possible, consider reasonable alternatives on lower priority agricultural lands in prime agricultural areas</i>		surrounded by good agricultural land so avoidance is not possible. The subject lands are deemed to be a reasonable alternative for expansion of the settlement boundary as the lands represent the lowest priority agricultural lands in the local area immediately adjacent to the settlement.
<i>e) whether the new or expanded settlement area complies with the minimum distance separation formulae</i>	Yes	The proposed Development complies with the MDS formulae.
<i>f) whether impacts on the agricultural system are avoided, or where avoidance is not possible, minimized and mitigated to the extent feasible as determined through an agricultural impact assessment or equivalent analysis, based on provincial guidance</i>	Yes	AIA documents that impacts on the agricultural system are minimal.
<i>g) the new or expanded settlement area provides for the phased progression of urban development</i>	Yes	Proposed expansion of settlement represents a logical progression of development.

The proposed development is consistent with the agricultural provisions of the PPS, 2024.

4.2 County of Wellington Official Plan

The County of Wellington Official Plan was adopted by Wellington County Council on September 24, 1998, approved by the Ministry of Municipal Affairs on April 13, 1998, and came into effect on May 6, 1999. The County Official Plan, as amended, was last revised December 2025. The proposed development was declared complete in 2006.

Prime Agricultural Areas in the OP are defined as: “Class 1, 2 and 3 agricultural soils, associated Class 4 to 7 soils and additional areas where there is a local concentration of farms which exhibit the characteristics of ongoing agriculture, and specialty crop land will be designated as prime agricultural areas. These areas will be protected for agriculture.”

While a portion of the site is designated Secondary Agriculture and Hamlet, the majority of the site is designated Prime Agriculture.

Section 4.6.5 of the OP sets out the matters that must be documented in an AIA. Table 4 provides a conformity analysis of these provisions.

Table 4: Official Plan Requirements of an AIA – Arkell Subdivision Proposal

AIA Documentation Requirements	SAI Findings	Conformity
a) the opportunity to use lands of lower agricultural potential;	<ul style="list-style-type: none"> Site represents the lowest agricultural potential of all lands in proximity to Arkel 	Yes
b) compliance with the <i>minimum distance separation formulae</i> for livestock operations;	<ul style="list-style-type: none"> No livestock operations in proximity to the site. No MDS impacts 	Yes

c) the degree to which agricultural expansion may be constrained;	<ul style="list-style-type: none"> No livestock operations in proximity to the site. Expansion of agricultural facilities will not be impacted. 	Yes
d) potential interference with normal agricultural activities and practices;	<ul style="list-style-type: none"> Site is well separated from adjacent livestock operations. No potential interference anticipated. As part of development, warning clause will be prepared for each new landowner indicating that normal agricultural activities and practices are to be anticipated. 	Yes
e) potential interference with the movement of agricultural machinery on roads;	<ul style="list-style-type: none"> Traffic Impact Study completed. Entrances will have satisfactory sight lines. No livestock operations in proximity to the site. No impacts related to potential interference with movement of agricultural machinery on roads anticipated. 	Yes
f) such other concerns as a Council may consider relevant.	No other concerns from Council at this point.	Yes

Section 4.8.2 sets out policy considerations for the evaluation of urban boundary expansions, including Hamlets. 4.8.2 f) and g) are relevant to this AIA.

f) prime agricultural areas should be avoided where possible. To support the Agricultural System, alternative locations across the County will be evaluated, prioritized and determined based on avoiding, minimizing and mitigating the impact on the Agricultural System and in accordance with the following;

- i) reasonable alternatives that avoid prime agricultural areas are evaluated; and;*
- ii) where prime agricultural areas cannot be avoided, lower priority agricultural lands are used;*

g) any adverse impacts on the agri-food network, including agricultural operations, from expanding settlement areas would be avoided, or if avoidance is not possible, minimized and mitigated as determined through an agricultural impact assessment;

As previously documented, the subject lands represent the lowest capability agricultural lands in proximity to Arkell. There are no reasonable alternatives of lower priority agricultural land available. From an agricultural perspective, the subject property represents the lowest priority option for protection. Impacts on agricultural operations will be minimal given that there is no MDS I conflict and there are no agricultural operations in proximity to the subject property. The proposed development will not result in any adverse impacts on the agri-food network.

5.0 CONCLUSIONS

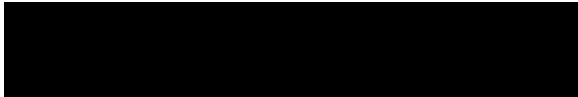
Stovel and Associates Inc. (“SAI”) was retained by Timberworx Custom Homes Inc. (Timberworx), Sloot Construction Ltd. (Sloot) and John Sloot Investments Ltd. to complete an Agricultural Impact Assessment (“AIA”) of a proposed residential subdivision in the Township of Puslinch (Arkell). The proposed development is an expansion of an existing settlement area and was assessed based on the related policy structure. A portion of the subject lands is already included in the Hamlet boundary.

The project is referred to as Arkell Subdivision. The lands in question are approximately 18.8 ha in size and are located on Part of Lots 7, 8 and 9, Concession 10, Township of Puslinch, County of Wellington.

The subject lands do not include any forms of capital investment related to agriculture and there are no livestock barns in immediate proximity to the site. The completed MDS I analysis confirms that the proposed development is not constrained by surrounding livestock operations. The lands are fragmented and oddly shaped, since a railroad dissects through this portion of the Township of Puslinch. Approximately 40% of the site is cultivated for agricultural production and the lands are constrained by a variety of factors including excessive stoniness, low moisture holding capacity and low inherent fertility. The lands in question are not reflective of a prime agricultural area.

Relevant guidelines and planning policies were considered in the preparation of this AIA. Background documentation, including agricultural mapping and agricultural statistics, was supplemented by data collected through reconnaissance investigations of the Secondary Study Area and the examination of Farm Data Sheets provided by local farmers. Based on this information, it was concluded that the proposed development will not impact adjacent agricultural operations and is a reasonable use of land given the surrounding land uses. Based on a review of alternative locations for expansion of the Hamlet boundary, it was determined that the subject lands represent the lowest priority agricultural lands for protection.

The proposed development is consistent with the relevant planning policy framework set out in the PPS, 2024 and conforms to the County of Wellington Official Plan.



ROBERT P. STOVEL, MCIP, RPP, P.A.G.



ROBERT L. STOVEL, B.Sc.

Appendix A: Farm Data Sheets

FARM DATA SHEET Minimum Distance Separation I (MDSI)

NOTE TO FARM OWNER(S)

By filling out this form you will help to ensure that new land uses will be located a suitable distance from your livestock operation.



935 WATSON RD S. PUSLINCH →
 Owner(s) of Livestock Facility _____
 No LIVESTOCK ON PROPERTY FOR ~~LAST~~ OVER 30 YEARS.

Contact Information

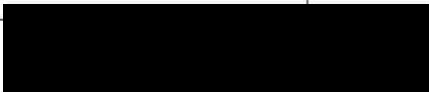
Email _____ Telephone _____
 Civic Address _____ Municipality _____
 Lot _____ Concession _____ Division _____
 Lot Size (where livestock facility is located) _____ hectares _____ acres

Signature of Livestock Facility Owner _____ Date _____

BARN(S) SIZE Please provide the size of the barns located on the property. This information is used to verify maximum livestock capacity. _____ ft²/m² _____ ft²/m²

- Manure Storage Types** Solid manure: 18% dry matter, or more Liquid manure: <18% dry matter
- V1 Solid, inside, bedded pack
 - V2 Solid, outside, covered
 - V3 Solid, outside, no cover, ≥30% dry matter
 - V4 Solid, outside, no cover, 18% - <30% dry matter, with covered liquid runoff storage
 - V5 Liquid, inside, underneath slatted floor
 - V6 Liquid, outside, with a permanent, tight-fitting cover
 - L1 Solid, outside, no cover, 18%- <30% dry matter, with uncovered liquid runoff storage
 - L2 Liquid, outside, with a permanent floating cover
 - M1 Liquid, outside, no cover, straight-walled storage
 - M2 Liquid, outside, roof, but with open sides
 - H1 Liquid, outside, no cover, sloped-sided storage

Animal Type of Material	Description	Housing Capacity (maximum)	Manure Storage Type (select from list)
Beef Cattle	Cows, including calves to weaning (all breeds)		/
	Feeders (7 – 16 months)		
	Backgrounders (7 – 12.5 months)		
	Shortkeepers (12.5 – 17.5 months)		
Dairy Cattle	Milking-age cows (dry or milking)		
	Large-framed; 545 – 658 kg (e.g. Holsteins)		
	Medium-framed; 455 – 545 kg (e.g. Guernseys)		
	Small-framed; 364 – 455 kg (e.g. Jerseys)		
	Heifers (5 months to freshening)		
	Large-framed; 182 – 545 kg (e.g. Holsteins)		
	Medium-framed; 148 – 455 kg (e.g. Guernseys)		
	Small-framed; 125 – 364 kg (e.g. Jerseys)		
	Calves (0 – 5 months)		
	Large-framed; 45 – 182 kg (e.g. Holsteins)		
Medium-framed; 39 – 148 kg (e.g. Guernseys)			
Small-framed; 30 – 125 kg (e.g. Jerseys)			
Horses	Large-framed, mature; >681 kg (e.g. draft or draft cross breeds including unweaned offspring)		
	Medium-framed, mature; 227 – 680 kg (e.g. saddle, riding and racing breeds including unweaned offspring)		
	Small-framed, mature; <227 kg (e.g. ponies and miniatures including unweaned offspring)		



FARM DATA SHEET (continued)
Minimum Distance Separation I (MDSI)

Animal Type of Material	Description	Housing Capacity (maximum)	Manure Storage Type (select from list)
Swine	Sows with litter, dry sows or boars		/
	Breeder gilts (entire barn designed specifically for this purpose)		
	Weaners (7 – 27 kg)		
	Feeders (27 – 136 kg)		
Sheep	Ewes & rams (for meat lambs; includes unweaned offspring & replacements)		
	Ewes & rams (dairy operation; includes unweaned offspring & replacements)		
	Lambs (dairy or feeder lambs)		
Goats	Does & bucks (for meat kids; includes unweaned offspring and replacements)		
	Does & bucks (for dairy; includes unweaned offspring & replacements)		
	Kids (dairy or feeder kids)		
Chickens	Layer hens (for eating eggs; after transfer from pullet barn)		
	Layer pullets (day-olds until transferred into layer barn)		
	Broiler breeder growers (males/females transferred out to layer barn)		
	Broiler breeder layers (males/females transferred in from grower barn)		
	Broilers on any length of cycle		
Turkeys	Turkey poults (day-old until transferred to grow out turkey barn)		
	Turkey breeder layers (males/females transferred in from grower barn)		
	Breeder toms		
	Broilers (day-olds to 6.2 kg)		
	Hens (day-olds up to 6.2 to 10.8 kg; 7.5 kg is typical)		
	Toms (day-olds to over 10.8 to 20 kg; 14.5 kg is typical)		
	Turkeys at any other weights, or if unknown (by floor area)		
Veal	Milk-fed		
	Grain-fed		
Other	Please refer to Factor Table 1 of The Minimum Distance Separation (MDS) Document for complete list of animal types		
Imported manure	Use the volume of the manure storages		
Unoccupied livestock barns	A livestock barn that does not currently house any livestock, but that housed livestock in the past and continues to be structurally sound and reasonably capable of housing livestock.*		

*NOTE: This should only be used where obtaining information from the farm operator(s) and/or owner(s) was not possible (see Implementation Guideline 20 for more information).

FARM DATA SHEET
Minimum Distance Separation I (MDSI)

NOTE TO FARM OWNER(S)
 By filling out this form you will help to ensure that new land uses will be located a suitable distance from your livestock operation.

Owner(s) of Livestock Facility _____

Contact Information

Email _____ Telephone _____

Civic Address 413+483 Arden Blvd. Municipality Puslinch.

Lot _____ Concession _____ Division _____

Lot Size (where livestock facility is located) _____ hectares 700 acres

Signature of Livestock Facility Owner _____ Date _____

BARN(S) SIZE Please provide the size of the barns located on the property. This information is used to verify maximum livestock capacity. _____ ft²/m² _____ ft²/m²

- Manure Storage Types** Solid manure: 18% dry matter, or more Liquid manure: <18% dry matter
- V1 Solid, inside, bedded pack
 - V2 Solid, outside, covered
 - V3 Solid, outside, no cover, ≥30% dry matter
 - V4 Solid, outside, no cover, 18% - <30% dry matter, with covered liquid runoff storage
 - V5 Liquid, inside, underneath slatted floor
 - V6 Liquid, outside, with a permanent, tight-fitting cover
 - L1 Solid, outside, no cover, 18%- <30% dry matter, with uncovered liquid runoff storage
 - L2 Liquid, outside, with a permanent floating cover
 - M1 Liquid, outside, no cover, straight-walled storage
 - M2 Liquid, outside, roof, but with open sides
 - H1 Liquid, outside, no cover, sloped-sided storage

Animal Type of Material	Description	Housing Capacity (maximum)	Manure Storage Type (select from list)
Beef Cattle	Cows, including calves to weaning (all breeds)		
	Feeders (7 – 16 months)		
	Backgrounders (7 – 12.5 months)		
	Shortkeepers (12.5 – 17.5 months)		
Dairy Cattle	Milking-age cows (dry or milking)		
	Large-framed; 545 – 658 kg (e.g. Holsteins)		
	Medium-framed; 455 – 545 kg (e.g. Guernseys)		
	Small-framed; 364 – 455 kg (e.g. Jerseys)		
	Heifers (5 months to freshening)		
	Large-framed; 182 – 545 kg (e.g. Holsteins)		
	Medium-framed; 148 – 455 kg (e.g. Guernseys)		
	Small-framed; 125 – 364 kg (e.g. Jerseys)		
	Calves (0 – 5 months)		
	Large-framed; 45 – 182 kg (e.g. Holsteins)		
Medium-framed; 39 – 148 kg (e.g. Guernseys)			
Small-framed; 30 – 125 kg (e.g. Jerseys)			
Horses	Large-framed, mature; >681 kg (e.g. draft or draft cross breeds including unweaned offspring)		
	Medium-framed, mature; 227 – 680 kg (e.g. saddle, riding and racing breeds including unweaned offspring)	60	V1 + V2
	Small-framed, mature; <227 kg (e.g. ponies and miniatures including unweaned offspring)		

FARM DATA SHEET (continued)
Minimum Distance Separation I (MDSI)

Animal Type of Material	Description	Housing Capacity (maximum)	Manure Storage Type (select from list)
Swine	Sows with litter, dry sows or boars	350	V5 + M1
	Breeder gilts (entire barn designed specifically for this purpose)	120	V5 + M1
	Weaners (7 – 27 kg)	1000	V5 + M1
	Feeders (27 – 136 kg)	520	V5 + M1
Sheep	Ewes & rams (for meat lambs; includes unweaned offspring & replacements)		
	Ewes & rams (dairy operation; includes unweaned offspring & replacements)		
	Lambs (dairy or feeder lambs)		
Goats	Does & bucks (for meat kids; includes unweaned offspring and replacements)		
	Does & bucks (for dairy; includes unweaned offspring & replacements)		
	Kids (dairy or feeder kids)		
Chickens	Layer hens (for eating eggs; after transfer from pullet barn)	6000	V2
	Layer pullets (day-olds until transferred into layer barn)	3000	V2
	Broiler breeder growers (males/females transferred out to layer barn)	1000	V2
	Broiler breeder layers (males/females transferred in from grower barn)	1000	V2
	Broilers on any length of cycle	3000	V2
Turkeys	Turkey poults (day-old until transferred to grow out turkey barn)	1000	V2
	Turkey breeder layers (males/females transferred in from grower barn)		
	Breeder toms		
	Broilers (day-olds to 6.2 kg)	500	V2
	Hens (day-olds up to 6.2 to 10.8 kg; 7.5 kg is typical)	500	V2
	Toms (day-olds to over 10.8 to 20 kg; 14.5 kg is typical)	500	V2
Veal	Milk-fed		
	Grain-fed		
Other	Please refer to Factor Table 1 of The Minimum Distance Separation (MDS) Document for complete list of animal types		
Imported manure	Use the volume of the manure storages		
Unoccupied livestock barns	A livestock barn that does not currently house any livestock, but that housed livestock in the past and continues to be structurally sound and reasonably capable of housing livestock. *	1000	V1 + V2

*NOTE: This should only be used where obtaining information from the farm operator(s) and/or owner(s) was not possible (see Implementation Guideline 20 for more information).

FARM DATA SHEET

Minimum Distance Separation I (MDSI)

ALL POLE SHEDS ON THE PROPERTY ARE NOW USED FOR HAY + EQUIPMENT STORAGE - THE BARN BARN IS USED FOR FAMILY ENTERTAINMENT UPSTAIRS + STORAGE DOWNSTAIRS

NOTE TO FARM OWNER(S)
By filling out this form you will help to ensure that new land uses will be located a suitable distance from your livestock operation.

Owner(s) of Livestock Facility _____

Contact Information

Email _____ Telephone _____

Civic Address 86 FARNHAM RD Municipality PUSLINCH

Lot 5 Concession 9 Division _____

Lot Size (where livestock facility is located) _____ hectares 70 acres

Signature of Livestock Facility Owner _____ Date Oct 17/22

BARN(S) SIZE Please provide the size of the barns located on the property. This information is used to verify maximum livestock capacity. 4300 ft²/m²

- Manure Storage Types** Solid manure: 18% dry matter, or more Liquid manure: <18% dry matter
- V1 Solid, inside, bedded pack
 - V2 Solid, outside, covered
 - V3 Solid, outside, no cover, ≥30% dry matter
 - V4 Solid, outside, no cover, 18% - <30% dry matter, with covered liquid runoff storage
 - V5 Liquid, inside, underneath slatted floor
 - V6 Liquid, outside, with a permanent, tight-fitting cover
 - L1 Solid, outside, no cover, 18% - <30% dry matter, with uncovered liquid runoff storage
 - L2 Liquid, outside, with a permanent floating cover
 - M1 Liquid, outside, no cover, straight-walled storage
 - M2 Liquid, outside, roof, but with open sides
 - H1 Liquid, outside, no cover, sloped-sided storage

Animal Type of Material	Description	Housing Capacity (maximum)	Manure Storage Type (select from list)
Beef Cattle	Cows, including calves to weaning (all breeds)		
	Feeders (7 – 16 months)		
	Backgrounders (7 – 12.5 months)		
	Shortkeepers (12.5 – 17.5 months)		
Dairy Cattle	Milking-age cows (dry or milking)		
	Large-framed; 545 – 658 kg (e.g. Holsteins)		
	Medium-framed; 455 – 545 kg (e.g. Guernseys)		
	Small-framed; 364 – 455 kg (e.g. Jerseys)		
	Heifers (5 months to freshening)		
	Large-framed; 182 – 545 kg (e.g. Holsteins)		
	Medium-framed; 148 – 455 kg (e.g. Guernseys)		
	Small-framed; 125 – 364 kg (e.g. Jerseys)		
	Calves (0 – 5 months)		
	Large-framed; 45 – 182 kg (e.g. Holsteins)		
Medium-framed; 39 – 148 kg (e.g. Guernseys)			
Small-framed; 30 – 125 kg (e.g. Jerseys)			
Horses	Large-framed, mature; >681 kg (e.g. draft or draft cross breeds including unweaned offspring)		
	Medium-framed, mature; 227 – 680 kg (e.g. saddle, riding and racing breeds including unweaned offspring)		
	Small-framed, mature; <227 kg (e.g. ponies and miniatures including unweaned offspring)		

FARM DATA SHEET (continued)
Minimum Distance Separation I (MDSI)

Animal Type of Material	Description	Housing Capacity (maximum)	Manure Storage Type (select from list)
Swine	Sows with litter, dry sows or boars		
	Breeder gilts (entire barn designed specifically for this purpose)		
	Weaners (7 – 27 kg)		
	Feeders (27 – 136 kg)		
Sheep	Ewes & rams (for meat lambs; includes unweaned offspring & replacements)		
	Ewes & rams (dairy operation; includes unweaned offspring & replacements)		
	Lambs (dairy or feeder lambs)		
Goats	Does & bucks (for meat kids; includes unweaned offspring and replacements)		
	Does & bucks (for dairy; includes unweaned offspring & replacements)		
	Kids (dairy or feeder kids)		
Chickens	Layer hens (for eating eggs; after transfer from pullet barn)		
	Layer pullets (day-olds until transferred into layer barn)		
	Broiler breeder growers (males/females transferred out to layer barn)		
	Broiler breeder layers (males/females transferred in from grower barn)		
	Broilers on any length of cycle		
Turkeys	Turkey poults (day-old until transferred to grow out turkey barn)		
	Turkey breeder layers (males/females transferred in from grower barn)		
	Breeder toms		
	Broilers (day-olds to 6.2 kg)		
	Hens (day-olds up to 6.2 to 10.8 kg; 7.5 kg is typical)		
	Toms (day-olds to over 10.8 to 20 kg; 14.5 kg is typical)		
	Turkeys at any other weights, or if unknown (by floor area)		
Veal	Milk-fed		
	Grain-fed		
Other	Please refer to Factor Table 1 of The Minimum Distance Separation (MDS) Document for complete list of animal types		
Imported manure	Use the volume of the manure storages		
Unoccupied livestock barns	A livestock barn that does not currently house any livestock, but that housed livestock in the past and continues to be structurally sound and reasonably capable of housing livestock.*		

*NOTE: This should only be used where obtaining information from the farm operator(s) and/or owner(s) was not possible (see Implementation Guideline 20 for more information).

FARM DATA SHEET
Minimum Distance Separation I (MDSI)

NOTE TO FARM OWNER(S)

By filling out this form you will help to ensure that new land uses will be located a suitable distance from your livestock operation.

Owner(s) of Livestock Facility [REDACTED]

Contact Information

Email _____ Telephone _____
 Civic Address 900 Watson Road S Municipality Puslinch
 Lot Pt. Lots 8 and 9 Concession 10 Division _____
 Lot Size (where livestock facility is located) 2.98 hectares 7.36 acres

Signature of Livestock Facility Owner [REDACTED] Date Dec 17th 2022

BARN(S) SIZE Please provide the size of the barns located on the property. This information is used to verify maximum livestock capacity. _____ ft²/m² _____ ft²/m²

- Manure Storage Types** Solid manure: 18% dry matter, or more Liquid manure: <18% dry matter
- V1 Solid, inside, bedded pack
 - V2 Solid, outside, covered
 - V3 Solid, outside, no cover, ≥30% dry matter
 - V4 Solid, outside, no cover, 18% - <30% dry matter, with covered liquid runoff storage
 - V5 Liquid, inside, underneath slatted floor
 - V6 Liquid, outside, with a permanent, tight-fitting cover
 - L1 Solid, outside, no cover, 18% - <30% dry matter, with uncovered liquid runoff storage
 - L2 Liquid, outside, with a permanent floating cover
 - M1 Liquid, outside, no cover, straight-walled storage
 - M2 Liquid, outside, roof, but with open sides
 - H1 Liquid, outside, no cover, sloped-sided storage

Animal Type of Material	Description	Housing Capacity (maximum)	Manure Storage Type (select from list)
Beef Cattle	Cows, including calves to weaning (all breeds)		
	Feeders (7 – 16 months)		
	Backgrounders (7 – 12.5 months)		
	Shortkeepers (12.5 – 17.5 months)		
Dairy Cattle	Milking-age cows (dry or milking)		
	Large-framed; 545 – 658 kg (e.g. Holsteins)		
	Medium-framed; 455 – 545 kg (e.g. Guernseys)		
	Small-framed; 364 – 455 kg (e.g. Jerseys)		
	Heifers (5 months to freshening)		
	Large-framed; 182 – 545 kg (e.g. Holsteins)		
	Medium-framed; 148 – 455 kg (e.g. Guernseys)		
	Small-framed; 125 – 364 kg (e.g. Jerseys)		
	Calves (0 – 5 months)		
	Large-framed; 45 – 182 kg (e.g. Holsteins)		
Medium-framed; 39 – 148 kg (e.g. Guernseys)			
Small-framed; 30 – 125 kg (e.g. Jerseys)			
Horses	Large-framed, mature; >681 kg (e.g. draft or draft cross breeds including unweaned offspring)		
	Medium-framed, mature; 227 – 680 kg (e.g. saddle, riding and racing breeds including unweaned offspring)		
	Small-framed, mature; <227 kg (e.g. ponies and miniatures including unweaned offspring)		

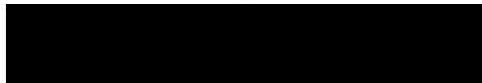


FARM DATA SHEET (continued)
Minimum Distance Separation I (MDSI)

Animal Type of Material	Description	Housing Capacity (maximum)	Manure Storage Type (select from list)
Swine	Sows with litter, dry sows or boars		
	Breeder gilts (entire barn designed specifically for this purpose)		
	Weaners (7 – 27 kg)		
	Feeders (27 – 136 kg)		
Sheep	Ewes & rams (for meat lambs; includes unweaned offspring & replacements)		
	Ewes & rams (dairy operation; includes unweaned offspring & replacements)		
	Lambs (dairy or feeder lambs)		
Goats	Does & bucks (for meat kids; includes unweaned offspring and replacements)		
	Does & bucks (for dairy; includes unweaned offspring & replacements)		
	Kids (dairy or feeder kids)		
Chickens	Layer hens (for eating eggs; after transfer from pullet barn)		
	Layer pullets (day-olds until transferred into layer barn)		
	Broiler breeder growers (males/females transferred out to layer barn)		
	Broiler breeder layers (males/females transferred in from grower barn)		
	Broilers on any length of cycle		
Turkeys	Turkey poults (day-old until transferred to grow out turkey barn)		
	Turkey breeder layers (males/females transferred in from grower barn)		
	Breeder toms		
	Broilers (day-olds to 6.2 kg)		
	Hens (day-olds up to 6.2 to 10.8 kg; 7.5 kg is typical)		
	Toms (day-olds to over 10.8 to 20 kg; 14.5 kg is typical)		
	Turkeys at any other weights, or if unknown (by floor area)		
Veal	Milk-fed		
	Grain-fed		
Other	Please refer to Factor Table 1 of The Minimum Distance Separation (MDS) Document for complete list of animal types		
Imported manure	Use the volume of the manure storages		
Unoccupied livestock barns	A livestock barn that does not currently house any livestock, but that housed livestock in the past and continues to be structurally sound and reasonably capable of housing livestock.*		

*NOTE: This should only be used where obtaining information from the farm operator(s) and/or owner(s) was not possible (see Implementation Guideline 20 for more information).

On-site structures/shed are used for storage and are not capable for housing livestock.



Appendix B: Photo of Agricultural Operations and Table of Agricultural Operations

Ag Operation No.	Address	Description
-	Subject Lands	-
2	1096 Victoria Rd. S.	Two storage buildings, these are used as storage for the golf course. (No farm data sheet returned).
3	111 Carter Road	One remnant storage barn. (No farm data sheet returned).
4	86 Farnham Road	Two external storage structures, one concrete enclosed silo, room for external manure storage, two bank barns, Farm data sheet stated no animals are currently occupying any of the facilities (Farm data sheet was returned).
5	83 Carter Road	One bank barn capable of housing horses. Horses were observed during site visit. (Farm data sheet was not returned).
6	129 Farnham Road	One small wood barn. (Farm data sheet was not returned).
7	498 Arkell Road	One large implement shed, and one quonset style structure. (Farm data sheet was not returned).
8	540 Arkell Road	One gable barn, two storage barns (Farm data sheet was not returned).
9	508 Arkell Road	One small implement shed visible from aerial photography. One small gable styled barn was partially visible from road view. (Farm data sheet was not returned).
10	413 Arkell Road	3 large poultry barns, one large wooden bank barn, three implement sheds, one quonset style structure. Poultry Industry Council and UofG properties (Farm data sheet was returned).
11	529 Arkell Road	One large barn, one small storage barn, one external silo (Farm data sheet was not returned).
12	756-758 Watson Road South	Two large barns used for horses. (The Motts Equestrian Centre). (Farm data sheet was not returned).
13	857 Watson Road South	Two structures for livestock. Pasture area visible, horses were observed during site visits (Farm data sheet not returned) . This parcel is within the Hamlet of Arkell.
14	935 Watson Road South	Storage barn has been removed. Dallsons Electric Ltd. (Farm data sheet was returned).
15	930 Watson Road South	One small wood barn, possible used for horses. (Farm data sheet was not returned).
16	954 Watson Road South	One small implement shed. (Farm data sheet was not returned).
17	711 Arkell Road	Two small wooden barns possibly used for storage. No livestock observed at time of visit. (Farm data sheet was not returned).
18	735 Arkell Road	One large storage building. (Farm data sheet was not returned).
19	169 Hume Road	One small barn possibly used for horses. (Farm data sheet was not returned).
20	258 Hume Road	One medium barn with extension, no livestock observed at time of visit. (Farm data sheet was not returned).
21	217 Hume Road	One metal structure, and one storage barn. (Farm data sheet was not returned).
22	900 Watson Road South	Storage Barn has been taken down.

Operation #2: 1096 Victoria RD S



Operation #3: 111 Carter RD



Operation #4: 86 Farnham RD



Operation #5: 83 Carter RD



Operation #6: 129 Farnham RD



Operation #7: 498 Arkell RD



Operation #8: 540 Arkell RD



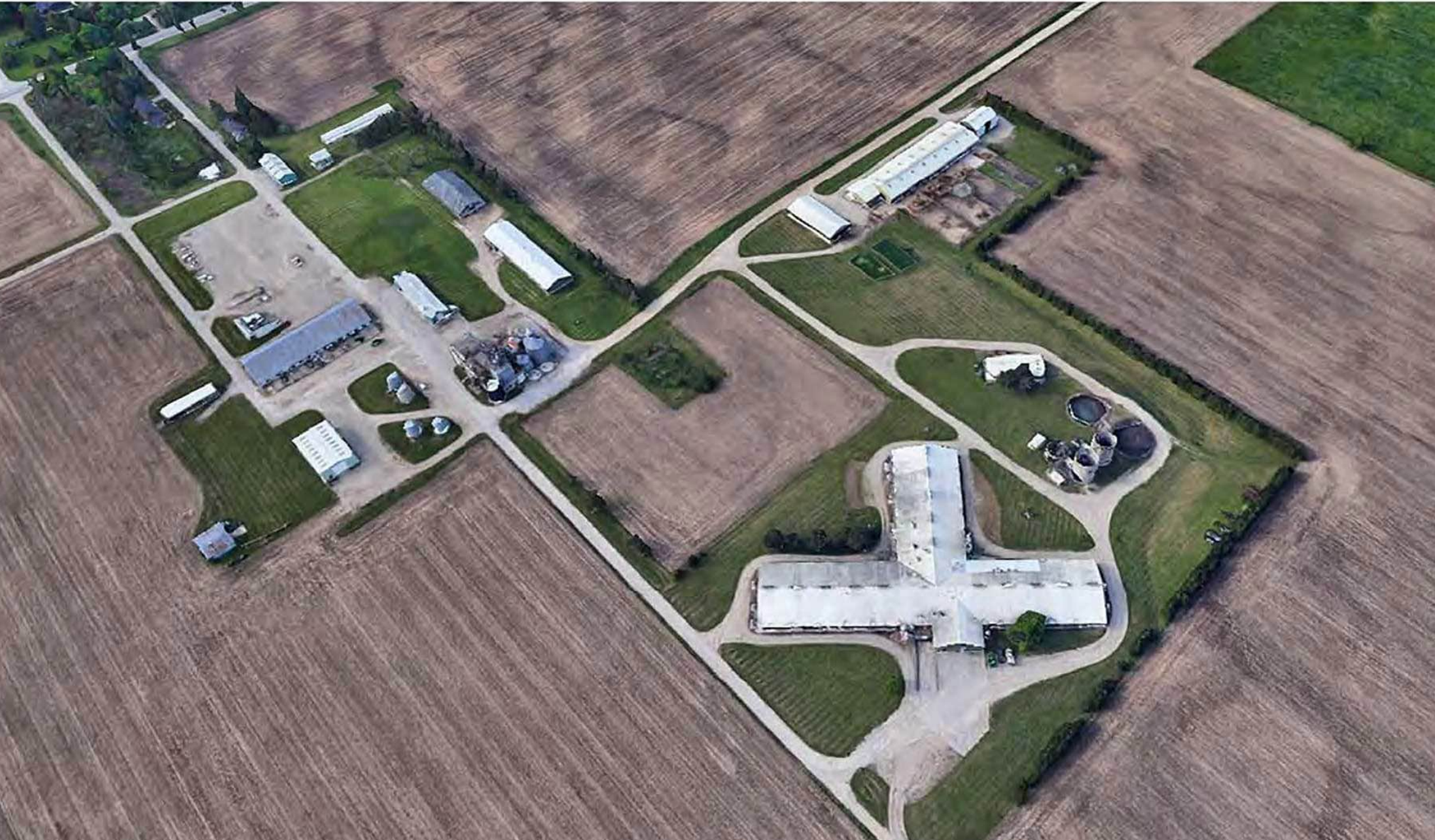
Operation #9: 508 Arkell RD



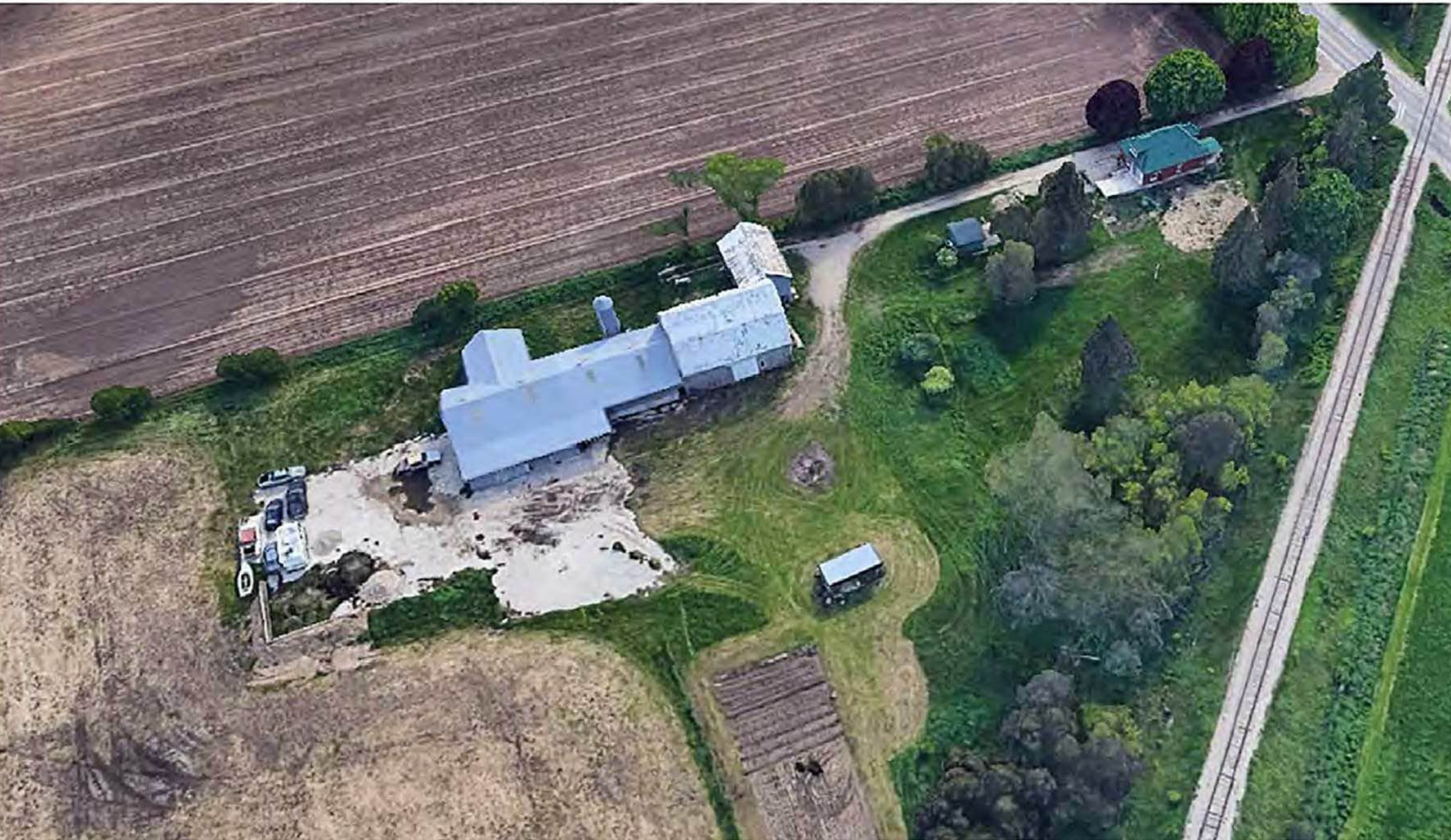
Operation #10: 413-483 Arkell RD



Operation #10: 413-483 Arkell RD



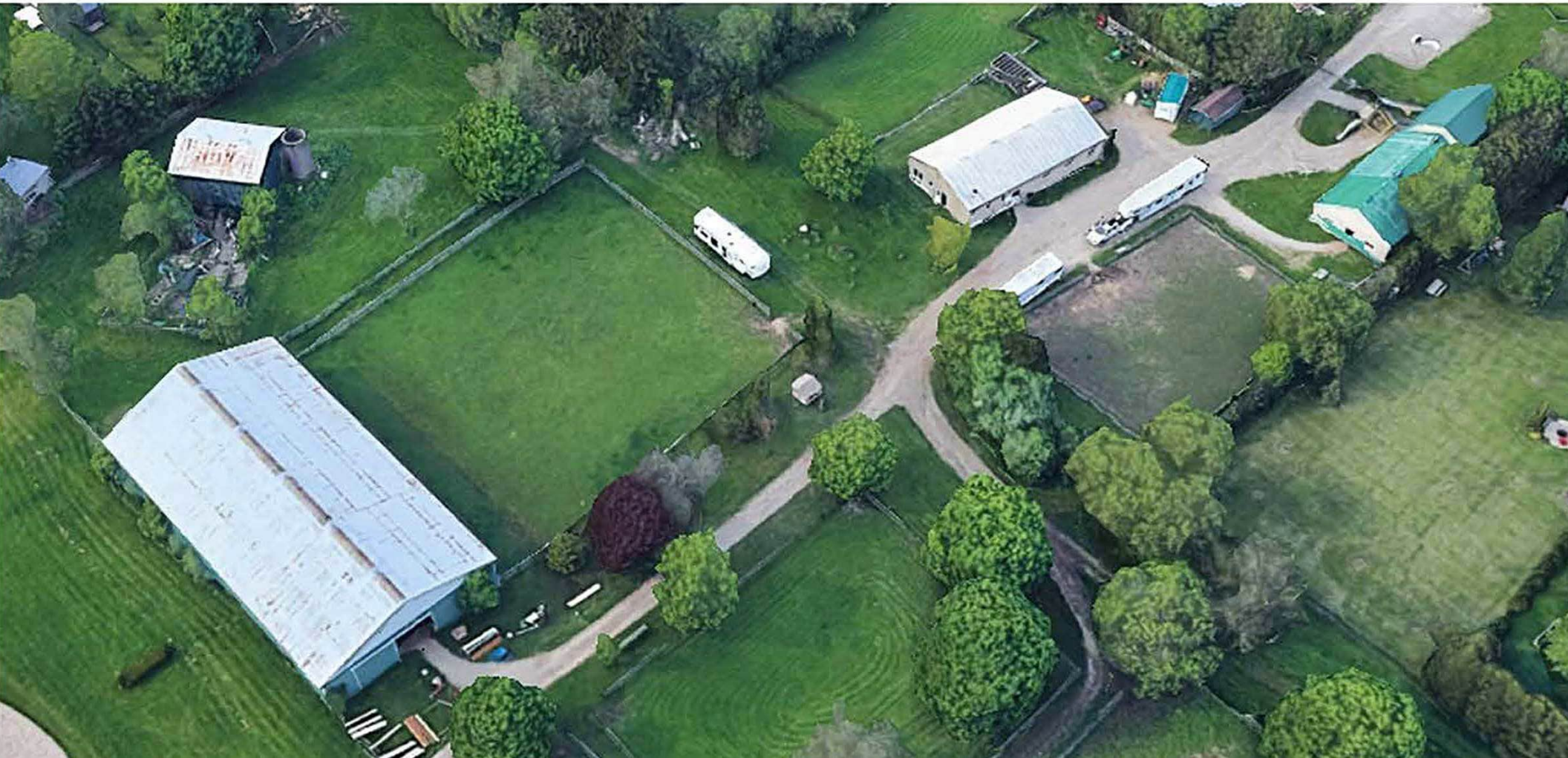
Operation #11: 529 Arkell RD



Operation #12: 756-758 Watson RD S

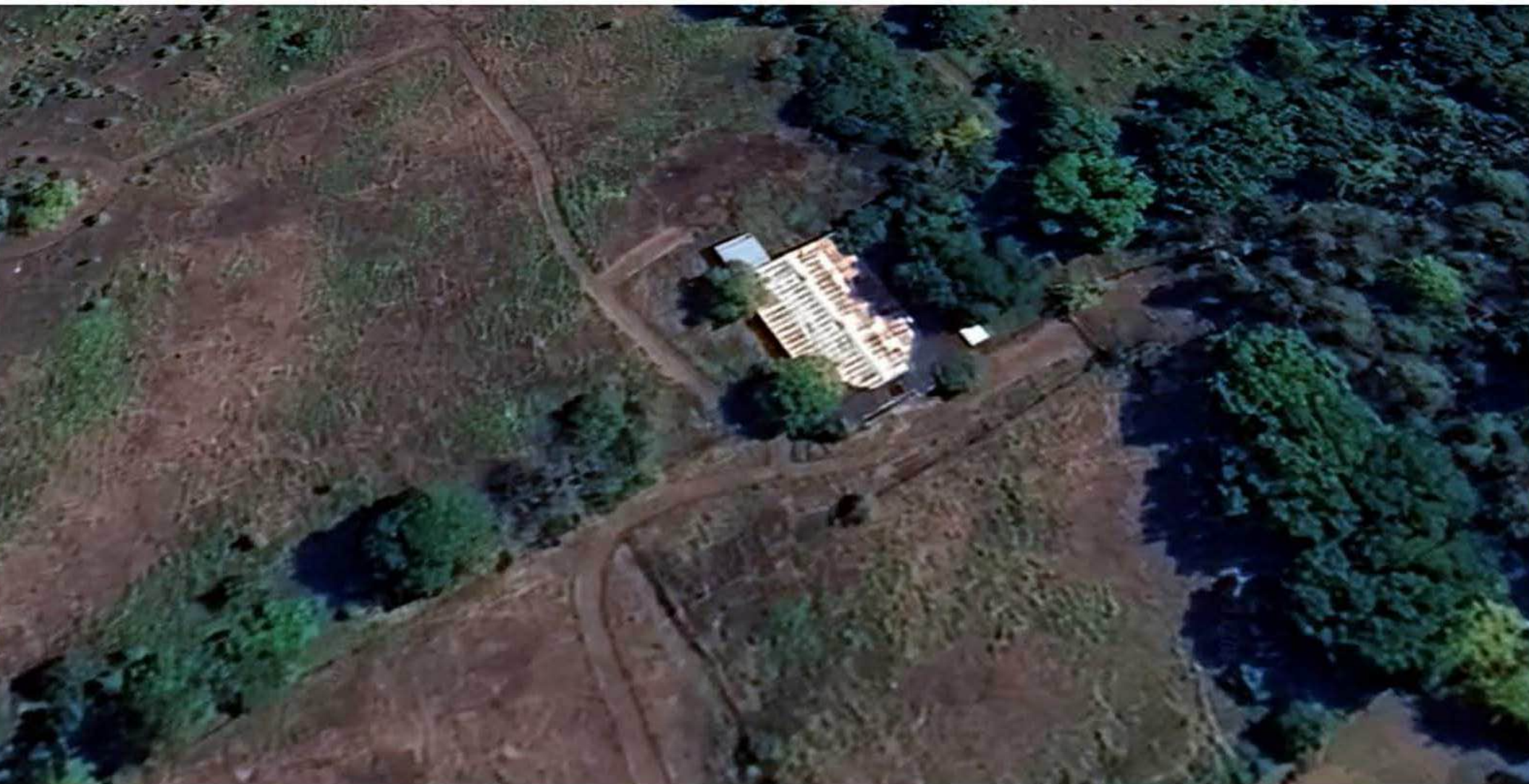


Operation #13: 857 Watson RD S



Operation #14: 935 Watson RD S - No longer exists

Operation #15: 930 Watson RD S



Operation #16: 954 Watson RD S



Operation #17: 711 Arkell RD



Operation #18: 735 Arkell RD



Operation #19: 169 Hume RD



Operation #20: 258 Hume RD



Operation #21: 217 Hume RD



Stovel and Associates Inc.
Planners, Agrologists and Environmental Consultants

January 06, 2023

Meagan Ferris, RPP, MCIP, Manager of Planning and Environment
County of Wellington Planning and Development
74 Woolwich Street
Guelph, ON
N1H 3T9

**RE: Alternate Site Evaluation – Proposed Expansion of the Hamlet of Arkell
Part of Lots 7, 8 and 9, Concession 10
Township of Puslinch
Related Applications: OP-2006-06, ZBA P10/2006, Draft Plan of Subdivision
Application 23T-06003**

Dear Meagan:

Stovel and Associates Inc. (“SAI”) is retained by 1000286480 Ontario Inc. and Slood Construction Inc. (“Slood”) to address the agricultural concerns associated with the above-mentioned planning applications. Please accept the following with respect to consideration of lower priority agricultural lands.

Background

An application for a residential subdivision was submitted to the County of Wellington in 2006 by Mr. Tom Kukovica. As part of this draft plan of subdivision application, an Official Plan Amendment (“OPA”) and Zoning By-law Amendment (“ZBA”) application was also submitted. Map 1 illustrates the location of the subject property.

Since that time, Slood purchased a portion of the lands and in 2022, 1000286480 Ontario Inc. acquired an interest in the property.

The lands in question include a portion of the existing Hamlet of Arkell. For this investigation, the lands designated Hamlet will not form part of the agricultural analysis as these lands have already been removed from the Agricultural System. The remaining portion of the site is designated Prime Agricultural and Secondary Agriculture. These lands are approximately 15.2 ha in size and are the focus of this report.

The initial circulation of the application generated a series of comments from agencies. Of note are the comments from the County of Wellington (“County”) Planning and Development Department (November 11, 2006). The County recommended that the applicant consider alternative locations of lower-priority agricultural lands.

Agricultural Analysis

Map 2 illustrates the distribution of agricultural soils and the associated Canada Land Inventory (“CLI”) – Soil Capability for Agriculture ratings on the subject property. The subject property is mapped as follows:

- Class 2 soils: 5.9 ha.
- Class 3 (50%) and Class 5 (50%) soils: 9.3 ha.

Map 3 illustrates the Alternate Site Locations for potential hamlet expansion for Arkell. Six properties were selected for comparison purposes. Each parcel immediately abuts the existing Hamlet boundary. All six parcels are comprised of higher-capability agricultural lands than the subject property.

From an agricultural perspective, the subject property represents the lowest priority option for protection.

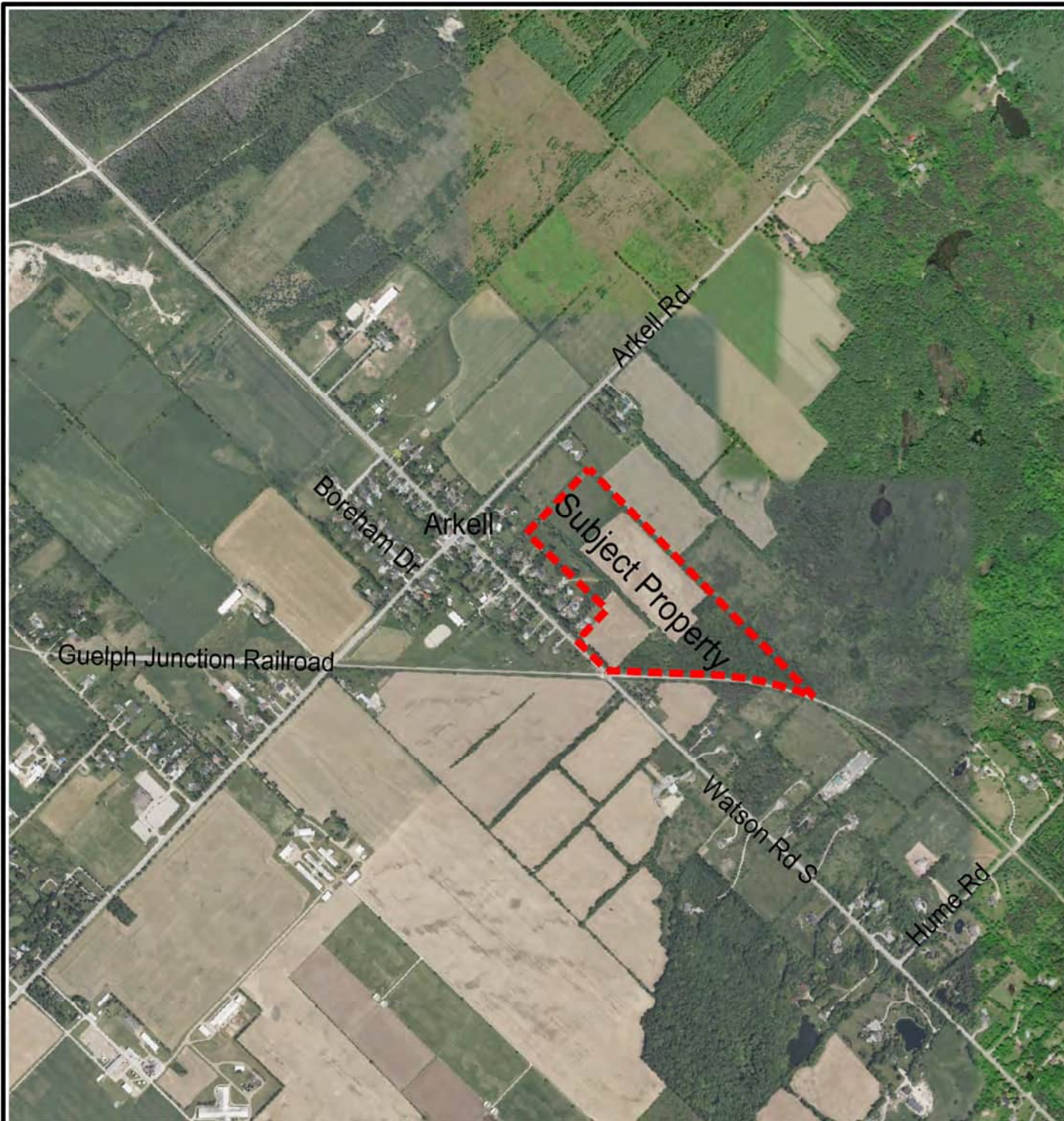
We trust that you will find this report to be of sufficient detail. Should you have any questions, please do not hesitate to contact the undersigned.




Yours truly,

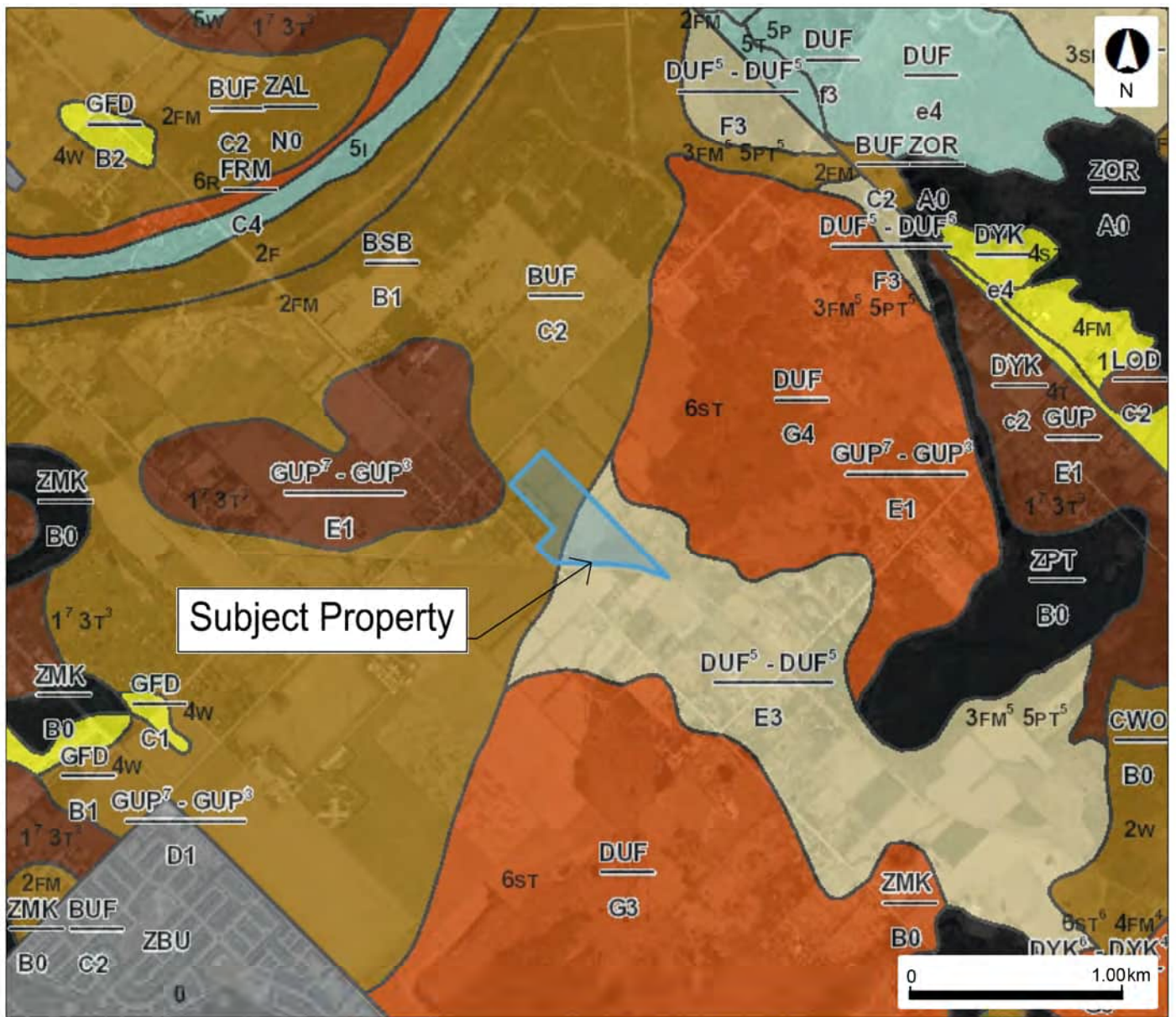


Robert P. Stovel, M.Sc., M.C.I.P., R.P.P., P. Ag.

cc. 1000286480 Ontario Inc. and Sloom Construction Inc.



Location of Subject Property		Map 1
Part of Lots 7, 8, & 9 Concession 10 Arkell Alternate Site Evaluation		
 Stovel and Associates Inc. 651 Orangerville Road, Fergus On N1M 1T9		P: 519-766-8042 E: stovel.associates@outlook.com
Client: Sloat Construction Inc. 1000286480 Ontario Inc.		Date: 12-21-2022
	Aprox. 1:15,000	
Imagery Provided by Microsoft Corporation - MAXAR Distribution Airbus		



Subject Property

Legend	
	Soil Name Label
	Soil Code
Soil Capability for Agriculture	
	Unclassified
	Class 1' / 3T ²
	Class 2FM
	Class 3FM ⁵ / 5PT ⁵
	Class 4w
	Class 5i
	Class 6ST
	Class 7
	Organic Soil
	Water

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) shall not be liable in any way for the use or any information on this map, of, or reliance upon, this map.

Soil Capability for Agriculture		Map 2
Part of Lots 7, 8, & 9 Concession 10 Arkell Alternate Site Evaluation		
	Stovel and Associates Inc. 651 Orangerville Road, Fergus On N1M 1T9	P: 519-766-8042 E: stovel.associates@outlook.com
Client: Sloop Construction Inc. 1000286480 Ontario Inc.		Date: 12-21-2022
	Aprox. 1:30,000	
PDF Taken from The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) AgMaps (2022). Derived by Stovel & Associates Inc. Date: 12-21-2022		

Stovel and Associates Inc.

Planners, Agrologists and Environmental Consultants

August 13, 2025

Township of Puslinch C/O Lynne Banks and Monika Farncombe
7404 Wellington Rd 34
Puslinch ON
N0B 2J0

**RE: Minimum Distance Separation (MDS) Analysis
Part of Lots 7, 8, and 9
Concession 10
Township of Puslinch
County of Wellington**

Stovel and Associates Inc. (SAI) was retained by Shawn Marsh of 1000286480 Ontario Inc. to conduct an analysis of the Minimum Distance Separation (MDS) requirements associated with a proposed settlement boundary expansion in Arkell, Township of Puslinch.

Proposals for new or expanded settlement area must be consistent with the Provincial Planning Statement, 2024 (PPS, 2024). Policy 2.3.2.1 e) sets out the requirement to comply with minimum distance separation formulae, as noted below:

2.3.2.1 (New Settlement Areas and Settlement Area Boundary Expansions)

“In identifying a new settlement area or allowing a settlement area boundary expansion, planning authorities shall consider the following:

- a) the need to designate and plan for additional land to accommodate an appropriate range and mix of land uses;*
- b) if there is sufficient capacity in existing or planned infrastructure and public service facilities;*
- c) whether the applicable lands comprise specialty crop areas;*
- d) the evaluation of alternative locations which avoid prime agricultural areas and, where avoidance is not possible, consider reasonable alternatives on lower priority agricultural lands in prime agricultural areas;*
- e) whether the new or expanded settlement area complies with the minimum distance separation formulae;*
- f) whether impacts on the agricultural system are avoided, or where avoidance is not possible, minimized and mitigated to the extent feasible as determined through an agricultural impact assessment or equivalent*

- g) *analysis, based on provincial guidance; and the new or expanded settlement area provides for the phased progression of urban development.”*

Study Methods

To evaluate potential Minimum Distance Separation (MDS) implications for the proposed development, a reconnaissance-level survey of agricultural operations on lands adjacent to the proposed development was completed (Figure 1). Three livestock operations were identified in proximity to the site:

- Farm #1: 857 Watson Road S – existing hobby horse farm in the settlement of Arkell.
- Farm #2: 756 Watson Road S – existing, large horse farm north of Arkell.
- Farm #3: 930 Watson Road S – existing vacant building potentially capable of housing livestock (i.e. horses).

Farm Data Sheets were circulated to these properties. No replies were received.

Background data were reviewed. County Planning Report, May 9th, 2023 – D13/TON provides information related to Farm #3 for an unrelated, prior consent application (Report Attached – Appendix A).

The Minimum Distance Separation (MDS) Formulae - Publication 853

An MDS I assessment is required for settlement expansions into agricultural lands to ensure appropriate separation from livestock operations, prevent land use conflicts, and protect agricultural viability. The following guidelines were determined to be relevant:

Guideline 12 – Existing Non-Conforming Uses:

An MDS I setback is required for new development even if there are existing or approved developments that do not meet the MDS standard. The setback may be reduced if four or more non-agricultural or residential uses, or dwellings, are located closer to the livestock facility than the proposed development, provided they are:

- *Located within the 120° intervening field of view,*
- *On separate lots, and*
- *Of equal or greater sensitivity (Type A or B usage).*

Guideline 36 – Non-Application Within Settlement Areas:

MDS I setbacks are not required for proposed land use changes, including severances, rezonings, or redesignations, when they occur within approved settlement areas, as the long-term intent is typically non-agricultural.

Findings

There are relatively few active livestock operations in proximity to the subject lands. The existing horse farm located at 857 Watson Road S (Operation #1) is within the Hamlet boundary for Arkell. As a result, Guideline 36 applies and no MDS I setback is required.

Operation #2 is an active horse farm north of the site, at 756 Watson Road S. This farm is approximately 570 metres from the site. Given the presence of more than four non-farm residences between this farm and the site, the calculated MDS I setback does not encroach into the subject lands as it would only extend to the fourth closest non-farm residence.

Operation #3 is a small, vacant building (potentially capable of housing horses) located at 930 Watson Road has a calculated MDS I setback of 176 metres (County Planning Report, May 9th, 2023 – D13/TON, see Appendix A). This setback extends 176 metres north of the barn and encroaches into the subject property by about 38.8 metres. The encroached area is not proposed for development and will not affect the project. Figure 2 illustrates the extent of the MDSI arc

No other MDS I setbacks apply to the proposed urban boundary expansion.

Conclusion

In accordance with OMAFRA's Publication 853, the proposed development will not result in any MDS I conflicts with agricultural operations. Based on this, the proposed settlement boundary expansion is consistent with PPS (2024) Policy 2.3.2.1 e). Should you have any concerns or questions, please do not hesitate to contact me.

Yours truly,



Robert P. Stovel, M.Sc., M.C.I.P., R.P.P., P. Ag.



Robert L. Stovel, B.Sc.

Figure 1 – Agricultural Operations Surrounding Site

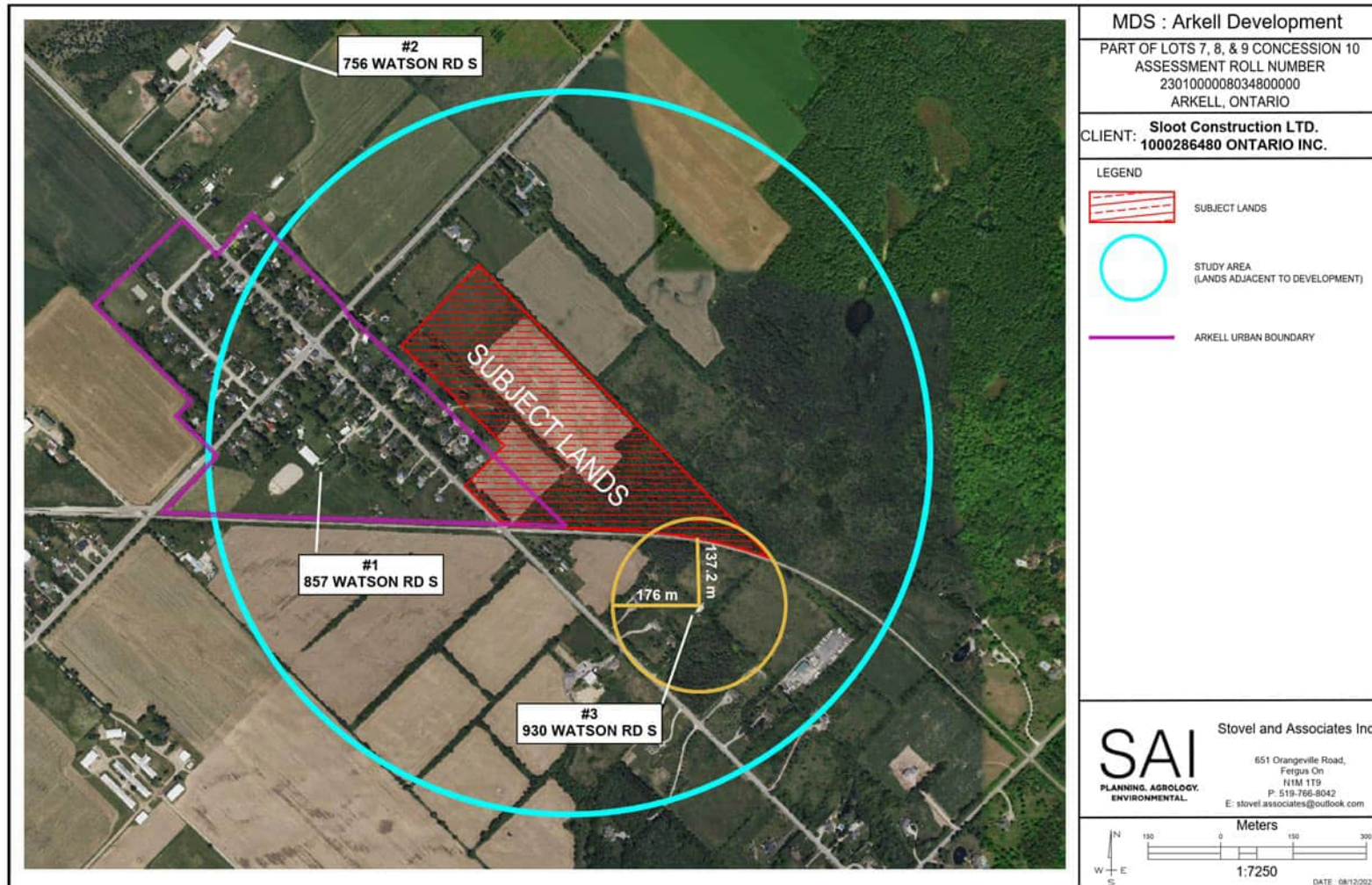
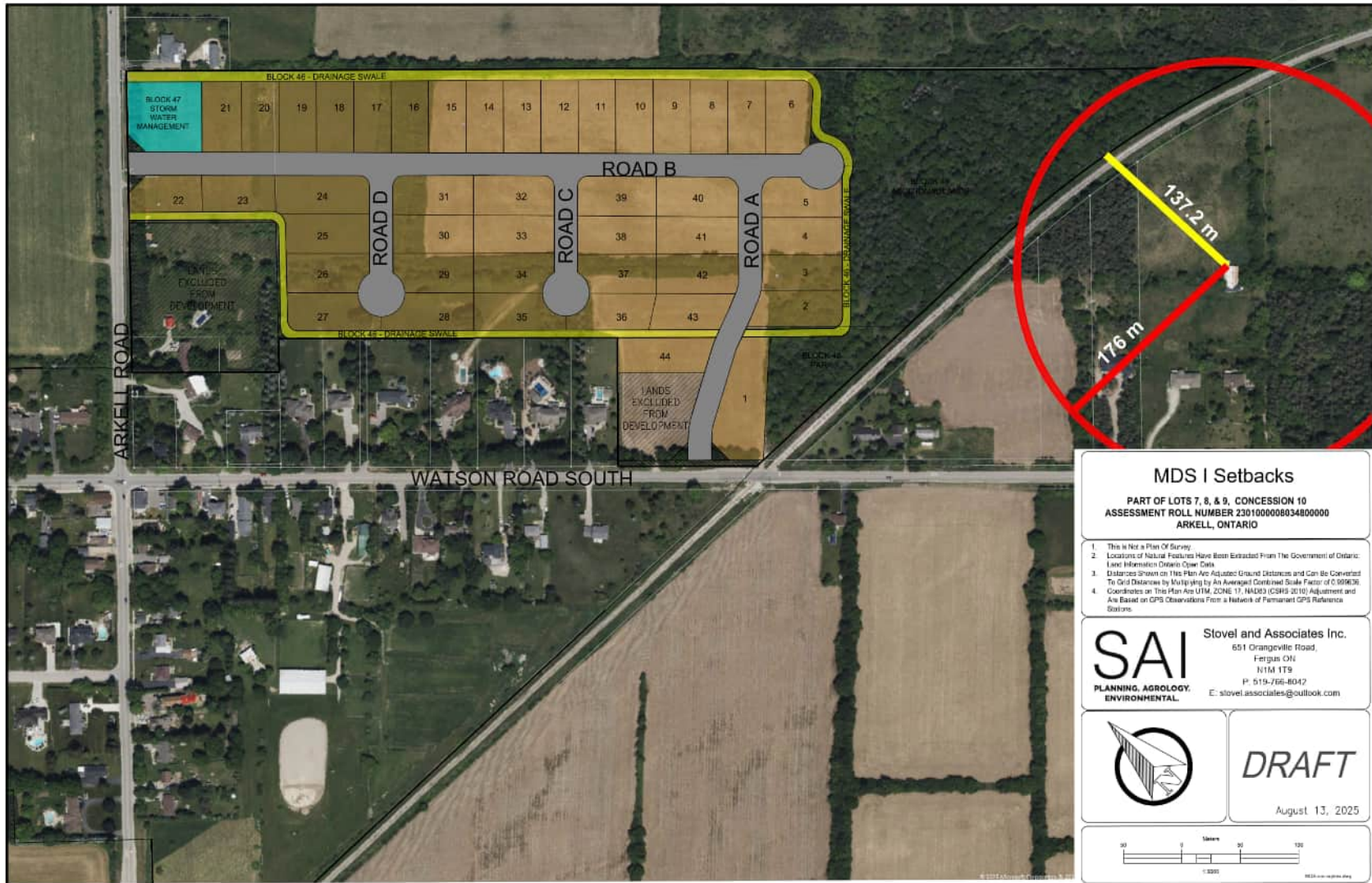


Figure 2: MDS Map



Appendix A: County Planning Report

Appendix A



PLANNING REPORT for the TOWNSHIP OF PUSLINCH

Prepared by the County of Wellington Planning and Development
Department

MEETING DATE: May 9th, 2023
TO: Lynne Banks, Development and Legislative Coordinator
 Township of Puslinch
FROM: Zach Prince, Senior Planner
 County of Wellington
SUBJECT: **MINOR VARIANCE APPLICATION D13/TON (Tonin)**
Louis Tonin
900 Watson Rd S
Part Lots 8 and 9, Concession 10
SCHEDULES: **1 – Applicant's Sketch**

We have reviewed the application for minor variance and provide the following comments. These comments are offered without the benefit of a site visit.

Planning Opinion

The purpose of this application is for relief from Minimum Distance Separation Formula (MDS I) requirements to meet a condition of consent application B01/03 which was conditionally granted by the County of Wellington Land Division Committee in March 2023. The consent application would sever a 0.93 ha (2.29 ac) vacant parcel and a 1.97 ha (4.87 ac) lot with an existing dwelling and barn would be retained. As part of the related consent application, MDS I was reviewed by Planning staff and it was determined that relief would be required to the existing barns in the area. Due to the number of lots within the area, the proposal has been calculated as a Type B land use under Guideline #34.

With respects to the MDS relief, planning staff notes that the setback from the barn located on the retained lands is based on the farm data sheet provided on a neighbouring severance application indicating the capacity for 8 medium sized horses. The barn located at 935 Watson Rd S is based on the unoccupied barn requirements and similarly is being used in a recent consent application (B48/22). The barn located at 930 Watson Rd S is based on information provided by the owner that indicates there are 9 horse stalls in the building and is currently unoccupied. The surrounding area includes the adjacent Guelph Junction Rail Line, existing agricultural parcels and rural residential lots as seen in **Figure 1**.

This minor variance application would maintain the general intent and purpose of the Official Plan and Zoning By-law, and is desirable and appropriate for the development of the subject property. We consider the request minor and have no concerns with the application.

PLANNING REPORT for the TOWNSHIP OF PUSLINCH
D13/TON –May 9th, 2023

Section of the By-law	Requirements	Proposed	Relief Requested
Section 4.16.2 - General Provisions MDS II New or Expanding Livestock Facilities and Manure Storage facilities. 935 Watson Road S	305 m (1,000 ft)	105 m (344 ft)	200 m (656 ft)
Section 4.16.2 - General Provisions MDS II New or Expanding Livestock Facilities and Manure Storage facilities. 930 Watson Road S	176 m (577 ft)	115 m (377 ft)	61 m (200 ft)
Section 4.16.2 - General Provisions MDS II New or Expanding Livestock Facilities and Manure Storage facilities. 900 Watson Road S	173 m (567 ft)	85 m (279 ft)	88 m (288 ft)

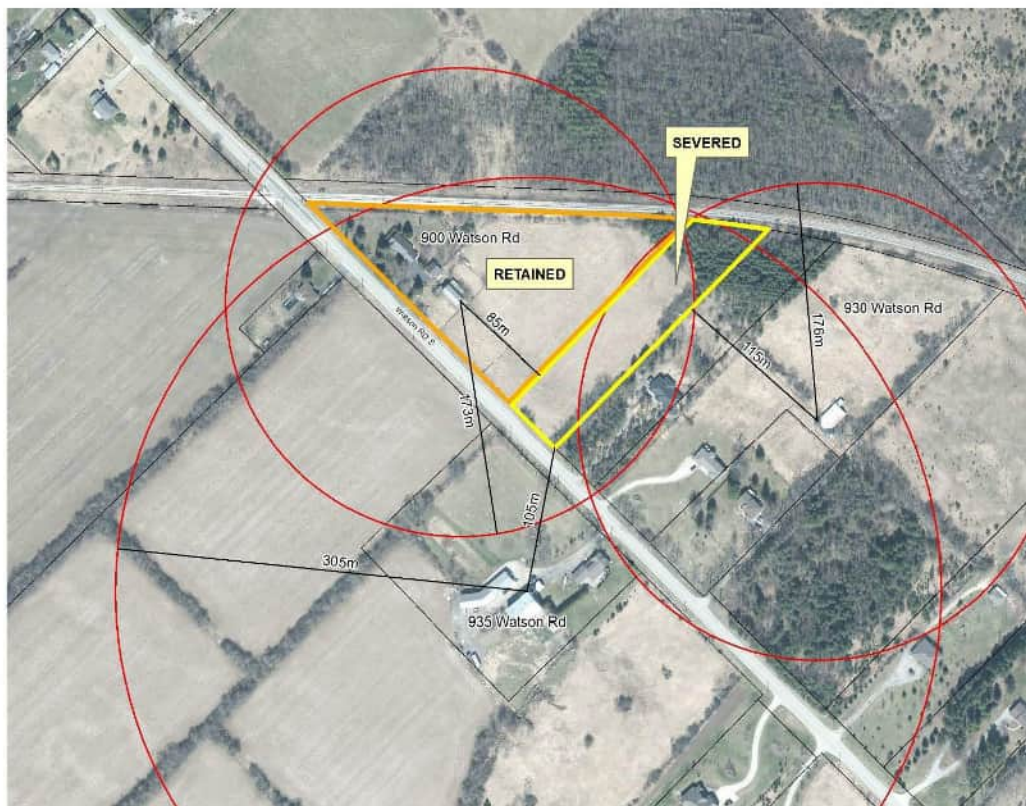


Figure 1 - Subject Property

PLANNING REPORT for the TOWNSHIP OF PUSLINCH
D13/TON – May 9th, 2023

Our discussion of this application relative to the four tests under the Planning Act is as follows:

Four Tests	Discussion
That the requested variance is minor in nature	<ul style="list-style-type: none"> • Consent application B01/23 was conditionally approved by the County of Wellington in March 2023 and this application is to satisfy a condition for MDS I relief. • There is a conditionally approved vacant lot located across the road from the proposed lot which requires the same MDS I relief, farm data sheets were provided for this application (B47/22). • The applicant has indicated the existing barn located on the retained lands (900 Watson) is vacant and have received a demolition permit to remove the structure. The owners of the neighbouring barns at 930 and 935 Watson Rd S have indicated the barn on their lands are vacant as well. • Due to the number of residential lots in the immediate area the proposed lot has been considered a Type B land use.
That the intent and purpose of the Zoning By-law is maintained	<ul style="list-style-type: none"> • The subject property is zoned Agricultural (A). The agricultural zone allows for residential uses. • The intent of the MDS I setback is to provide a minimum distance between livestock facilities and sensitive lands uses (i.e. dwellings). MDS setbacks are intended to promote and protect agricultural uses while also reducing odour complaints and land use incompatibility. • There are existing rural residential uses in the area which would impact the potential for future expansions to existing livestock buildings and new livestock buildings.
That the general intent and purpose of the Official Plan is maintained	<ul style="list-style-type: none"> • The property is designated Prime Agricultural, and Secondary Agricultural. • The Guelph Junction Rail line is an active rail line to the North of the property. • Rural residential uses and agricultural uses are permitted in the Official Plan. • The retained lands are adjacent to the Arkell Hamlet area • Local zoning by-laws implement MDS I requirements
That the variance is desirable and appropriate development and use of the land, building or structure	<ul style="list-style-type: none"> • The subject property is adjacent to existing rural residential uses and in close proximity to the Arkell Hamlet Area. • We do not anticipate that a new residential use in this location would hinder or preclude the present use or future potential for the agricultural operations in question given that a number of existing rural residential uses are existing in the immediate area.

Additional Comments

All 3 of the above noted barns are currently not housing livestock. Since the initial application the owner of 900 Watson Road S has applied for and received a demolition permit for the barn located on the retained lands. The owners of 935 Watson Road S have a conditionally approved severance on their lands in which MDS will also need to be addressed, through discussions with

the owner this barn may be demolished or rezoned to no longer house livestock. The owner of the barn at 930 Watson Road South indicating they do not intend to have livestock in the future.

I trust that these comments will be of assistance to the Committee in their consideration of this matter. We would appreciate a copy of the Committee's decision with respect to this application.

Respectfully submitted

Planning and Development Department



Zach Prince, RPP MCIP, Senior Planner

Map 3 Alternate Site Evaluation - CLI Soil Capability for Agriculture Classes

Legal Description
PART OF LOTS 7, 8, & 9 CONCESSION 10
ASSESSMENT ROLL NUMBER 230100008034800000
ARKELL, ONTARIO

- Notes**
- All Coordinates were Determined Using NAD83 CSRS - UTM Zone 17.
 - This is Not a Plan of Survey.
 - Shapefiles Have Been Derived From "AgMaps" - Ontario / Ministry of Agriculture, Food and Rural Affairs

- CLI Agricultural Capability Classes**
- Class 1** Soils in this class have no significant limitations in use for crops.
 - Class 2** Soils in this class have moderate limitations that restrict the range of crops or require moderate conservation practices.
 - Class 3** Soils in this class have moderately severe limitations that restrict the range of crops or require special conservation practices.
 - Class 4** Soils in this class have severe limitations that restrict the range of crops or require special conservation practices.
 - Class 5** Soils in this class have very severe limitations that restrict their capability in producing perennial forage crops, and improvement practices are feasible.
 - Class 6** Soils in this class are capable only of producing perennial forage crops, and improvement practices are not feasible.
 - Class 7** Soils in this class have no capacity for arable culture or permanent pasture.
 - Class 0** Organic Soils (not placed in capability classes).

- Legend**
- Subject Lands
 - Existing Hamlet Boundary Limit
 - A Alternate Site For Hamlet Expansion

- Soil Capability For Agriculture**
- Unclassified
 - Class 1⁷ 3^T
 - Class 2^{FM} & 2^F
 - Class 3^{FM} 5^{PT} 5
 - Class 4^W
 - Class 5^I
 - Class 6ST 6^R
 - Class 7
 - Organic Soil
 - Water

Client: Sloop Construction Inc. & 1000286480 Ontario Inc.

SAI
PLANNING, AGROLOGY, ENVIRONMENTAL

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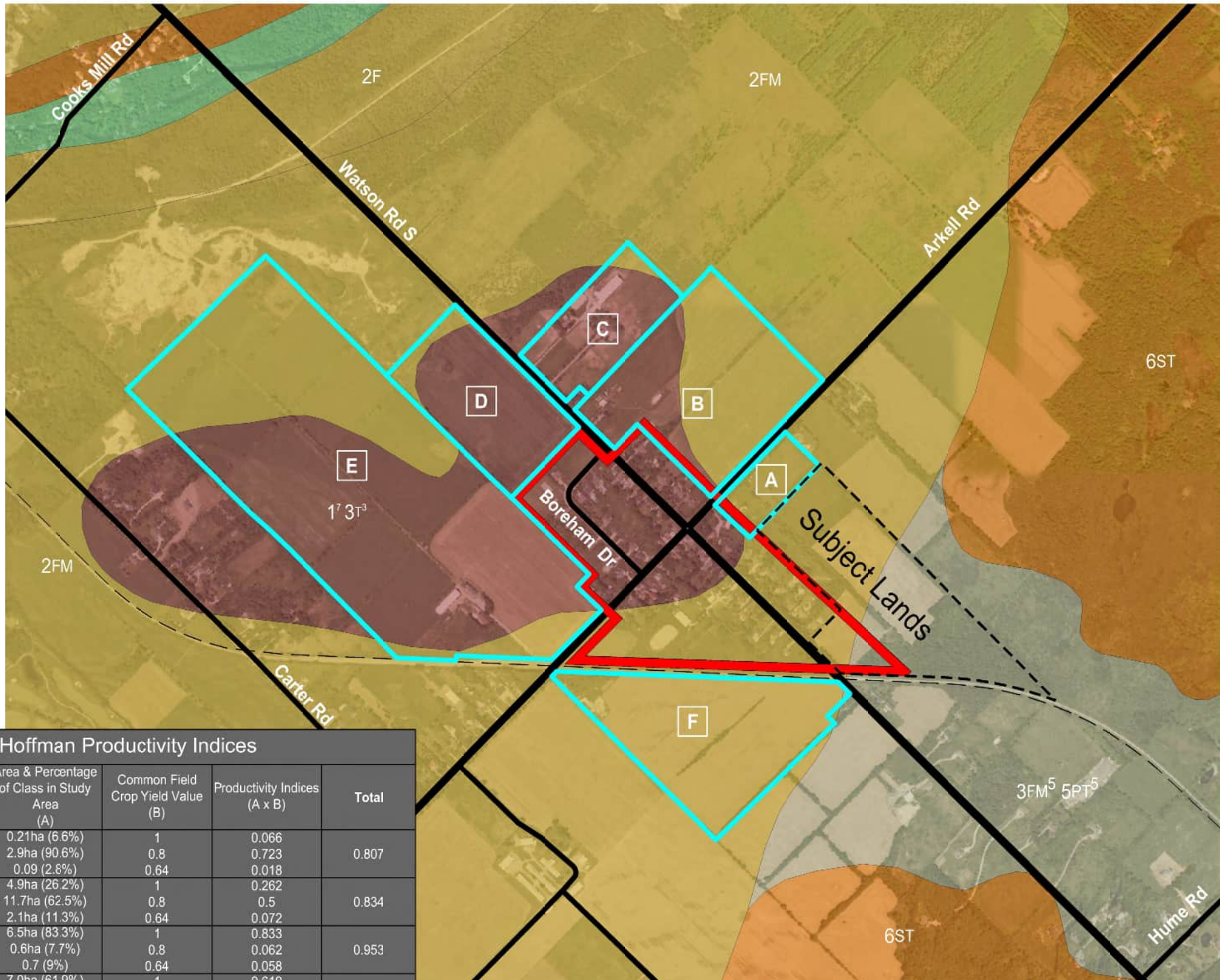
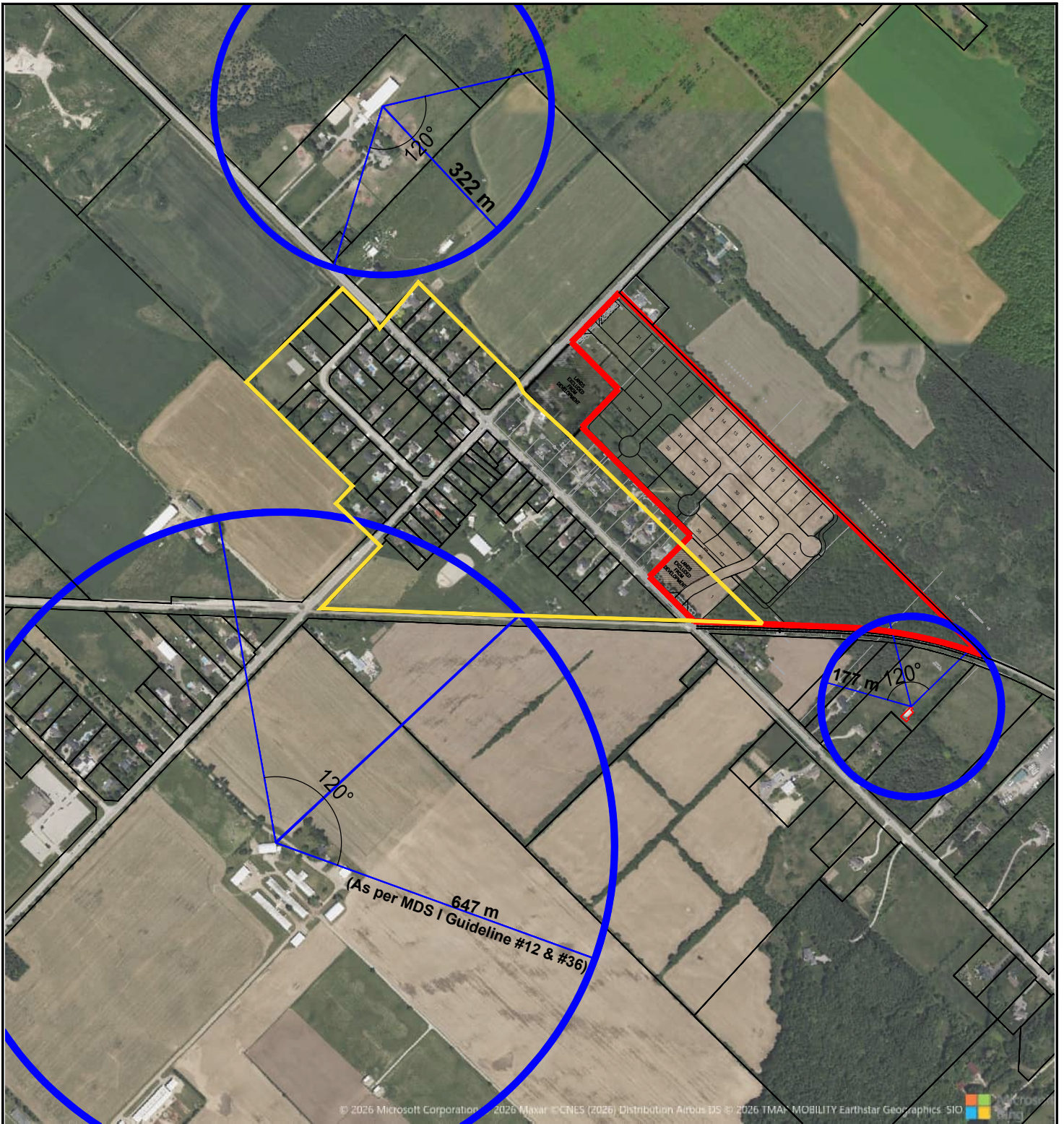


Table 1. Hoffman Productivity Indices


Location	CLI Class	Total Area (ha)	Area & Percentage of Class in Study Area (A)	Common Field Crop Yield Value (B)	Productivity Indices (A x B)	Total
Location 'A'	1	3.2	0.21ha (6.6%)	1	0.066	0.807
	2		2.9ha (90.6%)	0.8	0.723	
	3		0.09 (2.8%)	0.64	0.018	
Location 'B'	1	18.7	4.9ha (26.2%)	1	0.262	0.834
	2		11.7ha (62.5%)	0.8	0.5	
	3		2.1ha (11.3%)	0.64	0.072	
Location 'C'	1	7.8	6.5ha (83.3%)	1	0.833	0.953
	2		0.8ha (7.7%)	0.8	0.062	
	3		0.7 (9%)	0.64	0.058	
Location 'D'	1	11.3	7.0ha (61.9%)	1	0.619	0.881
	2		1.3ha (11.5%)	0.8	0.092	
	3		3.0ha (26.6%)	0.64	0.170	
Location 'E'	1	58.2	24.4ha (41.9%)	1	0.419	0.855
	2		23.3ha (39.9%)	0.8	0.319	
	3		10.5ha (18.2%)	0.64	0.117	
Location 'F'	2	17.2	17.18ha (99.88%)	0.8	0.799	0.800
	3		0.01ha (0.06%)	0.64	0.00038	
	5		0.01ha (0.06%)	0.37	0.00022	
Subject Property 1	2	15.5	7.2ha (46.4%)	0.8	0.371	0.642
	3		4.15ha (26.8%)	0.64	0.172	
	5		4.15ha (26.8%)	0.37	0.099	

Notes
1. Area of subject Land does not include the area within the Hamlet Boundary.



Legend

 EXISTING HAMLET BOUNDARY LIMIT

 SUBJECT LANDS

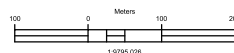
 176m MDS ARC

Figure 8: MDS

PART OF LOTS 7, 8, & 9 CONCESSION 10
 ASSESSMENT ROLL NUMBER 2301000008034800000
 ARKELL, ONTARIO

SAI
 PLANNING. AGROLOGY.
 ENVIRONMENTAL.

Stovel and Associates Inc.
 651 Orangeville Road
 Fergus, Ontario
 N1M 1T9
 T: 519-766-8042
 E: stovel.associates@outlook.com



DATE:
 28-May-26



MDS I

General information

Application date May 28, 2026	Municipal file number	Proposed application New or expanding settlement area boundary
Applicant contact information ON	Location of subject lands County of Wellington Township of Puslinch PUSLINCH Concession 10, Lot 7, 8 and 0 Roll number: 2301000008034800000	

Calculations

930 Watson Road

Farm contact information ON	Location of existing livestock facility or anaerobic digester County of Wellington Township of Puslinch PUSLINCH Concession 10, Lot Part Lot 9 Roll number: 2301000008035050000	Total lot size 6.71 ac
--------------------------------	--	---------------------------

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Horses, Medium-framed, mature: 227 - 680 kg (including unweaned offspring)	9	9 NU	2250 ft ²

Setback summary

Existing manure storage	No storage required (manure is stored for less than 14 days)		
Design capacity	9 NU		
Potential design capacity	9 NU		
Factor A (odour potential)	0.7	Factor B (design capacity)	163.33
Factor D (manure type)	0.7	Factor E (encroaching land use)	2.2
Building base distance 'F' (A x B x D x E) (minimum distance from livestock barn)	177 m (581 ft)		
Actual distance from livestock barn	NA		
Storage base distance 'S' (minimum distance from manure storage)	No existing manure storage		
Actual distance from manure storage	NA		

Preparer signoff & disclaimer

Preparer contact information
Rob Stovel
Stovel and Associates Inc.
651 Orangeville Road
Fergus, ON
N1M 1T9
519-949-0269
robstovel@gmail.com

Signature of preparer

 05-28-2026
Rob Stovel Date (Month-Day-Year)

Note to the user

The Ontario Ministry of Agriculture, Food and Agribusiness (OMAF) has developed this software program for distribution and use with the Minimum Distance Separation (MDS) Formulae as a public service to assist farmers, consultants, and the general public. This version of the software distributed by OMAFA will be considered to be the official version for purposes of calculating MDS. OMAFA is not responsible for errors due to inaccurate or incorrect data or information; mistakes in calculation; errors arising out of modification of the software, or errors arising out of incorrect inputting of data. All data and calculations should be verified before acting on them.

MDS I

General information

Application date May 28, 2026	Municipal file number	Proposed application New or expanding settlement area boundary
Applicant contact information ON	Location of subject lands County of Wellington Township of Puslinch PUSLINCH Concession 10 , Lot 7, 8, 9 Roll number: 2301000008034800000	

Calculations

756 WATSON RD S

Farm contact information ON	Location of existing livestock facility or anaerobic digester County of Wellington Township of Puslinch PUSLINCH Concession 10 , Lot Pt Lot 5 Roll number: 230100000802400000	Total lot size 19.36 ac
--------------------------------	--	----------------------------

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Horses, Medium-framed, mature; 227 - 680 kg (including unweaned offspring)	80	80 NU	20000 ft ²

Confirm Livestock/Manure information (756 WATSON RD S)
The livestock/manure information has not been confirmed with the property owner and/or farm operator.

Setback summary

Existing manure storage	V3. Solid, outside, no cover, >= 30% DM		
Design capacity	80 NU		
Potential design capacity	80 NU		
Factor A (odour potential)	0.7	Factor B (design capacity)	297.87
Factor D (manure type)	0.7	Factor E (encroaching land use)	2.2
Building base distance 'F' (A x B x D x E) (minimum distance from livestock barn)	322 m (1056 ft)		
Actual distance from livestock barn	NA		
Storage base distance 'S' (minimum distance from manure storage)	322 m (1056 ft)		
Actual distance from manure storage	NA		

Preparer signoff & disclaimer

Preparer contact information
Rob Stovel
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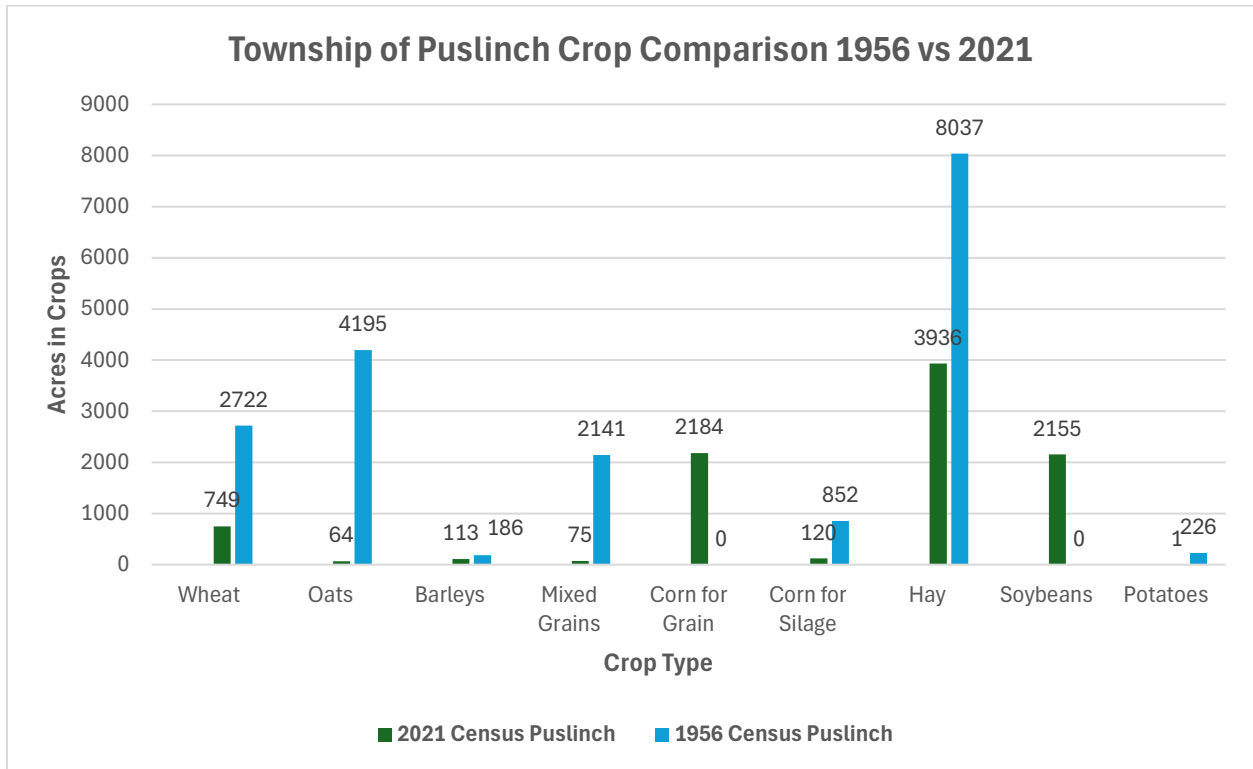
Signature of preparer

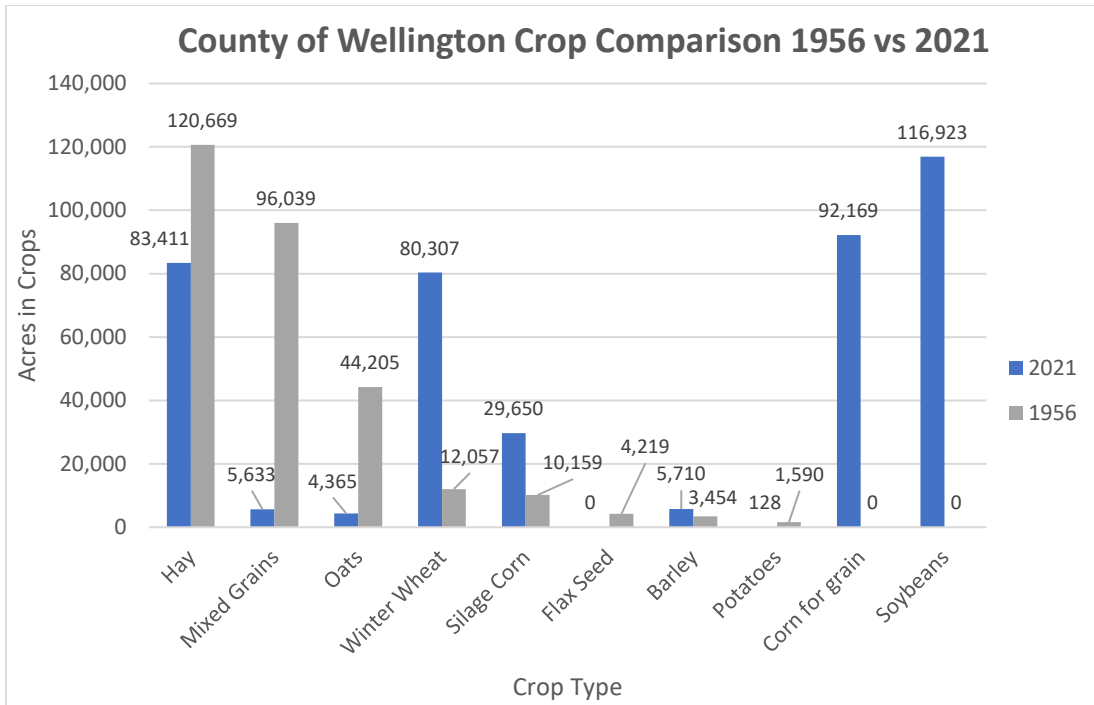
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Appendix E: Ontario Business, Agri-food, and Farm Data Profiles
County of Wellington and Township of Puslinch
Historic Comparison (1956 vs 2021)





Appendix F – Curriculum Vitae of Report Authors

ROBERT P. STOVEL, M.Sc., RPP, MCIP, P.Ag.

EDUCATION

M.Sc, Rural Planning, University School of Rural Planning and Development, University of Guelph, 1988.

B.A. Geography, Wilfrid Laurier University, 1986.

MEMBERSHIPS

Member of the Ontario Professional Planners Institute.

Member of the Canadian Institute of Planners.

Member of the Ontario Institute of Agrologists.

POSITIONS HELD

1995 - Present: Stovel and Associates Inc., Fergus, Ontario - President.

1993 - 1995: Ecological Services Group, Guelph, Ontario - Senior Project Manager.

1988 - 1992: Ecological Services For Planning Ltd., Guelph, Ontario - Planner.

EXPERIENCE

Extensive project experience on public sector and private sector developments. Planning assignments include site plan preparation, official plan amendments, zoning by-law amendments, consent applications, plan of subdivision and plan of condominium applications and peer review. These projects have required considerable government and non-government agency liaison, interdisciplinary team coordination and the integration of a variety of disciplines. I have been qualified to provide evidence at both the Ontario Municipal Board and Joint Board.

Hydroelectric and natural gas Environmental Assessment and Planning projects include: Union Gas 12 " Route Selection and Corridor Study (Orillia) and Lennox to Bowmanville 500 Kv Environmental Study and Monitoring Program.

Selected projects in planning projects include the following: selected plan review for the Town of Halton Hills planning department, testimony at the OMB related to the Hoddinott Plan of Condominium development, environmental planning evaluation in support of proposed residential severance in Ballinafad, planning opinion report for the Van Ryn application, and environmental and agricultural planning justification reports relating to estate residential development applications in the Town of Milton and the Town of Halton Hills.

Public sector projects include the following: planning/resources management review for the Town of Halton Hills (residential development), County of Grey (agricultural) and the Township of North Dumfries (aggregate); input to provincial highway expansion in the County of Peterborough (MTO Class EA of Highway 7) and the County of Essex (MTO Class EA of Highway 3); municipal landfill site searches and site expansions in the County of Victoria, County of Peterborough, County of Essex, and Regional Municipality of Haldimand-Norfolk; municipal road widening project in the Region of York (Weston Road); municipal bridge project in the Township of Mono (County of Dufferin); YDSS expansion project in the Town of Markham and Town of Pickering; and municipal water and sewage works EA in the City of Stratford.

- Coordinated private sector pit and quarry licence applications include: Flamboro Quarries Licence Expansion, Cox Construction's Puslinch Pit Expansion, Ospringe Pit Expansion, Lockhart Pit Expansion (Woolwich Township), and Shoemaker Pit (TMGL - Pilkington Township), Dufferin Construction - Wayside Borrow Pit (Hamilton Airport), Greenwood Construction (East Garafraxa Pit Expansion), MTO Highway 8 Bridge and Road Development in the City of Kitchener (MTO/Seegmiller), MTO 406 Aggregate Permit Project (Niagara).
 - Prepared Planning Impact Assessment for the proposed Audrey Meadows development (48 lots).
 - Prepared Planning Impact Assessment reports for Redi-Mix plant, and three mineral aggregate operations in the Chatsworth Township.
 - Prepared Planning Justification Report for the Trafalgar Road Sports Complex.
 - Prepared Planning Impact Studies for: Inverhaugh Pit, Puslinch Pit and Roszell Pit applications.
 - Prepared planning report for the Eisen Stone Yard project in the former Township of Nichol.
 - Prepared consent applications in both rural and urban settings in the County of Wellington.
 - Prepared Planning reports for the justification of golf course expansion and limited residential lot development adjacent to recreational uses in the County of Wellington.
 - Provided rural planning and agricultural examination of near urban area development in the Glen Williams and Glen Lamond area.
 - Examined the potential for agricultural conflicts for the proposed urban boundary adjustments in the urban areas of Fergus and Elora.
- Provided opinion evidence at Joint Board hearing on behalf of Town of Milton (Central Milton Holdings Limited).
- Completed Environmental Impact Study for proposed Audrey Meadows Estate Residential Subdivision in the Township of Puslinch.
- Completed Level 1 and/or Level 2 Natural Environment Reports for the following pit licence applications: Bosomworth Pit (Pilkington), Whitelaw Pit (Pilkington), Darrington Pit (Pilkington), Hale Farm (Minto), I-ON-X Acres Pit (Southwest Oxford), Schwartz Pit Expansion (Sullivan), Greenwood Pit (East Garafraxa), Palen Pit Expansion (Hibbert), Kraemer Pit (Huron East), Martin Pit (Huron East), and the Hartung Pit (North Perth).
- Completed the required seminar on the Ontario Wetland Evaluation System (3rd Edition), and the Wetland Environmental Impact Study, Technical Manual.
- Designed and implemented wetland monitoring programs for aggregate developments and estate residential developments.
- Completed wetland surveys in the following wetland complexes: Orangeville Reservoir, Hayesland-Christie, Dalrymple Lake, Star Wetland, Eramosa River Blue-Springs Creek, Philips Lake, Mossington Park, Cranberry/Oil Well bog, Humber River Marshes, Speed River, Beaverton River, Mill Creek, and Irish Creek.
- Completed forestry evaluations for woodlands in Puslinch Township, Centre Wellington, City of Hamilton, Woolwich Township, Southwest Oxford, Peel Region and Region of York.

CURRICULUM VITAE

Robert L. Stovel, B.Sc.

PROFESSIONAL PROFILE

Robert L. Stovel is a Planner with Stovel and Associates Inc. with professional experience in statutory land use planning, aggregate resource management, and agricultural land use planning across Ontario. His work involves the application and interpretation of provincial and municipal planning policy, including the Planning Act, Provincial Planning Statement, and the Aggregate Resources Act, in support of public and private-sector development applications.

Mr. Stovel works under the supervision of Registered Professional Planners and is progressively assuming increased responsibility in the preparation and coordination of planning materials, agency consultation, and policy analysis. He regularly liaises with municipal planning staff, conservation authorities, and provincial agencies, and contributes to interdisciplinary consultant teams addressing land use compatibility, agricultural protection, and resource management.

PROFESSIONAL EXPERIENCE

Planner

Stovel and Associates Inc., Fergus, Ontario, 2021 – Present

Mr. Stovel has worked on a range of public-sector and private-sector planning assignments involving aggregate resource development, agricultural land use planning, and rural development.

His responsibilities include:

- Preparation of Planning Justification Reports in support of Official Plan Amendments, Zoning By-Law Amendments, consents, and subdivision applications.
- Interpretation and analysis of provincial and municipal planning policy under the supervision of senior planners.
- Coordination with municipal planning staff, conservation authorities, and Provincial agencies.
- Participation in interdisciplinary consultant teams involving engineering, environmental, and agricultural specialists.

PLANNING COMPETENCIES & PROFESSIONAL EXPERIENCE

Preparation and evaluation of Planning Justification Reports for Official Plan Amendments, Zoning By-Law Amendments, consents, and plans of subdivision Application and interpretation of the Provincial Planning Statement and municipal Official Plans. Planning support for Aggregate Resources Act licence applications,

including land use compatibility and rehabilitation planning. Agricultural land use planning within Prime Agricultural Areas, including Agricultural Impact Assessments (AIAs) and Minimum Distance Separation (MDS I) analysis. Coordination with municipal staff, conservation authorities, and provincial agencies in support of planning approvals. Contribution to interdisciplinary planning teams addressing environmental, agricultural, and engineering considerations.

SELECTED AGGREGATE RESOURCE PROJECT EXPERIENCE

- Lockhart Pit Expansion (D & J Lockhart Excavators Ltd.), Township of Woolwich (Planning approvals and Aggregate Resources Act Licence Application), 2021-Present.
- Lichty Pit (James Thome Construction Ltd.), Township of Centre Wellington (Planning approvals and Aggregate Resources Act Licence Application), 2021-Present.
- Innes Line Pit (SAMI), Township of South-West Oxford (Planning approvals and Aggregate Resources Act Licence Application), 2021-Present.
- Leslie Expansion Pit (Leslie Sand and Gravel Inc.), Township of Guelph-Eramosa (Planning Approvals and Aggregate Resources Act Licence Application), 2024-Present.
- Township of Puslinch, Peer Review of Application, CBM Lanci Pit Expansion and Aberfoyle South Pit Expansion, 2023-Present.
- Town of Caledon, Peer Review of Agricultural Impact Assessment, CBM Caledon Quarry, 2024-Present.
- Town of Caledon, Assistance in preparing Site Plan Section, Caledon Aggregate Standards Manual, 2025-Present.
- Township of Melancthon, Peer Review of AIA and Site Plans, Strada Aggregates Inc., Strada Pit & Quarry, 2025-Present.
- Preparation of annual Compliance Assessment Reports (CARs) for active gravel pits across Ontario.
- Preparation and Peer Review of site plan amendments and partial surrender amendments for municipal and private-sector pit operations.

SELECTED MUNICIPAL & AGRICULTURAL PLANNING EXPERIENCE

- Preparation of Agricultural Impact Assessments (AIAs) for development proposals within Prime Agricultural Areas.
- Peer review of AIAs and Minimum Distance Separation (MDS I) calculations under senior planner supervision.
- Preparation of agricultural rehabilitation plans for disturbed and post-extraction landscapes.
- Background policy research for the County of Middlesex addressing minimum farm parcel size in the Prime Agricultural Area.
- Planning support for rural consents, severances, and subdivision applications in the County of Wellington.

EDUCATION

Bachelor of Science (B.Sc.)
Providence College, 2020

PROFESSIONAL OBJECTIVE

Actively working toward eligibility for the Registered Professional Planner (RPP) designation through progressive professional experience under the supervision of Registered Professional Planners.

**PLANNING JUSTIFICATION REPORT
UPDATE FOR ARKELL SUBDIVISION**

PREPARED FOR:

Timberworx Custom Homes Inc.
376 Maltby Rd. E,
Guelph, ON
&
Sloot Construction Ltd.
661 Watson Road S
Puslinch ON
&
John Sloot Investments Ltd.

PREPARED BY:



STOVEL AND ASSOCIATES INC.

651 Orangeville Road
Fergus, ON
N1M 1T9

MAY 2026

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1.0 INTRODUCTION

1.1 Site Location

Stovel and Associates Inc. (“SAI”) was retained by Timberworx Custom Homes Inc. (“Timberworx”), Slood Construction Ltd. (“Slood”) and John Slood Investments Ltd. to complete a Planning Justification Report (“PJR”) for a proposed residential development in the Township of Puslinch (Arkell). Given the location of the site, a settlement boundary expansion is required. Additional lands have been conditionally purchased by the ownership group to provide for an entrance onto Arkell Road. These additional lands are approximately 1.6 ha in size and are owned by Victor Satzewich and Linda Mahood (605 Arkell Road). The project is referred to as Arkell Subdivision. The lands proposed for the residential development (including a portion of the Satzewich/Mahood parcel) are approximately 18.8 ha in size and are located on Part of Lots 7, 8 and 9, Concession 10.

Watson Road abuts the property on the southwestern limits of the site and Wellington County Road 37 (also known as Arkell Road) is located on the west/northwestern limits of the site (see Figure 1).

In the context of this report, the lands in question are referred to as the site, subject lands or subject property.

1.2 History

In 2006, Mr. Tom Kukovica (the owner of the subject property at the time) applied for Draft Plan of Subdivision, Official Plan Amendment and Zoning Bylaw Amendment. The applications were deemed complete in September 2006. The proposal included 35 residential lots (minimum 1 acre in size) serviced by private individual wells and septic systems. The application was circulated to public agencies for comment and to landowners within 120m of the site. Following the receipt of the comments, replies were prepared by the Kukovica consulting team.

Astrid J. Clos Planning Consultants (“AJC Planning”) conducted a review of the Municipal Comprehensive Review from The County of Wellington – Progress Report #3. The letter prepared by Astrid Clos. requests that the Proposed Kukovica Subdivision be considered as a Hamlet Expansion (March 19, 2021). The following excerpt from AJC Planning summarizes the proposal:

“JOHN SLOOD INVESTMENTS LIMITED and SLOOD CONSTRUCTION LTD. is the owner of the property abutting the Arkell Hamlet and is legally described as Part of Lots 7, 8 and 9, Concession 10, Township of Puslinch. County Official Plan Amendment, Zone Change and Draft Plan of Subdivision applications were deemed to be complete in September 2006 for this property.

Please find this documentation attached for your reference.

These applications propose to expand the Arkell Hamlet to the east by approximately 18.2 hectares and change the zoning to implement a proposed residential Draft Plan of Subdivision to permit 35 residential lots. The area breakdown is provided below:

1.65 hectares (area of 3 severed lots)

1.83 hectares (area within the Hamlet)

18.2 hectares (area of Hamlet expansion)

21.68 hectares (Total Draft Plan Area)”

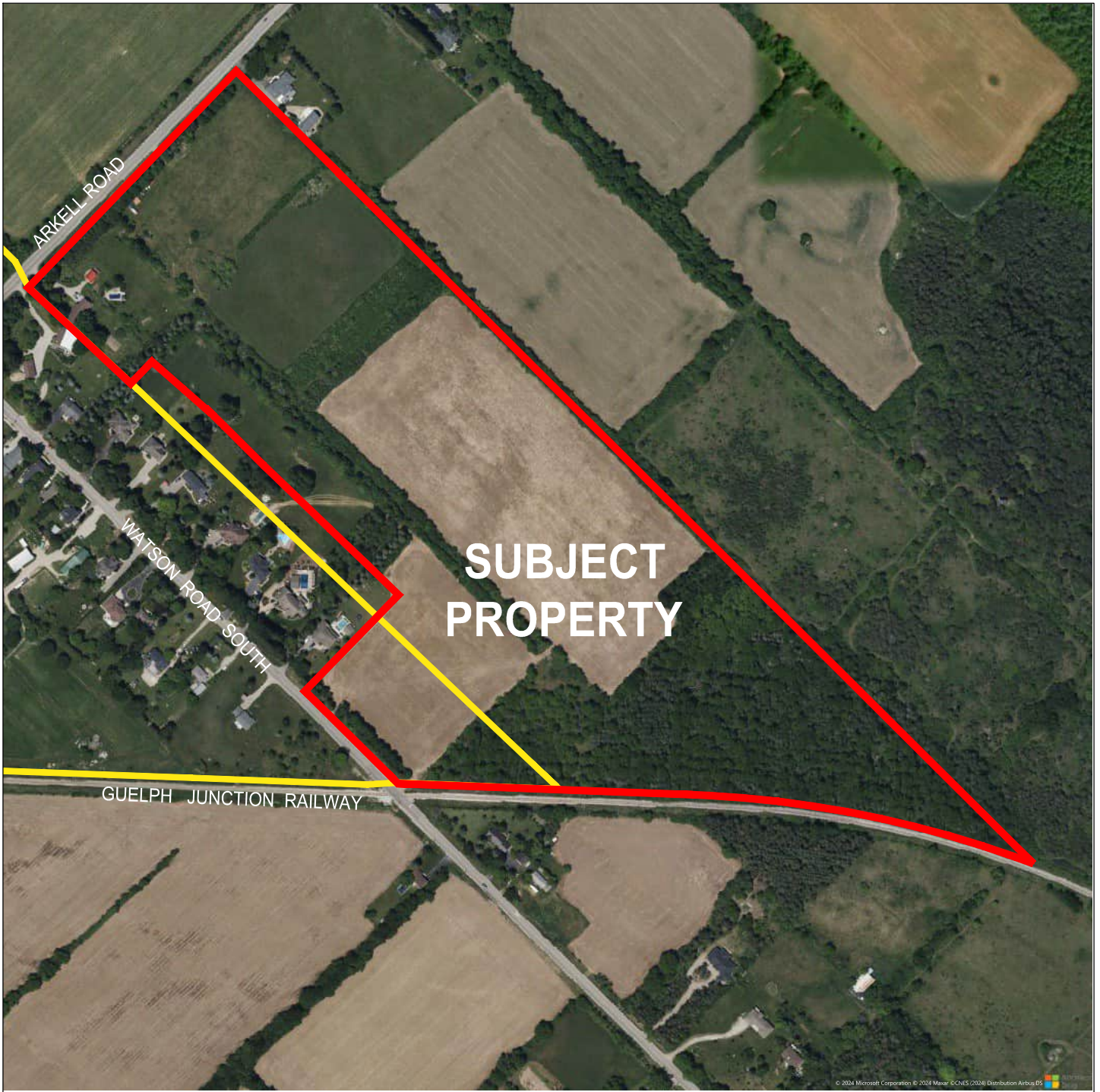


Figure 1
Site Location

- Legend
- SITE BOUNDARY
 - HAMLET OF ARKELL LIMITS

Part of Lots 7,8 & 9 Concession 10
Township of Puslinch,
Wellington County Arkell, Ontario

Date: May 29, 2026

50 0 Meters 50 100
1:5000



Sources:
Aerial Imagery Provided By Microsoft Corporation @
2026 Maxar CNES (2026) Distribution Airbus DS.

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In 2021, the current ownership group engaged with the Township of Puslinch and County of Wellington to resolve technical issues associated with the proposed development. Updated technical analysis was submitted to the municipality for technical peer review. The findings of these updated reports are summarized in this document. The updated reports include the following:

- Agricultural Impact Assessment (SAI, 2026).
- Nitrate Impact Assessment (Crozier, 2024).
- Functional Servicing and Stormwater Management Report (Crozier, 2026).
- Groundwater Supply Assessment (ARL Groundwater Resources Ltd, 2023).
- Water Balance Assessment (Crozier, 2025).
- Traffic Impact Study (Crozier, 2025).

1.3 County Official Plan and Township Zoning Bylaw

The lands in question are designated Hamlet, Prime Agricultural, and Secondary Agricultural in the County of Wellington Official Plan (“County OP”) (see Figure 2). Lands designated Hamlet may be used for residential purposes. An amendment to the County OP is required to expand the settlement boundary to permit residential development outside of the Hamlet limits.

The lands in question are zoned Agriculture (Comprehensive Zoning By-Law No. 023-18, Consolidated May 2021). The site will need to be rezoned from Agriculture to Hamlet Residential to permit the establishment of a residential subdivision.

At the time when the application was deemed complete in 2006, the Zoning By-Law enforced by the Township was “*Puslinch Township Zoning By-Law 19/85*”, but this bylaw was updated by Comprehensive Zoning By-Law No. 023-18 in 2021. The zoning standards set out in Zoning By-Law No. 023-18 for Hamlet Residential have guided the design of this proposed development.

1.4 Purpose and Scope

This report provides the planning justification for the proposed development application. The following study objectives are addressed in this report:

Planning impact assessments may be required to evaluate:

- a) the need for the proposed use other than for aggregate operations, taking into account other available lands or buildings in the area;*
- b) the appropriateness of the proposed site for the use proposed taking into consideration the size and shape of the land and its ability to accommodate the intensity of use proposed;*
- c) the adequacy of the proposed method of servicing the site;*
- d) the compatibility of the proposed use with consideration given to the height, location, proximity and spacing of buildings; the separation between various land uses; impacts from noise, odour, dust or other emissions from the proposed use and from adjacent land uses; loss of privacy, shadowing or impact on cultural heritage resources and landscapes;*
- e) the impact on natural resources such as agricultural land and mineral aggregate deposits;*
- f) the impact on biodiversity and connectivity of natural features and areas;*
- g) the exterior design in terms of bulk, scale and layout of buildings and other design elements;*
- h) the possibility that site contamination has occurred or the site may contain historic petroleum wells or associated works, and if so, demonstrate compliance with provincial regulations;*
- i) methods of reducing or eliminating negative impacts;*
- j) other planning matters considered important by a Council. (County of Wellington Official Plan. December 2025. Page 29-30 – Policy 4.6.2).*

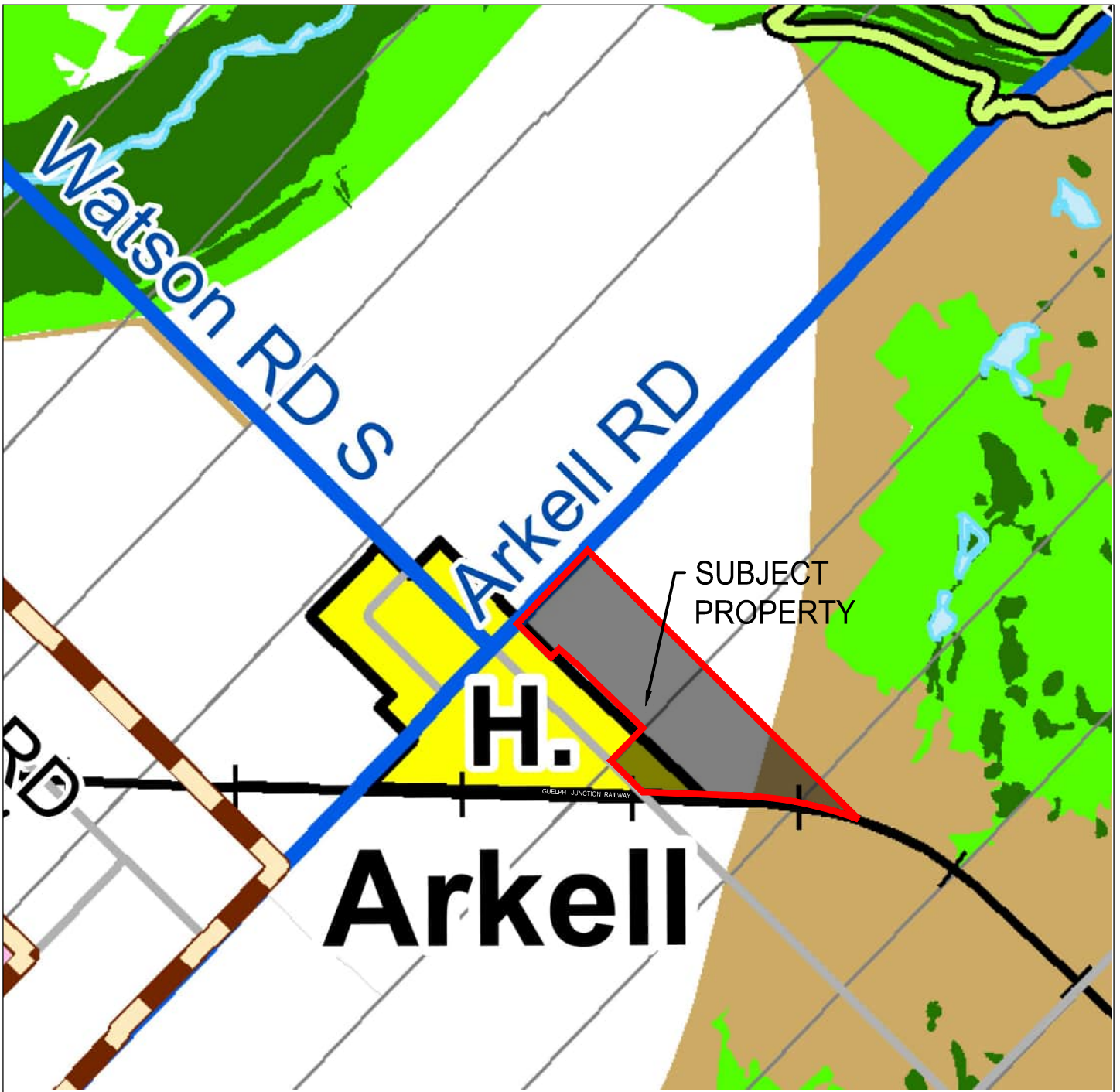


Figure 2
County Official Plan
Land Use Designation

The Greenlands System

- Core Greenlands
- Greenlands
- Earth Science ANSI

The Rural System

- Prime Agricultural
- Secondary Agricultural
- H. Hamlet Area
- U.C. Secondary Urban Centre
- Mineral Aggregate Area
- Recreational
- Rural Employment Area
- C.R. Country Residential
- PA Policy Area
- Regionally Significant Economic Development Study Area

Site Boundary

Other

- Landfill Site
- Proposed Interchange
- Proposed Major Roadways
- County Roads
- Provincial Highway
- ++ Railways
- Waterbody
- Watercourse

Part of Lots 7,8 & 9 Concession 10
Township of Puslinch,
Wellington County Arkell, Ontario

Date: May 29, 2026

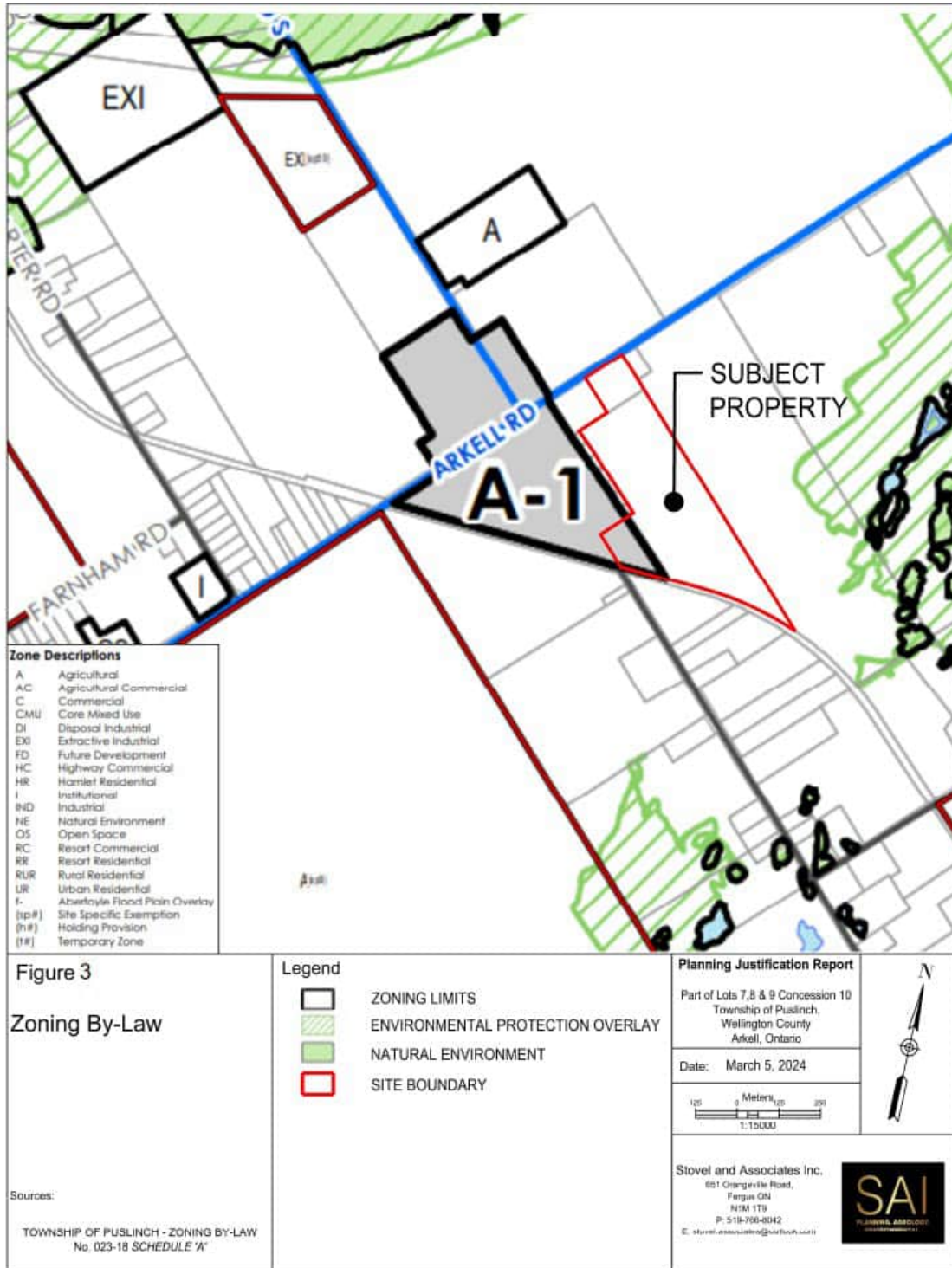
NOT TO SCALE
N.T.S.

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Sources:

County of Wellington Official Plan
Schedule B7 - Land Use - Puslinch



2.0 SITE LOCATION AND SURROUNDING LAND USES

2.1 Site Description

The total area of the proposed residential development is approximately 18.8 hectares in size. The site mainly comprises agricultural fields that have been used for common field crops. The agricultural fields comprise approximately 7.1 ha of the site. Approximately 1 ha of the subject lands are in the settlement boundary.

There is a plantation in the southern portion of the subject site. This plantation is approximately 4.7 ha in size. The plantation is described by GWS Ecological and Forestry Services Inc. as follows:

“An immature mixed wood plantation occupies approximately 11 acres at the south end of the site. The species composition is estimated to be white pine - 40%, white spruce - 20%, black walnut, 20% and black locust - 20%.

These trees are about 25 years old and mostly of pole timber size being 4 to 9 inches in diameter at breast height (dbh). Tree growth has generally been good as the white pine and deciduous trees are 25 to 50 feet tall while the spruce are 20 to 35 feet tall. However, where pine and spruce are growing in close proximity to black walnut there has been much dieback and mortality to the conifers due to juglone poisoning from the walnut. In spite of this mortality the overstory is still fully stocked with living trees. The understory consists of a low to moderately dense shrub layer of common buckthorn, red elderberry and raspberry. Common buckthorn is a very aggressive alien species that is undesirable in woodlands due to its high reproductive potential, shade tolerance and rapid growth under a wide variety of site conditions. Garlic mustard, another non-native invasive species, is also abundant throughout the woodland area. No rare or unusual plants were noted and none are expected in this man-made forest. To date, no thinning has been carried out in this plantation. Common wildlife species were observed utilizing this woodland habitat, including white-tailed deer, black squirrel, red squirrel, cottontail rabbit, Blue Jay, Black-capped Chickadee and American Crow. Other common woodland birds and mammals likely inhabit this area. Given the above characteristics there is insufficient justification to consider this plantation as locally significant within Puslinch Township. Development intrusions into this woodland are therefore considered acceptable.” (GWS Ecological & Forestry Services Inc., 2007).

A 2023 bird survey conducted by Colville Consulting Ltd. documented no threatened or endangered species on the subject lands. One Eastern Wood-Pewee was recorded in an edge tree that is not part of the plantation, and no significant impacts to species at risk are anticipated.

The proposed residential development has been kept out of the plantation, with minor inclusion at Lots 2 and 3. A Tree Protection and Compensation Plan will document and assess required clearings as part of the draft plan of subdivision process.

2.2 Surrounding Uses

The subject property is located partially within the Settlement of Arkell. Existing residential lots are located west and north of the site. Lands to the east of the site and north of Arkell Road are cultivated for common field crop production. The settlement boundary for Arkell extends west of Arkell Road that includes six residential parcels.

The Guelph Junction Railroad (“GJR”) is located on the southern limit of the site. The lands further to the south of the site (south of the GJR) include several non-farm residences, scattered small agricultural fields and small woodlands.

There are no significant agricultural operations adjacent to the site. Approximately 890 m to the west are the agricultural research buildings of the University of Guelph.

3.0 PROPOSED DEVELOPMENT

3.1 Description of Development Proposal

The proposed development is comprised of 44 single detached dwellings (See Figure 4 below). Within the existing Hamlet area, two residential lots are proposed (as part of the draft plan of subdivision). A stormwater management area is proposed in the northeastern portion of the site.

The current conceptual layout for the proposed development does not include residential development within the onsite plantation (with the exception of Lots 2 and 3). A municipal park was proposed within the Hamlet area, however, it is recognized that the Township of Puslinch is not interested in these lands for a park. Following discussion with Township Council, additional lands could be added to proposed Lot 1. The details of parkland dedication and future ownership of Blocks identified on draft concept plans will be addressed in a separate Addendum report to this PJR.

The residential lots are proposed to be created through a Plan of Subdivision. The residential lots will be serviced utilizing advanced tertiary septic systems and private, drilled individual wells. Lot sizes range from approximately 0.19 to 0.39 ha in size. Lot frontages range from 30-40 m, not including the lots on curves or cul de sacs. Each home is expected to have a double-car garage with additional parking for a minimum of two cars within each driveway.

The proposed development will have two entrances: one on Watson Road and one on Arkell Road. The internal streets will utilize an urban cross-section with pavement, curb, and gutter. The road section has been designed using a standard 20m right-of-way.

The internal road network sets out the following:

- There is approximately 1200m of road in the proposed subdivision;
- The roads will provide a full urban cross-section with curb, gutter and sidewalks;
- For the most part, the internal roads are double-loaded.

The engineering proposal includes design elements to capture surface runoff water and to promote infiltration.

3.2 Traffic Impact Study

C.F. Crozier & Associates Inc. was retained to complete an updated TIS. This study assessed the transportation impacts of the proposed residential development. The detailed analysis contained within this report has resulted in the following key findings:

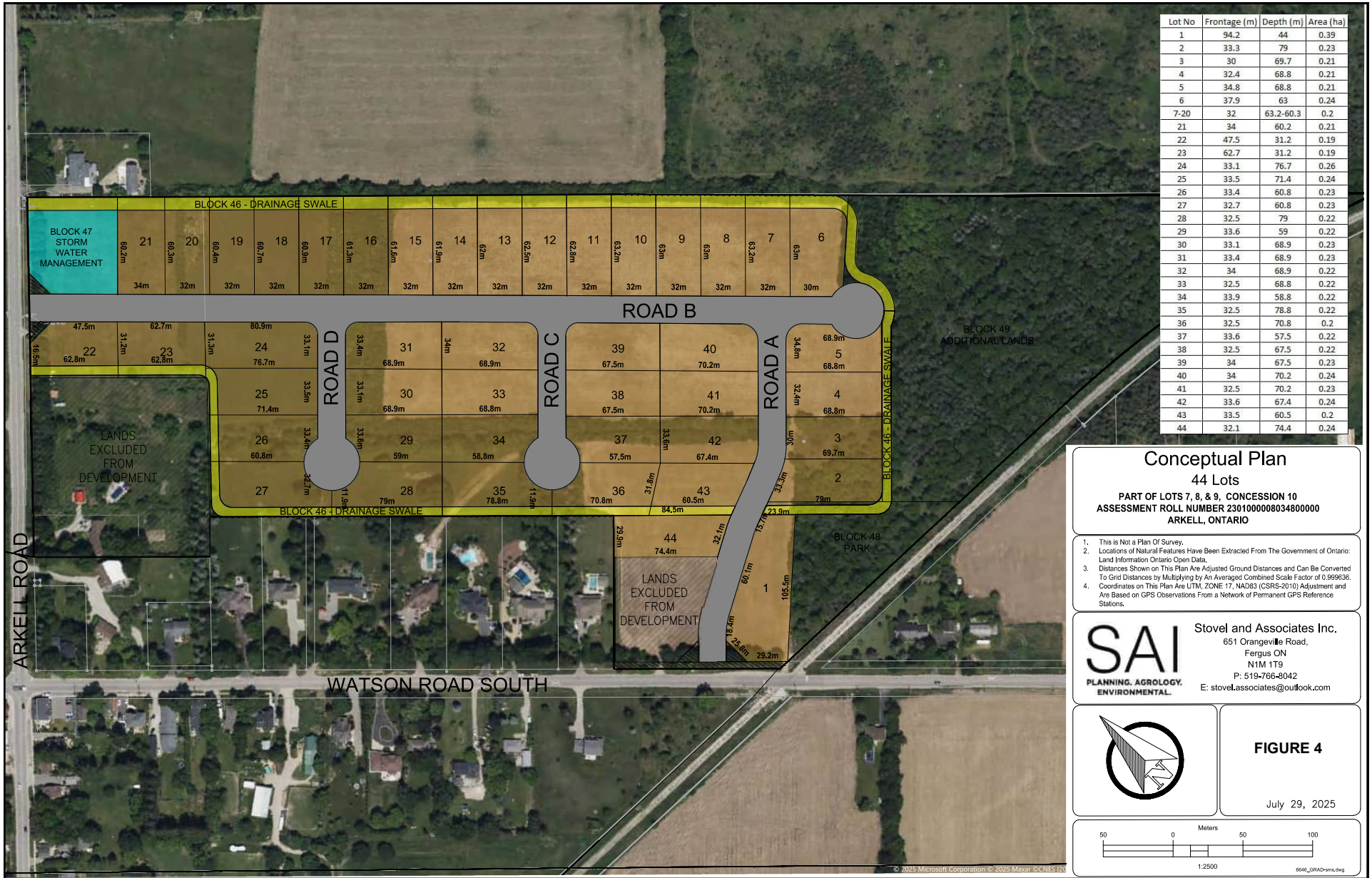
- Under the ultimate 2031 future total conditions:
 - The all-way stop-controlled intersection of Arkell Road and Watson Road South is projected to operate below capacity at a LOS "A" and "B" during the weekday a.m. and p.m. peak hours, respectively. Average intersection control delays of 9.5 and 14.3 seconds in the a.m. and p.m. peak hours, respectively and maximum volume-to- capacity ratios of 0.27 (EB) and 0.54 (NB) are expected in the weekday a.m. and p.m. peak hours, respectively.
 - The proposed site access connection at Watson Road South is forecast to operate at a LOS "A" and "B" during the a.m. and p.m. peak hours respectively.

- Overall, the nearby road network is projected to operate adequately without any capacity constraints under the ultimate 2031 future total scenario. The nearby road network is expected to operate similarly or better under the 2026 horizon year.
- These operations are similar to the 2031 and 2026 Future Background traffic operations. Therefore, operations are expected to be similar with or without the proposed development.
- The proposed access connections to Watson Road South and Arkell Road are satisfactory per the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR) with regards to sight distance, access spacing, corner clearance and Transport Canada's Grade Crossing Standards with regards to access spacing.

Based on the study findings, the development application can be supported from a traffic operations perspective as the boundary road network can accommodate the increase in traffic volumes attributable to the proposed development located on sections of Lots 7, 8 and 9 of Concession 10, in the Township of Puslinch, County of Wellington. Further, the proposed accesses are forecast to be functionally adequate with immaterial impacts to the study intersections.

The detailed analysis contained within this report has resulted in the following key findings:

- *Under 2023 existing traffic conditions, the study intersection of Arkell Road and Watson Road South is operating below capacity with minimal delay during both weekday a.m. and p.m. peak hours.*
- *The proposed development is expected to generate 40 and 52 two-way primary trips in the a.m. and p.m. peak hours, respectively.*
- *Under the ultimate 2031 future total conditions:*
 - *The all-way stop-controlled intersection of Arkell Road and Watson Road South is projected to operate below capacity at a LOS "A" and "B" during the weekday a.m. and p.m. peak hours, respectively. Average intersection control delays of 9.5 and 14.3 seconds in the a.m. and p.m. peak hours, respectively and maximum volume-to-capacity ratios of 0.27 (EB) and 0.54 (NB) are expected in the weekday a.m. and p.m. peak hours, respectively.*
 - *The proposed site access connection at Watson Road South is forecast to operate at a LOS "A" and "B" during the a.m. and p.m. peak hours respectively.*
 - *Overall, the nearby road network is projected to operate adequately without any capacity constraints under the ultimate 2031 future total scenario. The nearby road network is expected to operate similarly or better under the 2026 horizon year.*
 - *These operations are similar to the 2031 and 2026 Future Background traffic operations. Therefore, operations are expected to be similar with or without the proposed development.*



Lot No	Frontage (m)	Depth (m)	Area (ha)
1	94.2	44	0.39
2	33.3	79	0.23
3	30	69.7	0.21
4	32.4	68.8	0.21
5	34.8	68.8	0.21
6	37.9	63	0.24
7-20	32	63.2-60.3	0.2
21	34	60.2	0.21
22	47.5	31.2	0.19
23	62.7	31.2	0.19
24	33.1	76.7	0.26
25	33.5	71.4	0.24
26	33.4	60.8	0.23
27	32.7	60.8	0.23
28	32.5	79	0.22
29	33.6	59	0.22
30	33.1	68.9	0.23
31	33.4	68.9	0.23
32	34	68.9	0.22
33	32.5	68.8	0.22
34	33.9	58.8	0.22
35	32.5	78.8	0.22
36	32.5	70.8	0.2
37	33.6	57.5	0.22
38	32.5	67.5	0.22
39	34	67.5	0.23
40	34	70.2	0.24
41	32.5	70.2	0.23
42	33.6	67.4	0.24
43	33.5	60.5	0.2
44	32.1	74.4	0.24

Conceptual Plan
44 Lots
 PART OF LOTS 7, 8, & 9, CONCESSION 10
 ASSESSMENT ROLL NUMBER 230100008034800000
 ARKELL, ONTARIO

1. This is Not a Plan Of Survey.
2. Locations of Natural Features Have Been Extracted From The Government of Ontario: Land Information Ontario Open Data.
3. Distances Shown on This Plan Are Adjusted Ground Distances and Can Be Converted To Grid Distances by Multiplying by An Averaged Combined Scale Factor of 0.999636.
4. Coordinates on This Plan Are UTM, ZONE 17, NAD83 (CSRS-2010) Adjustment and Are Based on GPS Observations From a Network of Permanent GPS Reference Stations.

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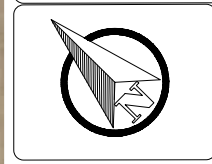
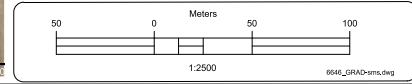


FIGURE 4

 July 29, 2025



- *The proposed access connections to Watson Road South and Arkell Road are satisfactory per the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR) with regards to sight distance, access spacing, corner clearance and Transport Canada's Grade Crossing Standards with regards to access spacing.*

3.3 Review of Natural Heritage Features and Functions

Stovel and Associates Inc. prepared a Scoped Environmental Impact Study (EIS) (May 2026) to evaluate the potential impacts of the proposed development on natural heritage features and ecological functions. The study included a review of background information, field investigations, breeding bird surveys, species at risk screening, bat habitat assessments, and an inventory of vegetation communities located on and adjacent to the subject lands. The assessment was completed in accordance with the applicable policies of the County of Wellington Official Plan.

The EIS determined that the subject lands are primarily comprised of actively cultivated agricultural fields with limited natural heritage features. There are no wetlands, watercourses, significant woodlands, or other identified significant natural heritage features within the area proposed for development. The nearest Greenlands designation is located approximately 200 to 400 metres northeast of the site and no Greenlands or Core Greenlands designations occur on the subject lands.

The study identified a plantation in the southern portion of the property and limited habitat associated with hedgerows and edge features. The proposed development has been designed to largely avoid the plantation area and minimize impacts to existing vegetation. The EIS also identified species-specific considerations, including a Butternut tree and Eastern Wood-Pewee habitat, and established mitigation measures and future permitting requirements where appropriate. These matters can be addressed through the draft plan approval process and subsequent detailed design stages.

Based on the findings of the EIS, the proposed development will not result in negative impacts on significant natural heritage features or ecological functions, provided the recommended mitigation measures are implemented. The EIS concludes that the proposed development is appropriate from a natural heritage perspective and is consistent with the natural heritage policies of the Provincial Planning Statement, 2024 and the County of Wellington Official Plan.

3.4 Geotechnical Assessment

V.A. Wood (Guelph) Incorporated conducted a Geotechnical investigation of the Proposed Subdivision February 2007. The results of the investigation are as follows:

"The boreholes encountered surficial deposits of topsoil underlain by compact to very dense sandy gravel or gravel and sand on very dense silt or gravelly, silty sand till on very dense sand and silt on very dense gravelly, silty sand till on very dense sand or probable boulder or bedrock.

The groundwater table is considered to be located at elevations ranging between El. 333.3m± and 334.9m±.

If storm sewer inverts are located at typical depths of between 3 and 4 metres below grade, excavations will encounter compact to very dense sandy gravel or gravel and sand. These deposits will generally provide adequate support for the pipes and allow the use of normal Class 'B' bedding using Granular 'A' material. Clear crushed stone should not be used as bedding unless it is wrapped with geotextile to prevent undesirable settlements caused from fines migrating into the voids of the stone. Where the exposed subgrade is less competent, the bedding thickness may have to be

increased, and it may be necessary to protect the excavation with a skim coat of concrete immediately after it has been exposed.

The excavated materials will be generally suitable for use as trench backfill provided that they are free of topsoil and boulders. If the on-site materials are or become wet, they should be air dried prior to re-use as trench backfill. The trench backfill should be placed in 150 to 200mm thick layers and uniformly compacted to at least 95% of its Standard Proctor maximum dry density. The backfill around manholes should consist of well-graded and well-compacted granular material.

To minimize potential problems and wetting of the subgrade material, backfilling operations should follow closely after excavations, so that only a minimal length of trench is exposed at a time. Should construction be carried out in the winter season, particular attention should be given to make sure no frozen material is used for backfill.

The deposits of topsoil are not considered to be a suitable bearing stratum. The foundations for the proposed residential dwellings should therefore be extended into the native sandy gravel or gravel and sand which will be suitable for supporting footings designed to an allowable bearing pressure of up to 200 kPa (4 ksf).

All exterior footings or footings in unheated areas should be located at least 1.2 metres below finished grade for adequate frost protection.

Elevation differences between adjacent footings should not be more than a half of the horizontal distance between them.

It is estimated that the total and differential settlements of footings designed to these bearing pressures will be less than 25 and 20mm respectively, which are normally considered acceptable for the proposed residential structures.

It is recommended that all foundation excavations be inspected to ensure the founding materials are similar to those identified in the boreholes and that they are capable of supporting the design loads.

No major construction problems due to water are anticipated in excavations above El. 334. 9m±. However, provision should be made for control of surface water run-off and minor seepage by pumping from local sumps on an as and where required basis.

The sides of the excavation to a depth of more than 1.2 metres (and above the water table) should either be cut back at a side slope of 1 to 1 or supported using adequately braced closed sheeting.

All topsoil and any deleterious fill encountered should be stripped from the building areas and the proposed subgrade should be re-compacted from the surface to at least 95% of its Standard Proctor maximum dry density. Any loose/wet material encountered should be sub-excavated and replaced with approved fill.

The fill may consist of approved on-site materials free of cobbles/boulders or approved imported fill. All fill should be placed in 150 to 200mm thick lifts and compacted to at least 95% Standard Proctor maximum dry density. It is recommended the underfloor fill be placed at least one month prior to floor construction in order to minimize settlement.

A layer of well-graded, free-draining material, at least 150mm thick and compacted to at least 98% Standard Proctor maximum density, should be placed under the floor slabs to provide a uniform bearing surface and act as a vapour barrier.

Frequent inspections by geotechnical personnel should be carried out during construction to verify compaction of the subgrade and base courses by in-situ density testing using nuclear gauges.

All topsoil and any deleterious materials encountered should be stripped from the proposed pavement area(s). The underlying subgrade should then be re-compacted from the surface to at least 95% of its Standard Proctor maximum dry density prior to construction of the pavement. Any loose areas which are detected should be sub-excavated and replaced with suitable approved on-site material or approved imported fill. All fill materials should be placed in 150 to 200mm thick lifts and compacted to at least 95% Standard Proctor maximum dry density.

Considering the probable traffic requirements and subsoil conditions, the following pavement designs are recommended:

Table 1: Recommendation of Pavement Designs

Material	Passenger Car Parking (Light Duty) (mm)	Access Road (Medium Duty) (mm)
Asphaltic Concrete	50	90
Granular 'A' Base Course	150	150
Granular 'B' Sub-base Course	200	300

The base and sub-base granular materials should be compacted to at least 100% Standard Proctor maximum dry density. The asphalt should be compacted to OPS Specifications.

Frequent inspections by geotechnical personnel should be carried out during construction to verify the compaction of the subgrade, base courses and asphaltic concrete by in-situ density testing using nuclear gauges”.

The results of the investigation confirmed the findings of the 2007 Geotechnical Study. In 2023, Chung and Vander Doelen Engineering Ltd. completed a series of test holes on the subject lands to confirm the character of the subsurface materials. The investigation verified the subsurface characteristics of the property and established that the groundwater table is located more than 6 m below the ground surface.

3.5 Groundwater Supply Assessment

ARL Groundwater Resources Ltd. (“ARL”) completed a Groundwater Supply Assessment to address impacts related to servicing the proposed development. The assessment addresses the requirements of the guideline D-5-5 (Private Wells: Water Supply Assessment), published by the Ontario Ministry of the Environment, Conservation and Parks (MECP). The most recent revision to Guideline D-5-5 is understood to have been made in August 1996, and the MECP has continued to publish the guideline in its current form up until at least December 2018. ARL summarized the geologic setting and workplan as follows:

A review of background information including existing water well record information indicates that a multi-aquifer system exists in the vicinity of the Hamlet of Arkell, including the proposed development property. The multi-aquifer system consists of the following geological units, in descending order:

Guelph Fm. - Upper Aquifer

Eramosa Fm. - Intermediate Aquitard/Aquifer

Gasport Fm. - Lower Aquifer.

It is evident from the water well record information that both the Guelph Fm. and Gasport Fm. aquifers have met the water quantity needs of residences and businesses in the Arkell area for many years.

Three test wells (TW1/2022 - TW3/2022) were constructed and tested as part of a groundwater supply assessment for the proposed development property. The wells were constructed in the lower aquifer (Gasport Fm.) to evaluate whether the lower aquifer alone could meet the water supply requirements of up to 50 new residential lots on the property. The upper aquifer (Guelph Fm.) was not considered in the test well program.

The results from 3 test wells indicate that the Gasport Fm. aquifer (lower aquifer) can meet the water quantity requirements of new individual lots on the proposed development property. Further, interpretation of the test well performance indicates that the aquifer can support the water quantity requirements associated with 50 new residential lots at the site.

Overall, the water quality test results indicate that groundwater produced from the 3 test wells is potable, as most of the parameters tested with an Ontario Drinking Water Standards Maximum Acceptable Concentration (MAC) were within the MAC. The marginally elevated lead concentrations reported at TW2 and TW3 may be related to particulate in the water at the time of sampling. Additional well development, sampling and lab testing could be considered to further assess the levels of arsenic and lead in the well water.

Construction of new supply wells associated with a multi-lot residential development on the property has the potential for interference to occur among individual wells as the development is built out. This interference could come in the form of (a) turbidity interference resulting from the process of well drilling and development and (b) water level interference when the wells are operating. The turbidity interference is a temporary problem that should dissipate after the well drilling and development operations are complete. Notification of adjacent well owners and monitoring when each new well is constructed will help to mitigate potential turbidity interference. Measures to minimize the effects of water level interference include optimizing the pump settings to maximize drawdown in each of the individual wells. Consideration could also be given to implementing an outdoor water use bylaw or similar instrument to manage water use during the warm weather months of the year when water demand is higher.

3.6 Functional Servicing Plan and Stormwater Management

This report was prepared in support of the planning applications for the subject property. The proposed development can be serviced for water, sanitary, and stormwater management in accordance with the Township of Puslinch, Wellington County, and the Grand River Conservation Authority requirements and standards. The conclusions and recommendations are as follows:

Proposed Water and Sanitary Services

- *Municipal servicing infrastructure is not available in the vicinity of the site, and therefore the proposed development will be serviced by individual onsite sewage systems and water supply wells.*
- *The preliminary sewage system design flows are expected to be approximately 4,575 L/d for each lot. Given the preliminary sewage system design flow is less than 10,000 L/day per individual lot, an ECA issued by the MECP will not be required. Each onsite sewage system will consist of an advanced treatment unit discharging to a leaching bed constructed as a Type A dispersal bed with a footprint of approximately 104 m². The advanced treatment system will consist of a Level IV*

treatment unit meeting the CAN/BNQ 3680-600 standard and must achieve the denitrification requirement of at least 50% nitrate-nitrogen reduction to meet MECP Guideline D-5-4.

- *Individual lots will be serviced with private drilled wells in accordance with O. Reg. 903 for potable water supply.*

Stormwater Management

1. *A passive stormwater management approach is proposed to preserve and maintain the rural character of the property using bioswale systems to control and infiltrate stormwater runoff.*
2. *Water quality controls, erosion protection, and water balance for the proposed development will be provided by the proposed bioswale systems pretreated by OGS units within the municipal roadway storm system. The bioswale system with OGS pretreatment and dry pond treatment train will provide water quality treatment that exceeds the “Enhanced Protection” criteria by retaining, treating, and infiltrating runoff volume equal to, or greater than, the runoff volume generated during a 25 mm rainfall event. The water quality storage provided in the bioswale system and dry pond provides active storage to simultaneously provide the necessary quantity controls for the Site.*
3. *No additional water quantity storage is required beyond what is provided in the bioswale system and dry pond. The post-development peak flows are less than pre-development peak flows at outlet culvert located at Arkell Road for the 2-year to 100-year design storm events.*
4. *Runoff generated from catchments Ext. 1, Ext. 2, Ext. 3, 202, UC02 will drain uncontrolled overland before being intercepted by the proposed conveyance bypass swale that safely directs in towards the outlet culvert located at Arkell Road. This flow routing will maintain the existing drainage conditions of the subject property.*
5. *Water balance and erosion control measures will be designed to satisfy all relevant criteria and constraints. The above will be demonstrated and discussed at the detailed design stage.*

3.7 Noise and Vibration Impact

A Rail Noise and Vibration Impact Assessment (“NIA”) was completed by Howe Gastmeier Chapnik Limited (“HGC”) in 2006. The results of the NIA are as follows:

- Inclusion of a central air conditioning system as an alternative means of ventilation for the identified units near the rail line is required.
- Forced air ventilation systems with the future provision of central air conditioning systems by the occupant for most of the remaining units are required.
- Masonry exterior wall construction is required for the dwellings closest to the rail line.
- The use of warning clauses in the property and tenancy agreements and offers of purchase and sale for the specified lots is required.
- Upgraded wall and window constructions for many of the dwelling units should be provided.

A Noise and Vibration Feasibility Study was completed on April 7, 2026 by HGC. The recommendations from this report are as follows:

1. *For the dwellings with exposure to the railway, upgraded building and glazing constructions are required to ensure adequate indoor sound levels from traffic noise.*
2. *Ventilation requirements in the form of the provision for the future installation of air conditioning at the occupant’s discretion are recommended for dwellings in the proposed development. Details are included in the summary table below.*

3. *Acoustic barrier requirements are required for dwellings with OLAs with exposure to the roadway and/or railway.*
4. *Acoustic barrier requirements are required for dwellings with OLAs with exposure to the roadway and/or railway.*
5. *Extensive measurements and analysis of ground-borne vibration from train movements illustrate the vibration criteria of GJR will be achieved within occupied residential spaces within the development, when dwellings are greater than 45 m away from the railway right-of-way. When building setbacks are determined, the drawings should be reviewed to confirm the requirements.*
6. *Warning clauses are required for dwellings in the proposed development with noise and/or vibration excesses and/or within 300 m from the railway line.*

Table 7: Summary of Noise Control Requirements and Noise Warning Clauses

Prediction Location	Lot Numbers	Acoustic Barrier	Ventilation Requirement	Type of Warning Clause	Required Minimum STC for Glazing
[A]	Lot 1	✓	A/C	B, D, GJR, II	STC-37
[B]	Lots 2 and 3	--	Provision for A/C	A, C, GJR, II	STC-32
[C]	Lot 4	--	Provision for A/C	A, C, GJR, II	OBC
[D]	Lot 22	--	Provision for A/C	A, C	OBC
[E]	Lots 5 to 21, and Lots 23 to 44	--	--	A	OBC

The details of the relevant mitigation measures as set out in the Noise and Vibration Feasibility Study. The reader is directed to this report for more specific information.

To ensure that the noise control recommendations outlined above are properly implemented, it is recommended that:

1. *When siting, lotting information is available, a detailed noise study should be performed to refine the acoustic requirements for the site.*
2. *Prior to an application for a building permit, a Professional Engineer qualified to provide acoustical engineering services in the Province of Ontario or the Municipality's building inspector shall review the unit plans (floor plans and building elevations) for future dwellings closest to the noise sources and the grading plan, to ensure that the windows and building constructions, and berms/barriers are adequately designed to ensure acceptable indoor and outdoor noise levels.*
3. *Prior to assumption of the subdivision, the Municipality's building inspector or a Professional Engineer qualified to perform acoustical engineering services in the Province of Ontario should certify that the noise control measures have been properly installed and constructed.*

3.8 Mineral Aggregate Resources

A general description of mineral aggregate resources in the area is provided in the Aggregate Resources Inventory Paper No. 162 – County of Wellington:

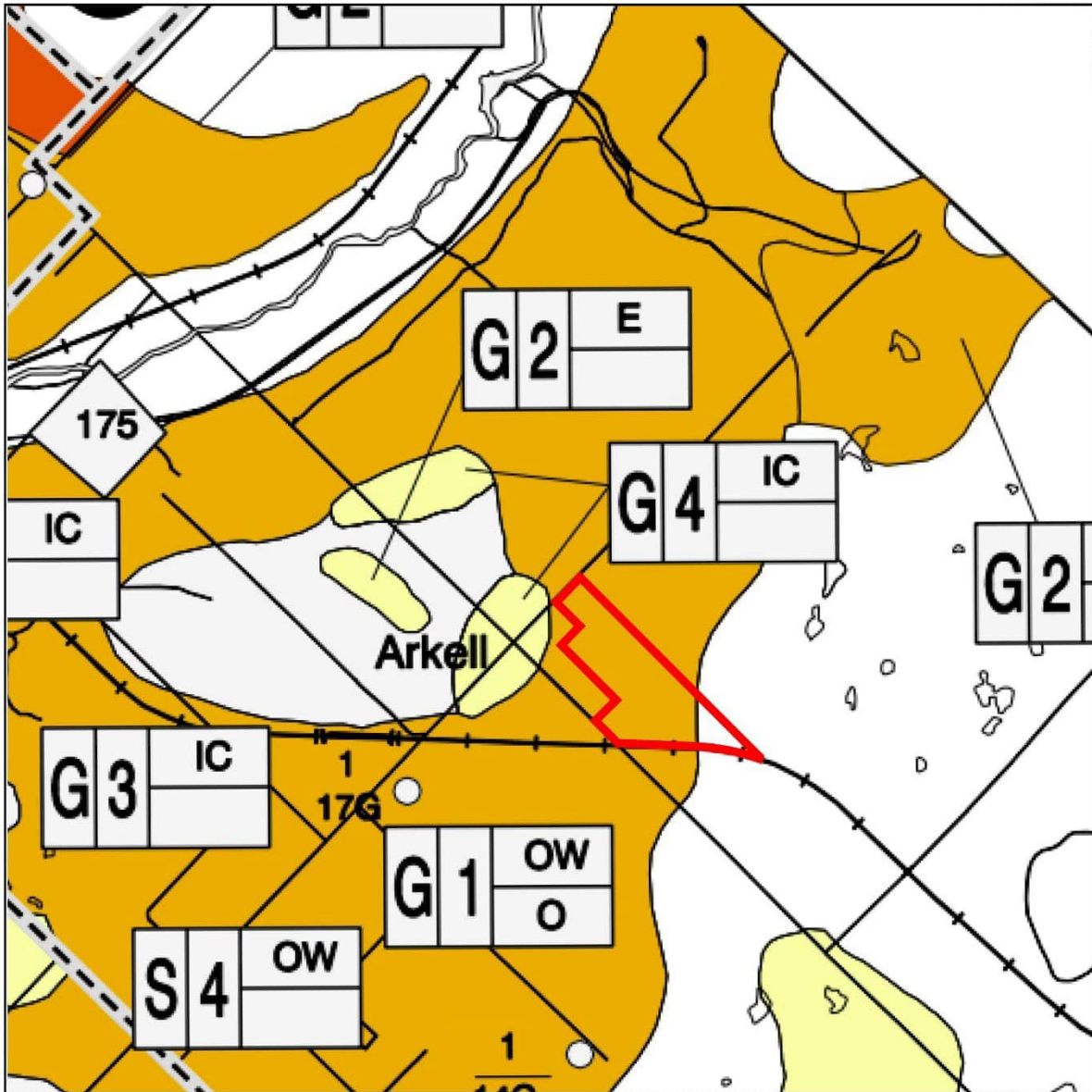
“Within Puslinch Township, several aggregate deposits have been selected as sand and gravel resource areas of secondary significance. The first of the outwash deposits is quite thick and extensive and is located south of the Eramosa River, in the northeastern part of the township. Data from water well records and from licenced sand and gravel pits indicate that the deposit is predominantly gravel with a thickness of 6 to 17 m. One licenced sand and gravel pit has been

opened in this resource area (Pit No. 175). A 6 to 7 m face exposes poorly sorted, often coarse aggregate consisting of approximately 60 to 70% gravel and 30 to 40% sand. This deposit is currently active and is being expanded. According to Burwasser (1976) the resource area contains large aggregate reserves. The deposit extends through the southern part of the City of Guelph and becomes part of Selected Resource Area 37. Field investigation reveals that the quality of the aggregate in the area selected at the secondary level is much poorer in quality than that in Selected Sand and Gravel Resource Area 37.” (ARIP 162).

Figure 5 illustrates the extent mineral aggregate resources in the Arkell area. There are no existing licensed mineral aggregate operations in proximity to the site. The closest licensed pit is over 1.5 km northwest of the subject property.

The aggregate deposit is recognized as a mineral aggregate deposit of secondary significance. Given the small size of the property (less than 20 ha) and the proximity of the site to the existing Settlement of Arkell, it is the considered opinion of SAI that the prospect of establishing a licensed pit on the subject property is not a commercially viable option and would not be in the public interest. The challenges of operating an industrial facility near Arkell, given its small size and the requisite mandatory setbacks and acoustic buffers (amongst other social issues such as truck traffic, concerns related to dust and water) would make the resource use unfeasible.

To ensure effective mineral aggregate resource conservation, the proposed development will utilize (where available) onsite aggregates for the construction of onsite infrastructure.



 SUBJECT LANDS

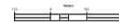
Mineral Aggregate Figure 5

Planning Justification Report

PART OF LOTS 7, 8, & 9 CONCESSION 10
 ASSESSMENT ROLL NUMBER Z301000008034800000
 ARKELL, ONTARIO

SAI
 PLANNING. AGROLOGY.
 ENVIRONMENTAL.

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DATE:
 5-Jan-26

Source: Wellington County ARIP 162

3.9 Agricultural Impact Assessment

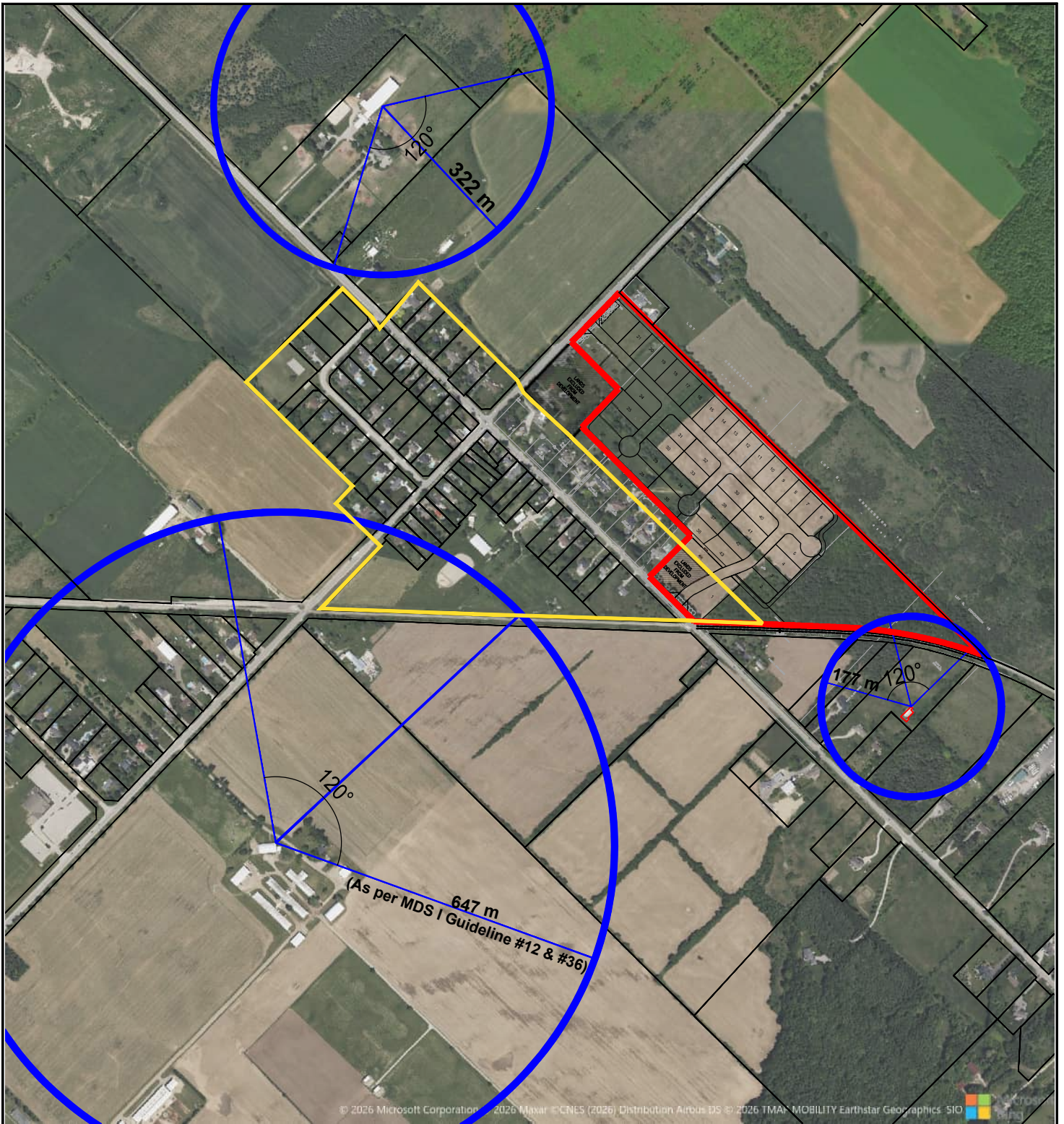
An Agricultural Impact Assessment (“AIA”) was completed by SAI. An AIA is required because much of the site is mapped as Prime Agricultural in the County of Wellington Official Plan. The southern portion of the site is mapped as Secondary Agriculture, and a portion of the site is included in the Hamlet designation.

The AIA reviewed relevant background information, including soils mapping, aerial photography and agricultural statistics. This information was supplemented by mapping of agricultural operations, cropping patterns and non-agricultural land uses for lands within 1.5 km of the subject property. In addition, Farm Data Sheets were circulated to livestock farms within 1.5 km of the site. This information was used to support the assessment of Minimum Distance Separation I setbacks associated with the proposed settlement boundary expansion.

The following conclusions of the AIA are noted:




- the site does not include any barns or significant forms of capital investment related to agriculture;
- there are no significant livestock barns in the immediate vicinity of the site;
- The completed MDS I analysis confirmed that the proposed settlement boundary expansion can comply with the applicable MDS I setbacks associated with nearby livestock operations. The analysis was completed in accordance with the OMAFA Minimum Distance Separation Formulae Implementation Guidelines, including Guideline #12 and Guideline #36.
- There are no alternate locations of lower agricultural capability abutting Arkell.
- The subject lands represent the preferred location from an agricultural perspective to expand Arkell.

Based on the findings of the Agricultural Impact Assessment, the proposed settlement boundary expansion represents the preferred location for growth associated with the Hamlet of Arkell from an agricultural perspective. The assessment confirmed that the subject lands do not contain significant agricultural infrastructure, that there are no adjacent livestock operations that would be negatively impacted by the proposal, and that the proposed development complies with the Minimum Distance Separation (MDS I) Formulae. The assessment further concluded that alternative expansion areas surrounding Arkell are generally characterized by similar or greater agricultural capability and/or greater agricultural constraints. Accordingly, the proposed development is not anticipated to result in significant adverse impacts on the surrounding agricultural system.



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Legend

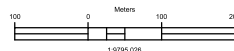
-  EXISTING HAMLET BOUNDARY LIMIT
-  SUBJECT LANDS
-  MDS ARC

MDS I

PART OF LOTS 7, 8, & 9 CONCESSION 10
 ASSESSMENT ROLL NUMBER 2301000008034800000
 ARKELL, ONTARIO

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DATE:
 28-May-26



4.0 PLANNING FRAMEWORK AND ASSESSMENT OF CONFORMITY

This section of the PJR provides an overview of the legislation, Policy Statements, Official Plan policies, and Zoning Regulations that relate to the proposed development application.

4.1 Ontario Planning Act

The Planning Act, R.S.O. 1990, serves as the foundational legislation for land use planning in Ontario. It sets out the requirements for Official Plans, Zoning By-Laws, Site Plan Approvals, and other planning instruments. Additionally, the Act empowers the Minister of Municipal Affairs and Housing to establish policy statements and plans that guide land use planning and development throughout the province, most notably, the Provincial Planning Statement.

The following sections of this report outline how the Planning Act applies to the proposed development and provide commentary on the ways in which the proposal aligns with the legislative direction established by the Act.

Section 2 of the Planning Act sets out various '*Matters of Provincial Interest*'. In carrying out their responsibilities under the Planning Act, decision-makers must have regard to these Matters of Provincial Interest. Table 2 outlines the Matters of Provincial Interest set out in Section 2 of the Planning Act and commentary regarding how each matter has been considered, where applicable.

Table 2: Matters of Provincial Interest set out in Section 2 of the Planning Act

Provincial Interest	Demonstration of Regard
a) The protection of ecological systems, including natural areas, features, and functions;	No impact on ecological systems as there are no significant natural heritage features onsite. A Tree protection and management plan will be implemented through a condition of draft plan approval.
b) The protection of agricultural resources of the Province;	There are no significant MDS impacts from the proposed development. From an agricultural perspective, settlement boundary expansion onto the subject lands represents the preferred option for development in Arkell.
c) The conservation and management of natural resources and the mineral resource base;	Mineral aggregate resources conservation will be utilized to ensure that available aggregate resources are used for the proposed development.
d) The conservation of features of significant architectural, cultural, historical, archaeological or scientific interest;	No significant archaeological, cultural or historical features associated with the site. No impacts anticipated.
e) The supply, efficient use, and conservation of energy and water;	Water supply was addressed through a study completed by a Qualified Professional. <i>"The results from 3 test wells indicate that the Gasport Fm. aquifer (lower aquifer) can meet the water quantity requirements of new individual lots on the</i>

	<i>proposed development property. Further, interpretation of the test well performance indicates that the aquifer can support the water quantity requirements associated with 50 new residential lots at the site.” (Groundwater Supply Assessment, 2023, ARL Groundwater Resources Ltd.)</i>
f) The adequate provision and efficient use of communication, transportation, sewage and water services and waste management systems;	Adequate servicing (water and sewage) will be provided by private individual services. Waste management is provided through the County of Wellington. Maintenance of the internal roads will be provided by the Township of Puslinch.
g) The minimization of waste;	Waste management services are through roadside pickup as per scheduling by the County of Wellington.
h) The orderly development of safe and healthy communities;	The proposed development represents an orderly expansion of the settlement of Arkell. Traffic Impact Assessment ensured that the proposed entrances are safe and meet the sight line requirements.
i) The accessibility for persons with disabilities to all facilities, services, and matters to which this Act applies;	The proposed development will have no impact on the accessibility for persons with disabilities to community services and facilities.
j) The adequate provision and distribution of educational, health, and recreation;	The proposed development is not anticipated to impact on the provision and distribution of education and health services. The applicant has proposed a park on the subject lands.
k) The adequate provision of a full range of housing, including affordable housing;	The proposed development will provide housing, including additional residential uses (subject to owner preference) that is appropriate for the Township of Puslinch.
l) The adequate provision of employment opportunities;	The proposed development will result in full-time and part-time employment opportunities related to the construction of the onsite roads/servicing and the development of 44 residential units.
m) The protection of the financial and economic well-being of the Province and its municipalities;	The proposed development will generate development charges, municipal taxes and parkland dedication for the municipality.
n) The co-ordination of planning activities of public bodies	The proposed development is not anticipated to impact on the planning activities of public bodies.
o) The resolution of planning conflicts involving public and private interests;	The proposed development is not anticipated to impact on planning conflicts involving public and private interests.

p) The protection of public health and safety;	The proposed development will ensure that public health and safety is maintained through the completion of relevant engineering reports.
q) The appropriate location of growth and development;	The proposed development represents the preferred location for expansion of the Arkell settlement boundary.
r) The promotion of development that is designed to be sustainable, to support public transit and to be oriented to pedestrians;	The proposed development will not impact on public transit in the municipality, as there is no public transit in the Township of Puslinch.
s) The promotion of built form that, i) is well-designed, ii) encourages a sense of place, and iii) provides for public spaces that are high quality, safe, accessible, attractive, and vibrant.	The proposed development is consistent with the building form and lot sizes found in the Arkell community. The development will be well-screened from existing uses. The urban section for the onsite streets will promote safe pedestrian mobility using street lighting, curbs and sidewalks.
t) The mitigation of greenhouse gas emissions and adaption to a changing climate.	The proposed development is not anticipated to impact on greenhouse gas emissions in the municipality.

Based on the foregoing, it is our opinion that the proposed development has regard for the matters of Provincial interest as set out in the Planning Act.

4.2 Provincial Planning Statement, 2024

The 2024 Provincial Planning Statement (PPS) was issued under Section 3 of the Planning Act and came into effect on October 20, 2024. The PPS establishes the policy foundation for regulating the development and use of land in the province and provides policy directions on matters of provincial interest related to land use planning and development. It provides a vision for land use planning in Ontario that encourages efficient use of land, resources and public investment in infrastructure. The PPS strongly encourages development that would provide long-term prosperity, environmental health, and social well-being. The 2024 PPS applies to planning decisions made on or after the effective date and applies to the consideration of the proposed official plan and zoning bylaw amendment applications. The following is a summary of the PPS policies that are relevant to the proposed development application.

The PPS is to be read in its entirety, and applicable policies are to be applied to specific situations/applications. The following table provides a summary of relevant policies of the PPS and describes how the proposed development is consistent with this policy direction.

PPS (2024) policy 2.3.2 provides the following direction regarding settlement boundary expansions:

2.3.2 New Settlement Areas and Settlement Area Boundary Expansions

1. *In identifying a new settlement area or allowing a settlement area boundary expansion, planning authorities shall consider the following:*
 - a. *the need to designate and plan for additional land to accommodate an appropriate range and mix of land uses;*
 - b. *if there is sufficient capacity in existing or planned infrastructure and public service facilities;*
 - c. *whether the applicable lands comprise specialty crop areas;*

- d. *the evaluation of alternative locations which avoid prime agricultural areas and, where avoidance is not possible, consider reasonable alternatives on lower priority agricultural lands in prime agricultural areas;*
 - e. *whether the new or expanded settlement area complies with the minimum distance separation formulae;*
 - f. *whether impacts on the agricultural system are avoided, or where avoidance is not possible, minimized and mitigated to the extent feasible as determined through an agricultural impact assessment or equivalent analysis, based on provincial guidance; and*
 - g. *the new or expanded settlement area provides for the phased progression of urban development.*
2. *Notwithstanding policy 2.3.2.1.b), planning authorities may identify a new settlement area only where it has been demonstrated that the infrastructure and public service facilities to support development are planned or available.*

The following table documents conformity of the proposed development with policy 2.3.2.1 of the PPS, 2024.

Table 3: Conformity Analysis – PPS, 2024 – Settlement Area Boundary Expansions (Policy 2.3.2.1)

Policy 2.3.2.1	Conformity	Analysis
<i>a) the need to designate and plan for additional land to accommodate an appropriate range and mix of land uses</i>	Yes	Land Need Analysis conducted by the County of Wellington sets out the need for 250 units in the Township of Puslinch (of which 50 units are anticipated to be provided for expansion of Arkell). The proposed development (44 units) provides approximately 17% of the total needed growth in the Township.
<i>b) if there is sufficient capacity in existing or planned infrastructure and public service facilities</i>	Yes	There are no existing or planned infrastructure and public services facilities in the municipality. Capacity for private servicing was assessed by a Qualified Professional.
<i>c) whether the applicable lands comprise specialty crop areas</i>	Yes	Development is not comprised of Specialty Crop Areas.
<i>d) the evaluation of alternative locations which avoid prime agricultural areas and, where avoidance is not possible, consider reasonable alternatives on lower priority agricultural lands in prime agricultural areas</i>	Yes	An alternate site location analysis was completed. The settlement of Arkell is surrounded by good agricultural land so avoidance is not possible. The subject lands are deemed to be a reasonable alternative for expansion of the settlement boundary as the lands represent the lowest priority agricultural lands in the local area immediately adjacent to the settlement, with no significant MDS impacts.

e) whether the new or expanded settlement area complies with the minimum distance separation formulae	Yes	The proposed Development complies with the MDS formulae.
f) whether impacts on the agricultural system are avoided, or where avoidance is not possible, minimized and mitigated to the extent feasible as determined through an agricultural impact assessment or equivalent analysis, based on provincial guidance	Yes	The Agricultural Impact Assessment concluded that the proposed settlement boundary expansion will not result in significant adverse impacts on the surrounding agricultural system. The assessment confirmed that there are no significant livestock operations adjacent to the site, no significant agricultural infrastructure onsite, and that the subject lands represent the preferred location for expansion of the Hamlet of Arkell from an agricultural perspective.
g) the new or expanded settlement area provides for the phased progression of urban development	Yes	Proposed expansion of settlement represents a logical progression of development.

PPS Policies 3.5.1 and 3.5.2 address land use compatibility with major facilities and sensitive land uses.

1. Major facilities and sensitive land uses shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of major facilities in accordance with provincial guidelines, standards and procedures.
2. Where avoidance is not possible in accordance with policy 3.5.1, planning authorities shall protect the long-term viability of existing or planned industrial, manufacturing or other major facilities that are vulnerable to encroachment by ensuring that the planning and development of proposed adjacent sensitive land uses is only permitted if potential adverse affects to the proposed sensitive land use are minimized and mitigated, and potential impacts to industrial, manufacturing or other major facilities are minimized and mitigated in accordance with provincial guidelines, standards and procedures.

A Noise and Vibration Feasibility Study was completed by HGC in April 2026 to assess the potential impacts of road traffic on Arkell Road and Watson Road South and rail traffic associated with the Guelph Junction Railway. The study concluded that the proposed residential development is feasible from a noise and vibration perspective, provided that recommended mitigation measures are incorporated into the detailed design of the subdivision. Recommended measures include upgraded building façade and glazing requirements for select lots, ventilation measures, acoustic barriers adjacent to the railway corridor, warning clauses, and appropriate setbacks from the railway right-of-way. The study further concluded that applicable Ministry of the Environment, Conservation and Parks (MECP) and railway requirements can be achieved through the detailed design and draft plan approval process. Accordingly, the proposed development is considered appropriate from a noise and vibration perspective.

The findings of the Noise and Vibration Feasibility Study demonstrate that potential adverse effects associated with transportation corridors can be appropriately mitigated through detailed design measures, consistent with the compatibility and land use planning policies of the Provincial Planning Statement, 2024.

Sewage and Water

Policy 3.6.4 sets out the consideration of servicing: *“Where municipal sewage services and municipal water services or private communal sewage services and private communal water services are not available, planned or feasible, individual on-site sewage services and individual on-site water services may be used provided that site conditions are suitable for the long-term provision of such services with no negative impacts.”*

Response:

The Functional Servicing and Stormwater Management Report prepared by Crozier and the Groundwater Supply Assessment prepared by ARL Groundwater address this policy. These studies note that the use of individual on-site water and sewage services are appropriate, and the use of such services will not result in negative impacts, including potential cross-jurisdictional impacts. The studies confirm that the proposed development will be serviced in a manner that is consistent with the existing development in the local area.

Natural Heritage

Policy 4.1 sets out the requirements for the protection of natural heritage features and areas. A Scoped Environmental Impact Study (EIS) was completed by Stovel and Associates Inc. (2026) to assess the potential impacts of the proposed development on natural heritage features and ecological functions. The EIS determined that there are no wetlands, significant woodlands, valleylands, fish habitat, areas of natural and scientific interest, or other significant natural heritage features within the area proposed for development.

The EIS concluded that the proposed development will not result in negative impacts on significant natural heritage features or ecological functions, provided that the recommended mitigation measures are implemented. The proposed development has been designed to largely avoid the onsite plantation and minimize impacts to existing vegetation communities. Appropriate tree protection, mitigation, and future permitting requirements can be addressed through the draft plan approval process.

Accordingly, the proposed development is consistent with the natural heritage policies of the Provincial Planning Statement, 2024, as no negative impacts on significant natural heritage features or ecological functions have been identified.

Mineral Aggregate Resources

Policy 4.5.2.3 sets out the requirement for mineral aggregate resources conservation: “Mineral aggregate resource conservation shall be undertaken, including through the use of accessory aggregate recycling facilities within operations, wherever feasible.”

Mineral aggregate resource conservation means

a) the recovery and recycling of manufactured materials derived from mineral aggregates (e.g., glass, porcelain, brick, concrete, asphalt, slag, etc.), for re-use in construction, manufacturing, industrial or maintenance projects as a substitute for new mineral aggregates; and

b) the wise use of mineral aggregates including utilization or extraction of on-site mineral aggregate resources prior to development occurring.

Response

The proposed development will be consistent with the requirement for mineral aggregate resource conservation. Available aggregate will be used for road construction at the site. This will reduce the need

for aggregate to be trucked in from adjacent pits, thus minimizing the potential for impacts on the adjacent residential community.

Policies 4.5.2.4 and 4.5.2.5 set out the policy to consider and protect existing mineral aggregate operations and mineral aggregate resource areas:

4. Mineral aggregate operations shall be protected from development and activities that would preclude or hinder their expansion or continued use or which would be incompatible for reasons of public health, public safety or environmental impact. Existing mineral aggregate operations shall be permitted to continue without the need for official plan amendment, rezoning or development permit under the Planning Act. Where the Aggregate Resources Act applies, only processes under the Aggregate Resources Act shall address the depth of extraction of new or existing mineral aggregate operations. When a license for extraction or operation ceases to exist, policy 4.5.2.5 continues to apply.

5. In known deposits of mineral aggregate resources and on adjacent lands, development and activities which would preclude or hinder the establishment of new operations or access to the resources shall only be permitted if:

- a) resource use would not be feasible; or*
- b) the proposed land use or development serves a greater long-term public interest; and*
- c) issues of public health, public safety and environmental impact are addressed.*

Response:

There are no existing licensed mineral aggregate operations located in proximity to the subject lands. Therefore, no impacts on licensed mineral aggregate operations are anticipated.

The subject lands are part of a secondary deposit of mineral aggregate resources. However, given the immediate proximity of existing residential development associated with the Settlement of Arkell, it is concluded that development of the subject lands as a residential subdivision serves a greater long-term interest. Further, the relatively small area of the site would result in portions of the reserve being sterilized due to mandatory setbacks under the ARA and acoustic buffering. This would make resource use unfeasible.

Cultural Heritage and Archaeology

PPS Policies 4.6.1-3 requires the protection of built heritage resources and archaeological resources.

- 1. Protected heritage property, which may contain built heritage resources or cultural heritage landscapes, shall be conserved.*
- 2. Planning authorities shall not permit development and site alteration on lands containing archaeological resources or areas of archaeological potential unless the significant archaeological resources have been conserved.*
- 3. Planning authorities shall not permit development and site alteration on adjacent lands to protected heritage property unless the heritage attributes of the protected heritage property will be conserved.*

There are no built or cultural features on the subject lands.

An Archaeological Study was completed by Lincoln Environmental Consultants (“LEC”). No significant archaeological resources were identified onsite.

The northern portion of the site was not assessed by LEC. This area will need to be examined by a licensed archaeologist. It is recommended that this be completed as a condition of draft plan approval.

Provincial Planning Statement Conclusion

The proposed development is consistent with the PPS, providing locally appropriate development that is needed in the Township of Puslinch.

4.3 County of Wellington Official Plan

The County of Wellington Official Plan (“County OP”) was adopted by Wellington County Council on September 24, 1998, approved by the Ministry of Municipal Affairs on April 13, 1999 and came into effect on May 6, 1999. The County Official Plan, as amended, was last revised December, 2025. The proposed development was declared complete in 2006.

As previously noted, the County OP (modified Schedule A-2 of OPA 119, April 12, 2023) designates Arkell as a Hamlet. The County wishes to encourage growth to occur in primary urban centres, secondary urban centres and hamlets. Secondary urban centres and hamlets are expected to be built out with modest expansions. Hamlets are expected to eventually be built out on existing designated lands, while growth beyond their current boundaries will be limited (6.3). Development will be relatively small-scale given the level of service available in the settlement. The primary residential use will be low-density single detached houses compatible with existing housing in Arkell. Sewage and water services will be provided in accordance with section 11.2 of the County Official Plan. Road access will be via internal roads will be via a local road and a County Road. In all cases, appropriate siting standards will be met and road functions maintained (6.11.2). The proposed development is a reasonable expansion option for the settlement of Arkell.

Policy 4.9.5 of the County OP sets out policies related to Source Water Protection. Mapping available on the County of Wellington website indicates that the site is part of a WHPA-B protection zone associated with the municipal wells serving the City of Guelph. Vulnerability is scored 8 across the site and the immediate surrounding areas. This means that waste disposal, conventional sewage disposal systems and DNAPLs are all considered significant threats. The proposed development does not include waste disposal facilities or DNAPL storage. On site sewage disposal systems with tertiary treatment is proposed for wastewater disposal. It is understood that the tertiary treatment systems are not considered significant threats, if they receive regular inspections and maintenance. As a result, the need for application of source protection policies should be limited.

Policy 4.9.7 of the County OP sets out policies related to the consideration and protection of the Paris and Galt Moraine. The Paris and Galt Moraines are unique landforms that function as a support for hydrologic processes and features that influence groundwater and surface water resources at regional and local scales. Only the southeast corner of the site is located within the Paris and Galt Moraine Policy Area. This area is mostly not proposed for development. No surface water features or wetlands are in the immediate vicinity of the property. The area of the property proposed for residential development was observed to be relatively flat with no obvious evidence of the hummocky terrain that characterizes the Paris and Galt Moraines. Land Use planning maps indicate that the nearest Greenland’s are about 200 - 400 m to the northeast of the site. The nearest surface/groundwater features are the springs at the Arkell Springs property, approximately 500 - 1000 m to the north of the site. The nearest continuous surface water feature is the Eramosa River beyond the Arkell Springs property. ARL Groundwater Resources Ltd. provides the opinion that *“there is little to no opportunity for the development to have a measurable effect on any of these features given the separation distances involved.”*

The following table provides an overview of the responses to technical requirements set out in 4.6.2 of the County OP.

Table 4: Overview of the responses to technical requirements set out in OP Policy 4.6.2

Relevant County Policy (4.6.2)	Response/Analysis
a) Need	<p>The County of Wellington has examined rural residential growth as part of the Official Plan Review (Committee Report prepared by Jameson Pickard, September 12, 2024). This analysis determined that there was a need for 250 rural residential lots in Puslinch. (September 12, 2024 - Official Plan Review - 2024 Rural Residential Growth Analysis).</p> <p><i>For Arkell, the County has estimated a potential of about 50 units if expansion were to be realized. In both cases additional policy and technical review would be necessary to determine the feasibility of such expansions (June 12, 2025, County Official Plan Review – Phase 3B Rural Residential Growth).</i></p> <p>The proposed development would satisfy approximately 17.5% of the anticipated future need for rural residential lots in Puslinch.</p>
b) Appropriateness of site for proposed use (size, shape and ability to accommodate intensity of use)	<p>The site has been long identified for future expansion option for Arkell (since 2006). The proposal is for single detached homes on private services the same as what is found in Arkell. Lot shape and sizing are similar to what exists in Arkell and generally meets the requirements of the Zoning Bylaw.</p>
c) Adequacy of Servicing	<p>Appropriate engineering studies were completed to address the provision of stormwater, water and sewage treatment. The measures recommended in these technical reports ensures that Ministry guidelines are satisfied.</p>
d) Compatibility	<p>The proposed single detached homes are similar in use, height and density to what currently exists in Arkell. Landscaping recommendations will provide for adequate buffering. Noise warning clauses on specified lots will be implemented. No impacts on adjacent land uses are anticipated.</p>
e) Impact on Natural Resources (Agriculture and Mineral Aggregates)	<p>No impacts on agriculture or mineral aggregates are anticipated. There are no pits in the area and existing livestock operations are well setback from the property. There are no MDS I impacts associated with the proposed development lands.</p>
f) Impact on biodiversity and connectivity to natural features.	<p>No impacts on significant natural heritage features or functions (including biodiversity and connectivity) are anticipated. Through tree protection and management for the development, an overall net improvement is anticipated.</p>
g) Exterior design (bulk, scale and layout of buildings and other design elements)	<p>The exterior design will be similar to the existing built-up area of Arkell. Additional tree plantings are proposed to assist in buffering the visual impact of the proposed development.</p>
h) Possibility of site contamination.	<p>No known areas of contamination onsite and no known petroleum deposits of significance in the area.</p>
i) Methods to reduce or eliminate negative impacts.	<p>Technical reports were prepared that include recommendations to reduce or eliminate potential impacts, including noise warning clauses, tree preservation and management plan, landscaping, and sedimentation and erosion control plans.</p>

j) Other planning matters considered important by a Council.	At this stage in the process, no other planning matters have been identified at this time.
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Official Plan Policy 4.8 sets out relevant planning provisions for the expansion Primary Urban Centres, Secondary Urban Centres and Hamlets. Policy 4.8.4 (**Hamlet Expansion**) sets out the following:

“None of the hamlets in Wellington are on municipal services and it is the policy of this Plan to limit growth in areas without municipal services. Hamlet expansions of more than 5 residential lots or units will not be allowed. The expansion must be based on the criteria as set out in Section 4.8.2.”

The County of Wellington prepared a Planning Report PD2025-20 (June 12, 2025). This report estimates that approximately 50 units are allocated for the expansion of Arkell.

Table 5 sets out the criteria for considering expansion of a Primary Urban Centre, Secondary Urban Centre and Hamlet.

Table 5: Expansion Criteria

Consideration	Analysis	Conformity
<i>a) sufficient opportunities to accommodate the population and employment forecasts for the County of Wellington, through intensification and in designated greenfield areas, using the intensification target and greenfield density targets, are not available; i) within the County of Wellington; and ii) within the applicable lower-tier municipality to accommodate the growth allocated to the municipality;</i>	County planning report sets out the need for 50 lots for the expansion of Arkell.	Yes
<i>b) the expansion makes available sufficient lands for a time horizon not exceeding the year 2051, based on the analysis provided for in a);</i>	As above.	Yes
<i>c) the timing of the expansion and the phasing of development within the designated greenfield area will not adversely affect the achievement of the intensification target and density targets set out in Section 3.3.1, the phasing policies of Section 3.6 and the other policies of this Plan;</i>	The intensity/density of the proposed development is consistent with development patterns in Hamlets.	Yes
<i>d) where applicable, the proposed expansion will meet the requirements of the Greenbelt Plan;</i>	Not in Greenbelt	Not applicable
<i>e) the infrastructure and public service facilities needed for expansion will be environmentally sustainable and financially viable over the full life cycle of these assets;</i>	No public service facilities or infrastructure required to support the proposed development.	Yes
<i>f) prime agricultural areas should be avoided where possible. To support the Agricultural System, alternative locations across the County will be evaluated, prioritized and determined based on avoiding, minimizing and mitigating the impact on the Agricultural System and in accordance with the following;</i>	Alternate Site Evaluation Study completed. Subject property represents the lowest capability lands in proximity to Arkell. All lands surrounding Arkell are prime agricultural lands. Proposed development will not result in MDS I impacts on adjacent farms.	Yes

<p><i>i) reasonable alternatives that avoid prime agricultural areas are evaluated; and;</i> <i>ii) where prime agricultural areas cannot be avoided, lower priority agricultural lands are used;</i></p>		
<p><i>g) any adverse impacts on the agri-food network, including agricultural operations, from expanding settlement areas would be avoided, or if avoidance is not possible, minimized and mitigated as determined through an agricultural impact assessment;</i></p>	<p>AIA completed. No adverse impacts on Agri-Food Network including agricultural operations are anticipate.</p>	<p>Yes</p>
<p><i>Sections 2 (Wise Use and Management of Resources) and 3 (Protecting Public Health and Safety) of the Provincial Policy Statement are applied, as well as the following are addressed:</i> <i>i) the existing development pattern in the community;</i> <i>ii) the potential impacts on people;</i> <i>iii) the need to avoid mineral aggregate areas or where it is unavoidable to use lands of lower quality aggregate resources;</i> <i>iv) the impacts on natural heritage systems and features;</i> <i>v) the impacts on groundwater and surface water;</i> <i>vi) the impacts on the safety and efficiency of existing or planned infrastructure;</i> <i>vii) the impacts on archaeology, cultural heritage landscapes, and built heritage resources;</i> <i>viii) logical boundaries based on existing property lines or recognized physical features where possible; and</i> <i>ix) other planning criteria considered appropriate in the circumstances.</i></p>	<ul style="list-style-type: none"> • Development pattern is consistent with lot fabric in Hamlet • Potential impacts on people are minimal. • Mineral aggregate resources have been considered and will be used to construct the proposed development. Site is not considered to be a viable commercial pit site given the proximity to the Hamlet and sensitive uses. • Impacts on ground and surface water have been evaluated and impacts are considered to be minimal • No significant archaeological resources and no cultural resources onsite. • Subject property represents a logical expansion of the Hamlet. A portion of the site is already designated Hamlet. Onsite plantation will have minimal encroachment. • Other planning criteria have been considered (noise/vibration) and relevant mitigation measures have been documented and will be implemented. 	<p>Yes</p>
<p><i>l) the County and local municipalities will plan to maintain or move significantly towards a minimum of one full-time job per three residents within or in the immediate vicinity of the urban centre or hamlet;</i></p>		<p>Not applicable.</p>

<i>j) the settlement area to be expanded is in compliance with the minimum distance separation formulae.</i>	No MDS I impact as documented in the AIA.	Yes.
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A Draft of a site-specific Official Plan Amendment is included in Appendix A. The proposed OPA redesignates lands that are currently designated “Prime Agricultural” and “Secondary Agricultural” to “Hamlet”. Section 10.1.3 of the Official Plan sets out Matters for Consideration when considering lot creation by subdivision:

Table 6: County Consideration (new lot creation by subdivision consent or part lot control)

Consideration	Analysis	Conformity
<i>a) that any new lots will be consistent with official plan policies and zoning regulations;</i>	Lands to be re-zoned to a site-specific Hamlet Residential zone.	Yes
<i>b) that all lots can be adequately serviced with water, sewage disposal, stormwater management or drainage, fire protection, roads, utilities, solid waste disposal to accepted municipal standards and without undue financial burden on the municipality;</i>	Engineering reports (stormwater, grading, sewage systems, water supply assessment) have been prepared. No financial burden to the Township anticipated.	Yes
<i>c) that sufficient reserve water and sewage plant capacity will be available when lots are created in areas to be serviced by central water and sewage systems;</i>	No municipal services.	N/A
<i>d) that all lots will have safe driveway access to an all-season maintained public road and that access to a local road will be preferred over county and provincial roads, where practical;</i>	Traffic study addresses safe access and sight lines.	Yes
<i>e) that public streets, spaces and facilities will be safe, meet the needs of pedestrians, and facilitate pedestrian and non-motorized movement, including, but not limited to, walking and cycling.</i>	Traffic study addresses public streets.	Yes
<i>f) that the topography, soils and drainage of the site are satisfactory for the lot sizes and uses proposed;</i>	Geotechnical and stormwater report address this matter.	Yes
<i>g) that tree loss related to anticipated development be kept to a minimum and, wherever reasonable, be compensated for by new tree planting;</i>	A Tree Protection and Compensation Plan will be prepared as a condition.	Yes
<i>h) that natural heritage features are not affected negatively;</i>	There are no significant natural heritage features in the area proposed for residential uses.	Yes
<i>i) that lots are not created in areas which would pose a threat to public health or safety;</i>	The proposed development will not pose a threat to public health.	Yes
<i>j) that natural resources such as agricultural lands and mineral aggregates would not be affected adversely;</i>	An AIA was prepared to address agricultural impacts. No MDS impacts on the proposed residential development lands. No licensed pits in proximity to the site. Mineral aggregate resources conservation will be employed at the site.	Yes
<i>k) that the size and shape of proposed lots is suitable, including frontage, area and the proportion of frontage to depth;</i>	The size of the lots is based on engineering studies.	Yes
<i>l) that the proposed lots and uses are compatible with and designed to minimize adverse impacts on surrounding uses;</i>	The proposed lots are compatible with the surrounding uses. No	Yes

	MDS impacts on the residential development lands.	
<i>m) that all new lots shall have logical lot lines given existing lot patterns in the area, natural and human-made features and other appropriate considerations;</i>	The new lots have logical lot lines.	Yes
<i>n) that residential lots will have adequate access to community facilities such as schools, libraries and parks based on reasonable standards for the area;</i>	The new lots will have adequate access.	Yes
<i>o) that the creation of any lot is necessary, timely and in the public interest;</i>	The new lots are in demand and necessary for local employment.	Yes
<i>p) that provincial legislation and policies are met, including the Greenbelt Plan policies set out in Section 9.9 of this Plan.</i>	Growth Plan was replaced by PPS, 2024. The site is not included in the Greenbelt Plan area.	Yes

It is our opinion that the proposed development satisfies these requirements.

4.4 Township of Puslinch Zoning By-Law

The Township of Puslinch Comprehensive Zoning By-law No. 23-18 (“Zoning Bylaw”) sets out the relevant zones and zoning provisions for the municipality. As previously noted, the Site is zoned Agricultural (A) and will require a zoning amendment to permit the establishment of the residential land uses on the site. Should Township Council want to establish a park in the area, a public park is permitted in the Hamlet Residential zone.

The proposed residential zone is a site-specific Hamlet Residential (HR) Zone. The permitted uses of the site-specific HR zone are limited to a Dwelling - single-detached, an Additional Residential Unit, a Home business, and a Park (public). The following table sets out a zoning conformance chart for specific zoning regulations in the HR – XXX zone. There is one exception to the HR provisions. The minimum lot area is reduced to 0.2 ha. This reduction in lot size is supported by relevant technical reports. A draft of the site-specific zoning amendment is included as Appendix B.

It is noted that the retained portion of 605 Arkell Road (i.e., lands that will not form part of the proposed residential subdivision) is zoned Agriculture. Given that this existing parcel is a less than 4 ha in size, the provisions of Section 11.4 – Reduced Agricultural Lot Requirements will apply. The retained portion of 605 Arkell Road will comply with the standards set out in Table 11.3 – Reduced Lot Agricultural Zone Standards of the Township’s Zoning Bylaw.

A Holding (H) provision is also included in the site-specific bylaw. The holding provision sets out the requirements for the applicant to enter into a subdivision agreement with the Township to satisfy conditions, including financial and servicing, as set out by the Township of Puslinch. The Holding provision will allow for refinements to the development through the Draft Plan of Subdivision process, such as matters related to sight triangle measurements, future ownership of Blocks, required road widenings etc. (to the satisfaction of Council) will be addressed following the refinement of the Draft Plan of Subdivision. All of these details require legal survey associated with the Draft Plan of Subdivision.

Table 7: Zoning Chart

Hamlet Residential	Required (23-18)	Provided	Compliance
Min. Lot Area	0.4 ha	0.2 ha	No
Min. Lot Frontage	20m	30m	Yes
Min. Front Yard	3m	3m	Yes
Min. Interior Side Yard	2m	2m	Yes
Min. Exterior Side Yard	3m	3m	Yes

Min. Rear Yard	6m	6m	Yes
Max. Lot Coverage	40%	40%	Yes
Max. Building Height	11 m	11 m	Yes
Min. Landscaped Open Space	15%	15%	Yes

5.0 CONCLUSIONS

The proposed Official Plan Amendment redesignates lands that are currently designated “Prime Agricultural” and “Secondary Agricultural” to “Hamlet”. The proposed Zoning By-Law Amendment rezones the lands from Agricultural to a site-specific Hamlet Residential zone (with a Holding provision). The Official Plan Amendment and Zoning By-Law Amendment applications are consistent with the PPS and conform to the County of Wellington Official Plan.

The proposed development is a logical expansion of an existing settlement. The proposed development will satisfy, in part, the projected need for residential units in the municipality. The subject lands represent the preferred location from an agricultural perspective to expand the Hamlet of Arkell.

The proposed development will not result in a negative impact on agriculture. There are no MDS I impacts associated with the proposed development.

Engineering studies have been prepared in support of the application. Recommendations have been developed to ensure that the proposed development meets relevant provincial guidelines. These recommendations form the basis of condition of draft plan of subdivision.

Following the approval of the Official Plan Amendment, the proposed Zoning Bylaw Amendment can be considered and approved by the Township of Puslinch. The draft plan of subdivision application will address the details of lot layout and parkland dedication. A revised draft plan of subdivision will be prepared at a future date by the Ontario Land Surveyor following general agreement on the lot fabric associated with the proposed development.



ROBERT P. STOVEL, MCIP, RPP, P.A.G.



ROBERT L. STOVEL, B.Sc.

Appendix A – Draft Official Plan Amendment

The Corporation of the County of Wellington

BY-LAW NO. __

To adopt:

Official Plan Amendment No. __ to the County of Wellington Official Plan

WHEREAS subsection 22(1) of the Planning Act, R.S.O. 1990 c.P.13, as amended, permits a person or public body to request a council of a municipality to amend its Official Plan, and Section 17, 21 and 22 applies to any such amendment; and,

WHEREAS it is deemed appropriate to adopt an amendment to the Wellington County Official Plan to incorporate certain modifications to the text of Part 9, Local Planning Policy, regarding the Arkell Subdivision;

WHEREAS it is deemed appropriate to adopt an amendment to the Wellington County Official Plan to redesignate lands mapped as “Prime Agricultural” and “Secondary Agricultural” to “Hamlet Area”;

COUNCIL ENACTS AS FOLLOWS:

1. The attached Amendment No. _ to the Wellington County Official Plan, is hereby adopted.
2. Pursuant to subsection 17(27) of the Planning Act, R.S.O. 1990, c.P.13 as amended, this Official Plan Amendment comes into effect upon the day after the last day for filing a notice of appeal, if no appeal is filed pursuant to subsection 17(24) and (25). Where one or more appeals have been filed under subsection 17(24) and (25) of the said Act, as amended, this Official Plan Amendment comes into effect when all such appeals have been withdrawn or finally disposed of in accordance with the direction of the Ontario Land Tribunal.

Passed this __ day of __, 20__.

Mayor

Clerk

Official Plan Amendment Number ____
To the County of Wellington's Official Plan

Constitutional Statement

The details of the Amendment, as contained in Part 2 of this text, constitute Amendment Number ____ to the County of Wellington Official Plan.

Part 1 – The Preamble

1.0 Location:

The lands affected by this Amendment are the lands located on the northern side of Watson Road, east of Arkell Road (County Road 37), described as Part of Lots 7, 8 and 9, Concession 10, Township of Puslinch, County of Wellington.

The proposed development is approximately 18.8 hectares in size.

2.0 Basis

These lands may be developed for residential dwellings. The dwellings shall be serviced by individual private water and wastewater services. This development is deemed to be residential infilling and rounding out of an existing settlement. This development contributes to the fulfillment of the local municipality growth strategy. This development shall be implemented through a rezoning and plan of subdivision or plan of condominium.

3.0 Other Approvals:

In addition to the proposed County Official Plan amendment, the proponent has also applied to the Township of Puslinch requesting an amendment to the Zoning By-law. The purpose of the By-law is to implement site specific OPA _ to permit infilling and rounding out of an existing settlement.

4.0 Supporting Information

In support of the proposed amendments to the planning documents, the proponent has prepared an Water Supply Assessment, Functioning Servicing and Stormwater Management Report, Traffic Impact Assessment an Agricultural Impact Assessment and Planning Justification Report.

Part 2 – The Amendment

All of this part of the document entitled **Part 2 – The Amendment**, consisting of the following text constitutes Amendment No. ___ to the County of Wellington Official Plan.

1.0 Details Of The Amendment

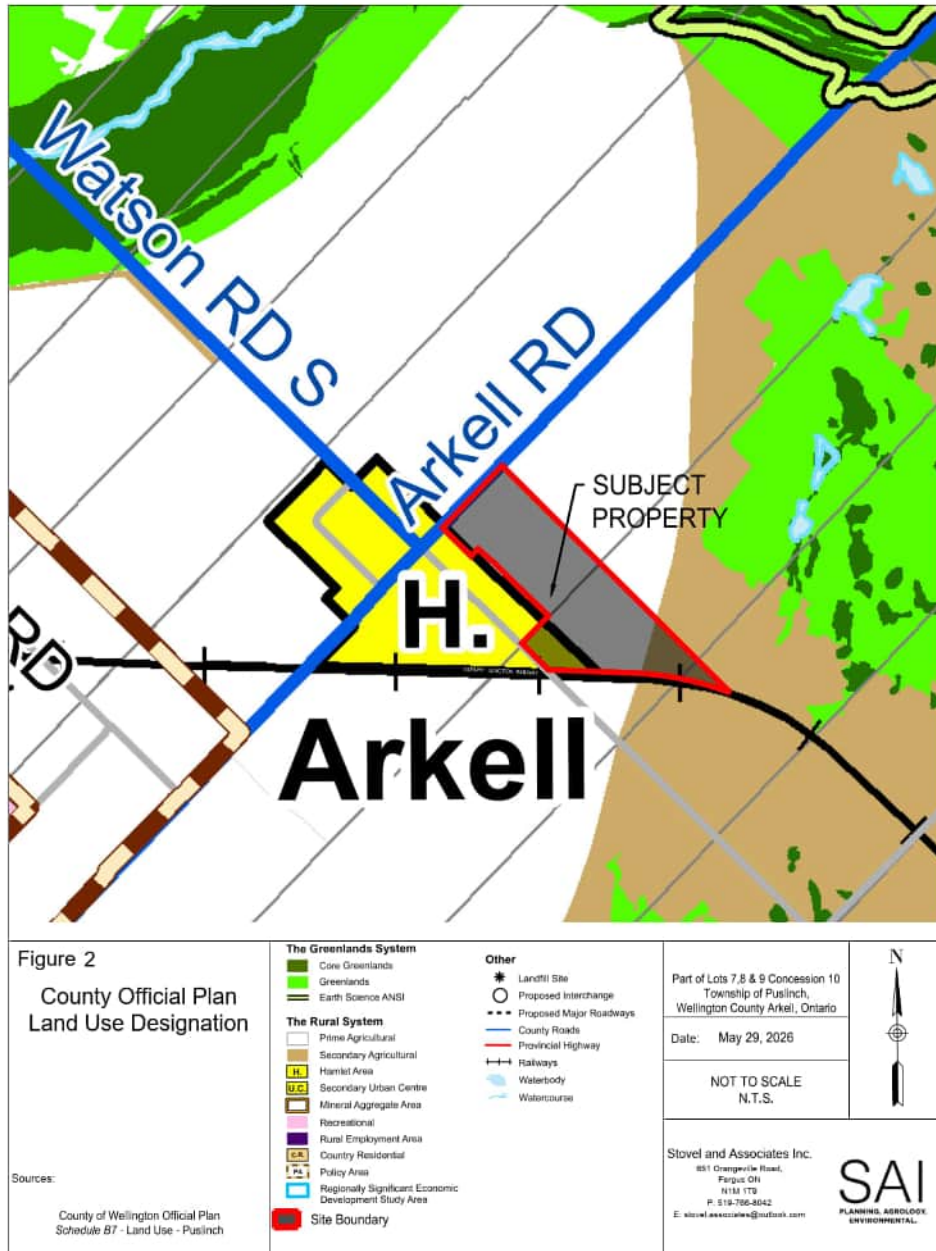
The Official Plan of the County of Wellington is hereby amended as follows:

1. THAT **Schedule B-7 (Puslinch)** is amended by changing a portion of the subject land to the Hamlet designation as illustrated on the attached Schedule "A".

Part 3 - Map Changes

The Site designated as "Prime Agricultural" and "Secondary Agricultural" to be redesignated to "Hamlet Area", as demonstrated on "Schedule A".

SCHEDULE A



Source: Wellington County Official Plan, Schedule B7 Puslinch (2024)

Appendix B – Draft Zoning By-Law Amendment

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER _____-2026

Being a by-law to amend By-law 023/18, as amended being the Zoning By-law for the Township of Puslinch

WHEREAS, the Council of the Corporation of the Township of Puslinch deem it appropriate and in the public interest to amend By-law Number 023-18 pursuant to Section 34 of the Planning Act, R.S.O. 1990 as amended;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF PUSLINCH HEREBY ENACT AS THE FOLLOWS:

1. THAT Table 2.1 a. Residential is hereby amended by adding the following to the first column: “Hamlet Residential”, to the second column the short form: “HR” and to the third column the following description, which pursuant to section 2.1 b of Bylaw No. 023-18 as amended, does not form part of the Zoning By-law.
2. THAT Schedule “A” of the By-law 023/18 is hereby amended by rezoning a portion of Part of Lots 7, 8, and 9, Concession 10, within the Township of Puslinch from Agriculture (A) Zone to Hamlet Residential Zone – Holding (HR-xxx-“H”) as shown on Schedule “A” of this By-law;
3. THAT the subject land as shown on Schedule “A” to this By-law shall be subject to the following site-specific provisions for the Hamlet Residential (HR-xxx-“H”) Zone:

Zone Standard	Hamlet Residential (HR-xxx)
Minimum Lot Area (ha)	0.2
Min. Lot Frontage (m)	20
Minimum Front Yard (m)	3
Minimum Interior Side Yard (m)	2
Minimum Required Exterior Side Yard (m)	3
Minimum Rear Yard (m)	6
Maximum Permitted Lot Coverage	40

Maximum Permitted Building Height (m)	11
Minimum Required Landscaped Open Space	15
Permitted Uses	Dwelling - single-detached, an Additional Residential Unit, a Home business, and a Park (public)

4. THAT the subject land as shown on Schedule “A” to this By-law shall be subject to a **HOLDING PROVISION**, as set out below:

i) A Holding (H) Provision is hereby established and identified on Schedule ‘A’ attached hereto, by the letter “H” in parentheses following a zoning symbol established in this By-law.

ii) Where a zoning symbol is followed by the letter “H” in parentheses, the provisions of the By-law applicable to the zone symbol shall only apply upon the removal of the letter “H” by an Amendment By-law as approved by Council in accordance with the provisions of Section 36 of the Planning Act.

iii) Until the removal of the letter “H”:

a) No land, building or structure shall be used for any purpose other than that for which it was lawfully used prior to the passing of this By-law with the exception of a use by a public authority or existing agricultural use once the specific items listed in section iv) (a) has been satisfied;

iv) The (H) Holding Provision shall only be lifted for all other uses when the Township of Puslinch is satisfied that the following items have been addressed:

a) A subdivision agreement(s) (or condominium agreement(s)) between the Owner and the Township of Puslinch has been executed in accordance with the terms of the subdivision agreement(s) (or condominium agreement(s)) to satisfy all requirements, including financial, servicing, environmental and other requirements to the satisfaction of the Township.

5. In all other respects, the provisions of Zoning By-law 023/18, as amended shall apply.

6. Upon approval of the site-specific Official Plan Amendment by the County of Wellington, this by-law shall take effect from date of passing thereof, providing no appeal has been filed. Where appeals to the by-law are received in accordance with provisions of the Planning Act, the by-law shall come into effect upon approval of the Ontario Land Tribunal.

**READ A FIRST, SECOND A THIRD TIME AND FINALLY PASSED THIS __ DAY OF
_____, 2026**

James Seeley, Mayor

Justine Brotherston, Clerk

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER _____

SCHEDULE “A”

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH ZONING BY-LAW
SCHEDULE 'A'



**THE CORPORATION OF THE TOWNSHIP OF
PUSLINCH EXPLANATION OF BY-LAW NO.-____2026**

By-law Number _ - 2026 amends the Township of Puslinch Zoning By-law 23/18 by rezoning a portion of Lots 7, 8, and 9, Concession 10, within the Township of Puslinch, from a site specific AGRICUTLURAL (A) ZONE to the HAMLET RESIDENTIAL (HR) ZONE to permit the future development of a residential subdivision.

A HOLDING (H) ZONE provision has been attached to the zone to ensure that Township requirements, financial and otherwise, have been satisfied. The Holding – H zone provisions will be set out as following:

Prior to the removal of the holding symbol, draft plan approval for a plan of subdivision on the Subject Lands shall be required to be granted, together with the entering of a subdivision agreement with the Township to satisfy all requirements, including financial, servicing, environmental and other requirements to the satisfaction of the Township.

Appendix C – Curriculum Vitae of Report Authors

ROBERT P. STOVEL, M.Sc., RPP, MCIP, P.Ag.

EDUCATION

M.Sc, Rural Planning, University School of Rural Planning and Development, University of Guelph, 1988.

B.A. Geography, Wilfrid Laurier University, 1986.

MEMBERSHIPS

Member of the Ontario Professional Planners Institute.

Member of the Canadian Institute of Planners.

Member of the Ontario Institute of Agrologists.

POSITIONS HELD

1995 - Present: Stovel and Associates Inc., Fergus, Ontario - President.

1993 - 1995: Ecological Services Group, Guelph, Ontario - Senior Project Manager.

1988 - 1992: Ecological Services For Planning Ltd., Guelph, Ontario - Planner.

EXPERIENCE

Extensive project experience on public sector and private sector developments. Planning assignments include site plan preparation, official plan amendments, zoning by-law amendments, consent applications, plan of subdivision and plan of condominium applications and peer review. These projects have required considerable government and non-government agency liaison, interdisciplinary team coordination and the integration of a variety of disciplines. I have been qualified to provide evidence at both the Ontario Municipal Board and Joint Board.

Hydroelectric and natural gas Environmental Assessment and Planning projects include: Union Gas 12 " Route Selection and Corridor Study (Orillia) and Lennox to Bowmanville 500 Kv Environmental Study and Monitoring Program.

Selected projects in planning projects include the following: selected plan review for the Town of Halton Hills planning department, testimony at the OMB related to the Hoddinott Plan of Condominium development, environmental planning evaluation in support of proposed residential severance in Ballinafad, planning opinion report for the Van Ryn application, and environmental and agricultural planning justification reports relating to estate residential development applications in the Town of Milton and the Town of Halton Hills.

Public sector projects include the following: planning/resources management review for the Town of Halton Hills (residential development), County of Grey (agricultural) and the Township of North Dumfries (aggregate); input to provincial highway expansion in the County of Peterborough (MTO Class EA of Highway 7) and the County of Essex (MTO Class EA of Highway 3); municipal landfill site searches and site expansions in the County of Victoria, County of Peterborough, County of Essex, and Regional Municipality of Haldimand-Norfolk; municipal road widening project in the Region of York (Weston Road); municipal bridge project in the Township of Mono (County of Dufferin); YDSS expansion project in the Town of Markham and Town of Pickering; and municipal water and sewage works EA in the City of Stratford.

- Coordinated private sector pit and quarry licence applications include: Flamboro Quarries Licence Expansion, Cox Construction's Puslinch Pit Expansion, Ospringe Pit Expansion, Lockhart Pit Expansion (Woolwich Township), and Shoemaker Pit (TMGL - Pilkington Township), Dufferin Construction - Wayside Borrow Pit (Hamilton Airport), Greenwood Construction (East Garafraxa Pit Expansion), MTO Highway 8 Bridge and Road Development in the City of Kitchener (MTO/Seegmiller), MTO 406 Aggregate Permit Project (Niagara).
 - Prepared Planning Impact Assessment for the proposed Audrey Meadows development (48 lots).
 - Prepared Planning Impact Assessment reports for Redi-Mix plant, and three mineral aggregate operations in the Chatsworth Township.
 - Prepared Planning Justification Report for the Trafalgar Road Sports Complex.
 - Prepared Planning Impact Studies for: Inverhaugh Pit, Puslinch Pit and Roszell Pit applications.
 - Prepared planning report for the Eisen Stone Yard project in the former Township of Nichol.
 - Prepared consent applications in both rural and urban settings in the County of Wellington.
 - Prepared Planning reports for the justification of golf course expansion and limited residential lot development adjacent to recreational uses in the County of Wellington.
 - Provided rural planning and agricultural examination of near urban area development in the Glen Williams and Glen Lamond area.
 - Examined the potential for agricultural conflicts for the proposed urban boundary adjustments in the urban areas of Fergus and Elora.
- Provided opinion evidence at Joint Board hearing on behalf of Town of Milton (Central Milton Holdings Limited).
- Completed Environmental Impact Study for proposed Audrey Meadows Estate Residential Subdivision in the Township of Puslinch.
- Completed Level 1 and/or Level 2 Natural Environment Reports for the following pit licence applications: Bosomworth Pit (Pilkington), Whitelaw Pit (Pilkington), Darrington Pit (Pilkington), Hale Farm (Minto), I-ON-X Acres Pit (Southwest Oxford), Schwartz Pit Expansion (Sullivan), Greenwood Pit (East Garafraxa), Palen Pit Expansion (Hibbert), Kraemer Pit (Huron East), Martin Pit (Huron East), and the Hartung Pit (North Perth).
- Completed the required seminar on the Ontario Wetland Evaluation System (3rd Edition), and the Wetland Environmental Impact Study, Technical Manual.
- Designed and implemented wetland monitoring programs for aggregate developments and estate residential developments.
- Completed wetland surveys in the following wetland complexes: Orangeville Reservoir, Hayesland-Christie, Dalrymple Lake, Star Wetland, Eramosa River Blue-Springs Creek, Philips Lake, Mossington Park, Cranberry/Oil Well bog, Humber River Marshes, Speed River, Beaverton River, Mill Creek, and Irish Creek.
- Completed forestry evaluations for woodlands in Puslinch Township, Centre Wellington, City of Hamilton, Woolwich Township, Southwest Oxford, Peel Region and Region of York.

CURRICULUM VITAE

Robert L. Stovel, B.Sc.

PROFESSIONAL PROFILE

Robert L. Stovel is a Planner with Stovel and Associates Inc. with professional experience in statutory land use planning, aggregate resource management, and agricultural land use planning across Ontario. His work involves the application and interpretation of provincial and municipal planning policy, including the Planning Act, Provincial Planning Statement, and the Aggregate Resources Act, in support of public and private-sector development applications.

Mr. Stovel works under the supervision of Registered Professional Planners and is progressively assuming increased responsibility in the preparation and coordination of planning materials, agency consultation, and policy analysis. He regularly liaises with municipal planning staff, conservation authorities, and provincial agencies, and contributes to interdisciplinary consultant teams addressing land use compatibility, agricultural protection, and resource management.

PROFESSIONAL EXPERIENCE

Planner

Stovel and Associates Inc., Fergus, Ontario, 2021 – Present

Mr. Stovel has worked on a range of public-sector and private-sector planning assignments involving aggregate resource development, agricultural land use planning, and rural development.

His responsibilities include:

- Preparation of Planning Justification Reports in support of Official Plan Amendments, Zoning By-Law Amendments, consents, and subdivision applications.
- Interpretation and analysis of provincial and municipal planning policy under the supervision of senior planners.
- Coordination with municipal planning staff, conservation authorities, and Provincial agencies.
- Participation in interdisciplinary consultant teams involving engineering, environmental, and agricultural specialists.

PLANNING COMPETENCIES & PROFESSIONAL EXPERIENCE

Preparation and evaluation of Planning Justification Reports for Official Plan Amendments, Zoning By-Law Amendments, consents, and plans of subdivision Application and interpretation of the Provincial Planning Statement and municipal Official Plans. Planning support for Aggregate Resources Act licence applications,

including land use compatibility and rehabilitation planning. Agricultural land use planning within Prime Agricultural Areas, including Agricultural Impact Assessments (AIAs) and Minimum Distance Separation (MDS I) analysis. Coordination with municipal staff, conservation authorities, and provincial agencies in support of planning approvals. Contribution to interdisciplinary planning teams addressing environmental, agricultural, and engineering considerations.

SELECTED AGGREGATE RESOURCE PROJECT EXPERIENCE

- Lockhart Pit Expansion (D & J Lockhart Excavators Ltd.), Township of Woolwich (Planning approvals and Aggregate Resources Act Licence Application), 2021-Present.
- Lichty Pit (James Thome Construction Ltd.), Township of Centre Wellington (Planning approvals and Aggregate Resources Act Licence Application), 2021-Present.
- Innes Line Pit (SAMI), Township of South-West Oxford (Planning approvals and Aggregate Resources Act Licence Application), 2021-Present.
- Leslie Expansion Pit (Leslie Sand and Gravel Inc.), Township of Guelph-Eramosa (Planning Approvals and Aggregate Resources Act Licence Application), 2024-Present.
- Township of Puslinch, Peer Review of Application, CBM Lanci Pit Expansion and Aberfoyle South Pit Expansion, 2023-Present.
- Town of Caledon, Peer Review of Agricultural Impact Assessment, CBM Caledon Quarry, 2024-Present.
- Town of Caledon, Assistance in preparing Site Plan Section, Caledon Aggregate Standards Manual, 2025-Present.
- Township of Melancthon, Peer Review of AIA and Site Plans, Strada Aggregates Inc., Strada Pit & Quarry, 2025-Present.
- Preparation of annual Compliance Assessment Reports (CARs) for active gravel pits across Ontario.
- Preparation and Peer Review of site plan amendments and partial surrender amendments for municipal and private-sector pit operations.

SELECTED MUNICIPAL & AGRICULTURAL PLANNING EXPERIENCE

- Preparation of Agricultural Impact Assessments (AIAs) for development proposals within Prime Agricultural Areas.
- Peer review of AIAs and Minimum Distance Separation (MDS I) calculations under senior planner supervision.
- Preparation of agricultural rehabilitation plans for disturbed and post-extraction landscapes.
- Background policy research for the County of Middlesex addressing minimum farm parcel size in the Prime Agricultural Area.
- Planning support for rural consents, severances, and subdivision applications in the County of Wellington.

EDUCATION

Bachelor of Science (B.Sc.)
Providence College, 2020

PROFESSIONAL OBJECTIVE

Actively working toward eligibility for the Registered Professional Planner (RPP) designation through progressive professional experience under the supervision of Registered Professional Planners.

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER _____-2026

Being a by-law to amend By-law 023/18, as amended being the Zoning By-law for the Township of Puslinch

WHEREAS, the Council of the Corporation of the Township of Puslinch deem it appropriate and in the public interest to amend By-law Number 023-18 pursuant to Section 34 of the Planning Act, R.S.O. 1990 as amended;

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF PUSLINCH HEREBY ENACT AS THE FOLLOWS:

1. THAT Table 2.1 a. Residential is hereby amended by adding the following to the first column: "Hamlet Residential", to the second column the short form: "HR" and to the third column the following description, which pursuant to section 2.1 b of Bylaw No. 023-18 as amended, does not form part of the Zoning By-law.
2. THAT Schedule "A" of the By-law 023/18 is hereby amended by rezoning a portion of Part of Lots 7, 8, and 9, Concession 10, within the Township of Puslinch from Agriculture (A) Zone to Hamlet Residential Zone – Holding (HR-xxx-"H") as shown on Schedule "A" of this By-law;
3. THAT the subject land as shown on Schedule "A" to this By-law shall be subject to the following site-specific provisions for the Hamlet Residential (HR-xxx-"H") Zone:

Zone Standard	Hamlet Residential (HR-xxx)
Minimum Lot Area (ha)	0.2
Min. Lot Frontage (m)	20
Minimum Front Yard (m)	3
Minimum Interior Side Yard (m)	2
Minimum Required Exterior Side Yard (m)	3
Minimum Rear Yard (m)	6
Maximum Permitted Lot Coverage	40

Maximum Permitted Building Height (m)	11
Minimum Required Landscaped Open Space	15
Permitted Uses	Dwelling - single-detached, an Additional Residential Unit, a Home business, and a Park (public)

4. THAT the subject land as shown on Schedule "A" to this By-law shall be subject to a **HOLDING PROVISION**, as set out below:

i) A Holding (H) Provision is hereby established and identified on Schedule 'A' attached hereto, by the letter "H" in parentheses following a zoning symbol established in this By-law.

ii) Where a zoning symbol is followed by the letter "H" in parentheses, the provisions of the By-law applicable to the zone symbol shall only apply upon the removal of the letter "H" by an Amendment By-law as approved by Council in accordance with the provisions of Section 36 of the Planning Act.

iii) Until the removal of the letter "H":

a) No land, building or structure shall be used for any purpose other than that for which it was lawfully used prior to the passing of this By-law with the exception of a use by a public authority or existing agricultural use once the specific items listed in section iv) (a) has been satisfied;

iv) The (H) Holding Provision shall only be lifted for all other uses when the Township of Puslinch is satisfied that the following items have been addressed:

a) A subdivision agreement(s) (or condominium agreement(s)) between the Owner and the Township of Puslinch has been executed in accordance with the terms of the subdivision agreement(s) (or condominium agreement(s)) to satisfy all requirements, including financial, servicing, environmental and other requirements to the satisfaction of the Township.

5. In all other respects, the provisions of Zoning By-law 023/18, as amended shall apply.

6. Upon approval of the site-specific Official Plan Amendment by the County of Wellington, this by-law shall take effect from date of passing thereof, providing no appeal has been filed. Where appeals to the by-law are received in accordance with provisions of the Planning Act, the by-law shall come into effect upon approval of the Ontario Land Tribunal.

**READ A FIRST, SECOND A THIRD TIME AND FINALLY PASSED THIS __ DAY OF
_____, 2026**

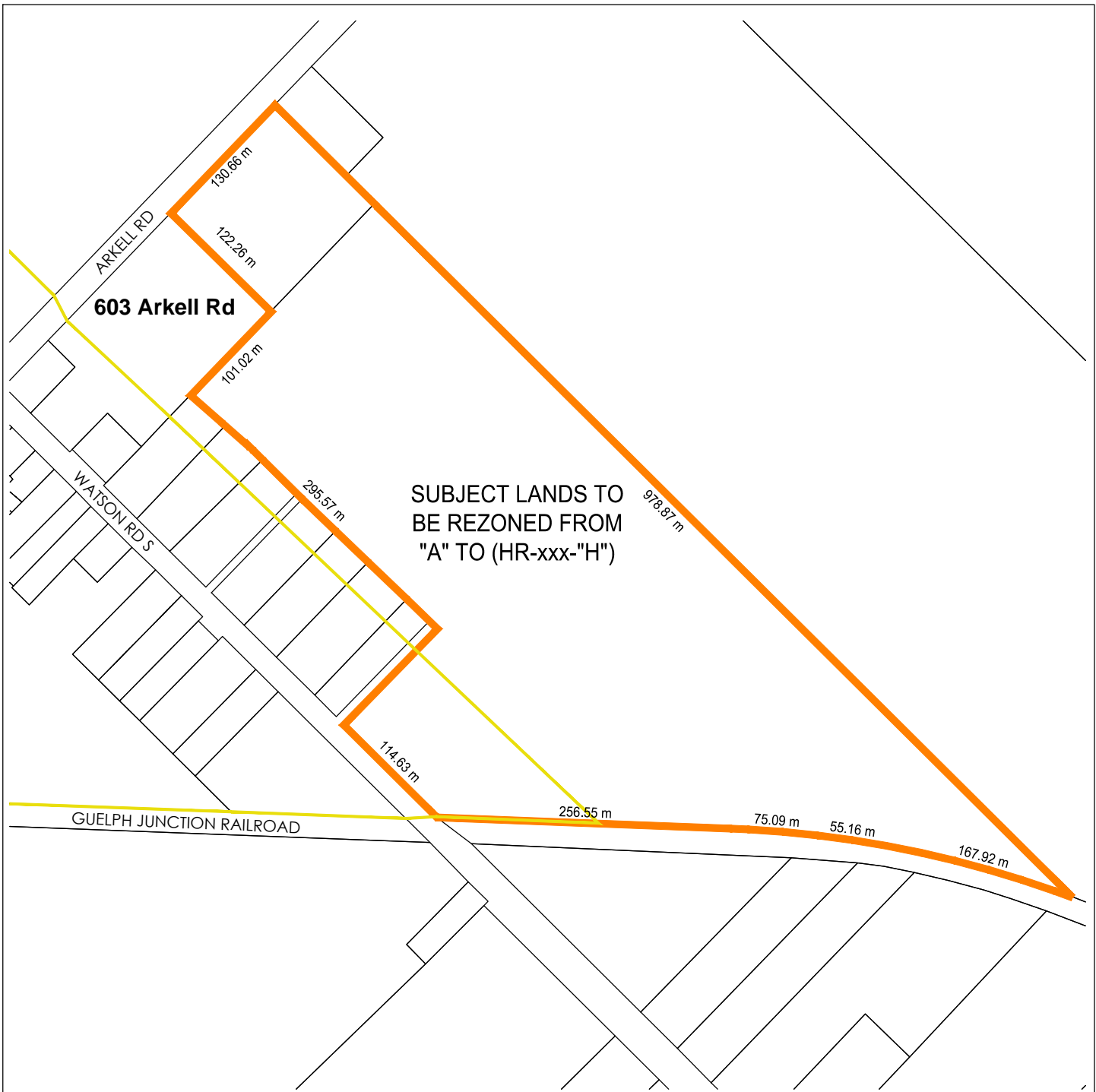
James Seeley, Mayor

Justine Brotherston, Clerk

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER _____

SCHEDULE "A"



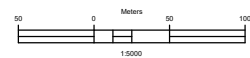
SITE SKETCH

LEGEND

- SUBJECT LANDS TO BE ZONED TO (HR-xxx-"H")
- HAMLET OF ARKELL LIMITS
- PARCEL FABRIC

Part of Lots 7, 8 & 9 Concession 10
Township of Puslinch,
Wellington County
Arkele, Ontario

Date: June 3, 2026



Client: Timberworx Custom Homes Inc., Sloat
Construction Ltd., and John Sloat Investments Ltd.

Stovel and Associates Inc.
651 Orangeville Road,
Fergus ON
N1M 1T9
P: 519-766-8042
E: stovel.associates@outlook.com



**THE CORPORATION OF THE TOWNSHIP OF
PUSLINCH EXPLANATION OF BY-LAW NO.-____2026**

By-law Number _ - 2026 amends the Township of Puslinch Zoning By-law 23/18 by rezoning a portion of Lots 7, 8, and 9, Concession 10, within the Township of Puslinch, from a site specific AGRICUTLURAL (A) ZONE to the HAMLET RESIDENTIAL (HR) ZONE to permit the future development of a residential subdivision.

A HOLDING (H) ZONE provision has been attached to the zone to ensure that Township requirements, financial and otherwise, have been satisfied. The Holding – H zone provisions will be set out as following:

Prior to the removal of the holding symbol, draft plan approval for a plan of subdivision on the Subject Lands shall be required to be granted, together with the entering of a subdivision agreement with the Township to satisfy all requirements, including financial, servicing, environmental and other requirements to the satisfaction of the Township.

June 1, 2026

Attn: Rob Stovel
Timberworx Custom Homes Inc.
#201 – 1 Queen Street North,
Kitchener, ON N2H 2G7

Via Email: stovel.associates@outlook.com

RE : Responses to Peer Review Comments for Arkell Subdivision, South of Arkell Road and East of Watson Road South, Puslinch, ON
HGC Project #: 02600117

Dear Rob,

As requested, please see HGC Noise Vibration Acoustics responses to the Peer Review comments from Valcoustics Canada Ltd. dated April 21, 2025. The comments are presented below, and our responses follow in *italics*.

- a. The study recommends the future dwelling on Lot 1 be at least 45 m from the railway right-of-way to reduce vibration levels. Even at this setback distance, the vibration levels are above the CNR/GJR limit. In addition, the proposed building envelope shown on the Onsite Sewage Servicing Schematic has the setback at less than 45 m. Vibration mitigation to meet the limit is needed.

We recommend an increased setback of 55 m from the railway right of way, to the future dwelling on Lot 1. Figure has been updated to reflect this change and shows the recommended building envelope location, and is attached.

The "conceptual 240 m² building envelope" indicated on the "Onsite Sewage Servicing Schematic" drawing (attached) is preliminary. These are conceptual building envelopes and are not exact. The dwellings are not selected yet and therefore there is an opportunity to reduce the building envelope and dwelling setback to required distances.

- b. The noise study indicates there are existing stationary sources (i.e., small engine repair shop, bicycle store and pet boarding service) in the area. These need to be identified on a Key Plan to confirm there are existing noise sensitive uses that are closer to these than the proposed residential development as stated in the noise report.

Figure 1, the Key Plan, has been updated.

- c. Road traffic information was obtained from the Town of Puslinch and the County of Wellington. The assumptions regarding the traffic information, such as no truck traffic on Watson Road South and the 2035 volumes, should be confirmed by Crozier who authored the Traffic Impact Study on behalf of the developer.

The Traffic Impact Study for the subject site, prepared by Crozier and dated February 2026, has been obtained and reviewed. The traffic study indicates that there is a 2.0% commercial vehicle traffic on both Arkell Road and Watson Road South. The analysis has been updated to include 1.0% medium trucks, and 1.0% heavy trucks for Watson Road South.

The previously adopted commercial vehicle percentage of 1.2% medium truck and 2.5% heavy truck for Arkell Road, based on information previously obtained from the County of Wellington, has been retained as a conservative assumption. Results are presented in the updated report.

The overall recommendations do not change.

- d. The future sound levels at Prediction Location D presented in Table 4 assumes the dwelling is located to the north of the OLA which maximizes the distance from Arkell Road. However, the Onsite Sewage Servicing Schematic shows the dwelling at the southern portion of the lot with the OLA to the north and fully exposed to Arkell Road. An updated assessment for this location is needed.

The "conceptual 240 m² building envelope" indicated on the "Onsite Sewage Servicing Schematic" drawing (attached) is preliminary. These are conceptual building envelopes and are not exact. The dwellings are not selected yet and the building envelope may change.

Figure 2 has been updated to reflect the more conservative location of the OLA adjacent to the roadway. If the OLA is 15 m from the centerline of the roadway, the predicted sound level will be 60 dBA.

As per NPC-300., the OLA should be assessed 3 m from the building façade. In this scenario, the predicted sound level will be less than 55 dBA and physical mitigation is not required.

- e. To calculate the exterior façade sound isolation requirements, the report states that a window to floor ratio of 50% was used. How was a corner room where there could be windows on two façades accounted for? What wall to floor ratio was used?

The note under Table 4 indicates a 100% wall to floor area ratio. The exterior wall of the dwelling at location [A] is required to be brick which will reduce the window requirements compared to a non-brick facade.

Predictions at Lot 1 have been recalculated to include two façades of exposure (prediction location [A]). Window-to-floor area ratios are assumed to be 50% (30% fixed and 20% operable). Minimum STC requirements are shown in Table 4.



Regardless, once detailed floor plans are available, the glazing requirements should be refined and the exterior wall construction verified to be brick.

- f. The noise mitigation summary provided as Table 7 should include the locations where brick veneer or equivalent masonry construction is required for the exterior walls. Review of the recommended locations shown on the first Figure 4 indicate that in addition to the southeast façade, the southwest façade should also be brick veneer or equivalent masonry construction.

The table is reprinted here with the extra column. Figure 3 is attached.

Table 7: Summary of Noise Control Requirements and Noise Warning Clauses

Prediction Location	Lot Numbers	Acoustic Barrier	Ventilation Requirement	Type of Warning Clause	Façades with Brick Veneer or Equivalent Masonry Construction Required	Required Minimum STC for Glazing
[A]	Lot 1	✓	A/C	B, D, GJR	Southwest and Southeast	STC-39
[B]	Lots 2 and 3	--	Provision for A/C	A, C, GJR	Lot 2: Southwest and Southeast Lot 3: Southeast	STC-32
[C]	Lot 4	--	Provision for A/C	A, C, GJR	Southeast	OBC
[D]	Lot 22	--	Provision for A/C	A, C	--	OBC
[E]	Lots 5 to 21, and Lots 23 to 44	--	--	A	Lot 5: Southeast Lot 6: Southeast Lot 44: Southwest	OBC

- g. The minimum window STC for Location A (Lot 1) in Table 7 is indicated as being 37. However, Table 4 recommends 35 for the same location. Clarification is needed.

The table is reproduced here with the change. Again, please note that these STC ratings are likely to be changed after a review of the detailed floor plans and building elevations.

Table 4: Preliminary Glazing Requirements

Prediction Location	Description	^{1,2,3} Minimum STC Requirements for Glazing
[A]	Lot 1 – Southernmost dwelling with exposure to the railway	*STC-39]
[B]	Lot 2 – Southern dwelling with exposure to the railway	STC-32
	Remaining dwellings	OBC

Note:

¹ Assumed window to floor area ratios of 50% for living/dining rooms and bedrooms; and assumed 100% wall to floor area ratio.

² STC requirement refers to fixed glazing. Small leaks through operable doors and windows are assumed, however, tight weather seals should be provided to reduce such leakage to the extent feasible.

³ When detailed floor plans and building elevations are available, the drawings should be reviewed to confirm exterior façade constructions and refine window glazing requirements based on actual window to floor area ratio.

* Sound entering through windows and brick veneer or a masonry equivalent construction facades
OBC – Ontario Building Code

Due to the preliminary feasibility nature of the noise report, it is recommended that once the grading information including actual building envelopes are available, the acoustic requirements should be refined along with a review of the detailed floor plans and building elevations to refine the glazing constructions based on actual window to floor area ratios and verify the exterior wall to be brick for the required dwellings.

All other recommendations included in our previous report remain applicable. We trust the above is sufficient for your current purposes. If we can be of further assistance, please let us know.

**Best Regards,
Howe Gastmeier Chapnik Limited**


Elise Jaklic, B.Eng


Sheeba Paul, M.Eng

Limitations

This document was prepared solely for the addressed party and titled project or named part thereof and should not be relied upon or used for any other project without obtaining prior written authorization from HGC Noise Vibration Acoustics (HGC). Further, the input of content from any document produced by HGC or related HGC intellectual property into any Artificial Intelligence tool is expressly prohibited. HGC accepts no responsibility or liability for any consequence of this document being used for a purpose other than for which it was commissioned. Any person or party using or relying on the document for such other purpose agrees and will by such use or reliance be taken to confirm their agreement to indemnify HGC for all loss or damage resulting therefrom. HGC accepts no responsibility or liability for this document to any person or party other than the party by whom it was commissioned.

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NOISE



VIBRATION



ACOUSTICS



Figure 1: Key Plan

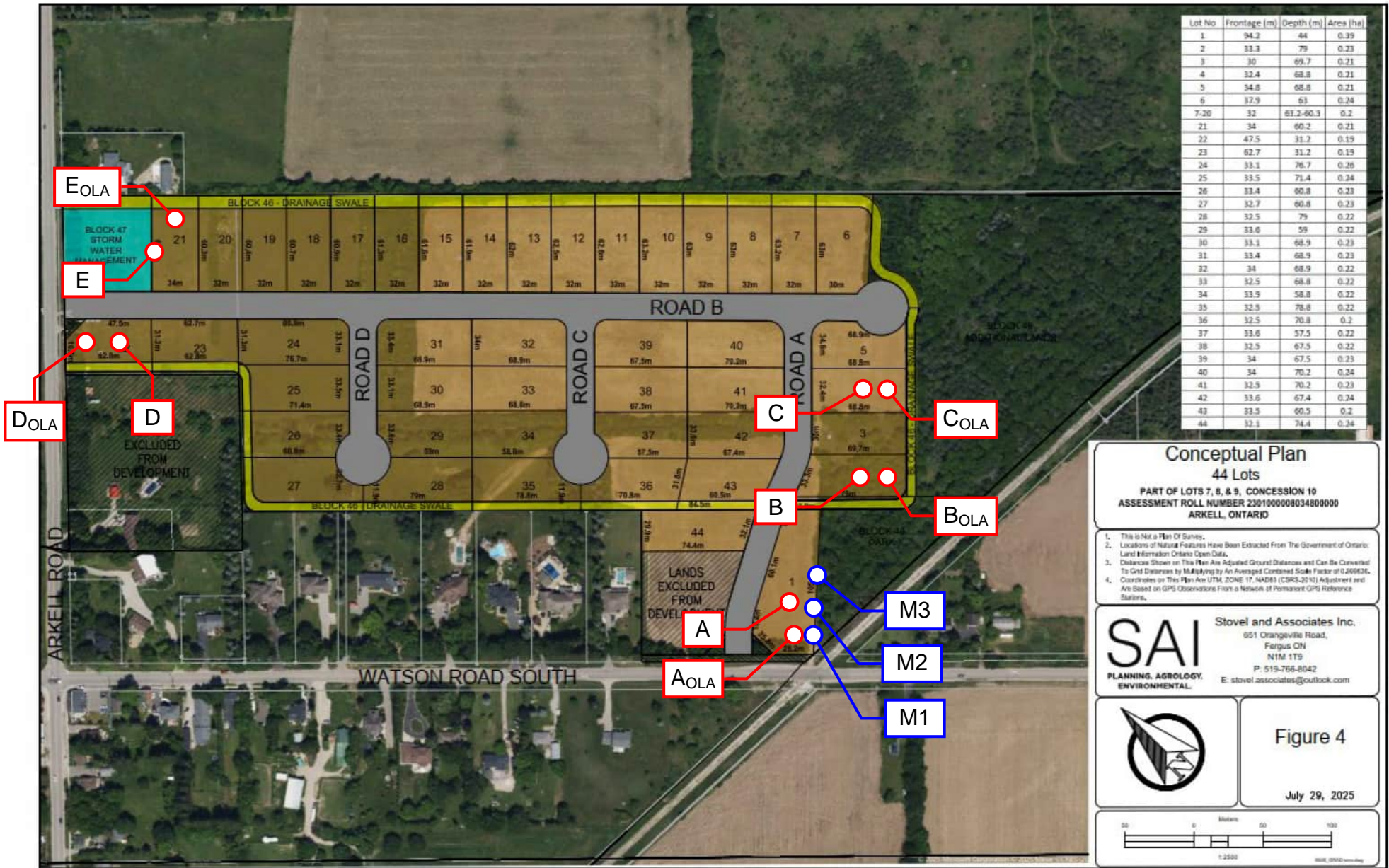


Figure 2: Proposed Concept Plan Showing Prediction Locations

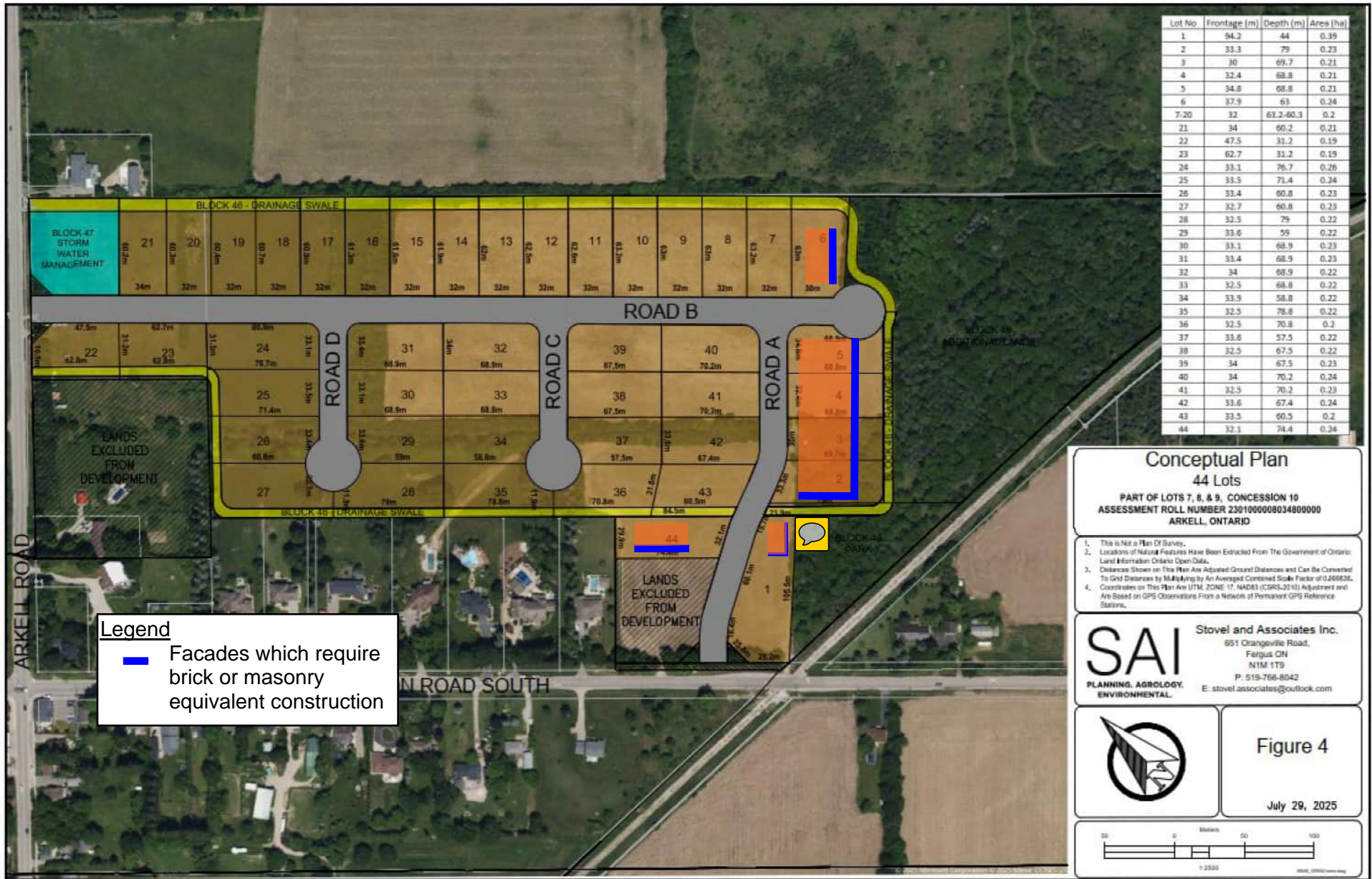
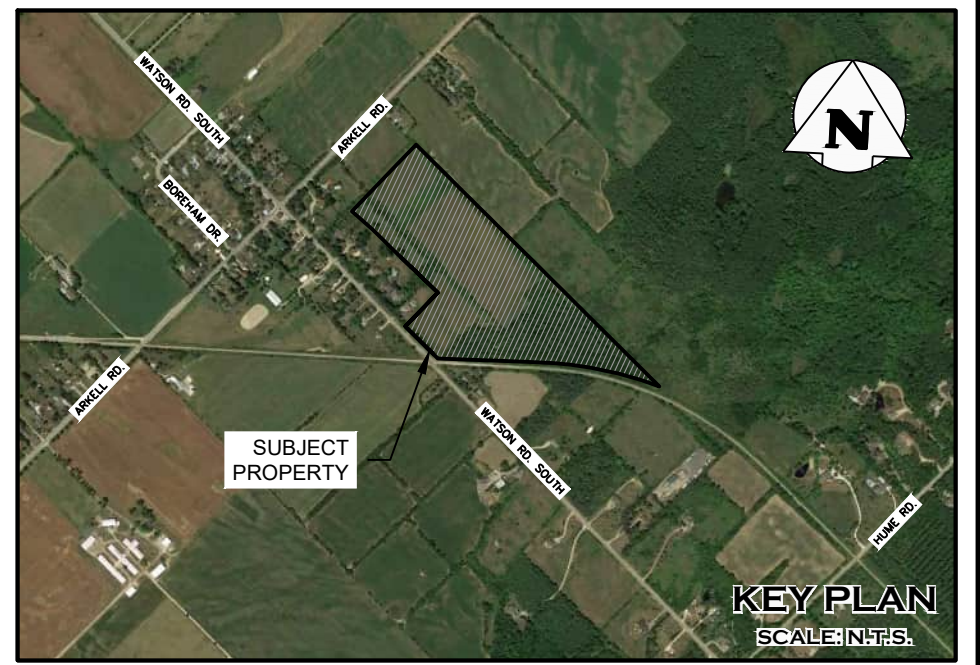
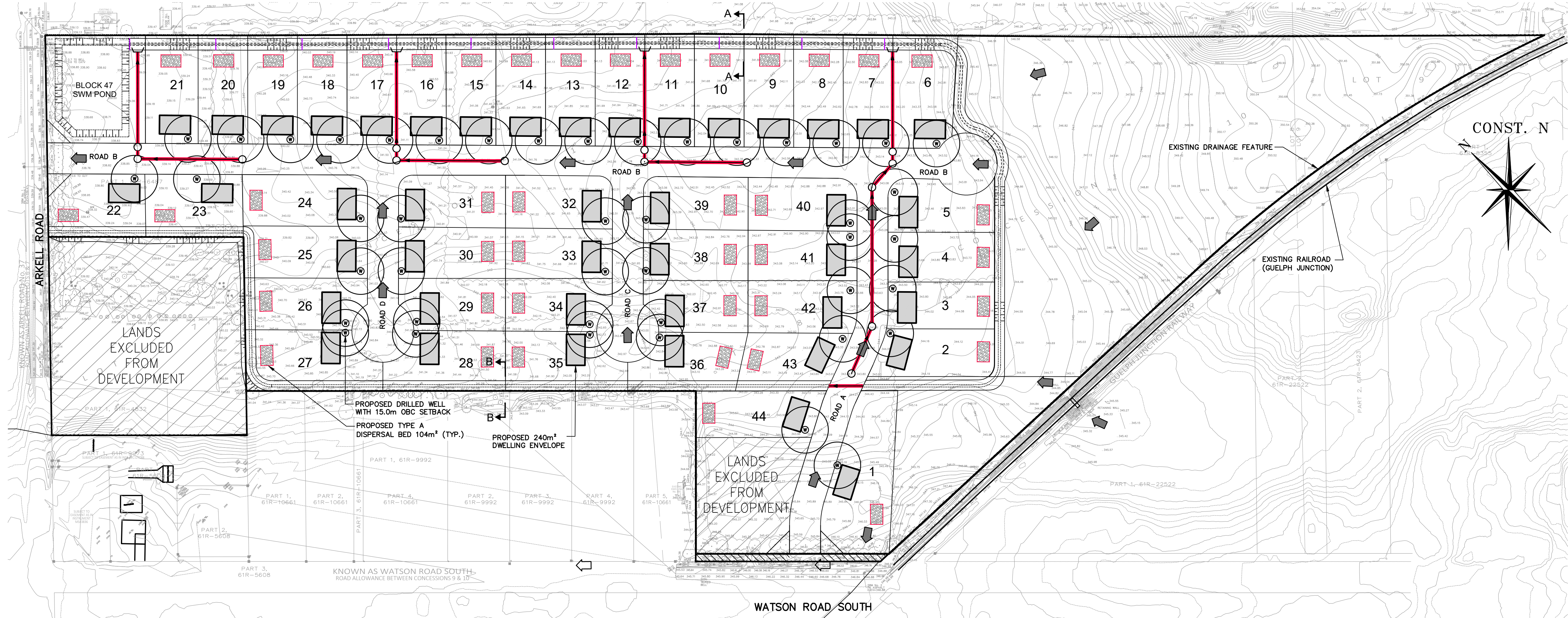
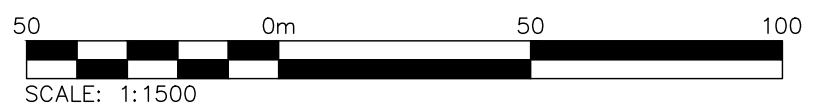


Figure 3: Proposed Concept Plan Showing Ventilation and Acoustic Barrier Requirements



LEGEND

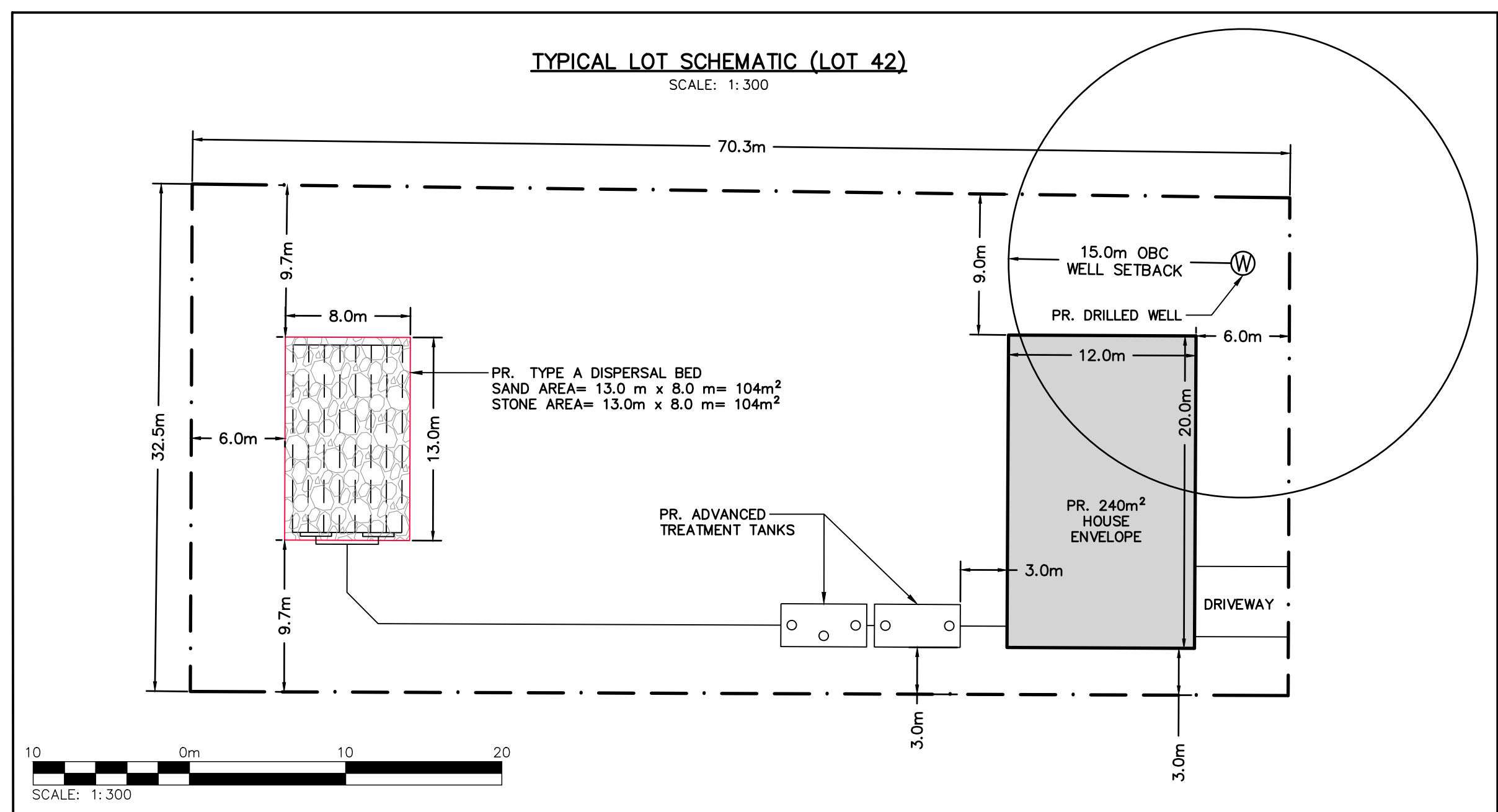
- PROPERTY LINE
- EXISTING CONTOUR (0.5m)
- EXISTING CONTOUR (1.0m)
- LOT NUMBER
- EXISTING GRADE
- PROPOSED GRADE
- PROPOSED GRADE (TO MATCH EXISTING)
- PROPOSED SLOPE (3:1 MAX.)
- PROPOSED LOT-LINE
- CONCEPTUAL 240 m² BUILDING ENVELOPE
- PROPOSED TYPE A DISPERSAL BED 104 m²
- CONCEPTUAL PROPOSED DRILLED WELL LOCATION C/W 15.0m OBC SETBACK



1	ISSUED FOR 2nd DRAFT PLAN SUBMISSION	2025/AUG/01
0	ISSUED FOR PRE-CONSULTATION	2023/AUG/31
No.	ISSUE / REVISION	YYYY/MM/DD

ONSITE SEWAGE SYSTEM DESIGN TYPICAL LOT NOTES

PROPOSED 6 BEDROOM, 240 m ² HOME WITH SIXTY-TWO (62) FIXTURE UNITS	BASE FLOW (6 BEDROOMS)= 2,500 L/DAY ADDITIONAL FLOOR AREA (40 m ²)= 400 L/DAY ADDITIONAL FIXTURE UNITS (42)= 2,075 L/DAY Q TOTAL (2,500+2,075)= 4,575 L/DAY
SOIL PERCOLATION RATE	T = 15 min/cm (ESTIMATED BY C.F. CROZIER)
PROPOSED TREATMENT UNIT	WATERLOO BIOFILTER AD-BA50
TYPE A DISPERSAL BED STONE AREA	MINIMUM SIZE=Q/50=4,575/50 = 91.5m ² PROVIDED 13m x 8m = 104m ²
TYPE A DISPERSAL BED SAND AREA	MINIMUM SIZE=QT/850 = 4,575*15/850 = 80.7m ² PROVIDED 13m x 8m = 104m ²



SITE PLAN NOTES:
DESIGN ELEMENTS ARE BASED ON DRAFT SITE PLAN BY STOVEL AND ASSOCIATES INC. PROJECT No. XXX DRAWING No. XXX DATE RECEIVED 2025/JUL/29

DRAWING NOTES:
THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE REPRODUCTION OF ANY PART OF IT WITHOUT PRIOR WRITTEN CONSENT OF THIS OFFICE IS STRICTLY PROHIBITED.
THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT. DO NOT SCALE THIS DRAWING. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Project
**WATSON ROAD SOUTH
TOWN OF PUSLINCH**

Drawing
ONSITE SEWAGE SERVICING SCHEMATIC

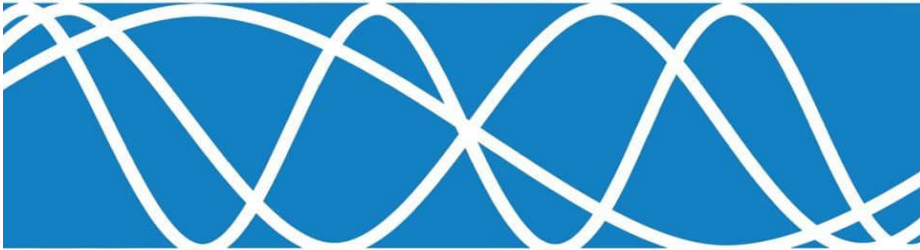
CROZIER CONSULTING ENGINEERS

Project No. **2433-6646**
Scale: 1:1500
Dwg. **C102**

Noise and Vibration Feasibility Study

Proposed Residential Development, Arkell Subdivision, South of Arkell Road and East of Watson Road South, Puslinch, Ontario

June 1, 2026
HGC Project #: 02600117



Prepared for:

Timberworx Custom Homes Inc.
and Sloat Construction Ltd.
#201-1 Queen Street North
Kitchener, Ontario
N2H 2G7

Version Control
Noise and Vibration Feasibility Study, Proposed Residential Development, Arkell
Subdivision, Puslinch, Ontario

Ver.	Date	Version Description	Prepared By
1.0	April 7, 2026	Noise and Vibration Study in support of the approvals process.	E. Jaklic / S. Paul
2.0	June 1, 2026	Update to Noise and Vibration Study in support of the approvals process.	E. Jaklic / S. Paul

Prepared by:

Reviewed by:

Elise Jaklic, BEng

Sheeba Paul, MEng, P.

Howe Gastmeier Chapnik Limited

Limitations

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Figure 1 – Key Plan

Figure 2 – Proposed Concept Plan Showing Prediction Locations

Figure 3 – Proposed Concept Plan Showing Brick Exterior Façade Construction Requirements

Figure 4 – Proposed Concept Plan Showing Ventilation and Barrier Requirements

APPENDIX A – GJR Spur Line Requirements

APPENDIX B – Road Traffic Data

APPENDIX C – Rail Traffic Data

APPENDIX D – Sample STAMSON 5.04 Output

APPENDIX E – Detailed Plots of Measured Vibration Levels and Peak Acceleration Spectra

APPENDIX F – Supporting Drawings

APPENDIX G – Peer Review dated April 21, 2026 and HGC's Responses



1 INTRODUCTION AND SUMMARY

HGC Noise Vibration Acoustics was retained by Timberworx Custom Homes Inc. and Sloop Construction Ltd. to conduct a noise and vibration feasibility study for a proposed residential development to be located south of Arkell Road and East of Watson Road South, in Puslinch, Ontario. The development concept includes 44 low-density dwellings. The study is required as part of the planning and approvals process by the municipality and the railway.

This report has been updated to respond to peer review comments, made by Valcoustics Canada, dated April 21, 2026, and are attached in Appendix G along with HGC's responses.

The primary source of noise in the area is rail traffic on the Guelph Junction Railway (GJR) to the south. Road traffic on Watson Road South and Arkell Road, located to the west and north, respectively, are secondary sources of noise. Rail traffic data for the GJR railway was obtained from GJR railway personnel. Road traffic data for Watson Road South was obtained from the Town of Puslinch, and the road traffic data for Arkell Road was obtained by County of Wellington. The data was used to predict future traffic sound levels at various locations at the development. The predicted sound levels were compared to the guidelines of the Ministry of the Environment, Conservation and Parks (MECP) and the railway.

The sound level predictions indicate that with suitable noise control measures integrated into the design of the residential buildings, it is feasible to achieve the MECP guideline sound levels for transportation noise. Central air conditioning systems and upgraded window glazing assemblies are required for the future dwelling on the lot closest to the railway line. The provision for the future installation of air conditioning at the occupant's discretion is required for dwellings with exposure to roadway/railway. Physical mitigation in the form of acoustic barrier is required for the southern dwelling closest to the railway line. The first row of dwellings nearest the railway requires a brick veneer or masonry equivalent construction for the façade facing the railway line. When



final lotting and grading plans are available for the proposed development, window glazing requirements and acoustic barrier heights should be refined.

Ground-borne vibration levels from rail pass-bys were measured on grade at the site at the closest lot to the railway line and were found to exceed CN/GJR limits for some of the train pass-bys. A few measurements were completed at 15 m, 30 m and 45 m from the railway right of way. It is recommended that the future dwelling on Lot 1 have a minimum distance of 55 m from the railway right-of-way and further mitigation is not recommended. When architectural drawings are available, they should be reviewed to confirm the exterior wall construction and actual building envelope of the residential units which form the basis for this report. In any event, warning clauses are required in the property and tenancy agreements of the dwelling units to inform the future owners and tenants of the noise excesses and proximity to the railway line.

2 SITE DESCRIPTION AND NOISE SOURCES

Figure 1 is a key plan showing the location of the proposed development. The development is south of Arkell Road and east of Watson Road South in Puslinch, Ontario. Figure 2 is a proposed concept plan dated January 2026. The proposed development consists of 44 lots of low-density dwellings and associated at-grade roadways.

Site visits were made by HGC personnel in March 2026, to make observations of the acoustical environment and to perform ground-borne vibration measurements. During the site visit, it was observed that the rail pass-bys are the primary noise source and road traffic on Watson Road South and Arkell Road are secondary sources of noise.

Lands to the east and northwest are existing residential lands. To the north, south and west of the subject site, are agricultural lands. There are a few small commercial facilities to the west of the subject site including a small engine repair shop, a bicycle store, and a pet boarding service identified on Figure 1. No sounds were audible at these facilities during the time of the site visit.



Additionally, there are residential uses closer to these facilities than the subject site, thus, there are no significant sources of stationary noise within 500 m of the subject site.

3 TRAFFIC NOISE ASSESSMENT

3.1 Road and Rail Traffic Noise Criteria

Guidelines for acceptable levels of road and rail traffic noise impacting residential developments are given in the MECP publication NPC-300, "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning", Part C release date October 21, 2013 and are listed in Table 1 below. The values in Table 1 are energy equivalent (average) sound levels [L_{EQ}] in units of A weighted decibels [dBA]. The Federation of Canadian Municipalities (FCM) and Railway Association of Canada (RAC) "Guidelines for New Development in Proximity to Railway Operations", dated May 2013 (RAC/FCM guidelines were also reviewed and considered in both the rail traffic and Stationary Noise assessments.

Table 1: Road Traffic Noise Criteria

Space	Daytime $L_{EQ}(16 \text{ hour})$ Road / Rail	Nighttime $L_{EQ}(8 \text{ hour})$ Road / Rail
Outdoor Living Areas	55 dBA	--
Inside Living/Dining Rooms	45 / 40 dBA	45 / 40 dBA
Inside Bedrooms	45 / 40 dBA	40 / 35 dBA

Daytime refers to the period between 07:00 and 23:00, while nighttime refers to the period between 23:00 and 07:00. The term "Outdoor Living Area" (OLA) is used in reference to an outdoor patio, a backyard, a terrace or other area where passive recreation is expected to occur. Balconies that are less than 4 m in depth are not considered to be outdoor living areas under MECP guidelines.

The guidelines in the MECP publication allow the sound level in an OLA to be exceeded by up to 5 dBA, without mitigation, if warning clauses are placed in the purchase and rental agreements to the property. Where OLA sound levels

exceed 60 dBA, physical mitigation is required to reduce the OLA sound level to below 60 dBA and as close to 55 dBA as technically, economically and administratively feasible. Note that not all OLA's necessarily require protection, if there are other protected outdoor areas accessible to future residents.

Indoor guidelines are 5 dBA more stringent for rail noise than for road noise, to account for the low frequency (rumbling) character of locomotive sound, and its greater potential to transmit through exterior wall/window assemblies.

A central air conditioning system as an alternative means of ventilation to open windows is required for dwellings where nighttime sound levels at the façade exceed 60 dBA or daytime sound levels at the façade exceed 65 dBA. Forced air ventilation with ducts sized to accommodate the future installation of air conditioning by the occupant is required when nighttime sound levels at the façade are in the range of 51 to 60 dBA or when daytime sound levels at the façade are in the range of 56 to 65 dBA.

Building components such as walls, windows and doors must be designed to achieve the indoor sound level criteria when the nighttime sound level at the façade is greater than 60 dBA or the daytime sound level is greater than 65 dBA due to road traffic noise; and when the nighttime sound level at the façade is greater than 55 dBA or the daytime sound level at the façade is greater than 60 dBA due to rail traffic noise.

MECP guidelines recommend brick veneer or a masonry equivalent construction from foundation to rafters as a minimum construction for any dwellings which are within 100 m of the right of way of the railway, where the 24-hour L_{EQ} is greater than 60 dBA. GJR/CN typically requires brick veneer or a masonry equivalent construction for the first row of dwellings regardless of setback and sound level.

The railways also provide minimum requirements for safety as well as sound and vibration for proposed residential developments located adjacent to their rights-of-way. These refer to minimum required setbacks, berms, fencing and warning clauses. The reader is referred to a copy of GJR/CN requirements for a new development adjacent to a spur line, which is provided in Appendix A.

Warning clauses are required to notify future residents of possible excesses when nighttime sound levels exceed 50 dBA at the plane of the bedroom window and daytime sound levels exceed 55 dBA in the outdoor living area and at the façade due to road and rail traffic.

3.2 Traffic Noise Assessment

3.2.1 Road Traffic Data

Road traffic volume data for Watson Road South was obtained from the Town of Puslinch in the form of Annual Average Daily Traffic (AADT) volumes for the year 2025 and is included in Appendix B. A traffic study, prepared by Crozier Consulting Engineers and dated February 2026, was reviewed to obtain the commercial vehicle percentages on Watson Road South, and is included in Appendix B. A speed limit of 50 km/h was applied for the roadway along with a day/night traffic volume split of 90/10.

Road traffic data for Arkell Road was provided by the County of Wellington in the form of AADT volumes for the year 2025, and is included in Appendix B. A commercial vehicle percentage of 3.7% further split into 1.2% for medium trucks and 2.5% for heavy truck was calculated from the data and used for the analysis. A speed limit of 80 km/h was applied for the roadway along with a day/night traffic volume split of 90/10.

Traffic volumes were conservatively assumed to grow at a rate of 2.5% per year for ten years (to 2036). Table 2 summarises the road traffic volume data used in this study.

Table 2: Projected Road Traffic Data to 2036

Roadway	AADT	Day / Night Split [%]	Trucks Percentage (%)		Speed Limit [km/h]
			Medium	Heavy	
Arkell Road	5 933	90 / 10	1.2	2.5	80
Watson Road South	2 755	90 / 10	1.0	1.0	50

3.2.2 Rail Traffic Data

Updated rail traffic volumes for the GJR rail line located to the south was provided by Les Petroczi from the City of Guelph and are provided in Appendix C.

The GJR railway line is used for freight and way freight operations and is classified as a spur line. The maximum train speed of 40 kph (25 mph) for freight and way freight trains was used in the analysis. In conformance with GJR assessment requirements, these maximum speeds, number of cars and maximum locomotives per train were used in the traffic noise analysis to yield a worst-case estimate of train noise. The data was projected to the year 2036 using a 2.5% per year growth rate as per the guidelines. Table 3 summarises the rail traffic data used in the assessment.

Table 3: Rail Traffic Data Projected to 2036

Rail Line	Train Type	Number of Trains Day/Night	Number of Locomotives	Number of Cars	Maximum Speed [km/h]
GJR	Freight	5.2 / 2.6	2	24	40

3.2.3 Road and Rail Traffic Noise Predictions

To assess the levels of road and rail traffic noise which will impact the site in the future, predictions were made using STAMSON version 5.04, a computer algorithm developed by the MECP. Sample STAMSON output is included in Appendix D.

Since building envelopes were not provided on the concept site plan, a 6 m front yard setback was used in the analysis. Sound levels were predicted at a height of 4.5 m for 2nd storey windows, assuming each lot has 2-storey dwellings. Prediction locations were chosen around the residential site, as shown in Figure 2, to obtain a good representation of the future sound levels at various dwellings. The results of these predictions are summarized in Table 4. The

acoustic requirements may be subject to modifications if the site plan is changed significantly.

Table 4: Future Traffic Sound Levels, [dBA], Without Mitigation

Prediction Location	Description	Daytime in OLA	Daytime at Façade	Nighttime at Façade
		LEQ(16 hour) Road/Rail/Total	LEQ(16 hour) Road/Rail/Total	LEQ(8 hour) Road/Rail/Total
[A]	Southernmost dwelling with exposure to Watson Road South and the Railway	<55 / 64 / 64	<55 / 63 / 63	<50 / 63 / 63
[B]	Southern dwelling with exposure to the railway	<55 / 59 / 59	<55 / 58 / 58	<50 / 58 / 58
[C]	Fourth row dwelling with exposure to the railway	<55 / 55 / 55	<55 / 55 / 55	<50 / 55 / 55
[D]	Dwellings adjacent to Arkell Road	57 / <55 / 57	57 / <55 / 57	51 / <50 / 51
[E]	Second row of dwellings closest to Arkell Road	<55 / <55 / <55	<55 / <55 / <55	<50 / <50 / <50

3.3 Traffic Noise Recommendations

The predictions indicate that the future road and rail traffic sound levels will exceed MECP guidelines in the proposed development. Recommendations to address these excesses are discussed below.

3.3.1 Building Façade Constructions

Future sound levels in the proposed development will exceed 55 dBA at night and 60 dBA during the daytime due to rail traffic noise. MECP guidelines recommend that the windows, walls and doors be designed so that the indoor sound levels comply with MECP noise criteria.

Calculations were performed to determine the building envelope requirements to maintain indoor sound levels within MECP guidelines. The calculation methods were developed by the National Research Council (NRC). They are based on the predicted future sound levels at the building facades, the anticipated area ratios

of the facade components (walls, windows and doors) to the floor area of the adjacent room.

Exterior Wall Constructions

CN/GJR guidelines recommend brick exterior walls from foundation to rafters as a minimum construction for any dwellings that are in the first row of dwellings with exposure to their rail lines. This applies to the southeast and/or southwest façades of the dwellings located closest to the railway line to the south portion of the proposed development as indicated in Figure 3. Additionally, the by-law includes a holding provision that all residential buildings with exposure to the railway be provided with brick or masonry equivalent construction. A precast wall construction can be considered a masonry equivalent construction. This applies to the southeast and southwest façades of the residential buildings at the southern end of the development.

Acoustical Requirements for Glazing for Traffic Noise Sources

Since future sound levels at some façades of the proposed dwellings are predicted to exceed criteria, sound attenuating building constructions (windows and walls) need to be specified.

Detailed floor plans and building elevations for the proposed dwellings were not yet available. Window to floor area ratios of 50% (30% fixed, 20% operable) for living/dining rooms and bedrooms were assumed. The minimum STC results are shown in Table 4 below assuming sound entering through windows and walls.



Table 4: Preliminary Glazing Requirements

Prediction Location	Description	^{1,2,3} Minimum STC Requirements for Glazing
[A]	Lot 1 – Southernmost dwelling with exposure to the railway	*STC-39
[B]	Lot 2 – Southern dwelling with exposure to the railway	STC-32
	Remaining dwellings	OBC

Note:

¹ Assumed window to floor area ratios of 50% for living/dining rooms and bedrooms; and assumed 100% wall to floor area ratio.

² STC requirement refers to fixed glazing. Small leaks through operable doors and windows are assumed, however, tight weather seals should be provided to reduce such leakage to the extent feasible.

³ When detailed floor plans and building elevations are available, the drawings should be reviewed to confirm exterior façade constructions and refine window glazing requirements based on actual window to floor area ratio.

* Sound entering through windows and brick veneer or a masonry equivalent construction facades
 OBC – Ontario Building Code

Note that these ratings are a minimum for the entire assembly and test data should be provided to verify. If more glazing is incorporated, higher STC requirements may apply.

Once detailed floor plans and building elevations are finalized for Lots 1 – 6, 44, acoustical requirements for the building façades could be optimized as part of the detailed design of the dwellings.

Further Work

When final setbacks and building elevations are available for the proposed development, the glazing requirements should be refined and exterior wall constructions verified. If window to floor area ratios exceed those used above, the window glazing requirements may be higher.

3.3.2 Indoor Living Areas

Air Conditioning

The predicted daytime and nighttime sound levels outside the façades of the dwelling closest to the railway (prediction location [A]) will be greater than 60 dBA at night and/or greater than 65 dBA during the daytime hours. To address these excesses, the MECP guidelines recommend that this dwelling be

equipped with central air conditioning systems, so that the windows can be closed.

Window or through-the-wall air conditioning units are not recommended for any commercial or residential units because of the noise they produce and because the units penetrate through the exterior wall which degrades the overall noise insulating properties of the envelope. The location, installation and sound ratings of the outdoor air conditioning devices should minimize noise impacts and comply with criteria of MECP publication NPC-216 and NPC-300, as applicable. The guidelines also recommend warning clauses for all units with ventilation requirements.

Provision for Adding Central Air Conditioning

The predicted future sound levels outside the façade of dwellings with exposure to the GJR railway (prediction locations [B] to [D]) will be between 56 and 65 dBA during the daytime hours and/or between 51 and 60 dBA during the nighttime. To address this excess, the MECP guidelines recommend that these dwellings be equipped with the provision for the future installation of air conditioning at the occupant's discretion.

Remaining Dwellings

The predicted future sound levels outside at the facade of the proposed residential dwellings/buildings (prediction location [E]) will be less than 55 dBA during the day and less than 50 dBA during the night. There are no specific ventilation requirements for these proposed dwellings.

Ventilation requirements for the proposed development are shown in Figure 4.



3.3.3 Outdoor Living Areas

The predicted sound levels in the rear yard of the southernmost dwelling unit (Lot 1) with exposure to the railway (prediction location [A]) will be up to 64 dBA, 9 dBA in excess of the MECP limit of 55 dBA. An acoustic barrier is required for the rear yard of this dwelling.

The predicted sound levels in the remaining rear yards of the proposed dwelling units with exposure to the roadways and railway will be up to 59 dBA (prediction locations [B] and [D]), 4 dBA in excess of the MECP limit of 55 dBA. The predicted sound level is within the allowable 5 dBA discretionary range of the MECP’s limit of 55 dBA, provided that a warning clause be included in the property and tenancy agreements.

For the rear yard associated with prediction location [E], the predicted sound level is expected to be 60 dBA if the OLA is 15 m from the centreline of the roadway. If the OLA is located 3 m from the building façade, as is required by NPC-300, the predicted sound level will be less than 55 dBA and physical mitigation is not required.

The barrier heights required to meet 55 to 59 dBA for the rear yards are summarized in Table 5 below and the location of the required barriers are shown in Figure 4. According to MECP guidelines, a minor (4 dB) excess of the criteria may be addressed by including a warning clause in sale and lease agreements for the development.

Table 5: Summary of Barrier Heights Required to Meet Various Desired Sound Levels

Prediction Location	Barrier Height (m) to Achieve Desired Sound Level				
	55 dBA	56 dBA	57 dBA	58 dBA	59 dBA
A _{OLA}	4.5	4.1	3.8	3.3	2.7

When final dwelling setbacks are determined and detailed grading is available, the acoustic barrier heights should be refined.

4 VIBRATION ASSESSMENT

4.1 Criteria for Ground-borne Vibration from Rail Traffic

The Federation of Canadian Municipalities (FCM) and Railway Association of Canada (RAC) "Guidelines for New Development in Proximity to Railway Operations", dated May 2013 require measurements of ground-borne vibration when residential dwelling units are to be located within 75 metres from a railway corridor. The GJR generally follows the standard of CN for noise and vibration.

Vibration is typically measured in terms of oscillatory velocity or acceleration. The limits for acceptable ground-borne vibration are an RMS velocity of 0.14 mm/s (17 dB re 1 mm/s) between frequencies of 4 and 200 Hz.

CN limits for acceptable ground-borne vibration are also presented as a curve of maximum allowable vibratory acceleration levels, in units of decibels relative to the acceleration due to gravity (dB re 1g), versus one-third octave band frequency. The criteria have been overlaid on the graphs of measured vibration for easy reference (Appendix E).

4.2 Rail Vibration Assessment

Vibration measurements were conducted using a Svantek SV977 Sound and Vibration Meter outfitted with a Wilcoxon Research type 793V velocity transducer correctly field calibrated before and after the measurements between March 10, 2026, to March 20, 2026.

Measurements were performed at 15 m (M1) and 30 m (M2) from the railway right-of-way between March 10, 2026, and March 13, 2026, and 45 m (M3) from railway right-of-way between March 16, 2026, and March 20, 2026, representing the location of the possible nearest residential dwelling façades. The measurement locations, M1, M2, and M3, are indicated in Figure 2. The results of the measurements are presented in Appendix E. Table 5 shows the



maximum RMS vibration velocity measurements during each of the train pass-bys.

The results of the measurements are presented in Appendix E which shows the date and time of the vibration measurements, and the maximum RMS velocity in units of mm/s recorded at each location. Several train pass-bys were measured during the measurement periods. Table 6 shows the maximum vibration level measurements during the pass-bys at each vibration location.

Table 6: Maximum RMS Vibration Measurements of Freight Train Pass-bys

Train Pass-by	Measured Vibration Level (mm/s)			Criteria (mm/s)
	M1	M2	M3	
1	0.31	0.19	--	0.14
2	0.36	0.21	--	
3	0.26	0.15	--	
4	0.30	0.16	--	
5	0.41	0.23	--	
6	0.48	0.25	--	
7	--	--	0.15	
8	--	--	0.16	
9	--	--	0.15	
10	--	--	0.17	
11	--	--	0.13	
12	--	--	0.18	

The maximum RMS vibration levels are up to 0.48 mm/s at M1, 0.25 mm/s at M2, and 0.18 mm/s at M3. On average, the maximum RMS vibration levels at M3 were 0.13 mm/s with a median of 0.12 mm/s.

The detailed plots of the RMS velocity over time and the frequency spectrum of RMS acceleration for the six highest intrusions at Location M1, M2, and M3 are presented in Appendix E. The CN RMS velocity criteria and ISO RMS acceleration curves are overlaid on the figures. Examining the graphs show a couple of interesting points. The duration when the vibration exceeds the 0.14 mm/s

criteria is relatively short, ranging between 4 and 15 seconds at M2, and between 1 and 5 seconds at M3. In all cases at M2 and M3, the excesses over the vibration criteria the trains included in the table above occurred at frequencies in the 20 to 31.5 Hz one-third octave bands.

Since the dwelling setbacks have not yet been determined, we recommend that the closest façades be situated at a minimum distance of 55 m from the railway right-of-way.

5 WARNING CLAUSES

The MECP guidelines recommend that warning clauses be included in the property and tenancy agreements for all the dwellings with anticipated traffic noise sound level excesses. The following noise warning clauses are required.

A suggested wording for future dwellings with sound level excesses of the MECP criteria but do not require physical mitigation measures is given below.

Type A:

Purchasers/tenants are advised that sound levels due to increasing road traffic and rail traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment.

A suggested wording for future dwellings for which physical mitigation has been provided is given below.

Type B:

Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road and rail traffic may on occasions interfere with some activities of the dwelling occupants as the sound levels

exceed the sound level limits of the Municipality and the Ministry of the Environment.

Suitable wording for future dwellings requiring the provision for the future installation of air conditioning at the occupant's discretion is given below.

Type C:

This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment.

A suggested wording for future dwellings requiring central air conditioning systems is given below.

Type D:

This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment.

These sample clauses are provided by the MECP as examples and can be modified by the Municipality as required.

The following sample clause is typical of those included in agreements of purchase and sale or lease on the Lands that are within 300 meters of the railway right-of-way.

Type GJR:

Warning: Guelph Junction Railway or its assigns or successors in interest has or have a rights-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the railway facilities on such rights-of-way in the future including the possibility that the railway or its assigns or successors as aforesaid may expand its operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwelling(s). GJR will not be responsible for any complaints or

claims arising from use of such facilities and/or operations on, over or under the aforesaid rights-of-way.

6 SUMMARY AND RECOMMENDATIONS

The following list and Table 7 summarize the recommendations made in this report. The reader is referred to the previous sections of the report where these recommendations are discussed in more detail.

1. For the dwellings with exposure to the railway, upgraded building and glazing constructions are required to ensure adequate indoor sound levels from traffic noise, as outlined in Section 3.3.1.
2. Ventilation requirements in the form of the provision for the future installation of air conditioning at the occupant's discretion are recommended for dwellings in the proposed development. Details are included in Section 3.3.2 and summary table below.
3. Acoustic barrier requirements are required for dwellings with OLAs with exposure to the roadway and/or railway. See section 3.3.3 for detailed requirements
4. Acoustic barrier requirements are required for dwellings with OLAs with exposure to the roadway and/or railway. See section 3.3.3 for detailed requirements
5. Extensive measurements and analysis of ground-borne vibration from train movements illustrate the vibration criteria of GJR will be achieved within occupied residential spaces within the development, when dwellings are greater than 55 m away from the railway right-of-way. When building setbacks are determined, the drawings should be reviewed to confirm the requirements.
6. Warning clauses are required for dwellings in the proposed development with noise and/or vibration excesses and/or within 300 m from the railway line.



Table 7: Summary of Noise Control Requirements and Noise Warning Clauses

Prediction Location	Lot Numbers	Acoustic Barrier	Ventilation Requirement	Type of Warning Clause	Façades with Brick Veneer or Equivalent Masonry Construction Required	Required Minimum STC for Glazing
[A]	Lot 1	✓	A/C	B, D, GJR	Southwest and Southeast	STC-39
[B]	Lots 2 and 3	--	Provision for A/C	A, C, GJR	Lot 2: Southwest and Southeast Lot 3: Southeast	STC-32
[C]	Lot 4	--	Provision for A/C	A, C, GJR	Southeast	OBC
[D]	Lot 22	--	Provision for A/C	A, C	--	OBC
[E]	Lots 5 to 21, and Lots 23 to 44	--	--	A	Lot 5: Southeast Lot 6: Southeast Lot 44: Southwest	OBC

7 IMPLEMENTATION

To ensure that the noise control recommendations outlined above are properly implemented, it is recommended that:

1. When siting, lotting information is available, a detailed noise study should be performed to refine the acoustic requirements for the site specifically for barriers, exterior wall construction and glazing requirements.
2. Prior to an application for a building permit, a Professional Engineer qualified to provide acoustical engineering services in the Province of Ontario or the Municipality's building inspector shall review the unit plans (floor plans and building elevations) for future dwellings closest to the noise sources and the grading plan, to ensure that the windows and building constructions, and berms/barriers are adequately designed to ensure acceptable indoor and outdoor noise levels.
3. Prior to assumption of the subdivision, the Municipality's building inspector or a Professional Engineer qualified to perform acoustical engineering services in the Province of Ontario should certify that the noise control measures have been properly installed and constructed.



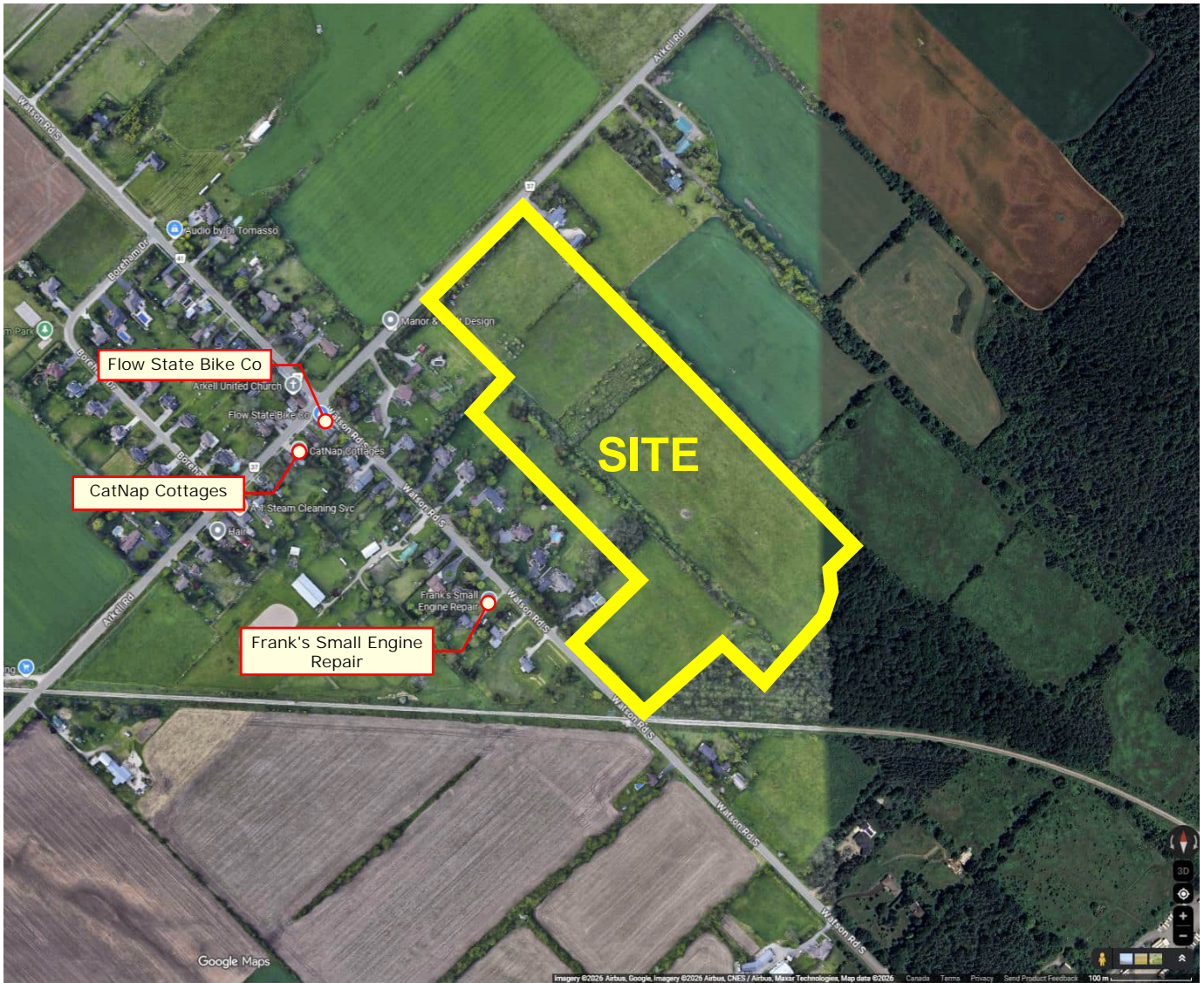


Figure 1: Key Plan

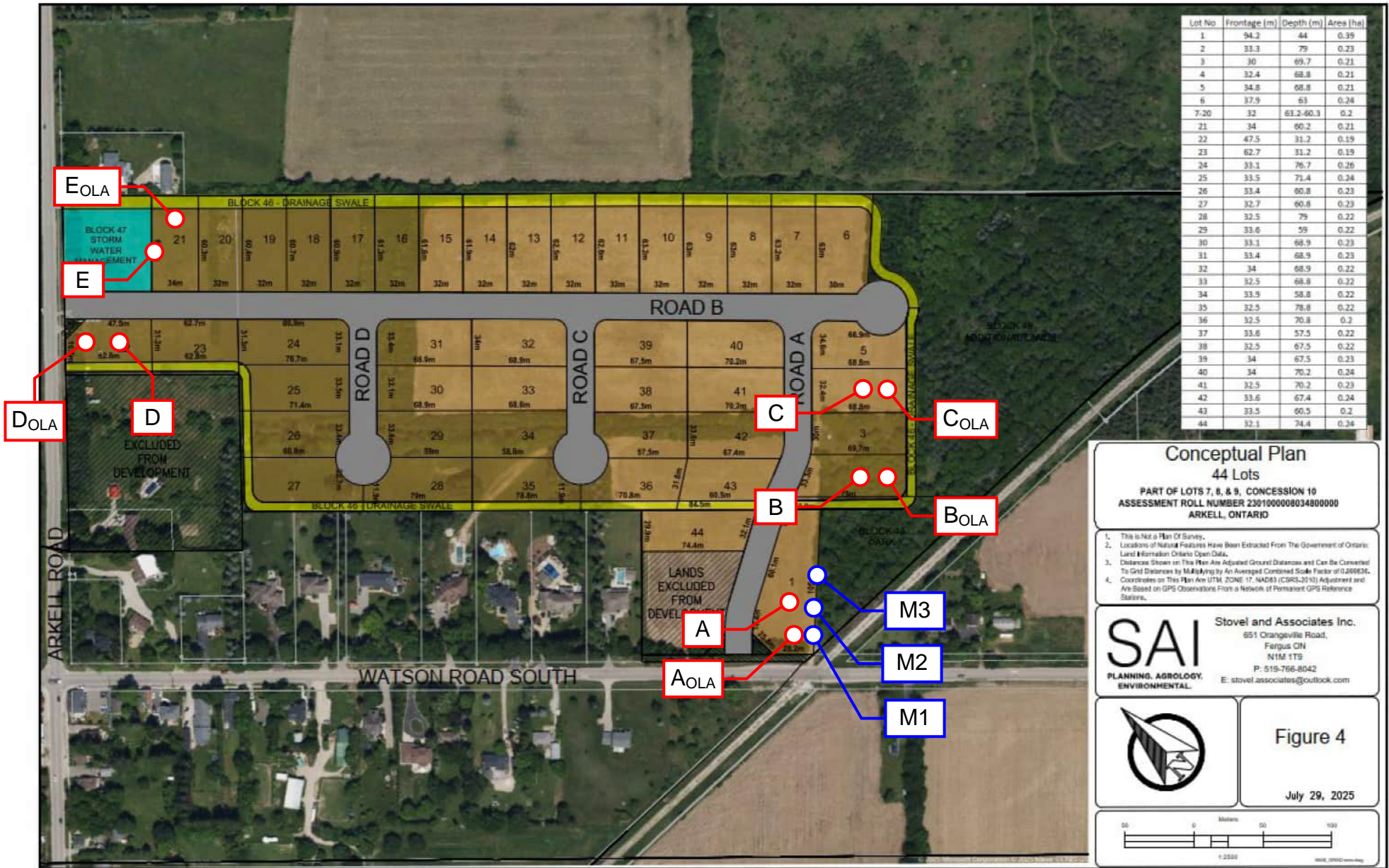


Figure 2: Proposed Concept Plan Showing Prediction Locations

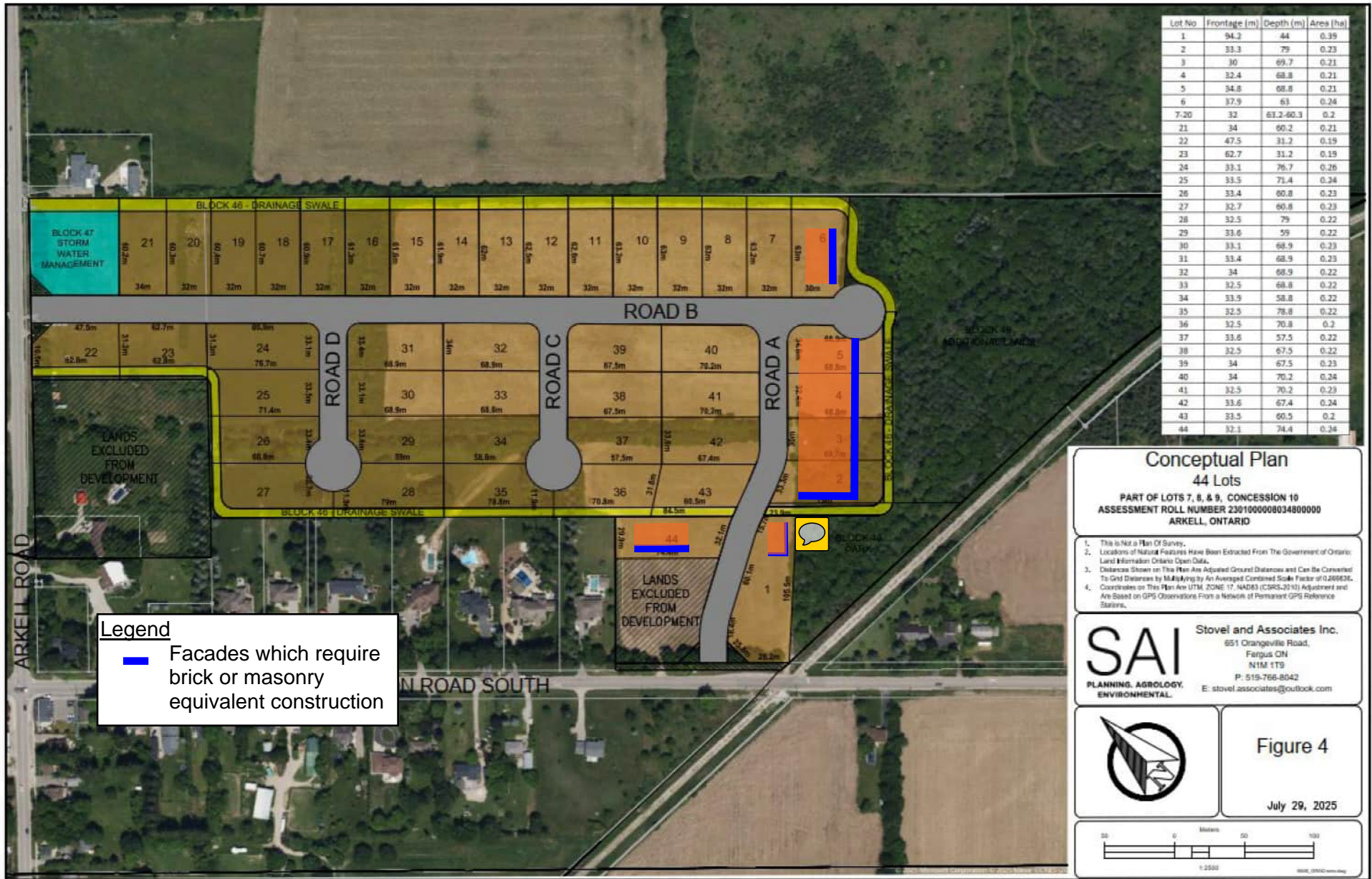


Figure 3: Proposed Concept Plan Showing Ventilation and Acoustic Barrier Requirements

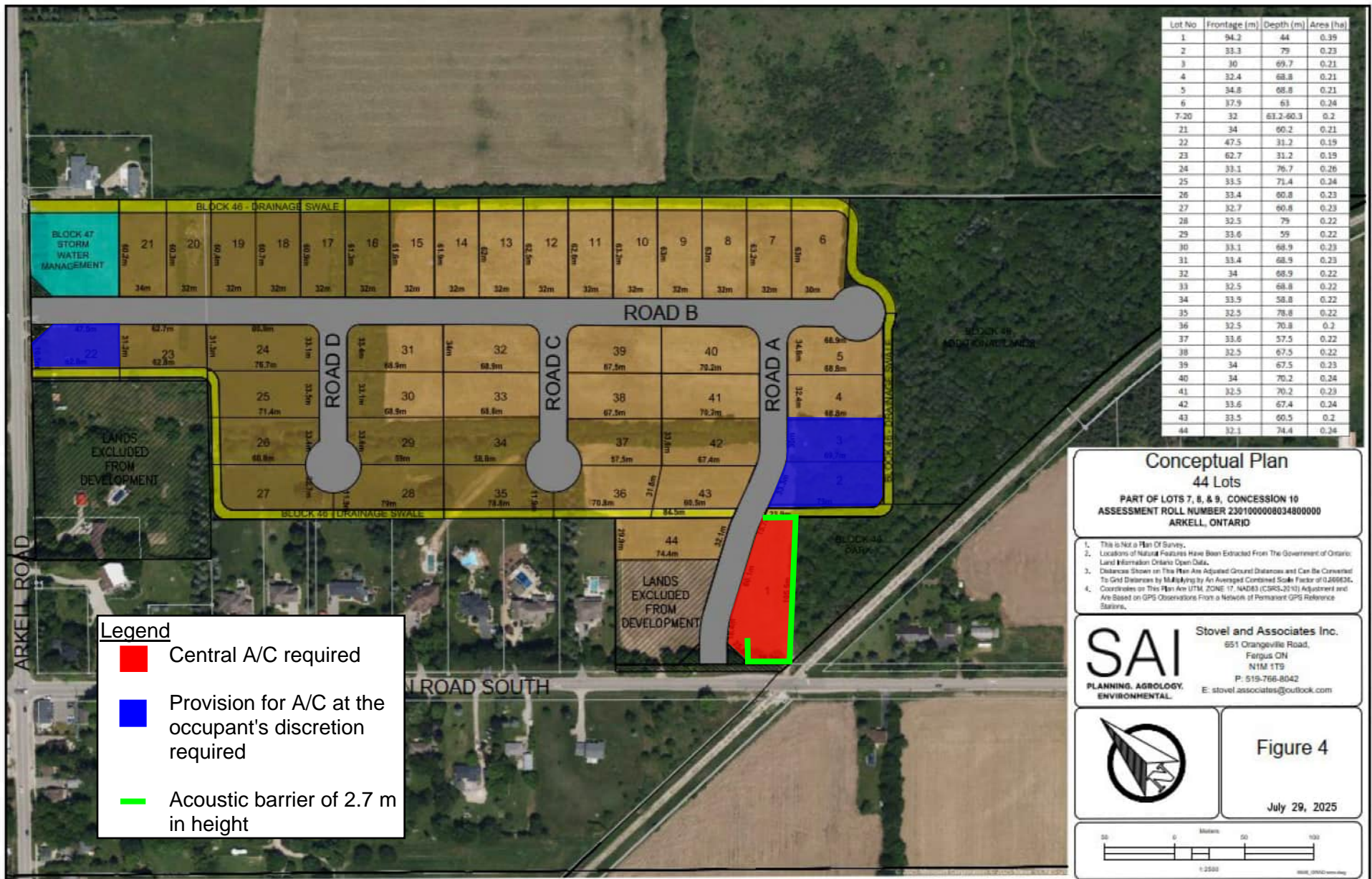


Figure 4: Proposed Concept Plan Showing Ventilation and Acoustic Barrier Requirements

Appendix A

GJR Spur Line Requirements



NOISE



VIBRATION



ACOUSTICS

Canadian National Railway Properties Inc. Propriétés ferroviaires du Canadien National Inc.



277 Front Street West
Floor 8
Toronto, Ontario
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Telephone: (416) 217-6961
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277, rue Front ouest
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Téléphone: (416) 217-6961
Télécopieur: (416) 217-6743

SPUR LINE REQUIREMENTS

- A. Safety setback of dwellings from the railway rights-of-way to be a minimum of 15 metres.
- B. The Owner shall install and maintain a chain link fence of minimum 1.83 metre height along the mutual property line.
- C. The following clause should be inserted in all development agreements, offers to purchase, and agreements of Purchase and Sale or Lease of each dwelling unit within 300m of the railway right-of-way: "Warning: Canadian National Railway Company or its assigns or successors in interest has or have a rights-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the railway facilities on such rights-of-way in the future including the possibility that the railway or its assigns or successors as aforesaid may expand its operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwelling(s). CNR will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid rights-of-way."
- D. Any proposed alterations to the existing drainage pattern affecting railway property must receive prior concurrence from the Railway and be substantiated by a drainage report to the satisfaction of the Railway.

April 1996

Appendix B

Road Traffic Data



NOISE



VIBRATION



ACOUSTICS

RE: Road Traffic Data Request - Arkell Rd and Watson Rd S

From Mike Fowler <mfowler@puslinch.ca>
Date Thu 2026-03-26 1:39 PM
To Elise Jaklic <ejaklic@hgcaoustics.com>

Good afternoon,

Arkell road is under the authority of The County of Wellington, please contact their Engineering department for this information.

Thank you.



Mike Fowler
Director of Public Works, Parks and Facilities
Township of Puslinch
7404 Wellington Rd 34, Puslinch ON N0B 2J0
519-763-1226 ext. 220 Fax 519-736-5846 www.puslinch.ca

My hours may not match your working hours. If you received this email outside of regular business hours, I do not expect an immediate response.

From: Elise Jaklic <ejaklic@hgcaoustics.com>
Sent: March 26, 2026 1:32 PM
To: Mike Fowler <mfowler@puslinch.ca>
Subject: Re: Road Traffic Data Request - Arkell Rd and Watson Rd S

Good afternoon Mike,

I hope you are well. This afternoon, we requested road traffic data (AADT and commercial vehicle percentages) for Arkell Rd and Watson Rd S. I received a response from Monika with data for Watson Rd S, and they advised that data for Arkell Rd was not available.

Could you please confirm whether Arkell Rd data does not exist, or if it is simply unavailable at the moment?

Please let me know! I appreciate your help.

Regards,

Elise

Elise Jaklic, BEng
Project Consultant
HGC NOISE VIBRATION ACOUSTICS
t: 905-826-4044 x271 e: ejaklic@hgcaoustics.com

The content of this email and any attachments prepared by HGC Noise Vibration Acoustics have [limitations](#).

From: Planning <planning@puslinch.ca>
Sent: March 26, 2026 1:20 PM
To: Elise Jaklic <ejaklic@hgcacoustics.com>
Subject: RE: Road Traffic Data Request - Arkell Rd and Watson Rd S

Hello Elise,
I spoke with our Roads Director who advised that the average daily traffic count on Watson Rd S is 2152.
We do not have any commercial vehicle data as this is technically a no truck route.

He was not able to provide me any data for Arkell Rd.
If you need to follow up with him, please email Mike Fowler at mfowler@puslinch.ca

Thank you,



PUSLINCH
TOWNSHIP OF
EST. 1880

Monika Farncombe

Planning and Corporate Services Coordinator

Township of Puslinch

7404 Wellington Rd 34, Puslinch ON N0B 2J0

519-763-1226 ext. 207 Fax 519-736-5846 www.puslinch.ca

My hours may not match your working hours. If you received this email outside of regular business hours, I do not expect an immediate response.

From: Elise Jaklic <ejaklic@hgcacoustics.com>
Sent: March 26, 2026 1:07 PM
To: Planning <planning@puslinch.ca>
Subject: Road Traffic Data Request - Arkell Rd and Watson Rd S

Good afternoon,

We are conducting a noise feasibility study for a site located south of Arkell Road and East of Watson Road South, in Puslinch, ON. A google maps link is provided below for reference:

[Google Maps](#)

We are specifically seeking the Annual Average Daily Traffic (AADT) data (or, alternatively, turning movement counts), along with commercial vehicle percentages for Arkell Road and Watson Rd S in this area.

Could you please direct me to the appropriate contact who can provide the traffic data required for this study?

Thank you,
Elise

Elise Jaklic, BEng
Project Consultant

HGC NOISE VIBRATION ACOUSTICS

2000 Argentia Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7

t: 905-826-4044 x271 e: ejaklic@hgcacoustics.com

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RE: Road Traffic Data Request - Watson Rd S & Arkell Rd

From Kayla Martin <kaylam@wellington.ca>
 Date Thu 2026-03-26 2:02 PM
 To Elise Jaklic <ejaklic@hgcaoustics.com>

Hi Elise,

Apologies for not getting back to you about this sooner. Below is a quick chart of the traffic count data we have. I've also provided a map of where the count stations are located. Let me know if you need anything else!

Counting Station ID	SPRING					SUMMER					FALL				
	Total of Passenger Car	Total Small Truck	Total Truck/Busses	Total Tractor Trailer	Total	Total of Passenger Car	Total Small Truck	Total Truck/Busses	Total Tractor Trailer	Total	Total of Passenger Car	Total Small Truck	Total Truck/Busses	Total Tractor Trailer	Total
3702 (Count year = 2025)	4306	45	18	104	4473	4144	18	8	99	4269	4355	38	18	111	4522
3704 (Count year = 2024)	5566	48	57	217	5888	5221	37	40	187	5485	5439	55	42	226	5762



Kayla Martin
 Engineering Technologist
 County of Wellington
 74 Woolwich Street, Guelph, ON N1H 3T9
 T: 519.837.2600 x 2261 | E: kaylam@wellington.ca

From: Elise Jaklic <ejaklic@hgcaoustics.com>
Sent: Wednesday, March 11, 2026 9:17 AM
To: Kayla Martin <kaylam@wellington.ca>
Subject: Road Traffic Data Request - Watson Rd S & Arkell Rd

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you know the contents to be safe.

Good morning Kayla,

We are preparing a noise study for a site near the intersection of Arkell Road and Watson Road South. A google maps link is provided for reference.

[Google Maps](#)

Could you please provide road traffic information, specifically AADT and commercial vehicle percentages for both roadways?

Let me know, thanks!

Elise

Elise Jaklic, BEng

Project Consultant

HGC NOISE VIBRATION ACOUSTICS

2000 Argentia Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7

t: 905-826-4044 x271 e: ejaklic@hgcacoustics.com

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Appendix C

Rail Traffic Data



NOISE



VIBRATION



ACOUSTICS

Re: Rail Traffic Request - Watson and Arkell

From Elise Jaklic <ejaklic@hgcacoustics.com>

Date Thu 2026-03-12 3:15 PM

To Les Petroczi <Les.Petroczi@guelph.ca>

Hi Les,

Thank you for providing this!

Have a great weekend 😊

Elise

Elise Jaklic, BEng

Project Consultant

HGC NOISE VIBRATION ACOUSTICS

t: 905-826-4044 x271 e: ejaklic@hgcacoustics.com

The content of this email and any attachments prepared by HGC Noise Vibration Acoustics have [limitations](#).

From: Les Petroczi <Les.Petroczi@guelph.ca>

Sent: March 12, 2026 3:04 PM

To: Elise Jaklic <ejaklic@hgcacoustics.com>

Subject: Re: Rail Traffic Request - Watson and Arkell

Please see below

Les Petroczi

General Manager

Guelph Junction Railway

City of Guelph

519-822-1260 extension 2825

Mobile 519-766-7121

les.petroczi@guelph.ca

From: Elise Jaklic <ejaklic@hgcacoustics.com>

Sent: Thursday, March 12, 2026 2:40 PM

To: Les Petroczi <Les.Petroczi@guelph.ca>

Subject: Re: Rail Traffic Request - Watson and Arkell

[EXTERNAL EMAIL] This email originates outside the City of Guelph. Do not click links or attachments unless you recognize the sender and know the content is safe.

Hi Les,

Thank you for getting back, we are looking for the following information:

- Number of trains per day/night
- 4 day 2 night
- Max number of train cars
- max 24
- Max number of locomotives
- two each train
- Speed
- 15-25MPH
- Welded rail (yes or no)
- no rail is bolted
- Electric or diesel
- diesel powering generators for traction units
- Whistle on/off
- whistle on

Thank you!

Elise

Elise Jaklic, BEng

Project Consultant

HGC NOISE VIBRATION ACOUSTICS

t: 905-826-4044 x271 e: ejaklic@hgcacoustics.com

The content of this email and any attachments prepared by HGC Noise Vibration Acoustics have [limitations](#).

From: Les Petroczi <Les.Petroczi@guelph.ca>

Sent: March 12, 2026 2:26 PM

To: Elise Jaklic <ejaklic@hgcacoustics.com>

Subject: RE: Rail Traffic Request - Watson and Arkell

Hi Elise

You will not be permitted to utilize the Alice/Morris data.

New tests will need to be completed.

Are you looking for vehicle traffic data or the amount of trains, train times car volumes with train speeds.

Thank you

Les Petroczi

General Manager

Guelph Junction Railway

City of Guelph

519-822-1260 extension 2825

Mobile 519-766-7121

les.petroczi@guelph.ca

From: Elise Jaklic <ejaklic@hgcacoustics.com>
Sent: Tuesday, March 10, 2026 5:06 PM
To: Les Petroczi <Les.Petroczi@guelph.ca>
Subject: Rail Traffic Request - Watson and Arkell

[EXTERNAL EMAIL] This email originates outside the City of Guelph. Do not click links or attachments unless you recognize the sender and know the content is safe.

Good afternoon,

We are preparing a noise feasibility study for a development located near the intersection of Watson Road South and Arkell Road in Puslinch, Ontario. A google link is included below for your reference:

[Google Maps](#)

We currently having the attached data for a site located to the west (Alice Street and Morris Street, Guelph, ON). Can you please confirm if the data is valid at this location? If not, can you please provide updated traffic data?

Thank you!

Best,
Elise

Elise Jaklic, BEng
Project Consultant

HGC NOISE VIBRATION ACOUSTICS

2000 Argentia Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7

t: 905-826-4044 x271 e: ejaklic@hgcacoustics.com

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Appendix D

Sample STAMSON 5.04 Output



NOISE



VIBRATION



ACOUSTICS

Filename: a.te Time Period: Day/Night 16/8 hours
 Description: Prediction Location A

Rail data, segment # 1: GJR (day/night)

Train Type	! Trains ! (Left)	! Trains ! (Right)	! Speed ! (km/h)	!# loc !/Train	!# Cars !/Train	! Eng ! type	!Cont !weld
* 1. Freight	! 2.6/1.3	! 2.6/1.3	! 40.0	! 2.0	! 24.0	!Diesel!	No

* The identified number of trains have been adjusted for future growth using the following parameters:

Train No	! Name	! Unadj. Trains ! Left	! Annual % ! Increase	! Years of ! Growth
1.	Freight	! 2.0/1.0	! 2.0/1.0	! 2.50 ! 10.00 !

Data for Segment # 1: GJR (day/night)

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 40.00 / 40.00 m
 Receiver height : 4.50 / 4.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Whistle Angle : 0 deg Track 1
 Reference angle : 0.00

Results segment # 1: GJR (day)

 LOCOMOTIVE (0.00 + 52.03 + 0.00) = 52.03 dBA
 Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

 -90 90 0.50 59.56 -6.37 -1.17 0.00 0.00 0.00 52.03

WHEEL (0.00 + 46.15 + 0.00) = 46.15 dBA
 Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

 -90 90 0.60 54.32 -6.82 -1.35 0.00 0.00 0.00 46.15

LEFT WHISTLE (0.00 + 59.17 + 0.00) = 59.17 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-84	0	0.50	69.79	-6.37	-4.25	0.00	0.00	0.00	59.17

RIGHT WHISTLE (0.00 + 59.17 + 0.00) = 59.17 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	84	0.50	69.79	-6.37	-4.25	0.00	0.00	0.00	59.17

Segment Leq : 62.68 dBA

Total Leq All Segments: 62.68 dBA

Results segment # 1: GJR (night)

LOCOMOTIVE (0.00 + 52.03 + 0.00) = 52.03 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	59.56	-6.37	-1.17	0.00	0.00	0.00	52.03

WHEEL (0.00 + 46.15 + 0.00) = 46.15 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	54.32	-6.82	-1.35	0.00	0.00	0.00	46.15

LEFT WHISTLE (0.00 + 59.17 + 0.00) = 59.17 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-84	0	0.50	69.79	-6.37	-4.25	0.00	0.00	0.00	59.17

RIGHT WHISTLE (0.00 + 59.17 + 0.00) = 59.17 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	84	0.50	69.79	-6.37	-4.25	0.00	0.00	0.00	59.17

Segment Leq : 62.68 dBA

Total Leq All Segments: 62.68 dBA

Road data, segment # 1: watson (day/night)

Car traffic volume : 1837/918 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod

Heavy truck volume : 0/0 veh/TimePeriod
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: watson (day/night)

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 46.00 / 45.00 m
 Receiver height : 4.50 / 4.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Results segment # 1: watson (day)

 Source height = 0.50 m

ROAD (0.00 + 43.56 + 0.00) = 43.56 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	52.70	0.00	-7.79	-1.35	0.00	0.00	0.00	43.56

 Segment Leq : 43.56 dBA

Total Leq All Segments: 43.56 dBA

Results segment # 1: watson (night)

 Source height = 0.50 m

ROAD (0.00 + 43.71 + 0.00) = 43.71 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	52.70	0.00	-7.63	-1.35	0.00	0.00	0.00	43.71

 Segment Leq : 43.71 dBA

Total Leq All Segments: 43.71 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.73
 (NIGHT): 62.73



Appendix E

Detailed Plots of Acceleration Spectra



NOISE

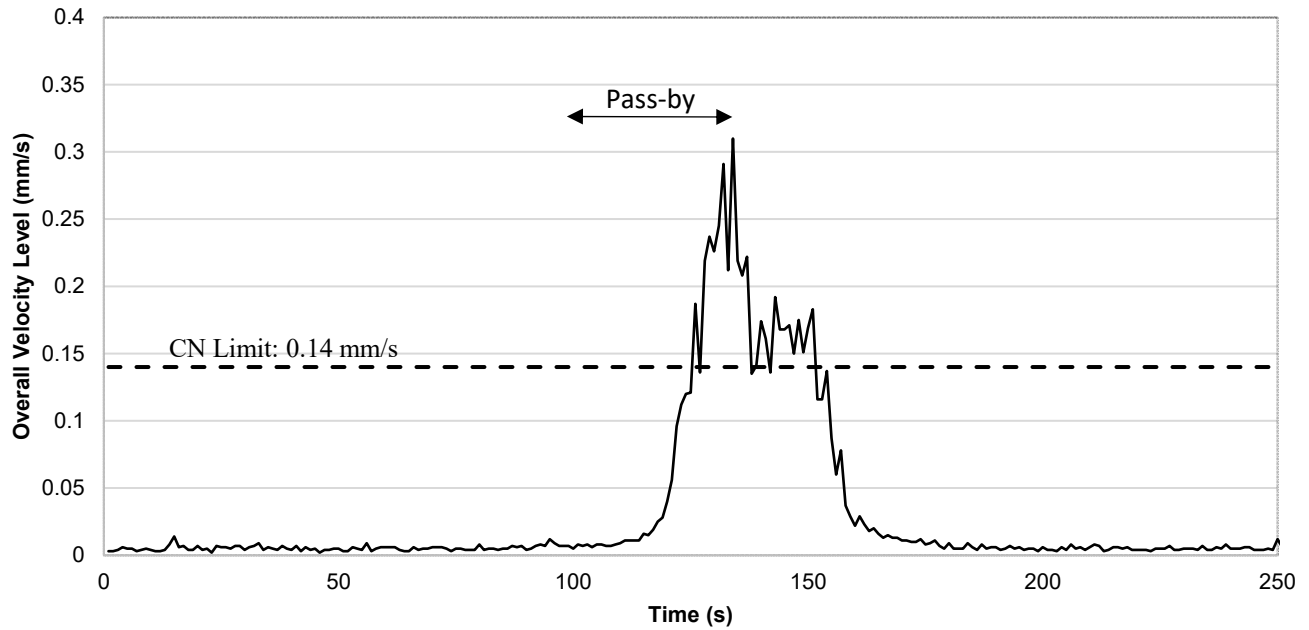


VIBRATION

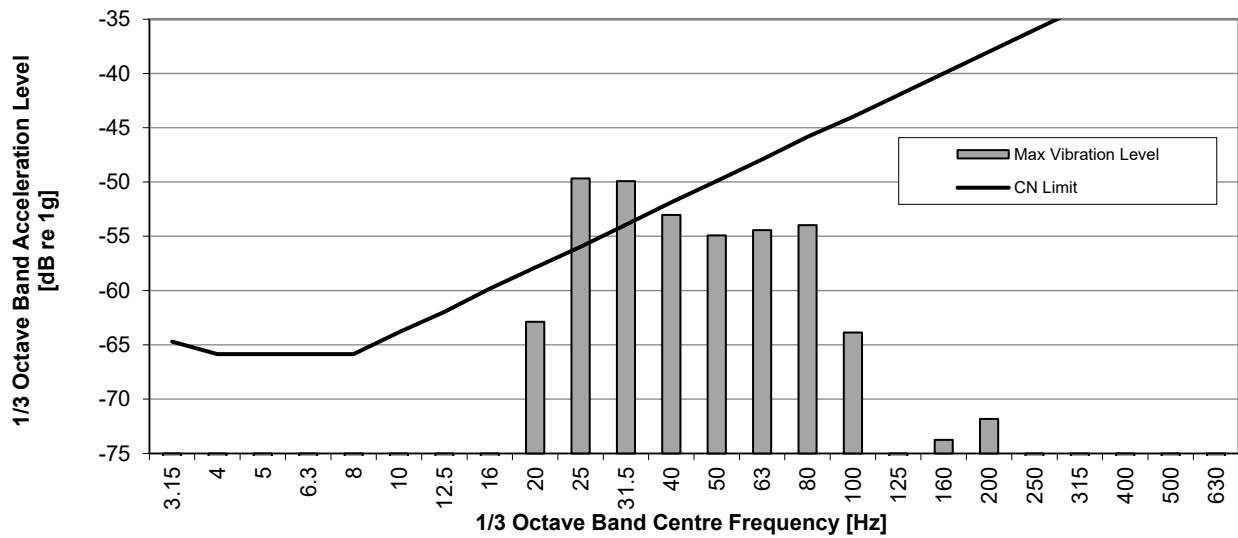


ACOUSTICS

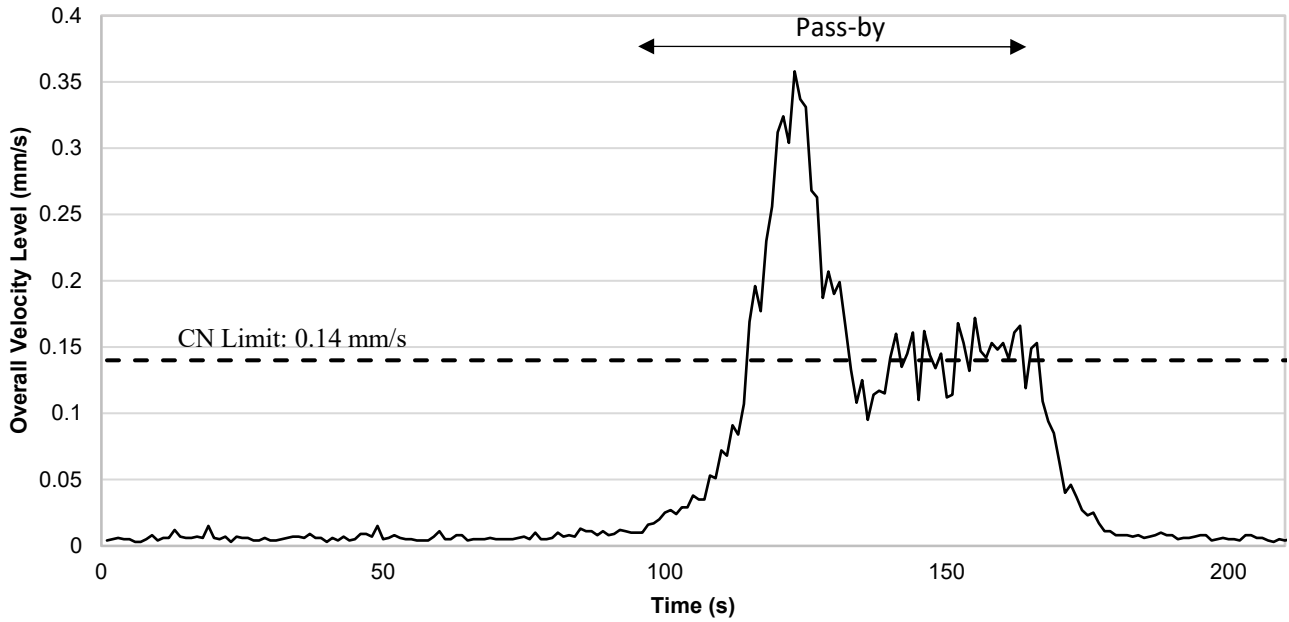
**Pass-by 1 at 15 m from ROW at M1
Measured Vibratory Velocity Level**



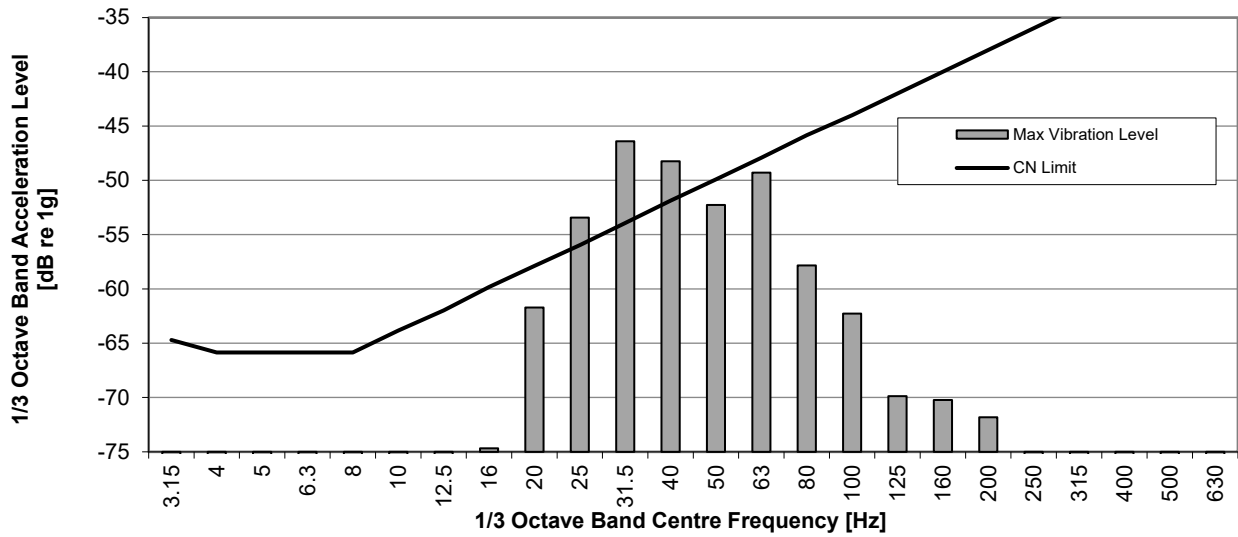
**Pass-by 1 at M1
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



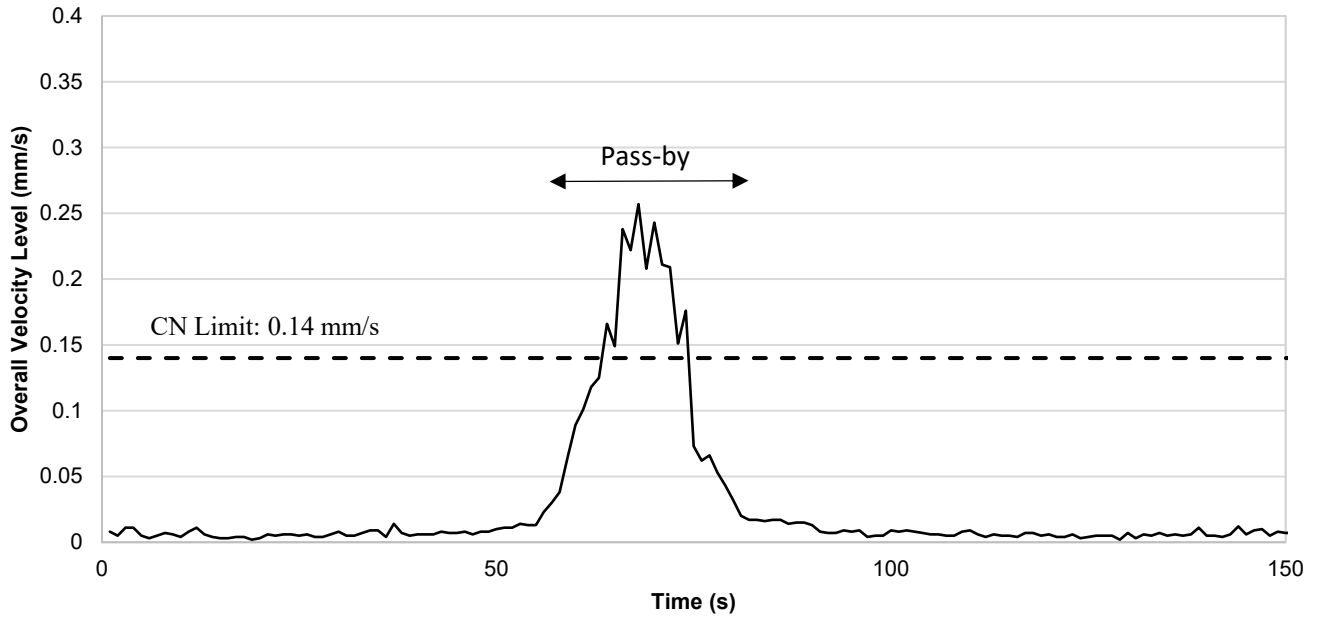
**Pass-by 2 at 15 m from ROW at M1
Measured Vibratory Velocity Level**



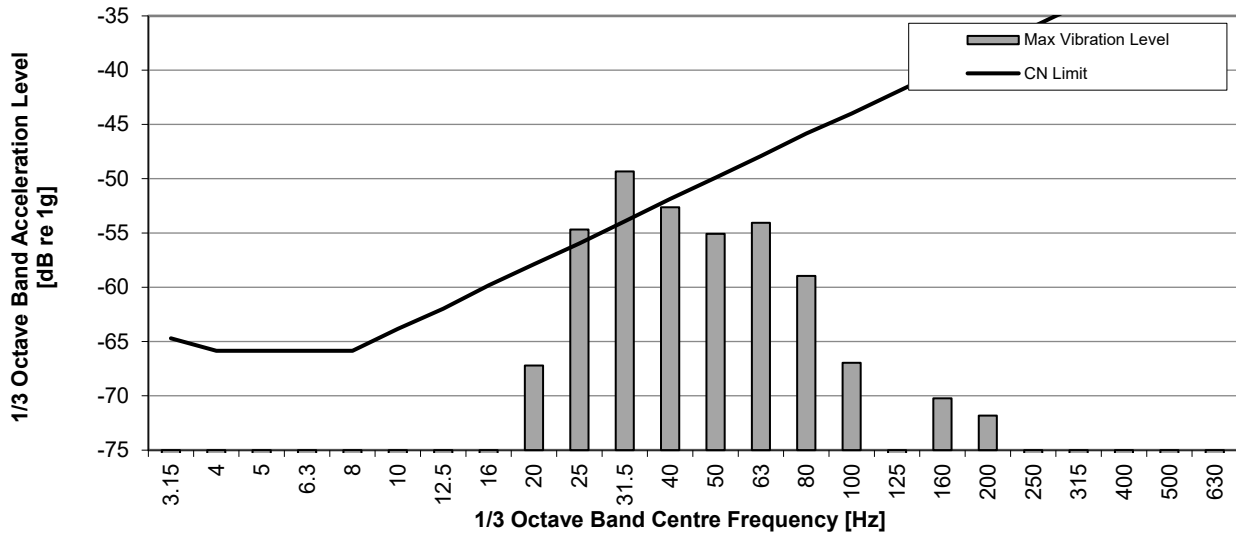
**Pass-by 2 at M1
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



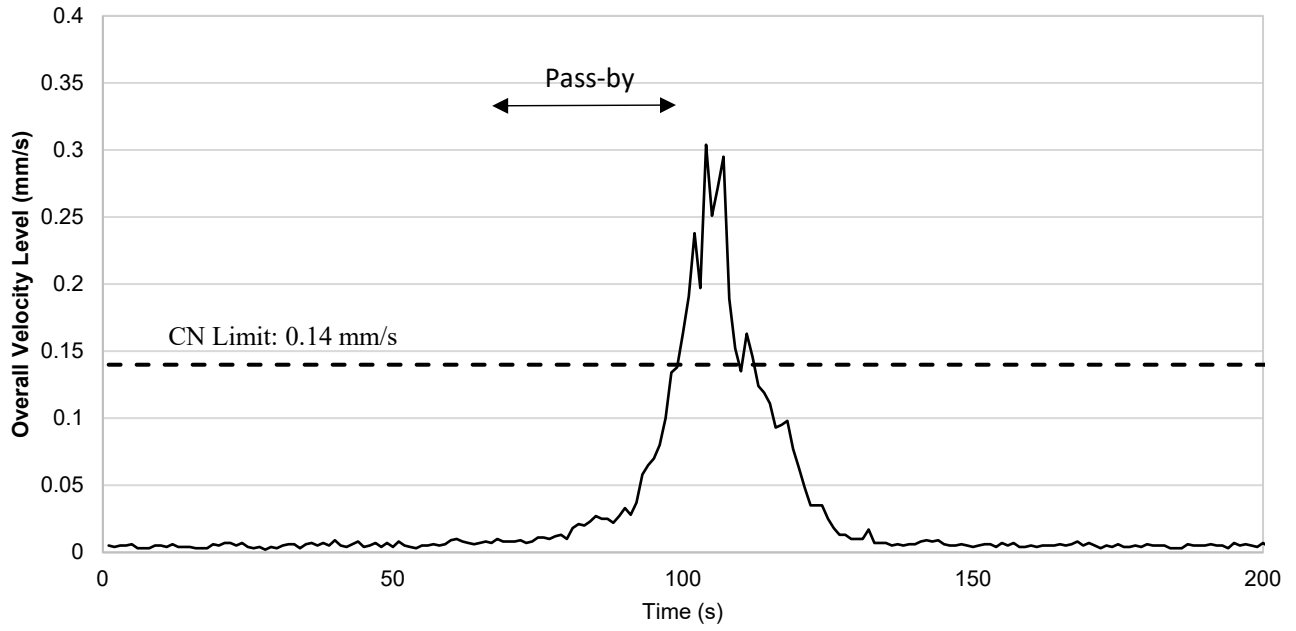
**Pass-by 3 at 15 m from ROW at M1
Measured Vibratory Velocity Level**



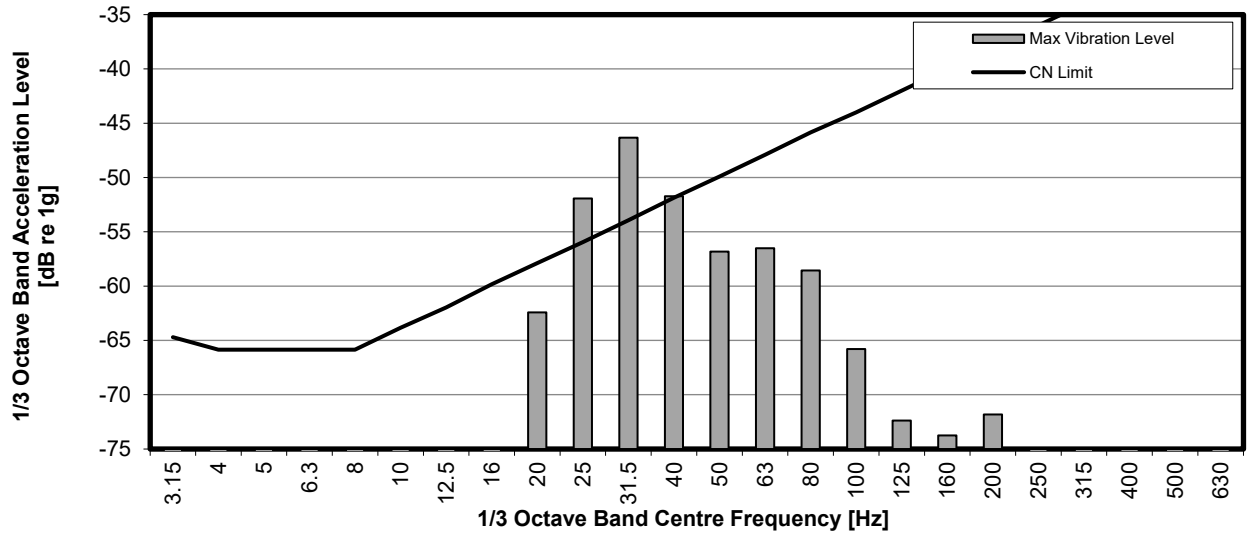
**Pass-by 3 at M1
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



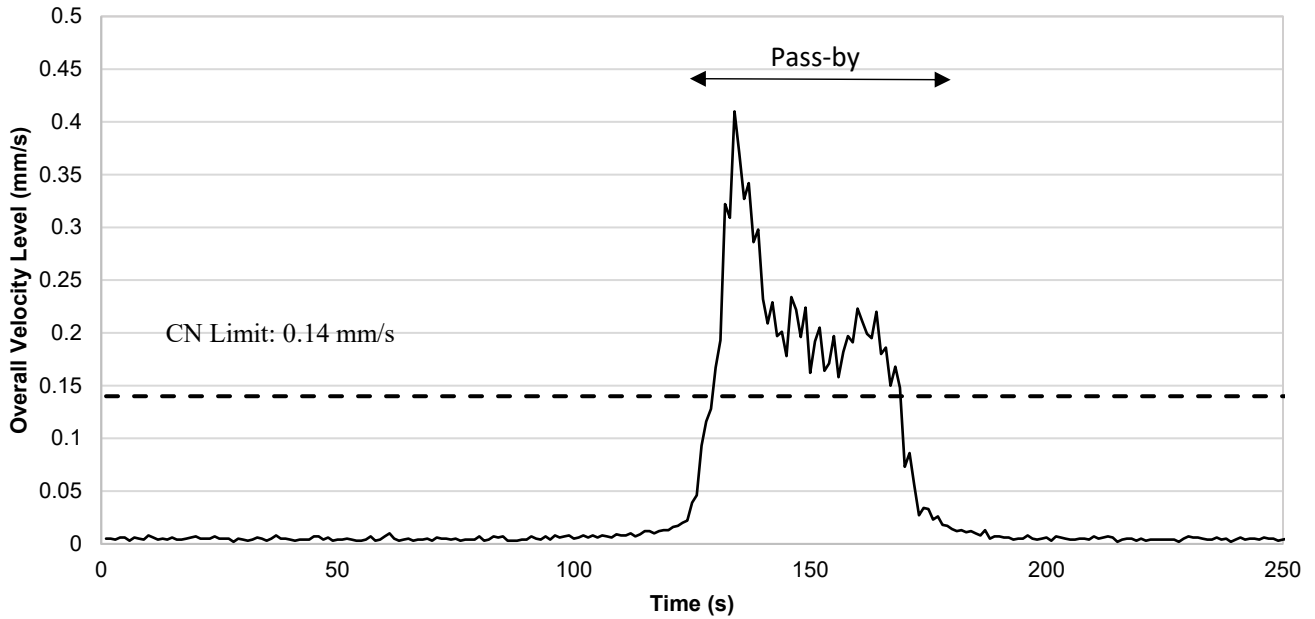
**Pass-by 4 at 15 m from ROW at M1
Measured Vibratory Velocity Level**



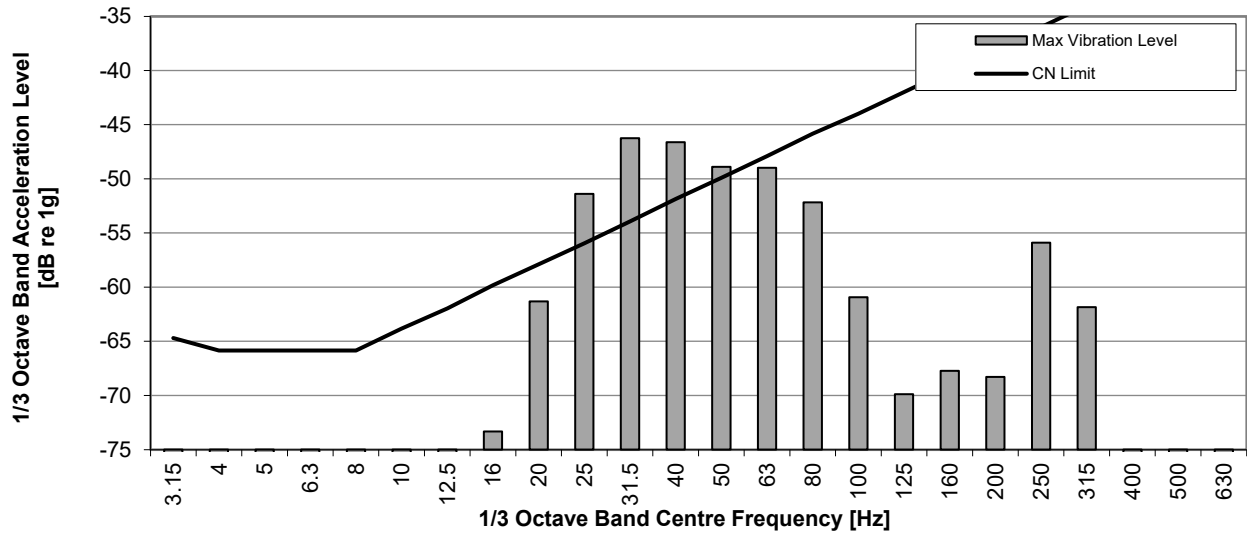
**Pass-by 4 at M1
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



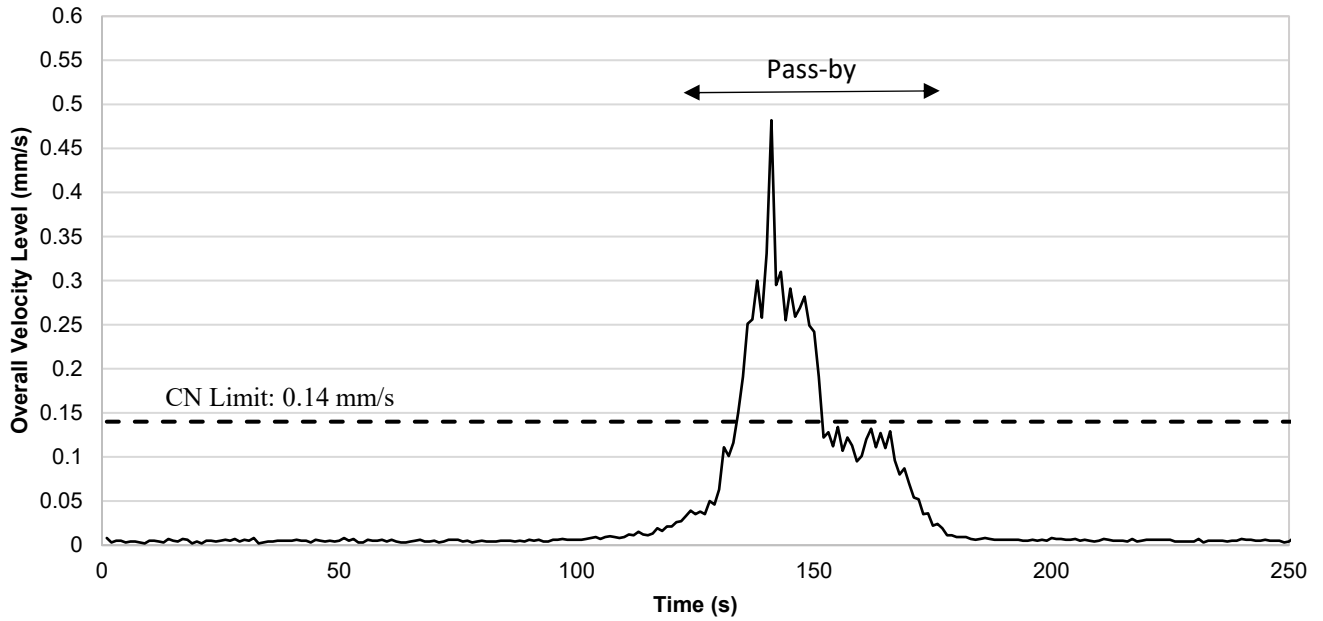
**Pass-by 5 at 15 m from ROW at M1
Measured Vibratory Velocity Level**



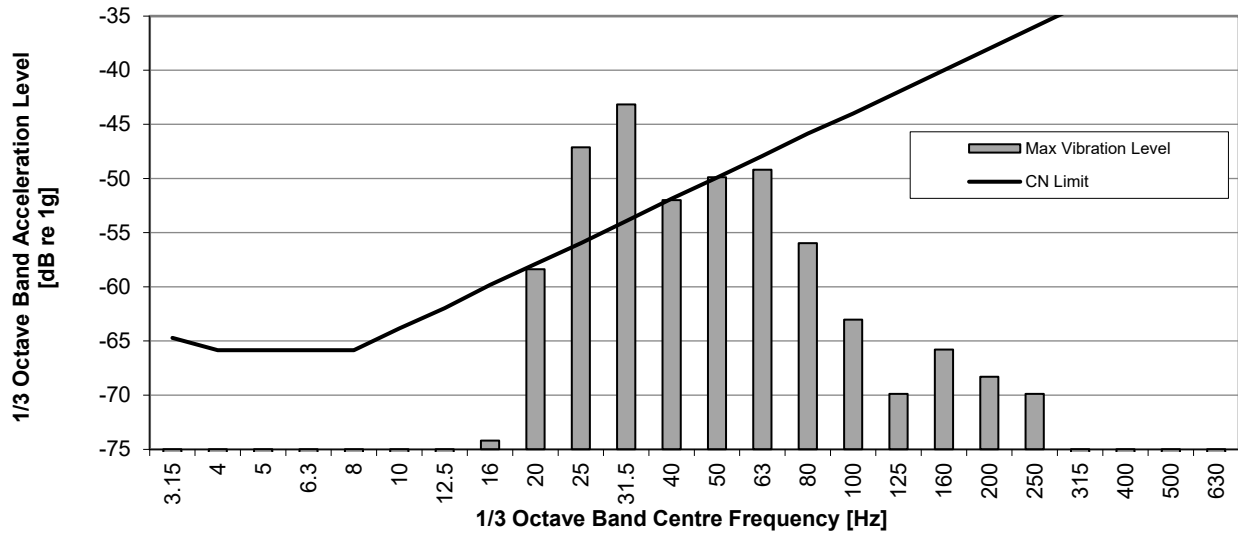
**Pass-by 5 at M1
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



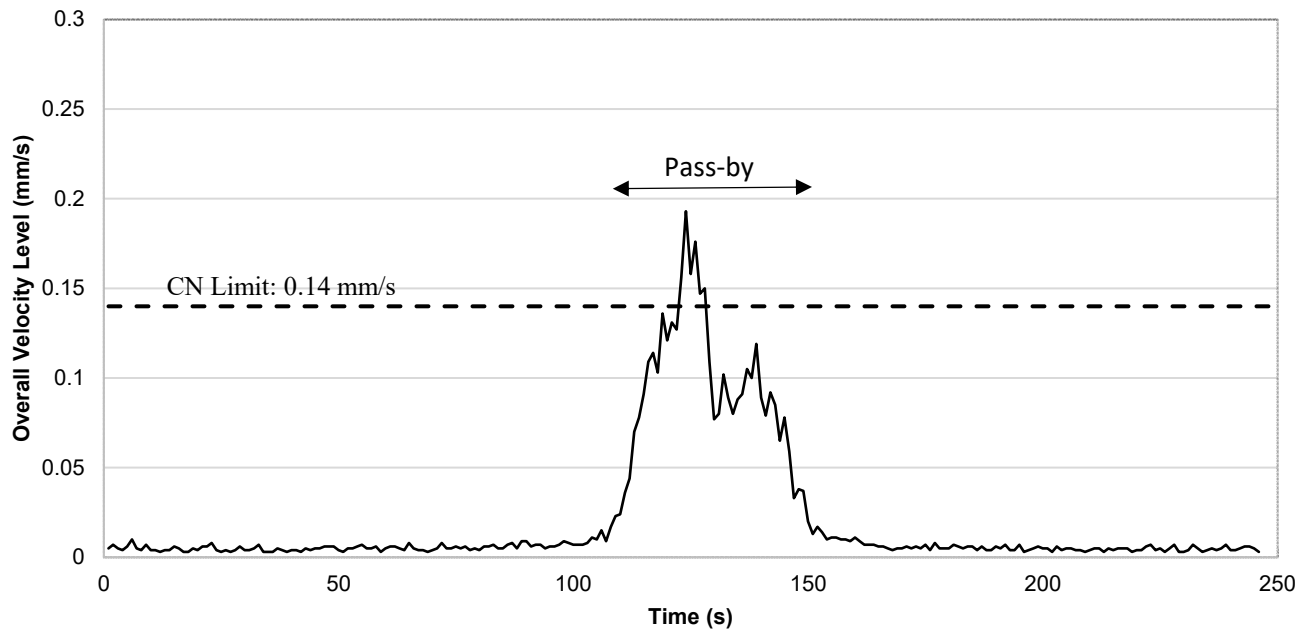
**Pass-by 6 at 15 m from ROW at M1
Measured Vibratory Velocity Level**



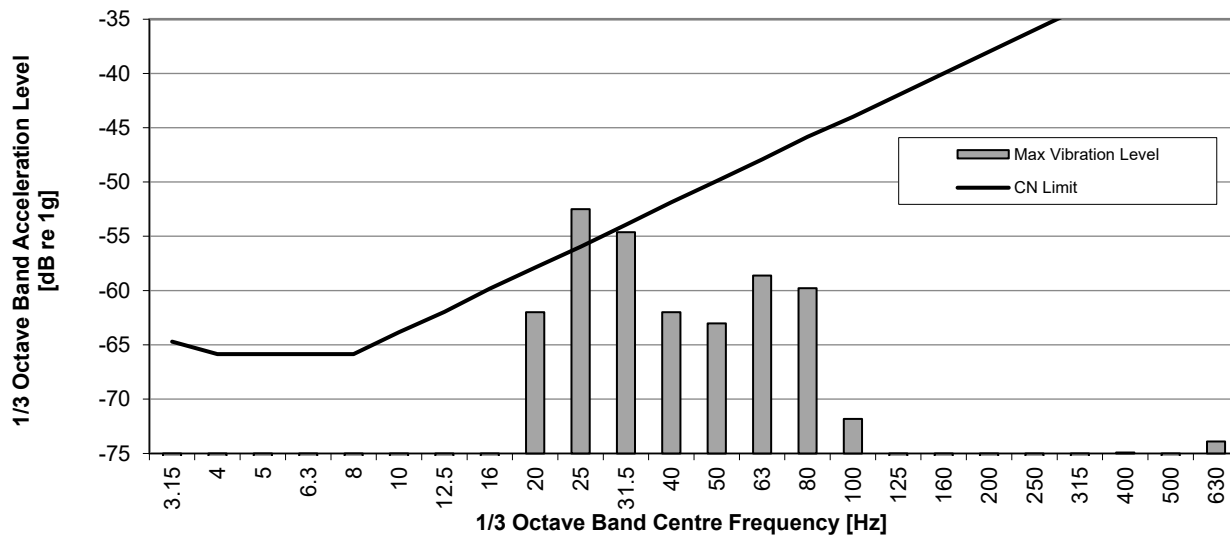
**Pass-by 6 at M1
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



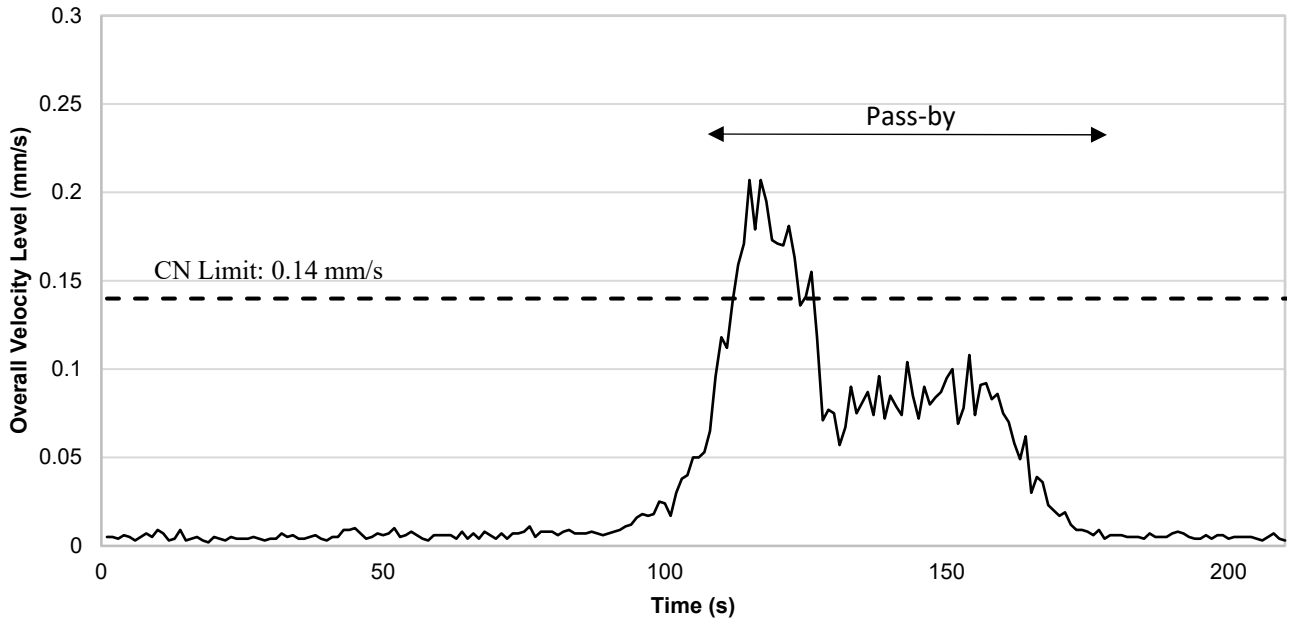
**Pass-by 1 at 30 m from ROW at M2
Measured Vibratory Velocity Level**



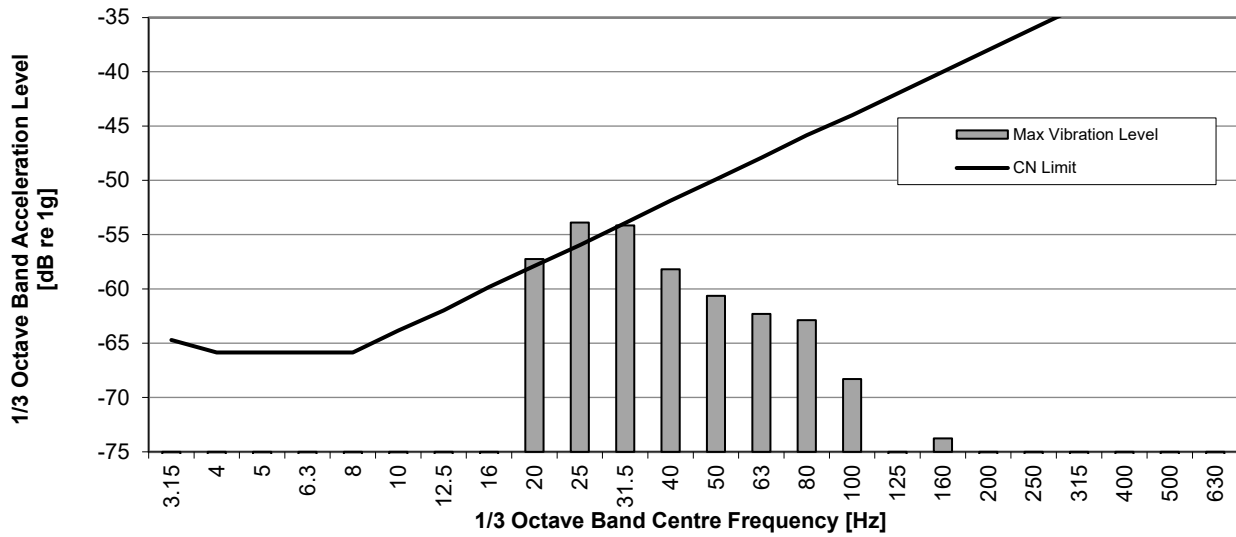
**Pass-by 1 at M2
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



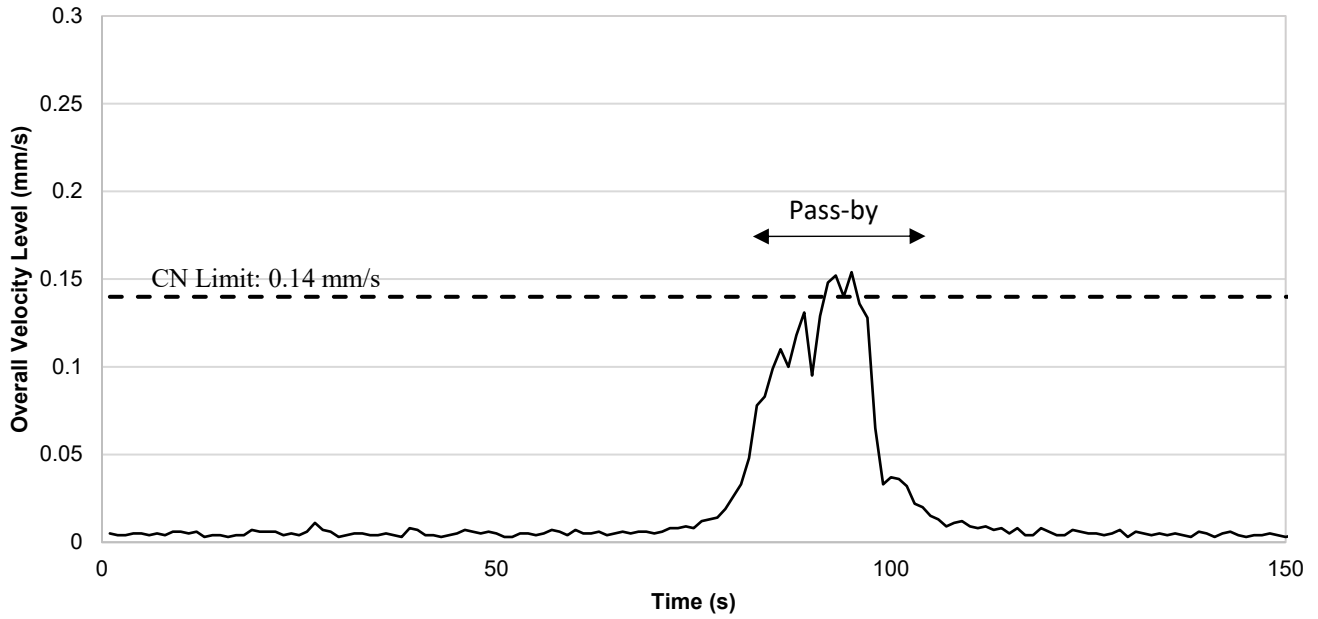
**Pass-by 2 at 30 m from ROW at M2
Measured Vibratory Velocity Level**



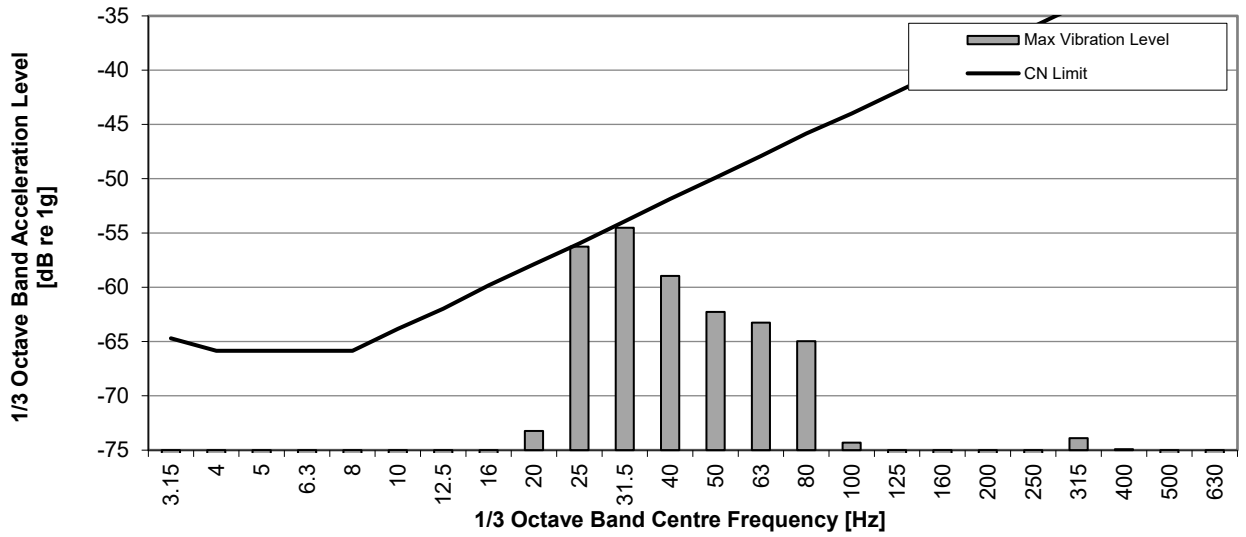
**Pass-by 2 at M2
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



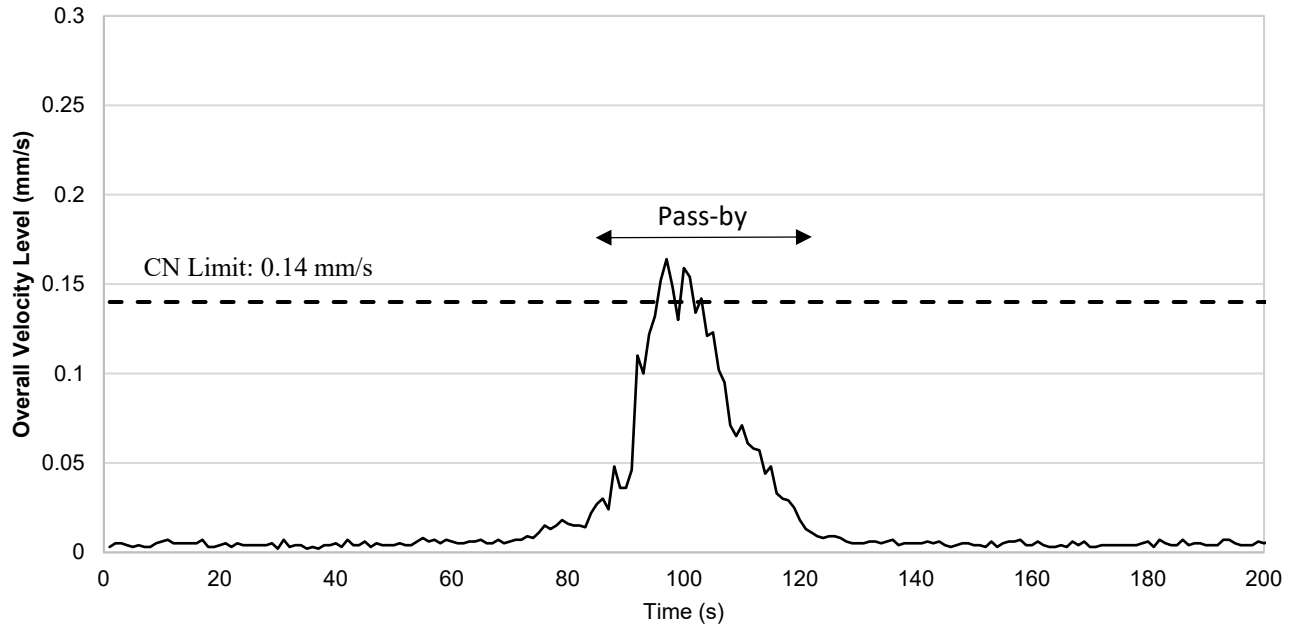
**Pass-by 3 at 30 m from ROW at M2
Measured Vibratory Velocity Level**



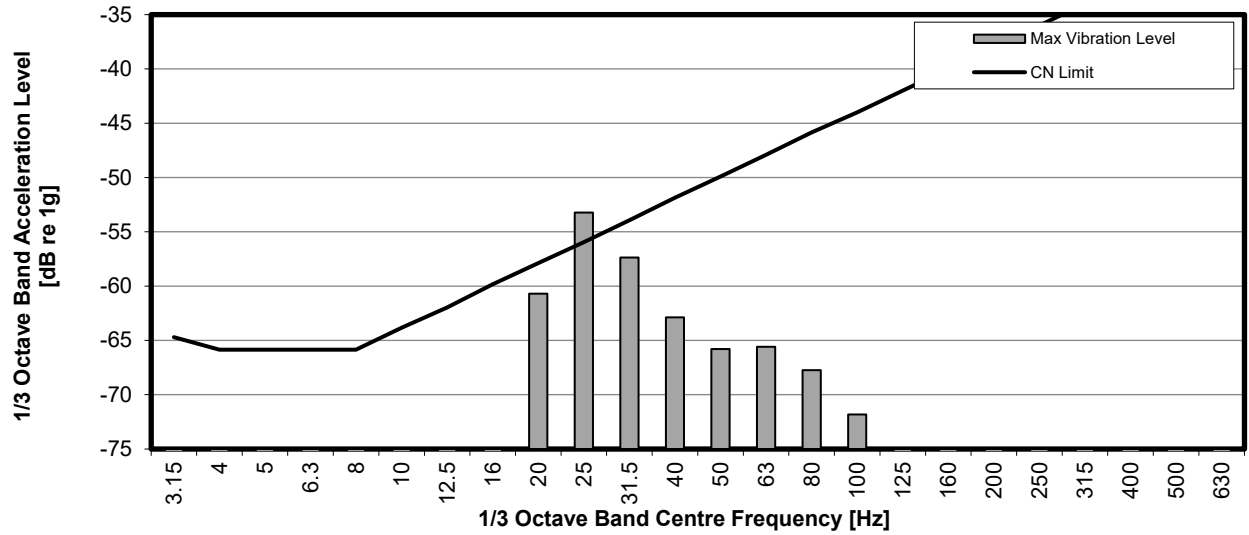
**Pass-by 3 at M2
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



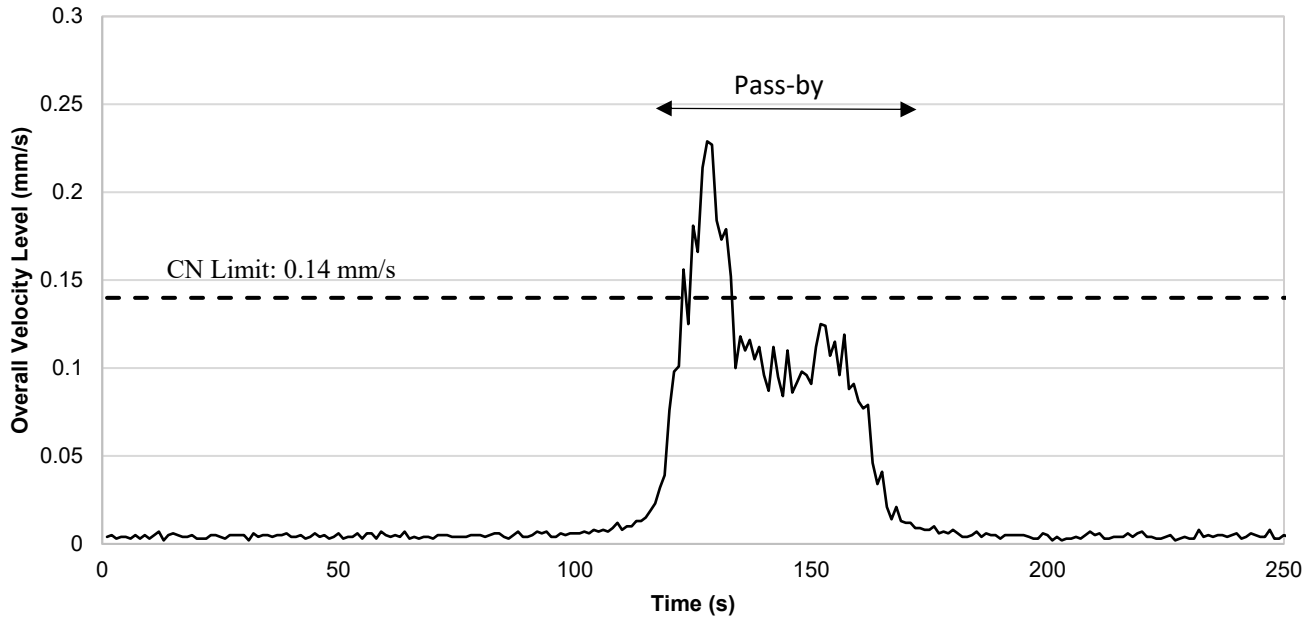
**Pass-by 4 at 30 m from ROW at M2
Measured Vibratory Velocity Level**



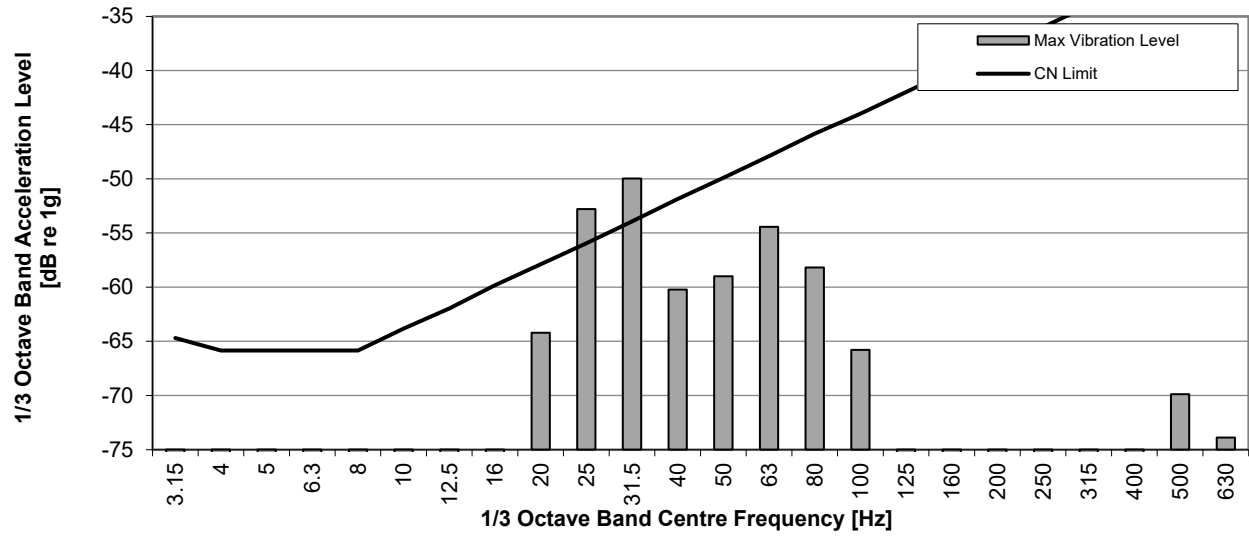
**Pass-by 4 at M2
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



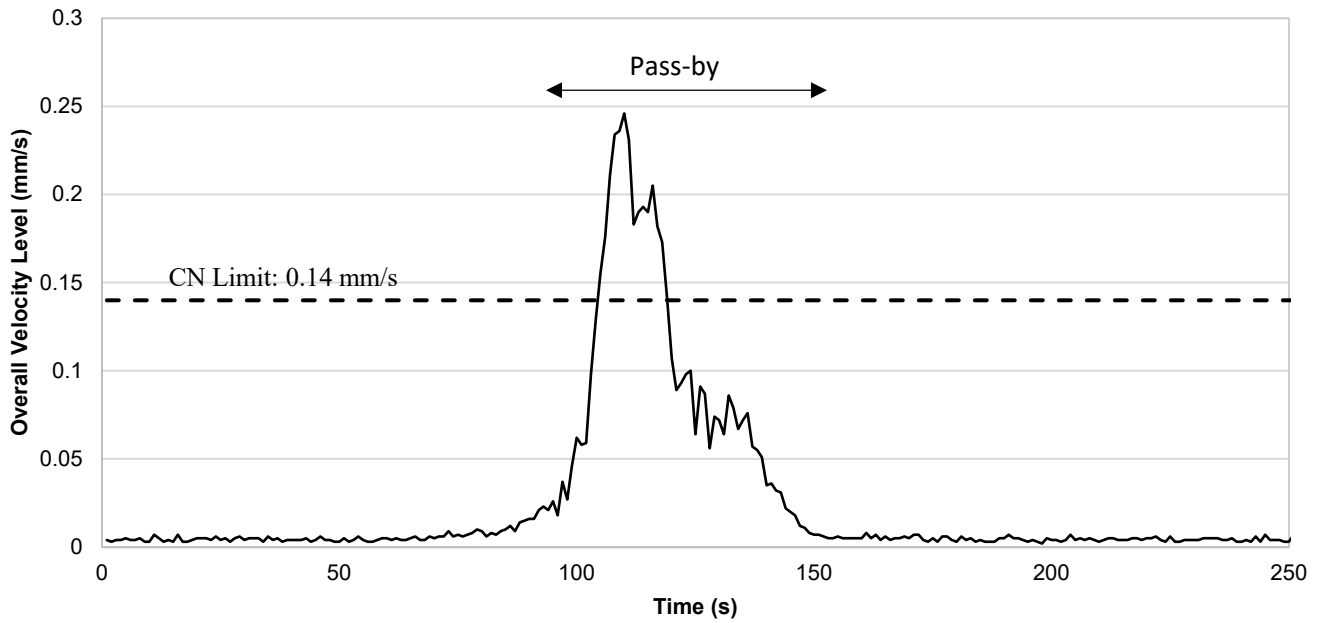
**Pass-by 5 at 30 m from ROW at M2
Measured Vibratory Velocity Level**



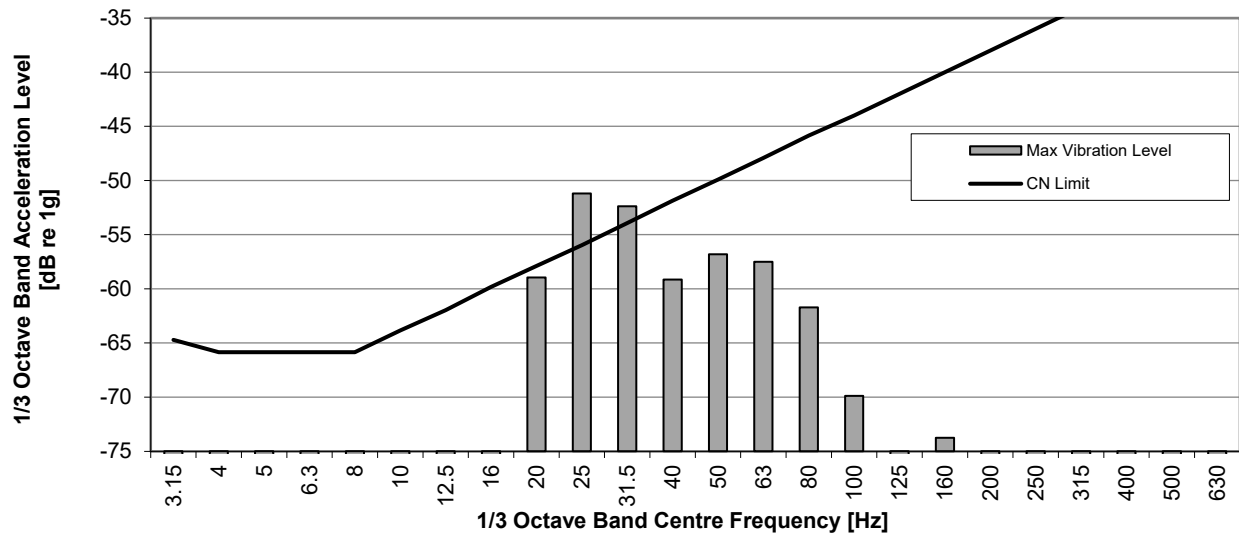
**Pass-by 5 at M2
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



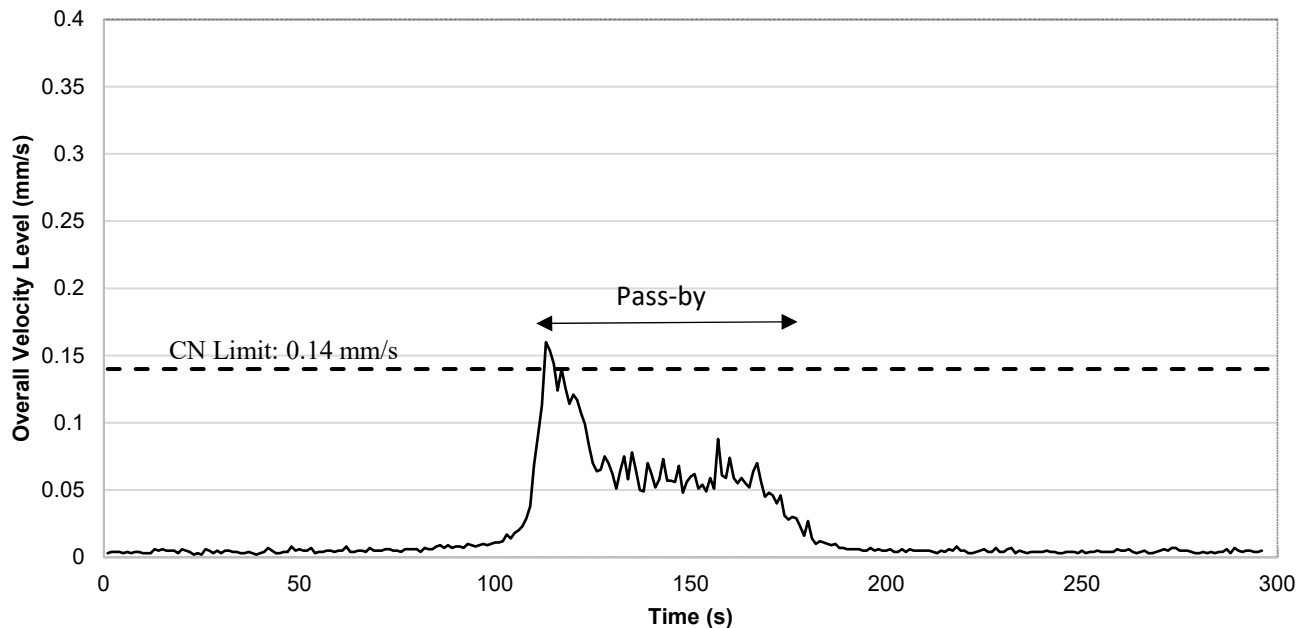
**Pass-by 6 at 30 m from ROW at M2
Measured Vibratory Velocity Level**



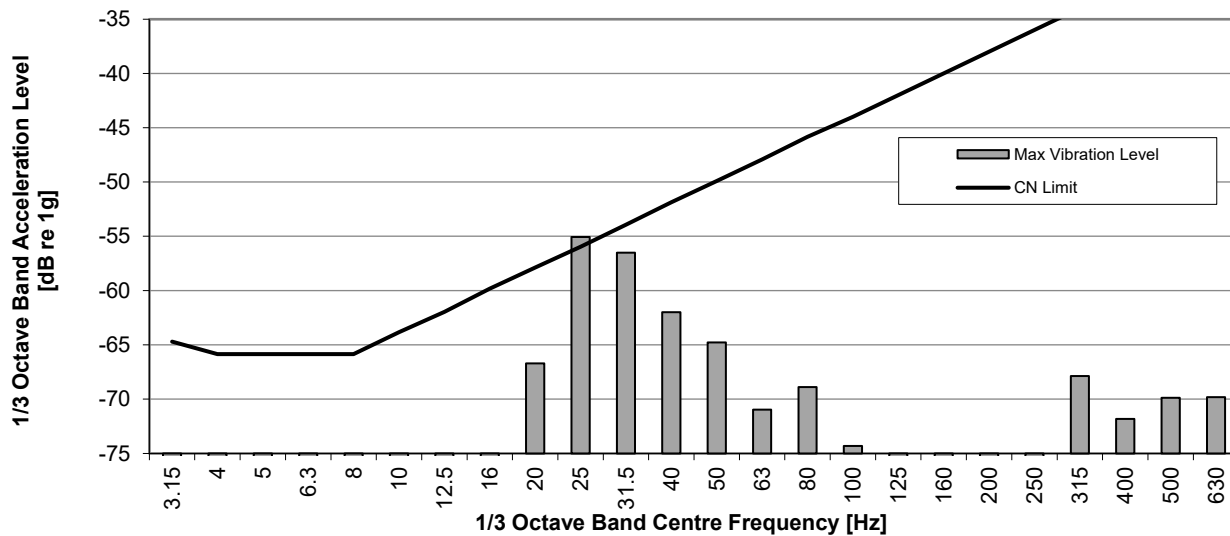
**Pass-by 6 at M2
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



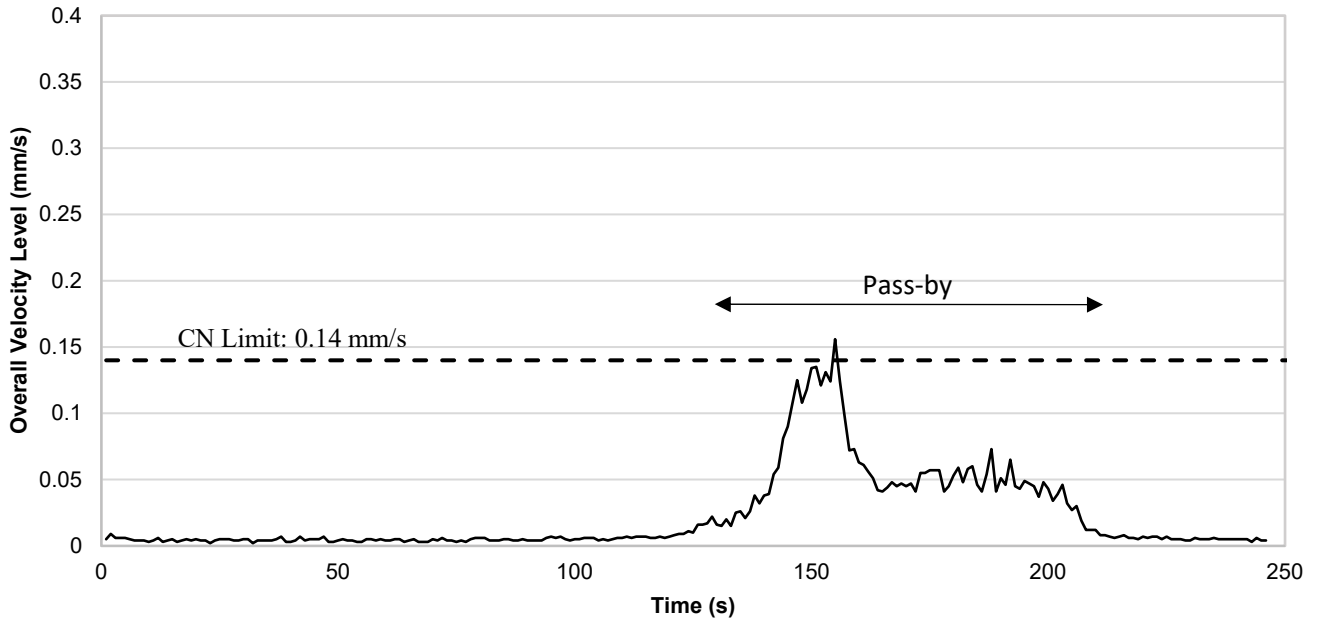
**Pass-by 1 at 45 m from ROW at M3
Measured Vibratory Velocity Level**



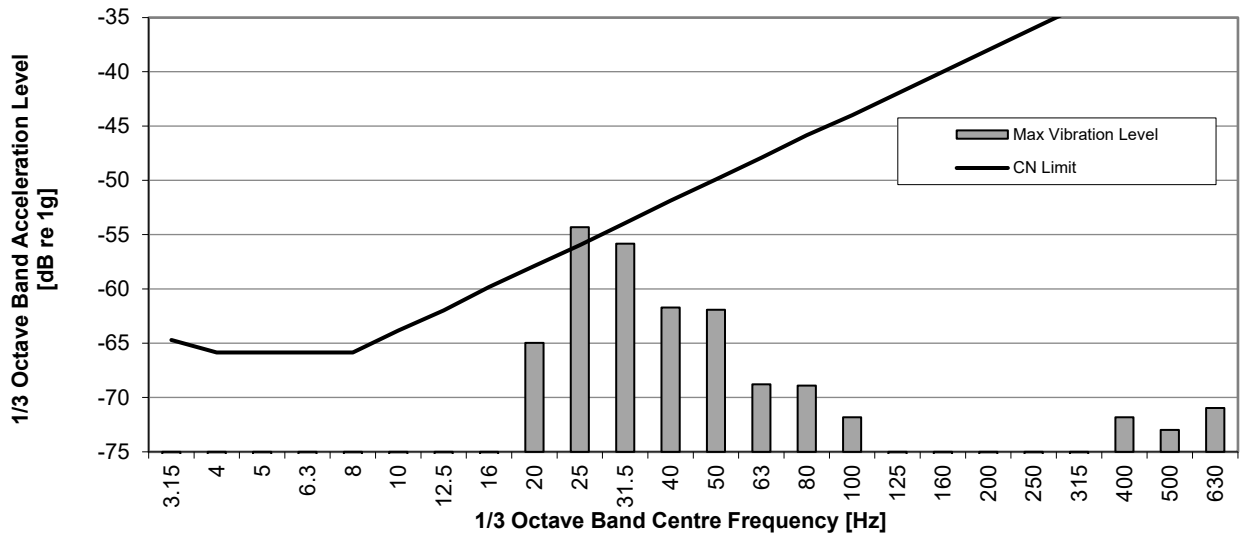
**Pass-by 1 at M3
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



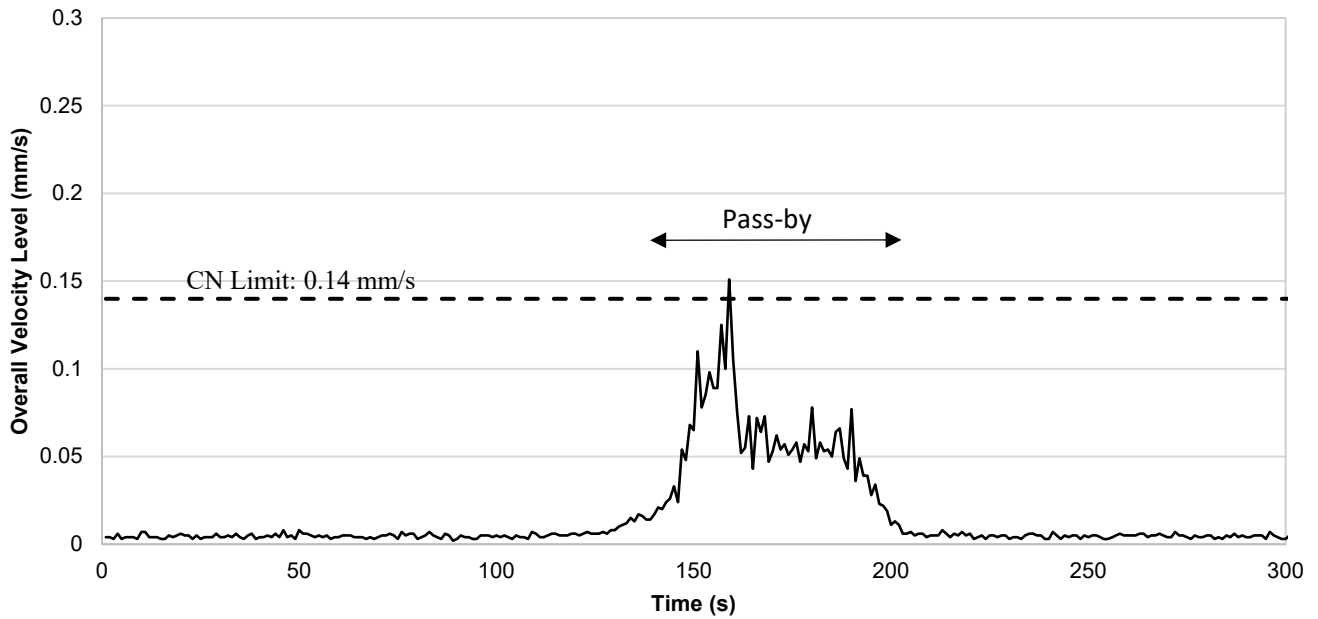
**Pass-by 2 at 45 m from ROW at M3
Measured Vibratory Velocity Level**



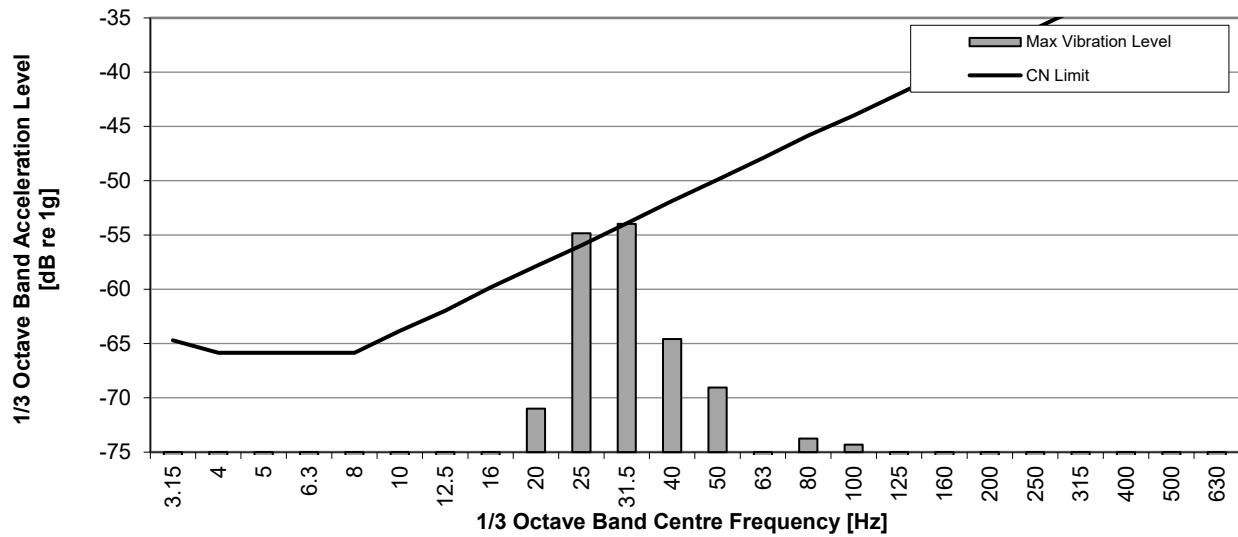
**Pass-by 2 at M3
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



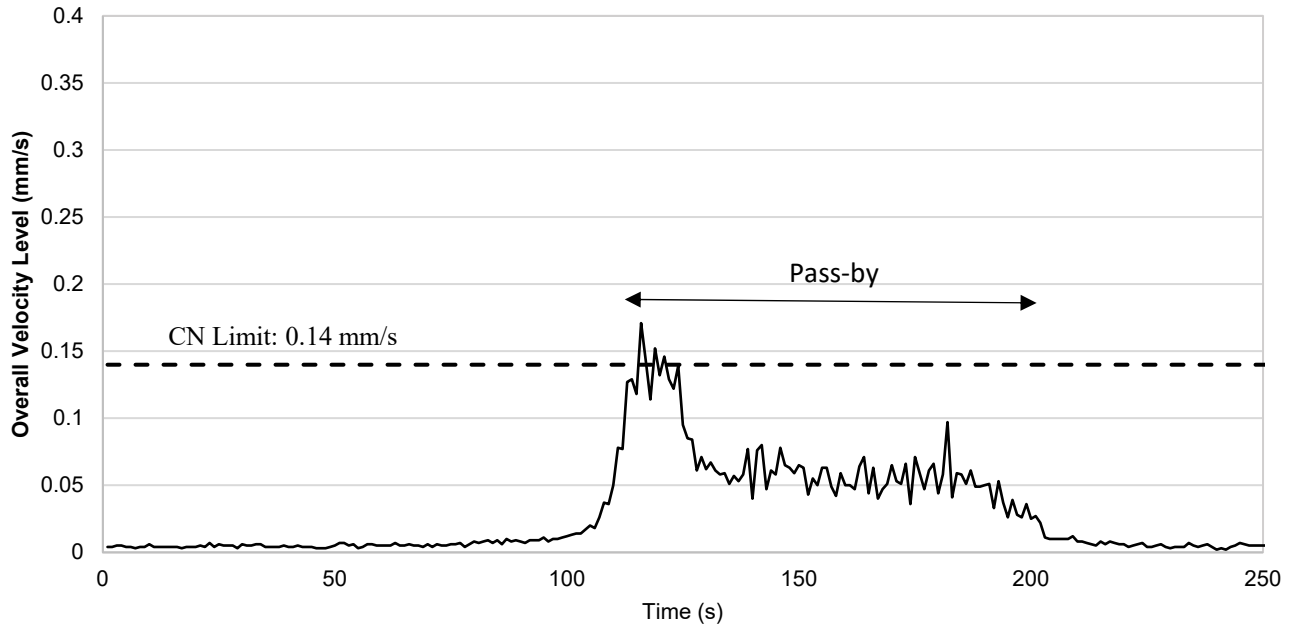
**Pass-by 3 at 45 m from ROW at M3
Measured Vibratory Velocity Level**



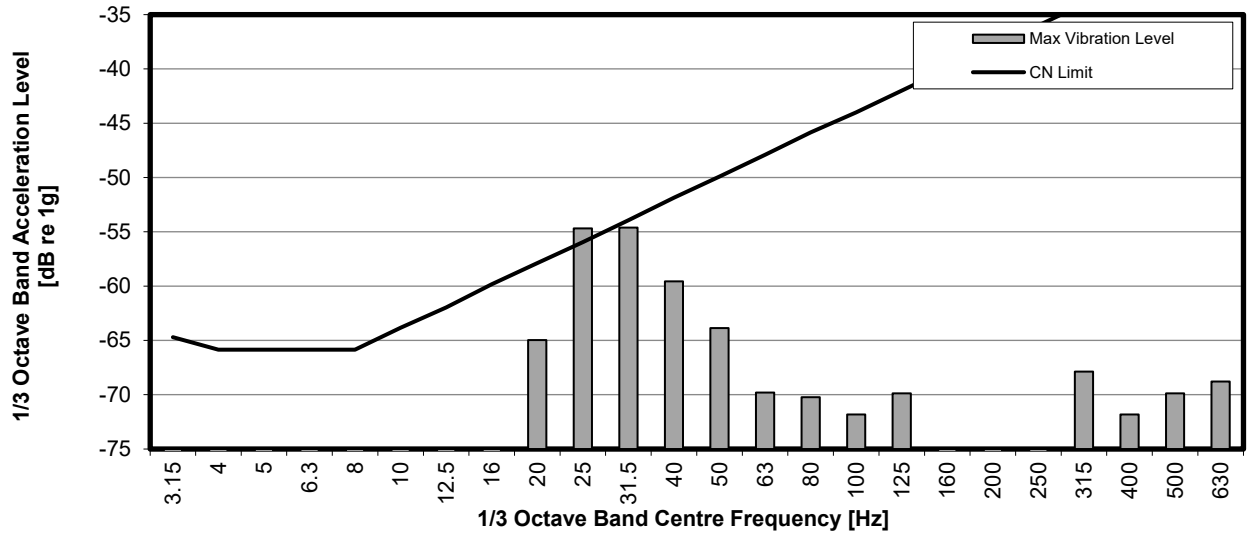
**Pass-by 3 at M3
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



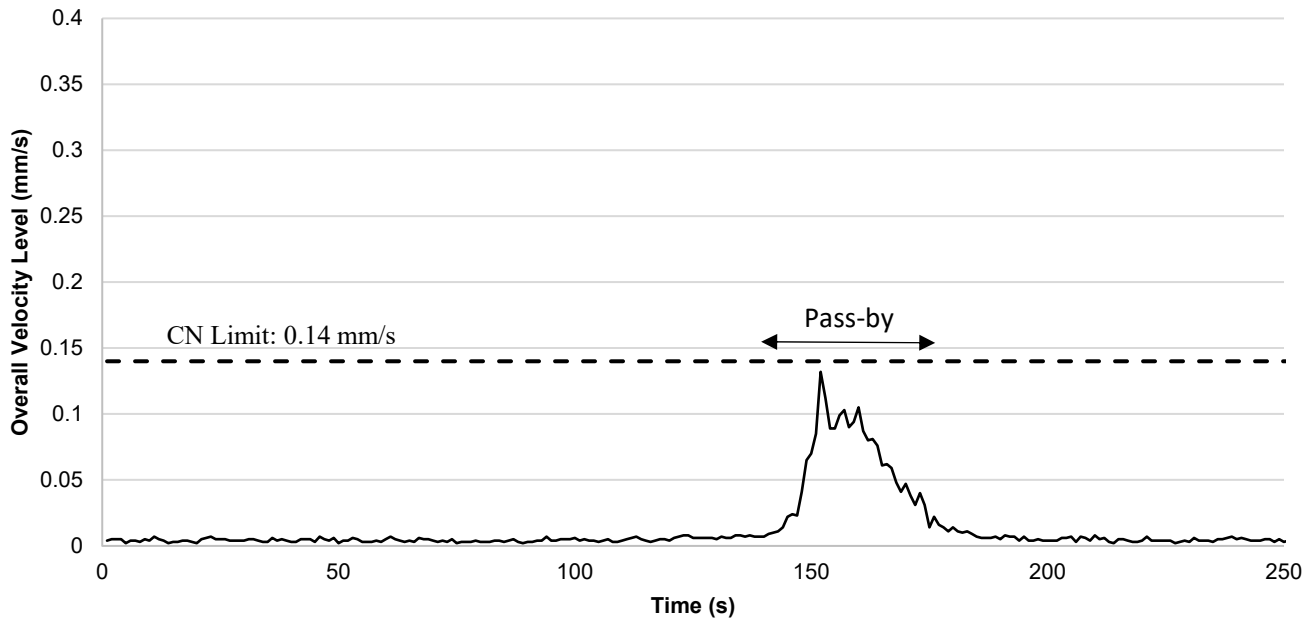
**Pass-by 4 at 45 m from ROW at M3
Measured Vibratory Velocity Level**



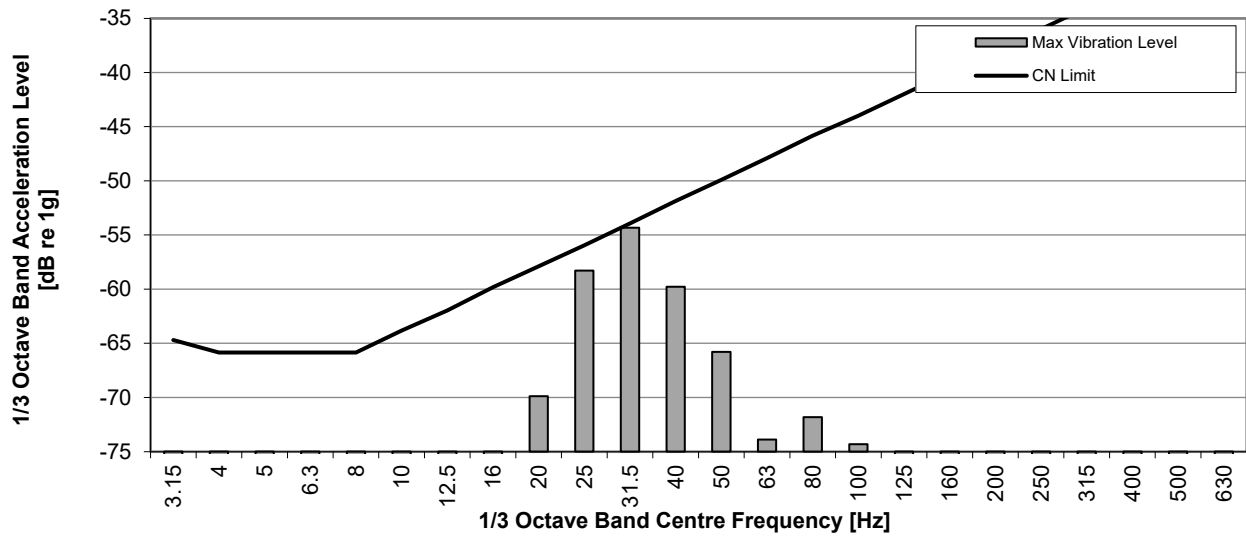
**Pass-by 4 at M3
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



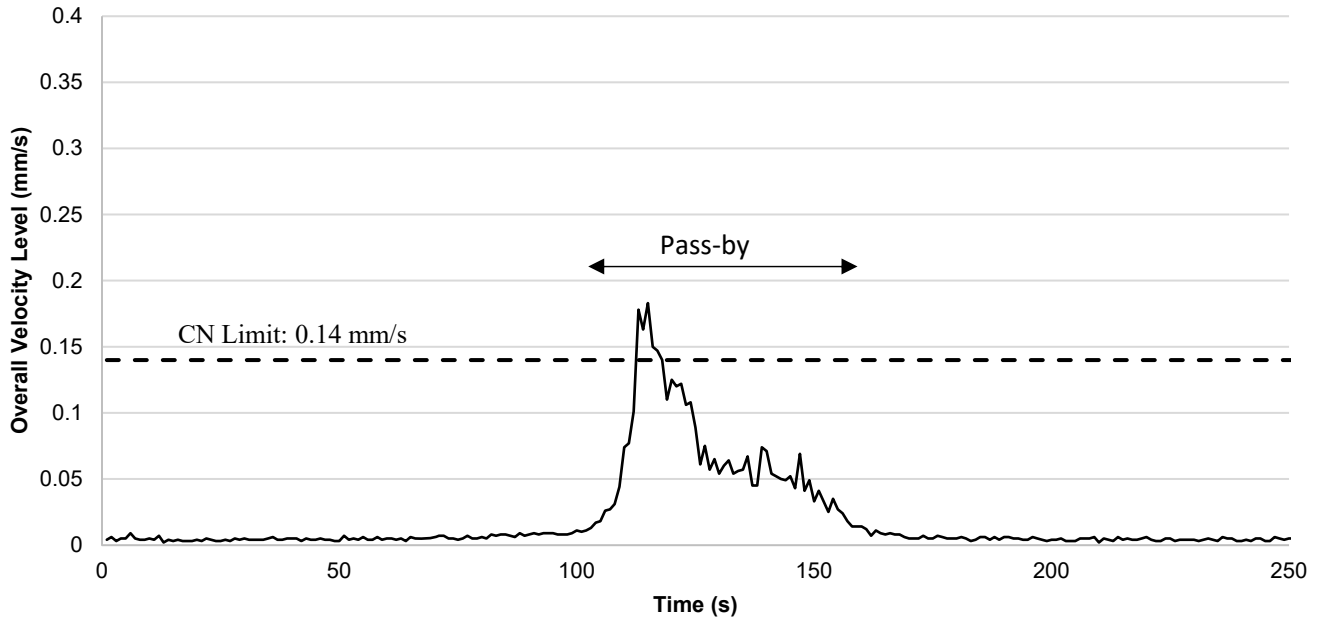
**Pass-by 5 at 45 m from ROW at M3
Measured Vibratory Velocity Level**



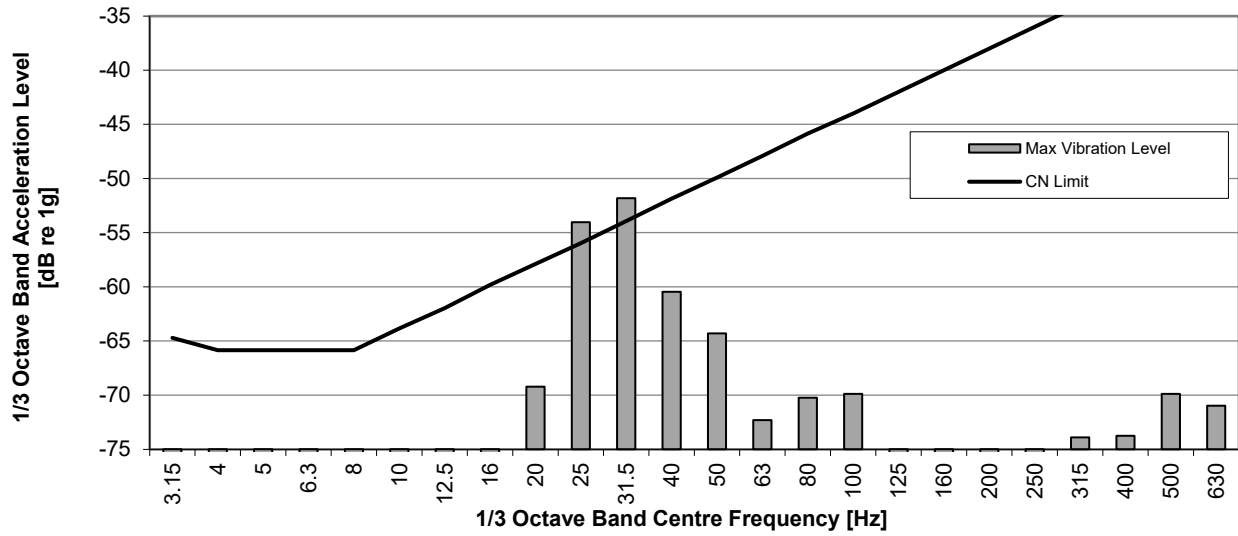
**Pass-by 5 at M3
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



**Pass-by 6 at 45 m from ROW at M3
Measured Vibratory Velocity Level**



**Pass-by 6 at M3
Acceleration Spectrum @ Peak Level (1 sec. Duration)**



APPENDIX F

Supporting Drawings



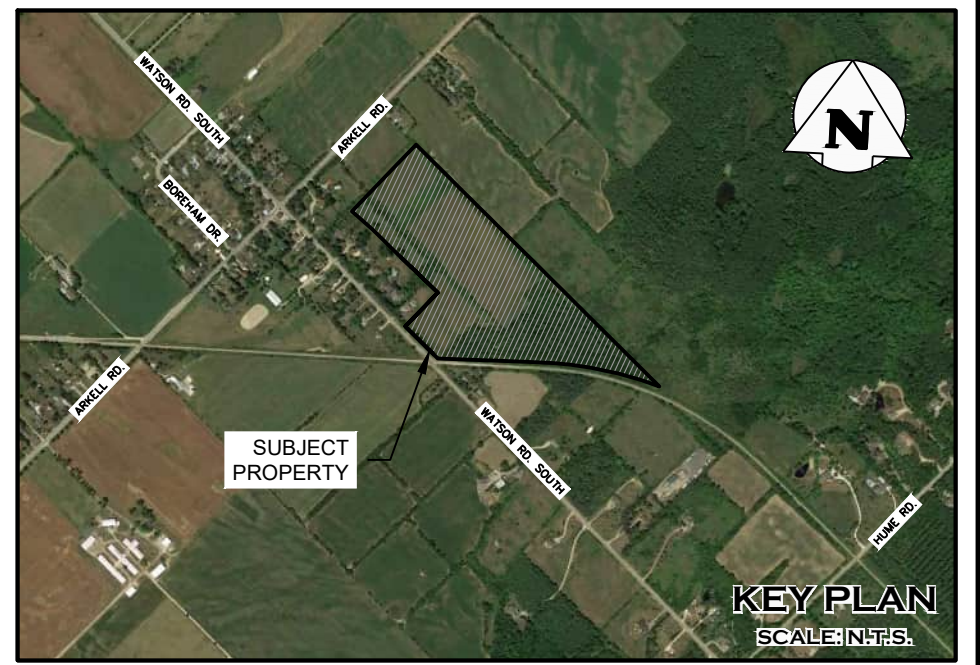
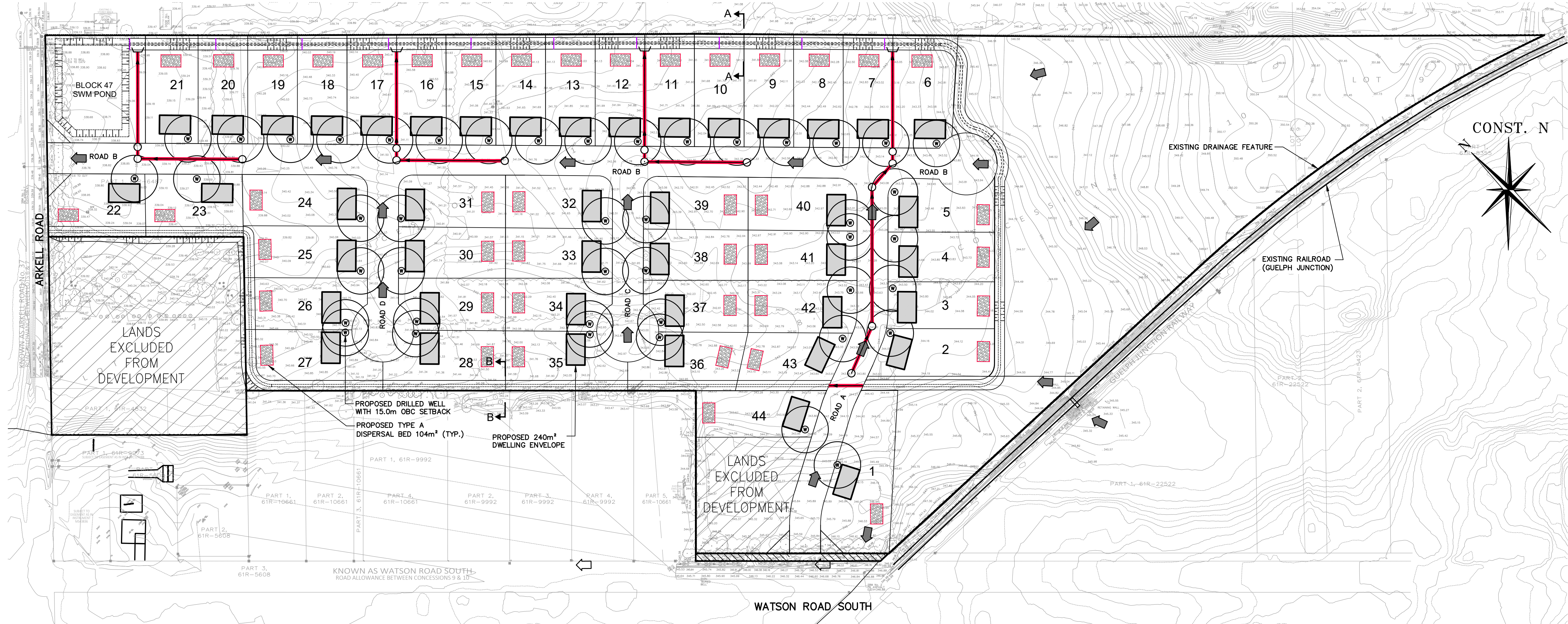
NOISE



VIBRATION

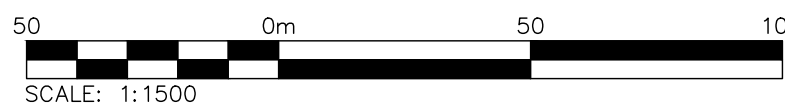


ACOUSTICS



LEGEND

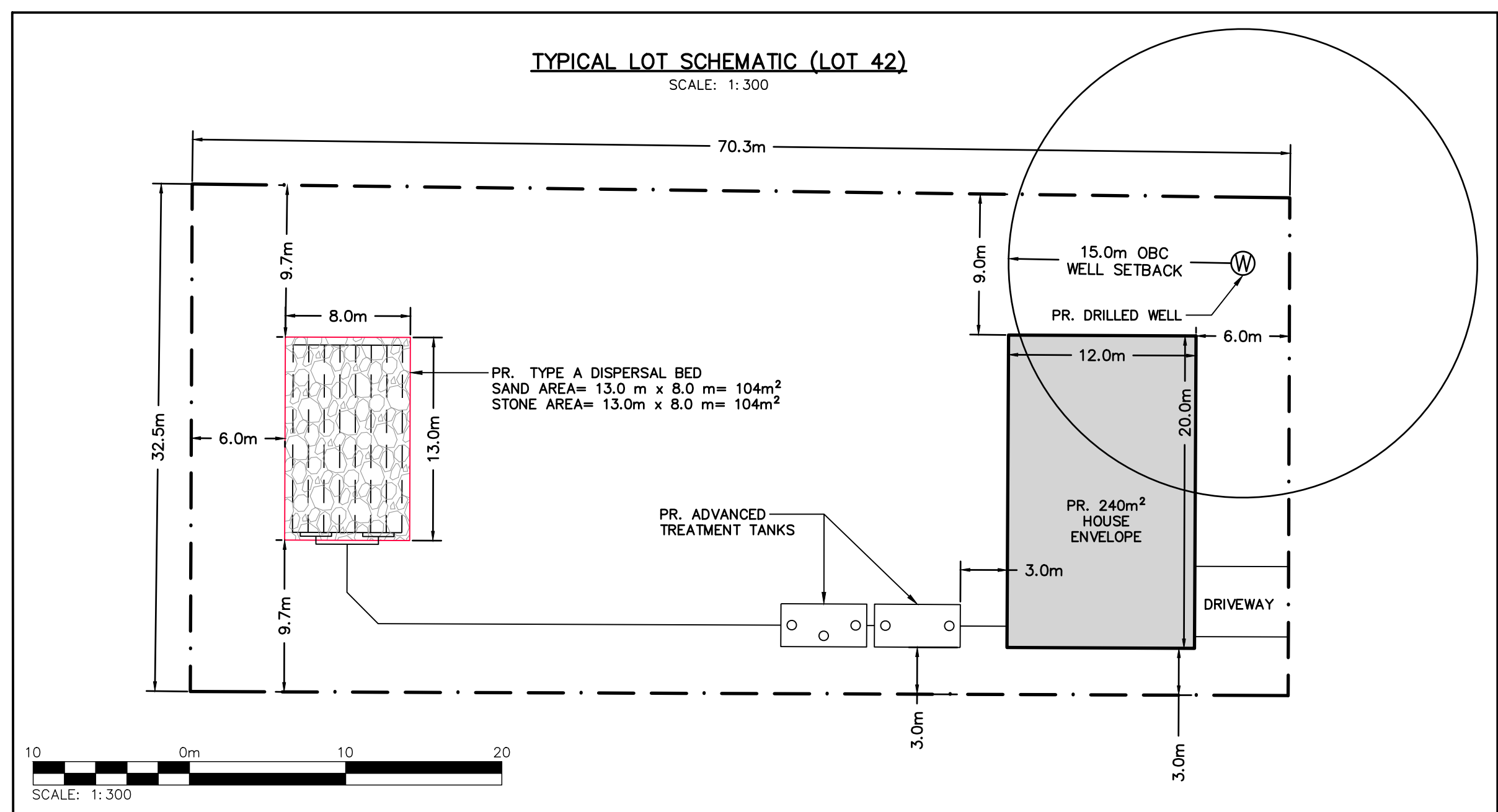
- PROPERTY LINE
- EXISTING CONTOUR (0.5m)
- EXISTING CONTOUR (1.0m)
- LOT NUMBER
- EXISTING GRADE
- PROPOSED GRADE
- PROPOSED GRADE (TO MATCH EXISTING)
- PROPOSED SLOPE (3:1 MAX.)
- PROPOSED LOT-LINE
- CONCEPTUAL 240 m² BUILDING ENVELOPE
- PROPOSED TYPE A DISPERSAL BED 104 m²
- CONCEPTUAL PROPOSED DRILLED WELL LOCATION C/W 15.0m OBC SETBACK



1	ISSUED FOR 2nd DRAFT PLAN SUBMISSION	2025/AUG/01
0	ISSUED FOR PRE-CONSULTATION	2023/AUG/31
No.	ISSUE / REVISION	YYYY/MM/DD

ONSITE SEWAGE SYSTEM DESIGN TYPICAL LOT NOTES

PROPOSED 6 BEDROOM, 240 m ² HOME WITH SIXTY-TWO (62) FIXTURE UNITS	BASE FLOW (6 BEDROOMS)= 2,500 L/DAY ADDITIONAL FLOOR AREA (40 m ²)= 400 L/DAY ADDITIONAL FIXTURE UNITS (42)= 2,075 L/DAY Q TOTAL (2,500+2,075)= 4,575 L/DAY
SOIL PERCOLATION RATE	T = 15 min/cm (ESTIMATED BY C.F. CROZIER)
PROPOSED TREATMENT UNIT	WATERLOO BIOFILTER AD-BA50
TYPE A DISPERSAL BED STONE AREA	MINIMUM SIZE=Q/50=4,575/50 = 91.5m ² PROVIDED 13m x 8m = 104m ²
TYPE A DISPERSAL BED SAND AREA	MINIMUM SIZE=QT/850= 4,575*15/850 = 80.7m ² PROVIDED 13m x 8m = 104m ²

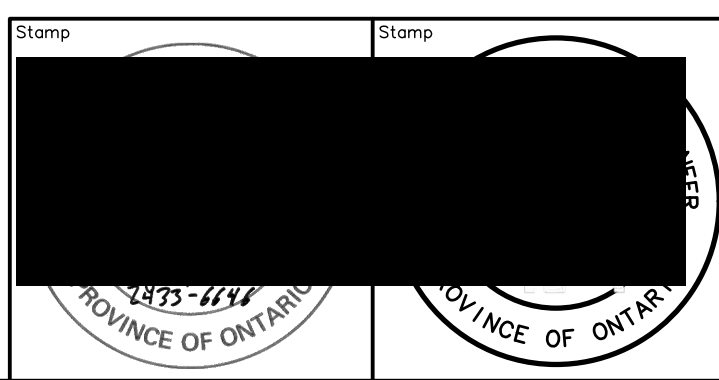


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Project
**WATSON ROAD SOUTH
TOWN OF PUSLINCH**

Drawing
ONSITE SEWAGE SERVICING SCHEMATIC



CROZIER CONSULTING ENGINEERS

Drawn: E.G. Design: E.G. Project No. **2433-6646**
 Check: W.B. Check: W.B. Scale: 1:1500 Dwg. **C102**

APPENDIX G Peer Review dated April 21, 2026 and HGC's Responses



NOISE



VIBRATION



ACOUSTICS

www.hgcacoustics.com

June 1, 2026

**Attn: Rob Stovel
Timberworx Custom Homes Inc.
#201 – 1 Queen Street North,
Kitchener, ON N2H 2G7**

Via Email: stovel.associates@outlook.com

**RE : Responses to Peer Review Comments for Arkell Subdivision, South of Arkell Road and East of Watson Road South, Puslinch, ON
HGC Project #: 02600117**

Dear Rob,

As requested, please see HGC Noise Vibration Acoustics responses to the Peer Review comments from Valcoustics Canada Ltd. dated April 21, 2025. The comments are presented below, and our responses follow in *italics*.

- a. The study recommends the future dwelling on Lot 1 be at least 45 m from the railway right-of-way to reduce vibration levels. Even at this setback distance, the vibration levels are above the CNR/GJR limit. In addition, the proposed building envelope shown on the Onsite Sewage Servicing Schematic has the setback at less than 45 m. Vibration mitigation to meet the limit is needed.

We recommend an increased setback of 55 m from the railway right of way, to the future dwelling on Lot 1. Figure has been updated to reflect this change and shows the recommended building envelope location, and is attached.

The "conceptual 240 m² building envelope" indicated on the "Onsite Sewage Servicing Schematic" drawing (attached) is preliminary. These are conceptual building envelopes and are not exact. The dwellings are not selected yet and therefore there is an opportunity to reduce the building envelope and dwelling setback to required distances.

- b. The noise study indicates there are existing stationary sources (i.e., small engine repair shop, bicycle store and pet boarding service) in the area. These need to be identified on a Key Plan to confirm there are existing noise sensitive uses that are closer to these than the proposed residential development as stated in the noise report.

Figure 1, the Key Plan, has been updated.

- c. Road traffic information was obtained from the Town of Puslinch and the County of Wellington. The assumptions regarding the traffic information, such as no truck traffic on Watson Road South and the 2035 volumes, should be confirmed by Crozier who authored the Traffic Impact Study on behalf of the developer.

The Traffic Impact Study for the subject site, prepared by Crozier and dated February 2026, has been obtained and reviewed. The traffic study indicates that there is a 2.0% commercial vehicle traffic on both Arkell Road and Watson Road South. The analysis has been updated to include 1.0% medium trucks, and 1.0% heavy trucks for Watson Road South.

The previously adopted commercial vehicle percentage of 1.2% medium truck and 2.5% heavy truck for Arkell Road, based on information previously obtained from the County of Wellington, has been retained as a conservative assumption. Results are presented in the updated report.

The overall recommendations do not change.

- d. The future sound levels at Prediction Location D presented in Table 4 assumes the dwelling is located to the north of the OLA which maximizes the distance from Arkell Road. However, the Onsite Sewage Servicing Schematic shows the dwelling at the southern portion of the lot with the OLA to the north and fully exposed to Arkell Road. An updated assessment for this location is needed.

The "conceptual 240 m² building envelope" indicated on the "Onsite Sewage Servicing Schematic" drawing (attached) is preliminary. These are conceptual building envelopes and are not exact. The dwellings are not selected yet and the building envelope may change.

Figure 2 has been updated to reflect the more conservative location of the OLA adjacent to the roadway. If the OLA is 15 m from the centerline of the roadway, the predicted sound level will be 60 dBA.

As per NPC-300., the OLA should be assessed 3 m from the building façade. In this scenario, the predicted sound level will be less than 55 dBA and physical mitigation is not required.

- e. To calculate the exterior façade sound isolation requirements, the report states that a window to floor ratio of 50% was used. How was a corner room where there could be windows on two façades accounted for? What wall to floor ratio was used?

The note under Table 4 indicates a 100% wall to floor area ratio. The exterior wall of the dwelling at location [A] is required to be brick which will reduce the window requirements compared to a non-brick facade.

Predictions at Lot 1 have been recalculated to include two façades of exposure (prediction location [A]). Window-to-floor area ratios are assumed to be 50% (30% fixed and 20% operable). Minimum STC requirements are shown in Table 4.



Regardless, once detailed floor plans are available, the glazing requirements should be refined and the exterior wall construction verified to be brick.

- f. The noise mitigation summary provided as Table 7 should include the locations where brick veneer or equivalent masonry construction is required for the exterior walls. Review of the recommended locations shown on the first Figure 4 indicate that in addition to the southeast façade, the southwest façade should also be brick veneer or equivalent masonry construction.

The table is reprinted here with the extra column. Figure 3 is attached.

Table 7: Summary of Noise Control Requirements and Noise Warning Clauses

Prediction Location	Lot Numbers	Acoustic Barrier	Ventilation Requirement	Type of Warning Clause	Façades with Brick Veneer or Equivalent Masonry Construction Required	Required Minimum STC for Glazing
[A]	Lot 1	✓	A/C	B, D, GJR	Southwest and Southeast	STC-39
[B]	Lots 2 and 3	--	Provision for A/C	A, C, GJR	Lot 2: Southwest and Southeast Lot 3: Southeast	STC-32
[C]	Lot 4	--	Provision for A/C	A, C, GJR	Southeast	OBC
[D]	Lot 22	--	Provision for A/C	A, C	--	OBC
[E]	Lots 5 to 21, and Lots 23 to 44	--	--	A	Lot 5: Southeast Lot 6: Southeast Lot 44: Southwest	OBC

- g. The minimum window STC for Location A (Lot 1) in Table 7 is indicated as being 37. However, Table 4 recommends 35 for the same location. Clarification is needed.

The table is reproduced here with the change. Again, please note that these STC ratings are likely to be changed after a review of the detailed floor plans and building elevations.

Table 4: Preliminary Glazing Requirements

Prediction Location	Description	^{1,2,3} Minimum STC Requirements for Glazing
[A]	Lot 1 – Southernmost dwelling with exposure to the railway	*STC-39]
[B]	Lot 2 – Southern dwelling with exposure to the railway	STC-32
	Remaining dwellings	OBC

Note:

¹ Assumed window to floor area ratios of 50% for living/dining rooms and bedrooms; and assumed 100% wall to floor area ratio.

² STC requirement refers to fixed glazing. Small leaks through operable doors and windows are assumed, however, tight weather seals should be provided to reduce such leakage to the extent feasible.

³ When detailed floor plans and building elevations are available, the drawings should be reviewed to confirm exterior façade constructions and refine window glazing requirements based on actual window to floor area ratio.

* Sound entering through windows and brick veneer or a masonry equivalent construction facades
 OBC – Ontario Building Code

Due to the preliminary feasibility nature of the noise report, it is recommended that once the grading information including actual building envelopes are available, the acoustic requirements should be refined along with a review of the detailed floor plans and building elevations to refine the glazing constructions based on actual window to floor area ratios and verify the exterior wall to be brick for the required dwellings.

All other recommendations included in our previous report remain applicable. We trust the above is sufficient for your current purposes. If we can be of further assistance, please let us know.

**Best Regards,
 Howe Gastmeier Chapnik Limited**

Elise Jaklic, B.Eng

Sheeba Paul, M.Eng,

Limitations

This document was prepared solely for the addressed party and titled project or named part thereof and should not be relied upon or used for any other project without obtaining prior written authorization from HGC Noise Vibration Acoustics (HGC). Further, the input of content from any document produced by HGC or related HGC intellectual property into any Artificial Intelligence tool is expressly prohibited. HGC accepts no responsibility or liability for any consequence of this document being used for a purpose other than for which it was commissioned. Any person or party using or relying on the document for such other purpose agrees and will by such use or reliance be taken to confirm their agreement to indemnify HGC for all loss or damage resulting therefrom. HGC accepts no responsibility or liability for this document to any person or party other than the party by whom it was commissioned.

Any conclusions and/or recommendations herein reflect the judgment of HGC based on information available at the time of preparation and were developed in good faith on information provided by others, as noted in the report, which has been assumed to be factual and accurate. Changed conditions or information occurring or becoming known after the date of this report could affect the results and conclusions presented



NOISE



VIBRATION



ACOUSTICS



Figure 1: Key Plan

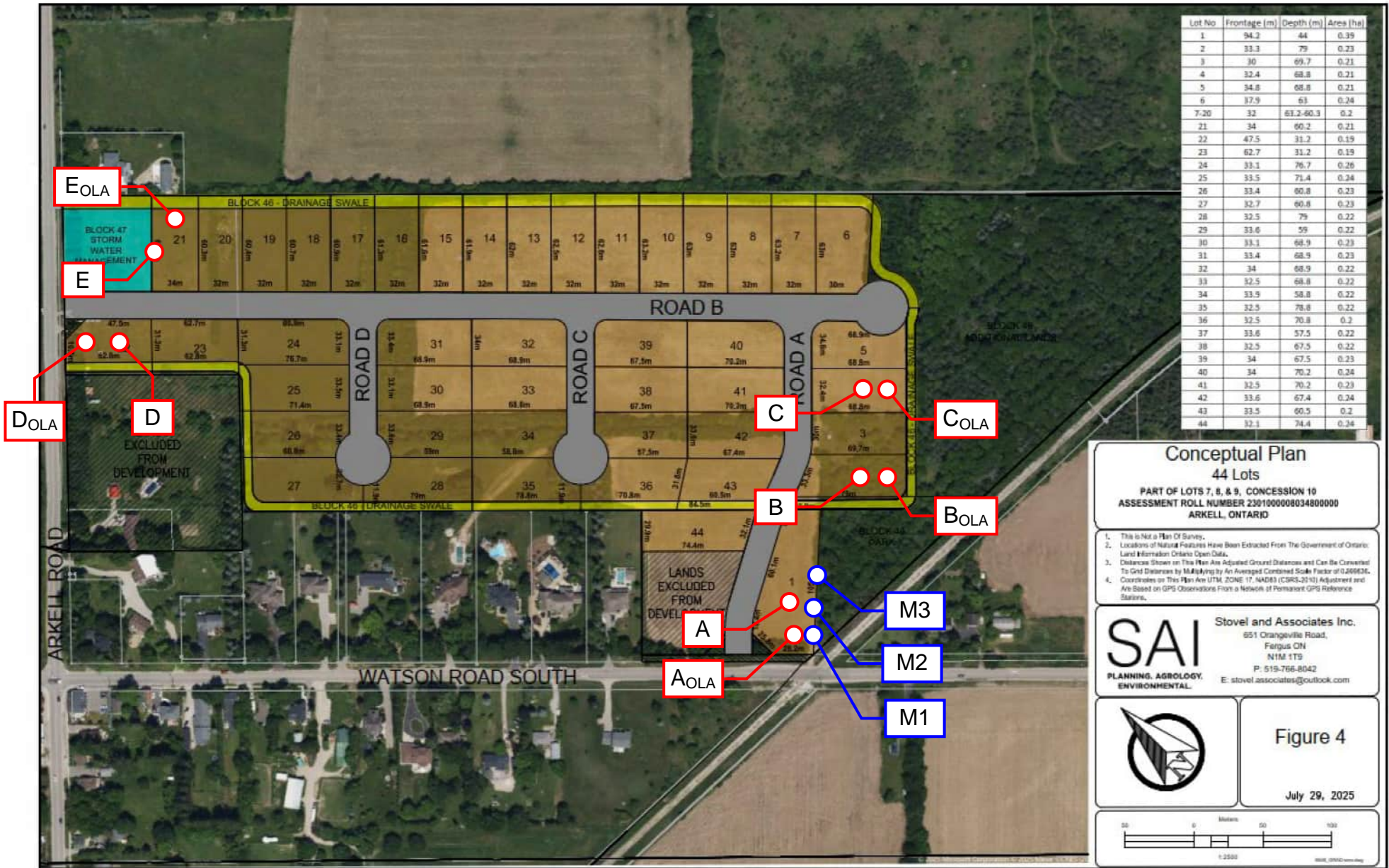


Figure 2: Proposed Concept Plan Showing Prediction Locations

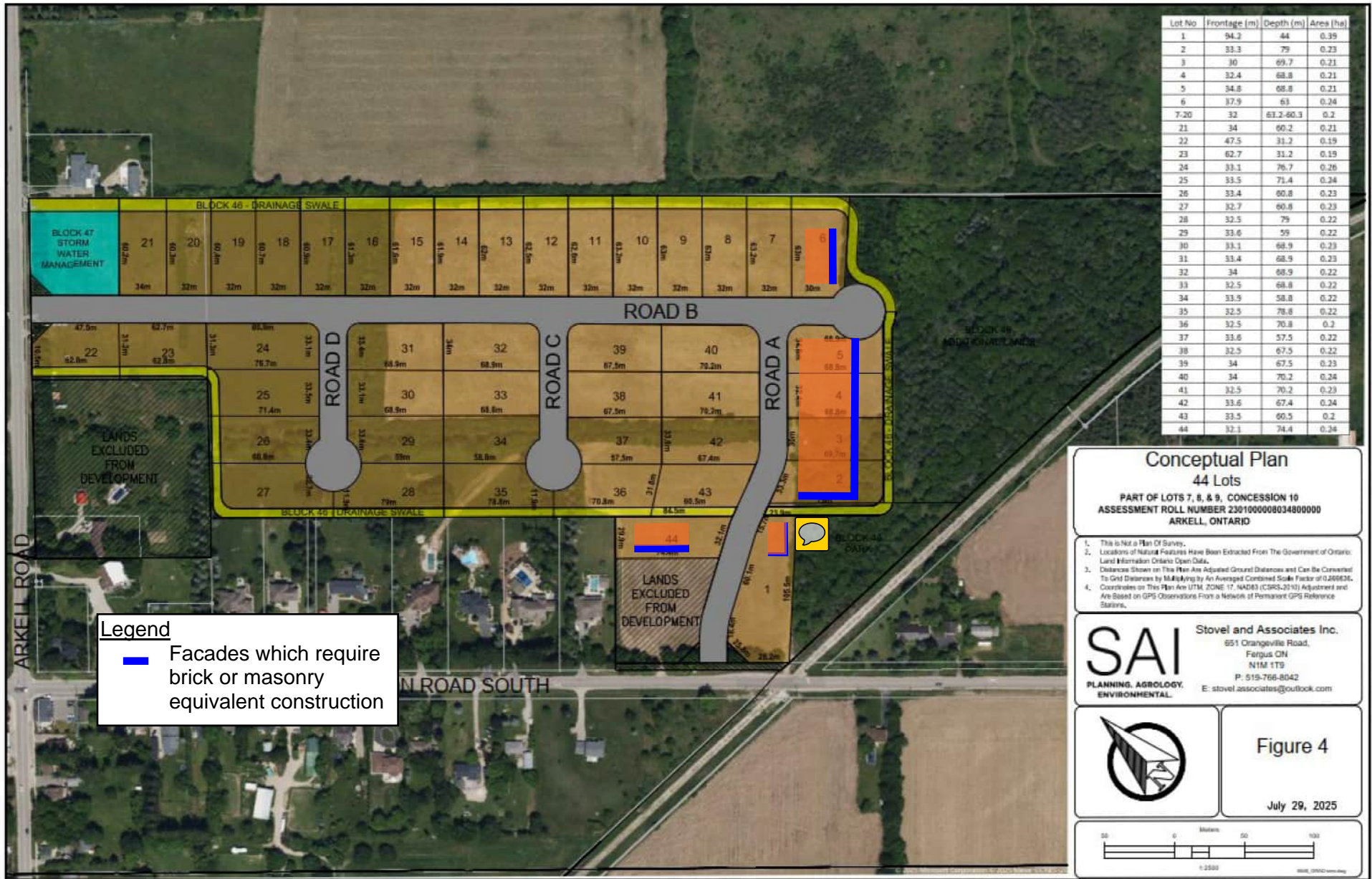
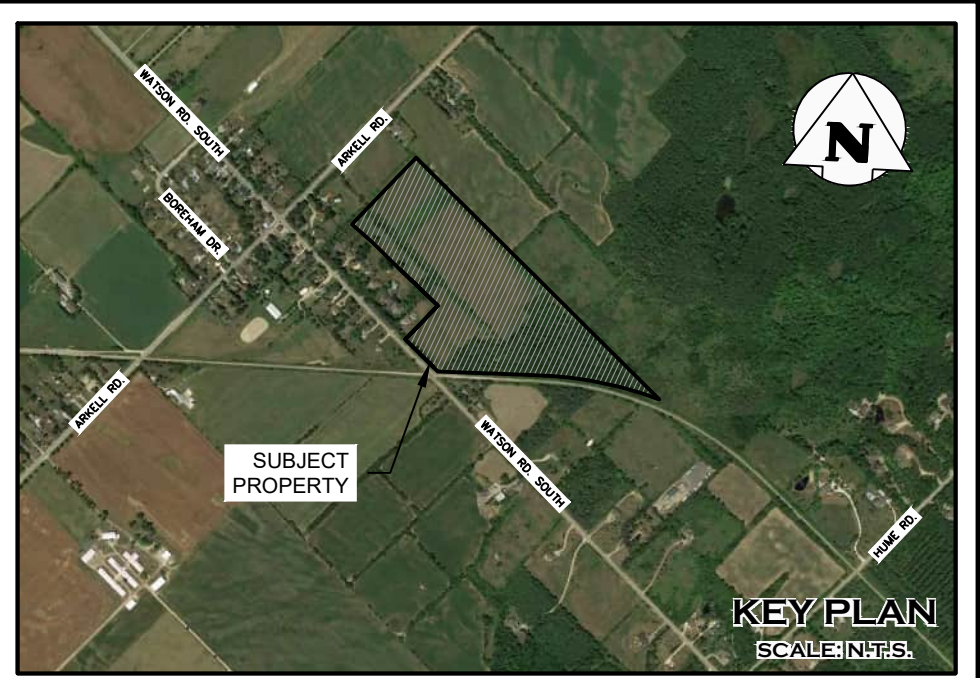
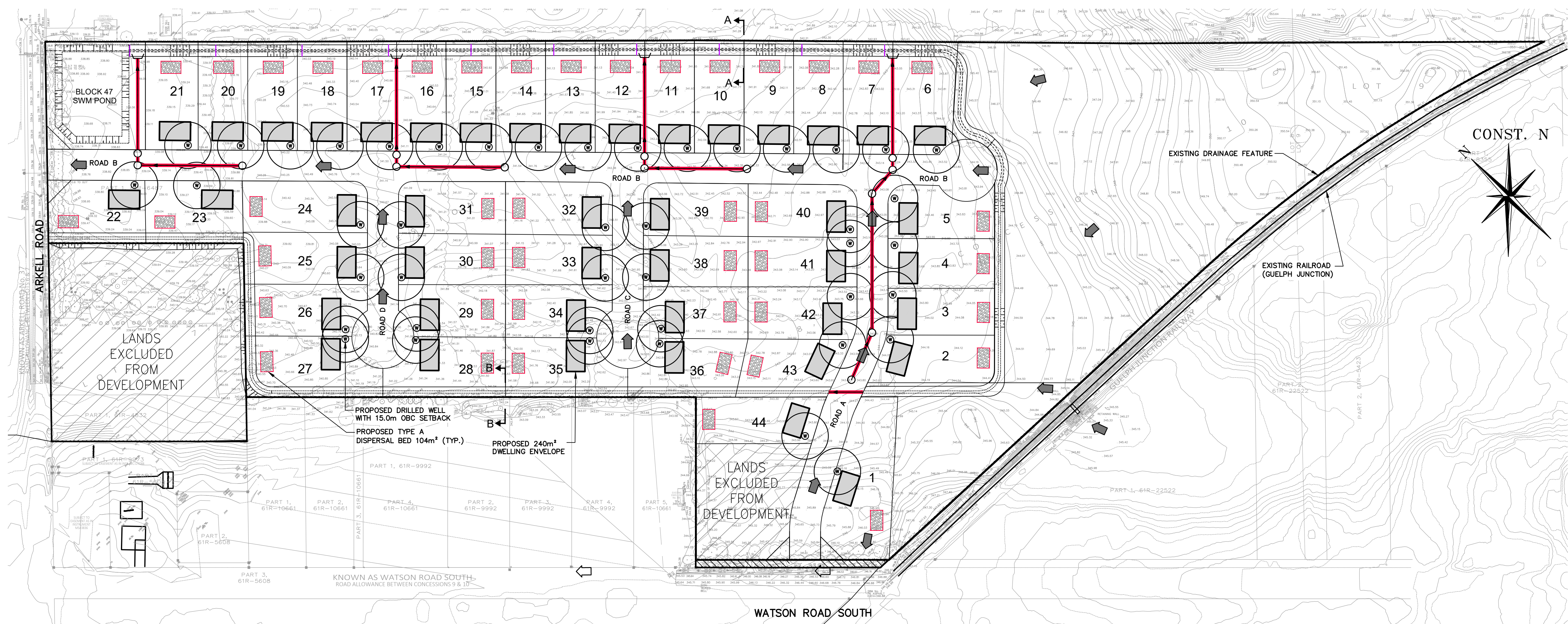
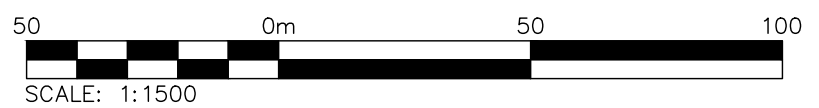


Figure 3: Proposed Concept Plan Showing Ventilation and Acoustic Barrier Requirements



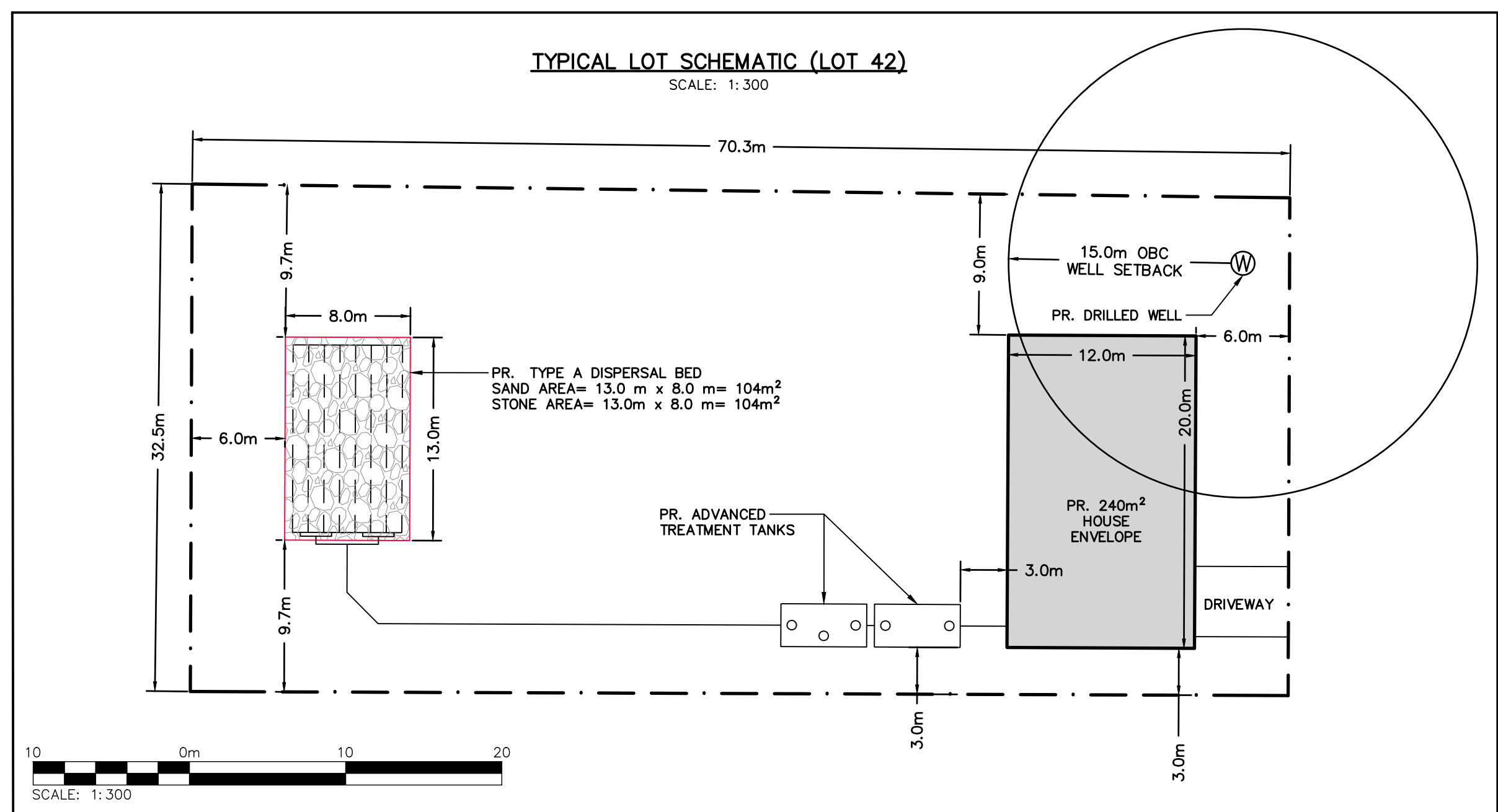
LEGEND

- PROPERTY LINE
- EXISTING CONTOUR (0.5m)
- EXISTING CONTOUR (1.0m)
- LOT NUMBER
- EXISTING GRADE
- PROPOSED GRADE
- PROPOSED GRADE (TO MATCH EXISTING)
- PROPOSED SLOPE (3:1 MAX.)
- PROPOSED LOT-LINE
- CONCEPTUAL 240 m² BUILDING ENVELOPE
- PROPOSED TYPE A DISPERSAL BED 104 m²
- CONCEPTUAL PROPOSED DRILLED WELL LOCATION C/W 15.0m OBC SETBACK



ONSITE SEWAGE SYSTEM DESIGN TYPICAL LOT NOTES

PROPOSED 6 BEDROOM, 240 m ² HOME WITH SIXTY-TWO (62) FIXTURE UNITS	BASE FLOW (6 BEDROOMS)= 2,500 L/DAY ADDITIONAL FLOOR AREA (40 m ²)= 400 L/DAY ADDITIONAL FIXTURE UNITS (42)= 2,075 L/DAY Q TOTAL (2,500+2,075)= 4,575 L/DAY
SOIL PERCOLATION RATE	T = 15 min/cm (ESTIMATED BY C.F. CROZIER)
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TYPE A DISPERSAL BED STONE AREA	MINIMUM SIZE=Q/50=4,575/50 = 91.5m ² PROVIDED 13m x 8m = 104m ²
TYPE A DISPERSAL BED SAND AREA	MINIMUM SIZE=QT/850= 4,575*15/850 = 80.7m ² PROVIDED 13m x 8m = 104m ²



1	ISSUED FOR 2nd DRAFT PLAN SUBMISSION	2025/AUG/01
0	ISSUED FOR PRE-CONSULTATION	2023/AUG/31
No.	ISSUE / REVISION	YYYY/MM/DD

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Project
**WATSON ROAD SOUTH
TOWN OF PUSLINCH**

Drawing
ONSITE SEWAGE SERVICING SCHEMATIC

CROZIER CONSULTING ENGINEERS

Drawn	J.G.	Design	J.G.	Project No.	2433-6646	
Check	J.B.	Check	J.B.	Scale	1:1500	
					Dwg.	C102

**SCOPED ENVIRONMENTAL IMPACT STUDY
ARKELL SUBDIVISION**

PREPARED FOR:

Timberworx Custom Homes Inc.
275 Hanlon Creek Blvd
Guelph ON
&
Sloot Construction Ltd.
661 Watson Road S
Puslinch ON
&
John Sloot Investments Ltd.

PREPARED BY:



STOVEL AND ASSOCIATES INC.

651 Orangeville Road
Fergus, ON
N1M 1T9

May 2026

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1. INTRODUCTION

1.1 Site Location

Stovel and Associates Inc. ("SAI") was retained by Timberworx Custom Homes Inc. ("Timberworx"), Slood Construction Ltd. ("Slood") and John Slood Investments Ltd. to complete a Scoped Environmental Impact Study ("EIS") for a proposed residential development in the Township of Puslinch, County of Wellington ("Township"). The project is referred to as the Arkell Subdivision. The lands in question are located on Part of Lots 7, 8 and 9, Concession 10.

Watson Road abuts the property on the southwest limits of the site and Wellington County Road 37 (also known as Arkell Road) is located on the west/northwestern limits of the site. The subject lands do not have a civic address. A location map is provided as Figure 1

In the context of this report, the lands in question are referred to as the site, subject lands, or subject property.

1.2 History and Background

In 2006, Mr. Tom Kukovica (the owner of the subject property at the time) applied for Draft Plan of Subdivision (23T-06003), Official Plan Amendment (OP-2006-06) and Zoning Bylaw Amendment (P10/2006). The applications were deemed complete in September 2006. The proposal included 35 residential lots (minimum 1 acre in size) serviced by private individual wells and septic systems. The application was circulated to public agencies for comment and to landowners within 120m of the site. Following the receipt of the comments, replies were prepared by the Kukovica consulting team.

GWS Ecological & Forestry Services Inc. ("GWS") was retained by the Township of Puslinch to conduct a review of the natural environment of the Proposed Subdivision on January 5, 2007. The results of the GWS peer review are summarized below:

- *"The subject property consists of hay fields bounded by hedgerows, as well as woodland that extends along the railway line. The land gently slopes to the north and run-off flows through a culvert that passes under Arkell Road. It is my understanding that an Environmental Impact Study (EIS) was not required in this case because there are no wetlands or significant woodlands found on or nearby the Kukovica property. The subject lands are currently designated as Primary Agricultural, Secondary Agricultural and Hamlet Area in the Wellington County Official Plan and they have been zoned Agricultural by the Township. As a result, an Amendment is required to the Official Plan and Zoning By-law in order for this development to proceed".*
- *"An immature mixed wood plantation occupies approximately 11 acres at the south end of the site. The species composition is estimated to be white pine – 40%, white spruce – 20%, black walnut – 20% and black locust – 20%. These trees are about 25 years old and mostly of pole timber size being 4 to 9 inches in diameter at breast height (dbh). Tree growth has generally been good as the white pine and*

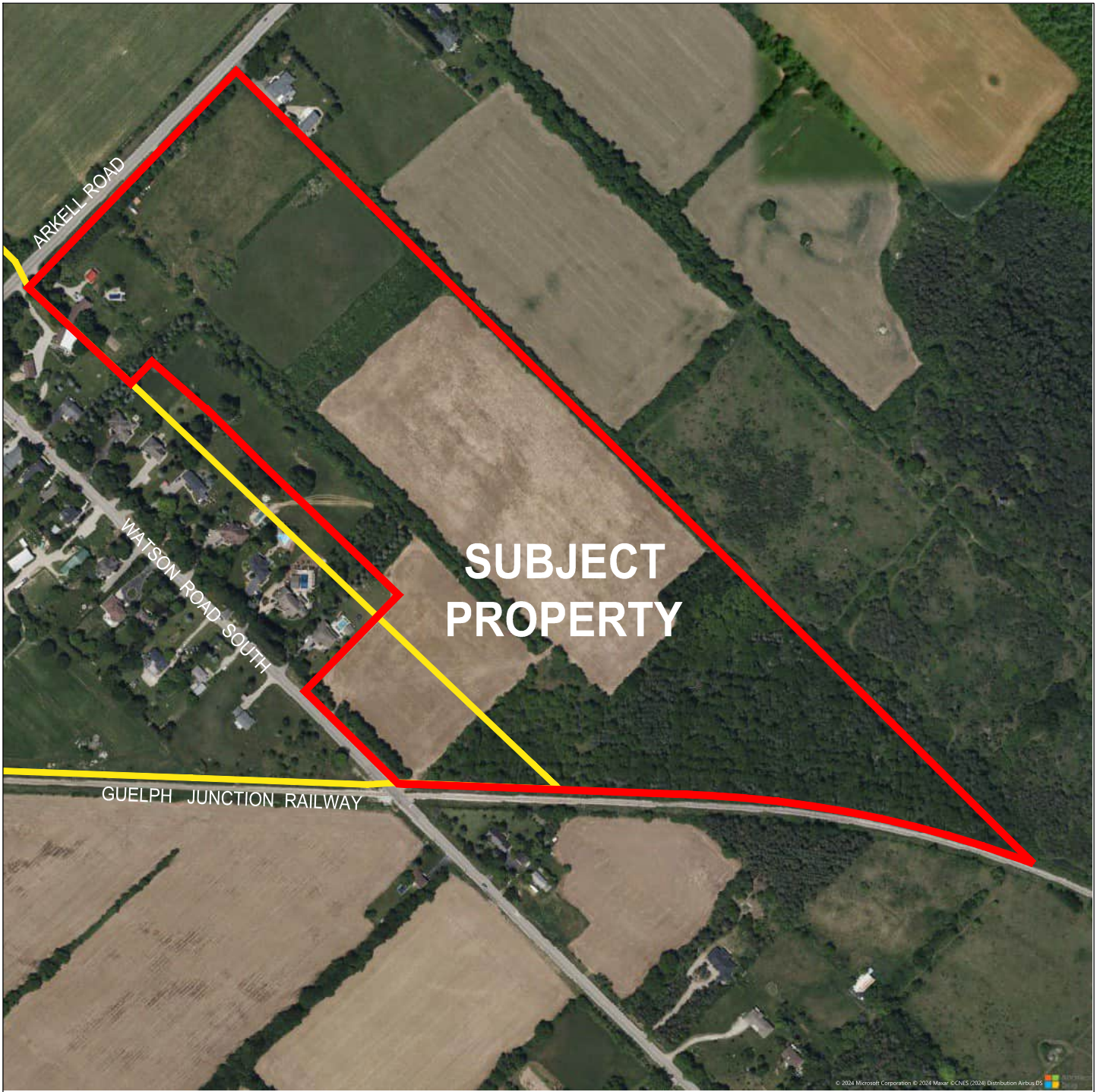


Figure 1
Site Location

- Legend
- SITE BOUNDARY
 - HAMLET OF ARKELL LIMITS

Part of Lots 7,8 & 9 Concession 10
Township of Puslinch,
Wellington County Arkell, Ontario

Date: May 29, 2026

50 0 Meters 50 100
1:5000



Sources:
Aerial Imagery Provided By Microsoft Corporation @
2026 Maxar CNES (2026) Distribution Airbus DS.

Stovel and Associates Inc.
651 Orangeville Road,
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deciduous trees are 25 to 50 feet tall while the spruce are 20 to 35 feet tall. However, where pine and spruce are growing in close proximity to black walnut there has been much dieback and mortality to the conifers due to juglone poisoning from the walnut. In spite of this mortality the overstory is still fully stocked with living trees. The understory consists of a low to moderately dense shrub layer of common buckthorn, red elderberry and raspberry. Common buckthorn is a very aggressive alien species that is undesirable in woodlands due to its high reproductive potential, shade tolerance and rapid growth under a wide variety of site conditions. Garlic mustard, another non-native invasive species, is also abundant throughout the woodland area. No rare or unusual plants were noted and none are expected in this man-made forest. To date, no thinning has been carried out in this plantation. Common wildlife species were observed utilizing this woodland habitat, including white-tailed deer, black squirrel, red squirrel, cottontail rabbit, Blue Jay, Black-capped Chickadee and American Crow. Other common woodland birds and mammals likely inhabit this area. Given the above characteristics there is insufficient justification to consider this plantation as locally significant within Puslinch Township. Development intrusions into this woodland are therefore considered acceptable”.

- *“In summary, there are no significant natural features on the subject lands that warrant protection or the exclusion of development intrusions. The proposal development therefore seems reasonable from a natural environment perspective. The large lots in conjunction with the gently sloping terrain are favourable for tree preservation and healthy, good quality trees should therefore be retained whenever possible. In order to effectively achieve this objective a tree preservation plan should be prepared for the entire site as a condition of Draft Plan approval. Given the high density of trees within the plantation and the tree health problems which exist in this area, more detailed lot specific tree preservation plans should also be prepared for lots 13, 14, 15, 16, 17, 18, 19 and 20 prior to the issuance of building permits. All trees to be retained on these lots should be clearly identified on a site plan along with appropriate tree protection measures to be implemented during construction”.*

The proposed development was placed on hold because of the Growth Plan provisions that only permitted settlement boundary expansions as part of the Municipal Comprehensive Review (“MCR”) process. The County of Wellington initiated the County Official Plan Review in 2019. Of note, the Growth Plan was replaced by the Provincial Planning Statement (“PPS”) in 2024 and the limitation on settlement expansions was removed and replaced by new provisions in the PPS.

At the start of the Municipal Comprehensive Review (“MCR”) conducted by the County of Wellington, the owner of the property retained a planning consultant to ensure that the subject property would be considered in the MCR. Astrid J. Clos Planning Consultants (“AJC Planning”) conducted a review of the Municipal Comprehensive Review from The County of Wellington – Progress Report #3. The letter prepared by Astrid Clos requests that the Proposed Kukovica Subdivision be considered as a Hamlet Expansion (March 19, 2021). The following excerpt from AJC Planning summarizes the proposal:

“JOHN SLOOT INVESTMENTS LIMITED and SLOOT CONSTRUCTION LTD. is the owner of the property abutting the Arkell Hamlet and is legally described as Part of Lots 7, 8 and 9, Concession 10, Township of Puslinch. County Official Plan Amendment, Zone Change and Draft Plan of Subdivision applications were deemed to be complete in September 2006 for this property.

Please find this documentation attached for your reference.

These applications propose to expand the Arkell Hamlet to the east by approximately 18.2 hectares and change the zoning to implement a proposed residential Draft Plan of Subdivision to permit 35 residential lots. The area breakdown is provided below:

1.65 hectares (area of 3 severed lots)

1.83 hectares (area within the Hamlet)

18.2 hectares (area of Hamlet expansion)

21.68 hectares (Total Draft Plan Area)”

In 2021, the current ownership group engaged with the Township of Puslinch and County of Wellington to resolve technical issues associated with the proposed development. Updated technical analysis was submitted to the municipality for technical peer review. The findings of these updated reports are summarized in this document. The updated reports include the following:

- Agricultural Impact Assessment (SAI, 2026).
- Nitrate Impact Assessment (Crozier, 2024).
- Functional Servicing and Stormwater Management Report (Crozier, 2026).
- Groundwater Supply Assessment (ARL Groundwater Resources Ltd, 2023).
- Water Balance Assessment (Crozier, 2025).
- Traffic Impact Study (Crozier, 2025).

A revised development concept was prepared for the site and is described in Section 2 of this report. The main emphasis of the revised concept plan was to minimize disturbance within the plantation.

1.3 County Official Plan and Township Zoning Bylaw

The lands in question are designated Hamlet, Prime Agricultural, and Secondary Agricultural in the County of Wellington Official Plan (“County OP”) (see Figure 2). There are no lands onsite or adjacent lands (i.e., within 120 m of the site) that are designated Greenland or Core Greenland in the County OP. Lands designated Hamlet may be used for residential purposes. An amendment to the County OP is required to expand the settlement boundary to permit residential development outside of the Hamlet limits.

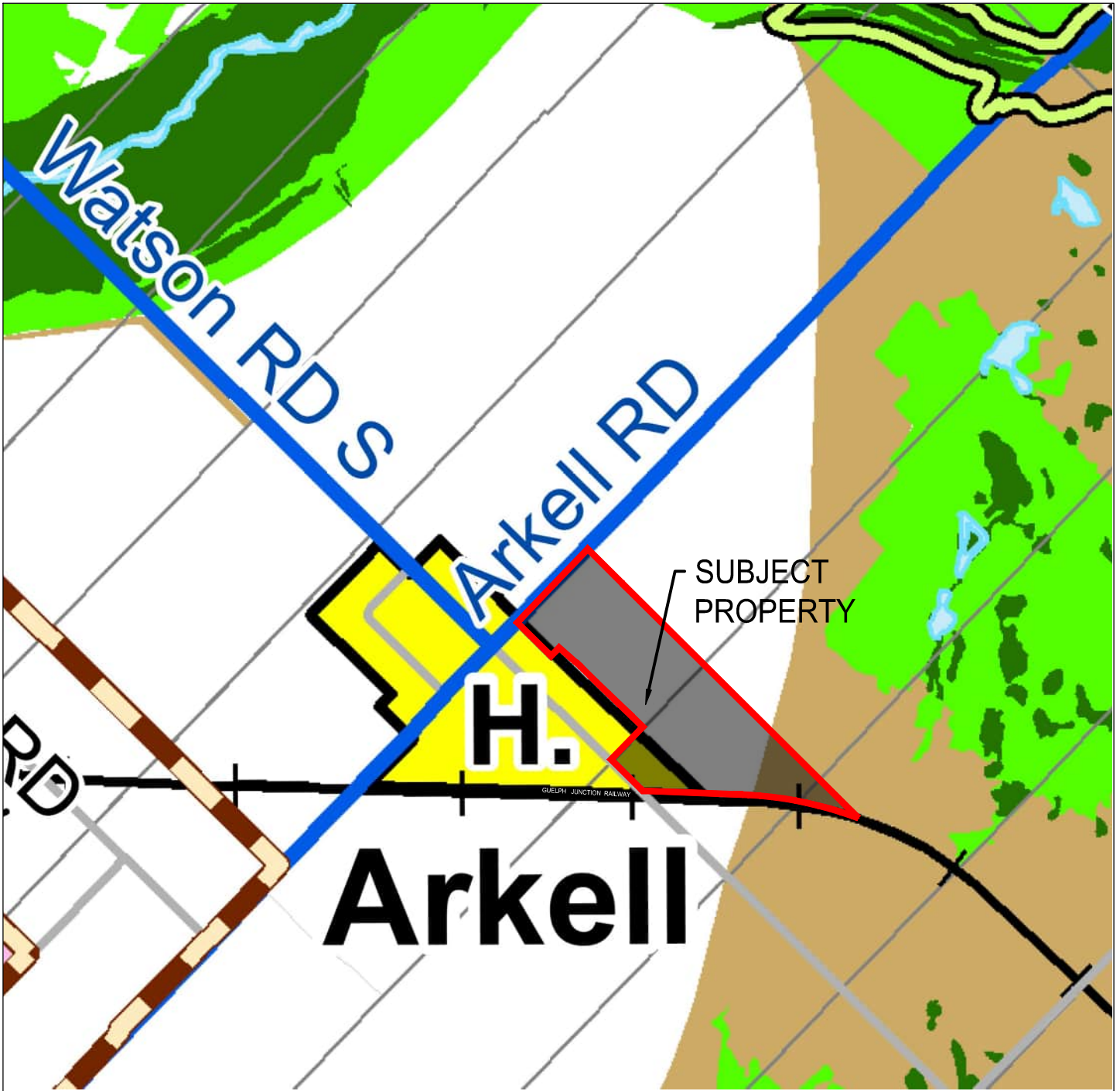


Figure 2
County Official Plan
Land Use Designation

The Greenlands System

- Core Greenlands
- Greenlands
- Earth Science ANSI

The Rural System

- Prime Agricultural
- Secondary Agricultural
- Hamlet Area
- Secondary Urban Centre
- Mineral Aggregate Area
- Recreational
- Rural Employment Area
- Country Residential
- Policy Area
- Regionally Significant Economic Development Study Area

Site Boundary

Other

- Landfill Site
- Proposed Interchange
- Proposed Major Roadways
- County Roads
- Provincial Highway
- Railways
- Waterbody
- Watercourse

Part of Lots 7,8 & 9 Concession 10
Township of Puslinch,
Wellington County Arkell, Ontario

Date: May 29, 2026

NOT TO SCALE
N.T.S.

Stovel and Associates Inc.
651 Orangeville Road,
Fergus ON
N1M 1T9
P: 519-766-8042
E: stovel.associates@outlook.com



Sources:

County of Wellington Official Plan
Schedule B7 - Land Use - Puslinch

The lands in question are zoned Agriculture (Comprehensive Zoning By-Law No. 023-18, Consolidated May 2021) (See Figure 3). The site will need to be rezoned from Agriculture to Hamlet Residential to permit the establishment of a residential subdivision.

At the time of the application was deemed complete in 2006, the Zoning By-Law enforced by the Township was “*Puslinch Township Zoning By-Law 19/85*”, but this bylaw was updated by Comprehensive Zoning By-Law No. 023-18 in 2021. The zoning standards set out in Zoning By-Law No. 023-18 for Hamlet Residential have guided the design of this proposed development.

Policy 4.6.3 of the County of Wellington Official Plan sets out the parameters of an EIS. This EIS evaluates the impacts that the proposed development may have on environmental features and functions onsite and on adjacent lands.

4.6.3 Environmental Impact Assessment

Environmental impact assessments prepared by a qualified person may be required to evaluate the impacts a proposed development may have on the natural environment and the means by which negative impacts may be reduced or eliminated. An environmental impact assessment may include some or all of the following:

- a) a description of the proposal, including a statement of purpose;*
- b) a description of the existing land use on the subject lands and adjacent lands, as well as the relevant land use regulations;*
- c) an identification of proposed land uses and activities and potential environmental impacts;*
- d) a delineation of any environmental constraint area on a site plan;*
- e) a description of the terrestrial and aquatic resources, natural and built landforms, surface and groundwater and other significant environmental features or functions on the site;*
- f) an assessment of the impact on groundwater resources and in particular existing private wells and municipal supply wells in the area;*
- g) a consideration of the need for a subwatershed study;*
- h) an assessment of the impact on groundwater resources and in particular existing private wells and municipal supply wells in the area;*
- i) a statement of the relative environmental and ecological significance of the natural features and functions affected by the proposal;*
- j) a consideration of the potential to maintain, restore or where possible, improve the long-term ecological function and biodiversity of natural heritage systems;*
- k) requirements to be addressed in Site Plans and/or Development Agreements;*

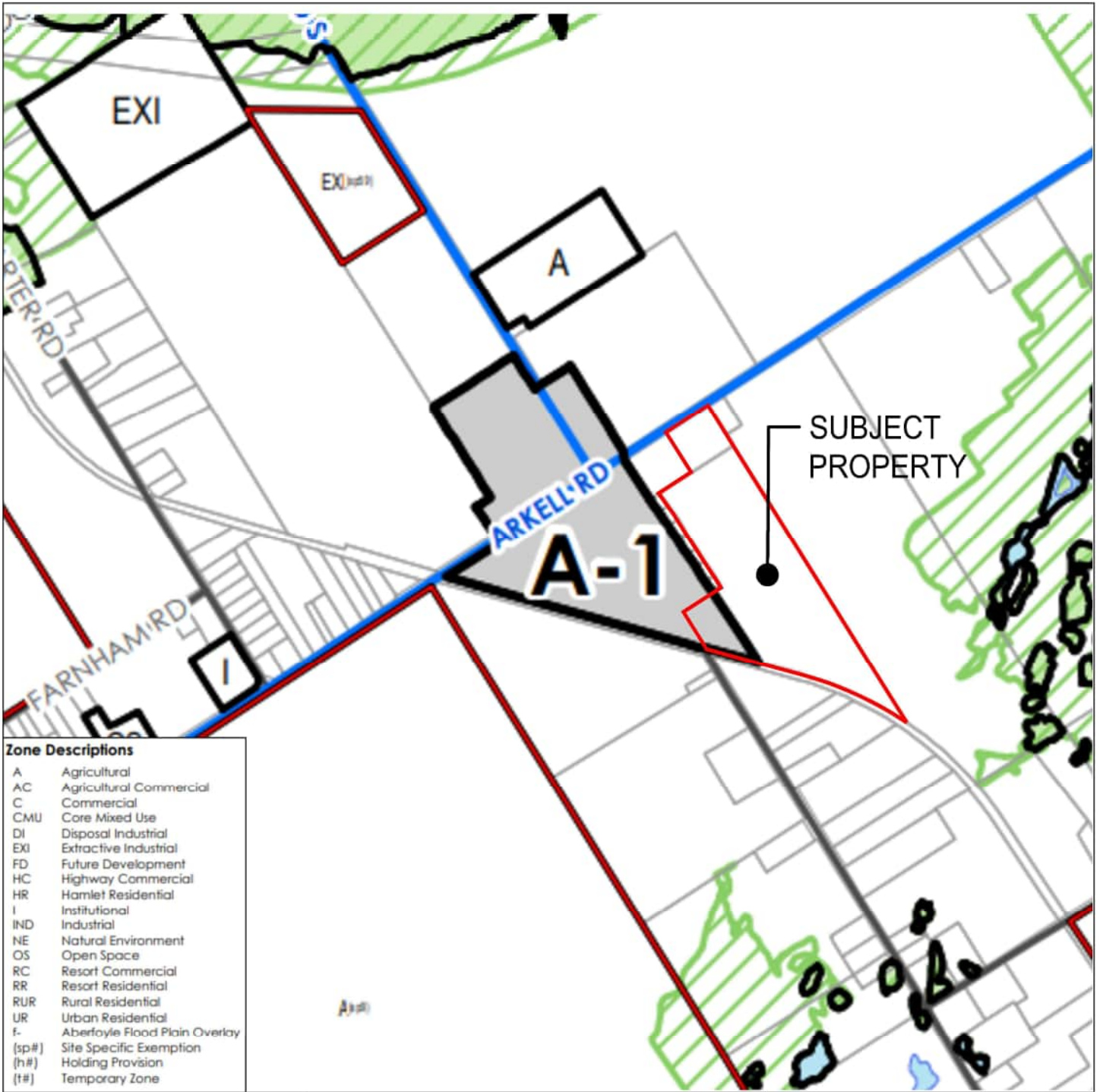


Figure 3
Zoning By-Law

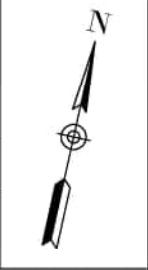
Legend

- ZONING LIMITS
- ENVIRONMENTAL PROTECTION OVERLAY
- NATURAL ENVIRONMENT
- SITE BOUNDARY

Part of Lots 7,8 & 9 Concession 10
Township of Puslinch,
Wellington County
Arkell, Ontario

Date: March 5, 2024

125 0 125 250
Meters
1:15000



Sources:

TOWNSHIP OF PUSLINCH - ZONING BY-LAW
No. 023-18 SCHEDULE 'A'

Stovel and Associates Inc.
651 Orangeville Road,
Fergus ON
N1M 1T9
P: 519-766-8042
E: stovel.associates@outlook.com



l) a statement that there are no negative impacts on provincially significant greenland features and functions and a description of the means by which negative environmental impacts will be mitigated in other greenland areas.

m) a consideration of the potential for enhancement of environmental features or functions through site design alternatives;

n) a proposal for monitoring, where needed;

o) such additional concerns as a Council may consider relevant.

The County may, in consultation with Conservation Authorities, provide consideration for a scoped environmental impact assessment format for use by proponents of development applications, which are generally minor in nature with limited potential impacts.

The purpose of this EIS is to address Policy 4.6.3 of the County OP.

2. DESCRIPTION OF PROPOSED DEVELOPMENT

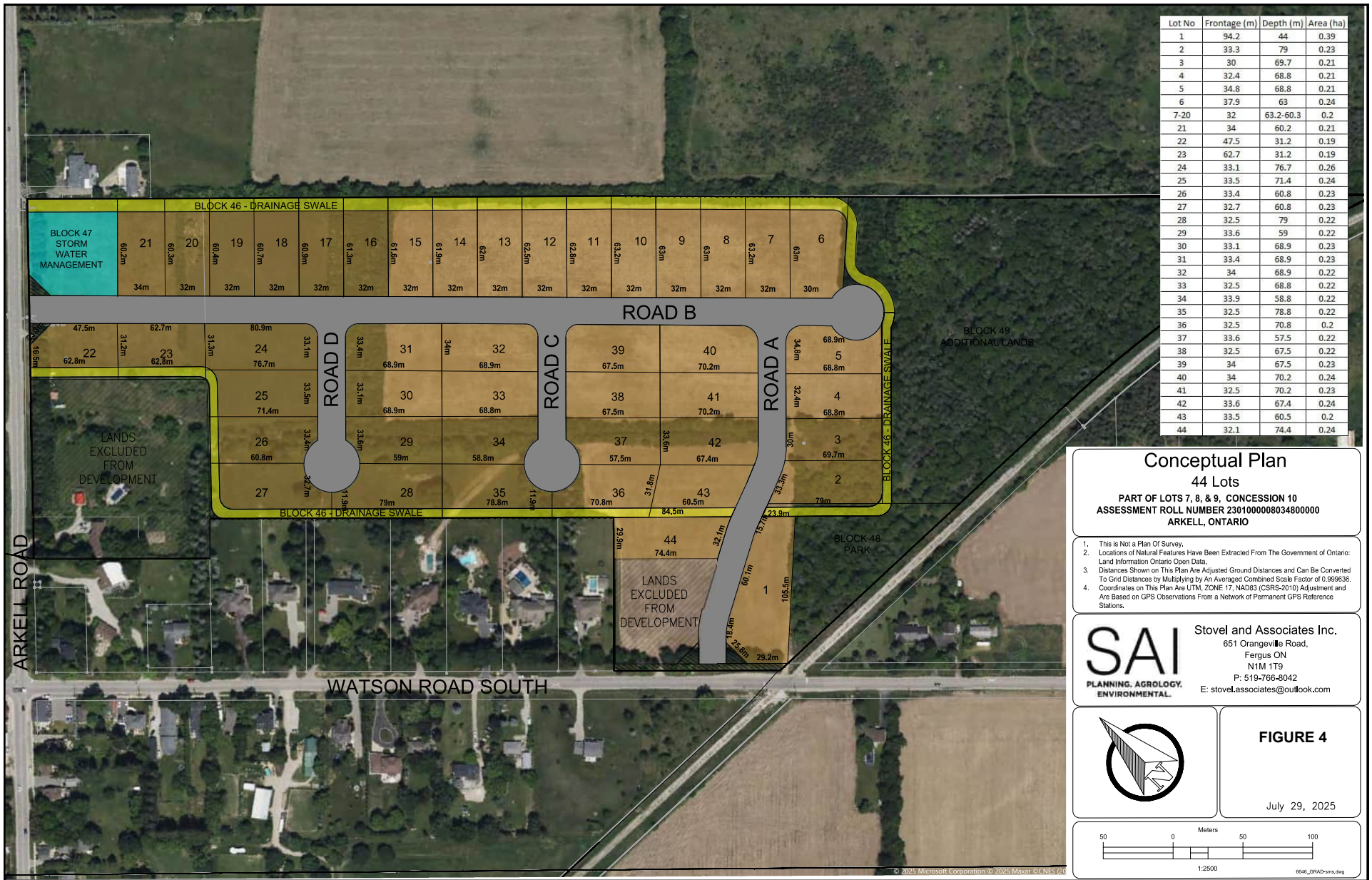
The Arkell Subdivision is proposed as a 44-lot residential plan of subdivision. The residential lots are proposed to be created through a Plan of Subdivision and will be serviced by advanced tertiary septic systems and private drilled individual wells. Lot sizes range from approximately 0.2 ha (0.49 ac) to 0.3 ha in size, with frontages ranging from approximately 30 to 40 metres, exclusive of lots located on curves or cul-de-sacs. Each dwelling unit is expected to include a double-car garage with a minimum of two additional parking spaces within each driveway. Figure 4 illustrates the revised concept plan. This plan will be the focus of impact assessment for this EIS.

The internal road network comprises approximately 1,200 metres of roadway within a 20-metre right-of-way. The roads will provide a full urban cross-section with curb and gutter and sidewalks. For the most part, the internal roads are double-loaded.

A passive stormwater management approach is proposed to preserve and maintain the rural character of the property. Water quality controls, erosion protection, and water balance will be provided through bioswale systems pretreated by oil-grit separators (OGS) within the municipal roadway storm system. A stormwater management pond of approximately 0.38 ha is located on the north side of the proposed internal road. The bioswale system with OGS pretreatment and dry pond treatment train will provide water quality treatment meeting or exceeding the Enhanced Protection criteria by retaining, treating, and infiltrating runoff volumes equal to or greater than those generated during a 25 mm rainfall event. No additional water quantity storage beyond that provided by the bioswale system and dry pond is required, as post-development peak flows do not exceed pre-development peak flows at the outlet culvert at Arkell Road for the 2-year to 100-year design storm events.

In preparation of the development concept, the applicant was aware of the potential concerns related to tree removal, particularly the removal of the onsite plantation. The recommendations provided by the Township's ecological consultant, GWS, set out important guidance for the development of the plan, i.e. preparation of a Tree Protection and Maintenance Plan. This recommendation can be included as a condition of draft plan approval.

It is noted, however, that the proposed conceptual plan does not propose significant development envelopes within the plantation; Lots 1, 4, 5 and 6 primarily backlot along the edge of the plantation. Lots 2 and 3 partially backlot into the plantation and the impact of these lots on the plantation will be evaluated in this EIS.



Lot No	Frontage (m)	Depth (m)	Area (ha)
1	94.2	44	0.39
2	33.3	79	0.23
3	30	69.7	0.21
4	32.4	68.8	0.21
5	34.8	68.8	0.21
6	37.9	63	0.24
7-20	32	63.2-60.3	0.2
21	34	60.2	0.21
22	47.5	31.2	0.19
23	62.7	31.2	0.19
24	33.1	76.7	0.26
25	33.5	71.4	0.24
26	33.4	60.8	0.23
27	32.7	60.8	0.23
28	32.5	79	0.22
29	33.6	59	0.22
30	33.1	68.9	0.23
31	33.4	68.9	0.23
32	34	68.9	0.22
33	32.5	68.8	0.22
34	33.9	58.8	0.22
35	32.5	78.8	0.22
36	32.5	70.8	0.2
37	33.6	57.5	0.22
38	32.5	67.5	0.22
39	34	67.5	0.23
40	34	70.2	0.24
41	32.5	70.2	0.23
42	33.6	67.4	0.24
43	33.5	60.5	0.2
44	32.1	74.4	0.24

Conceptual Plan

44 Lots

PART OF LOTS 7, 8, & 9, CONCESSION 10
ASSESSMENT ROLL NUMBER 230100008034800000
ARKELL, ONTARIO

1. This is Not a Plan Of Survey.
2. Locations of Natural Features Have Been Extracted From The Government of Ontario: Land Information Ontario Open Data.
3. Distances Shown on This Plan Are Adjusted Ground Distances and Can Be Converted To Grid Distances by Multiplying by An Averaged Combined Scale Factor of 0.999636.
4. Coordinates on This Plan Are UTM, ZONE 17, NAD83 (CSRS-2010) Adjustment and Are Based on GPS Observations From a Network of Permanent GPS Reference Stations.

SAI

Stovel and Associates Inc.
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 E: stovel.associates@outlook.com

FIGURE 4

July 29, 2025

1:2500

3. DESCRIPTION OF STUDY APPROACH and the NATURAL ENVIRONMENT

In addition to the plans and reports that were specifically prepared for the submission of the planning applications, the following background materials were also reviewed:

- Soil data resource information which includes Ontario Soil Survey reports and mapping, the provincial digital soil resource database and information from on-site investigations.
- Aerial photography (historic and recent drone survey) with scale of 1:10,000 or smaller.
- on-line data base queries at the Ontario Natural Heritage Information Centre (NHIC) web site. A review of the Natural Heritage Information Centre (NHIC) database was conducted for the 10 km UTM squares encompassing and adjacent to the subject lands. The following squares were reviewed: 17NJ6720, 17NJ6721, and 17NJ6820.
- on-line mapping provided by the Grand River Conservation Authority (“GRCA”).
- County of Wellington Official Plan.
- Township of Puslinch Zoning By-law.
- Selected Atlas sources: Butterfly, Reptile and Amphibian, and Breeding Birds.

The subject land is primarily disturbed and/or used for agricultural purposes. The 2025 crop was soybeans (approximately 18 ha). The property has been cultivated for common field crop production over the past several years. There are no natural or semi-natural vegetation communities located within the area proposed to be developed. Following the 2025 harvest, the site was planted in a cover crop.

Prior to completing field investigations in 2026, relevant background data were reviewed documenting rare species in the County, the presence of significant natural heritage features onsite and within 120 m of the site, and rare species in the County of Wellington. This background data review provided requisite scoping for the environmental inventories. Much of the area proposed to be developed is cultivated for agricultural production. Appendix A provides an outline for this scoped EIS.

Ecological Land Classification (“ELC”) System was used to describe onsite vegetation communities. Vegetation community boundaries were established on an aerial photo-mosaic base map and field checked. As documented later in this report, the only vegetation communities that were described are hedgerows and the onsite plantation. A working list of vascular plants is provided in Appendix B.

A land use survey was also conducted (2025), with additional information gathered from Google Satellite Imagery. Aerial photographic mapping and roadside images have been utilized to gain a better understanding of the ecological features and activities onsite and on adjacent lands (see Section 2.0).

The following site visits were completed:

- Breeding Bird Survey – May 23, June 10, June 25, 2023, by Colville Consulting Ltd.
- Leaf Off Bat Survey – May 5, 2026 – by R. J. Burnside.

- Habitat for Endangered or Threatened Species (Butternut and Black Ash) – April 27, 2026, by Williams and Associates, Professional Foresters.
- Butternut Health Assessment – May 11, 2026 - by Williams and Associates.
- Good Forestry Permit Application – 2023 - Aborland Forestry Consulting.

3.1 Geology and Soils

Quaternary geological mapping by P.F. Karrow in the 1960s (Map 2153, Geological Report 61, Ontario Department of Mines, 1968) indicates that the surficial sediments on the property are described as outwash gravel. Wentworth Till occurs to the east and north of the property where it occurs as a surface expression of the Paris Moraine. Karrow (1968) describes the Wentworth Till as predominantly a sand till (typically 49% sand, 33% silt, 18% clay). The Port Stanley Till (sandy silt till) is present in the general area, but this is not evident from the mapping by Karrow. Kame and esker deposits (consisting of sand and gravel) are mapped directly beneath the centre of the Hamlet of Arkell and to the north of the Hamlet where Arkell Road rises in elevation towards an intersection with the Paris Moraine. It is estimated that overburden sediment thickness beneath the proposed development property is approximately 15 - 20 m. Sediment types are shown to consist of sand, gravel and stones to silty sand, clay, and stones. In general, the overburden materials appear to be mostly coarse-grained materials.

Geological mapping of the Toronto to Windsor corridor by Sanford (Geological Survey of Canada, 1969) includes the study area. The mapping indicates that the Hamlet of Arkell and the proposed development property are underlain by the Eramosa Member of the Guelph Formation. The Eramosa Member is shown as occurring as a relatively narrow band in the area and is described as a dark brown to black bituminous dolomite and shale that intertongues with the basal Guelph Formation. The Eramosa Member is bordered to the west/southwest by the main Guelph Fm. unit, described by Sanford as a cream to brown, fine to medium crystalline dolomite containing numerous bioherm reefs. The Guelph Formation sub-crop is shown to extend over a wide area to the west of Arkell, including the cities of Guelph, Cambridge, and a large part of Kitchener. The Eramosa Member is bordered on the east/northeast side by the Amabel Group, described as a grey and blue-grey medium crystalline dolomite containing numerous bioherm reefs. Stratigraphically, the Guelph Formation overlies the Eramosa Member, which overlies the Amabel Group. The regional dip of the formations is to the southwest towards the Michigan Basin. The bedrock nomenclature associated with the Guelph-Eramosa-Amabel stratigraphic sequence was revised by Brunton in about 2006. The corresponding revised stratigraphic sequence in descending order (Brunton 2006) is as follows: Guelph Fm., Eramosa Fm., Goat Island Fm., Gasport Fm., and Irondequoit Fm. In general, the former un-subdivided Amabel Fm. has now been subdivided into 3 separate formations (Goat Island, Gasport, Irondequoit).

The southeast corner of the site is located within the Paris and Galt Moraine Policy Area. There are no surface water features or wetlands on or in the immediate vicinity of the property. The lands proposed for development were observed to be relatively flat with no obvious evidence onsite of the hummocky terrain that characterizes the Paris and Galt Moraines. ARL Groundwater Resources Ltd. (“ARL”) completed a Groundwater Supply Assessment (March 2023). The report identified that the *“southeast corner of the site is*

located within the Paris and Galt Moraine Policy Area”, while also noting there was “no obvious evidence onsite of the hummocky terrain that characterizes the Paris and Galt Moraines.” The report further states that “the surficial sediments on the property are described as outwash gravel” and that “the overburden materials appear to be mostly coarse-grained materials.”

3.2 Land Use and Surficial Drainage

Land Use planning maps indicate that the nearest Greenlands are about 200 - 400 m to the northeast of the site. The nearest surface/groundwater features are the springs at the Arkell Springs property approximately 500 - 1000 m to the north of the site. The nearest continuous surface water feature is the Eramosa River beyond the Arkell Springs property. There are no wetlands in proximity to the subject property.

Much of the site is tilled for agricultural purposes. Agricultural land is mapped east and north of the site. The southern limits of the site are demarcated by the Guelph Junction Railroad. Further to the south are scattered non-farm residential units and small patches of farmland. West of the site is the Hamlet of Arkell, with a small portion of the Hamlet included on the site. North of the site is agricultural land and some residences.

3.3 Description of Plantation

A mixed plantation is located at the southern portion of the site (see Figure 5 ELC Map). The mixed plantation started out as white pine/black walnut, with some black locust, white spruce, white ash and poplar (Aborland Forestry Consulting 2023). Most of the pine has declined because of the walnut. The plantation is approximately 4.7 ha in size.

The black walnut are planted in rows with white pine and black locust. This would provide for the walnut to grow straight and self prune for clear saw logs. The walnut subsequently kills the white pine with juglone in the root contact zone.

At this stage, the plantation is in poor condition and requires silviculture management. As noted in Section 2 of this report, the proposed lot fabric largely avoids development within the plantation, however, Lots 2 and 3 are located within the edge of the plantation. The attached photographs (Photos A and B) illustrate the condition of the plantation in relation to Lots 2 and 3.

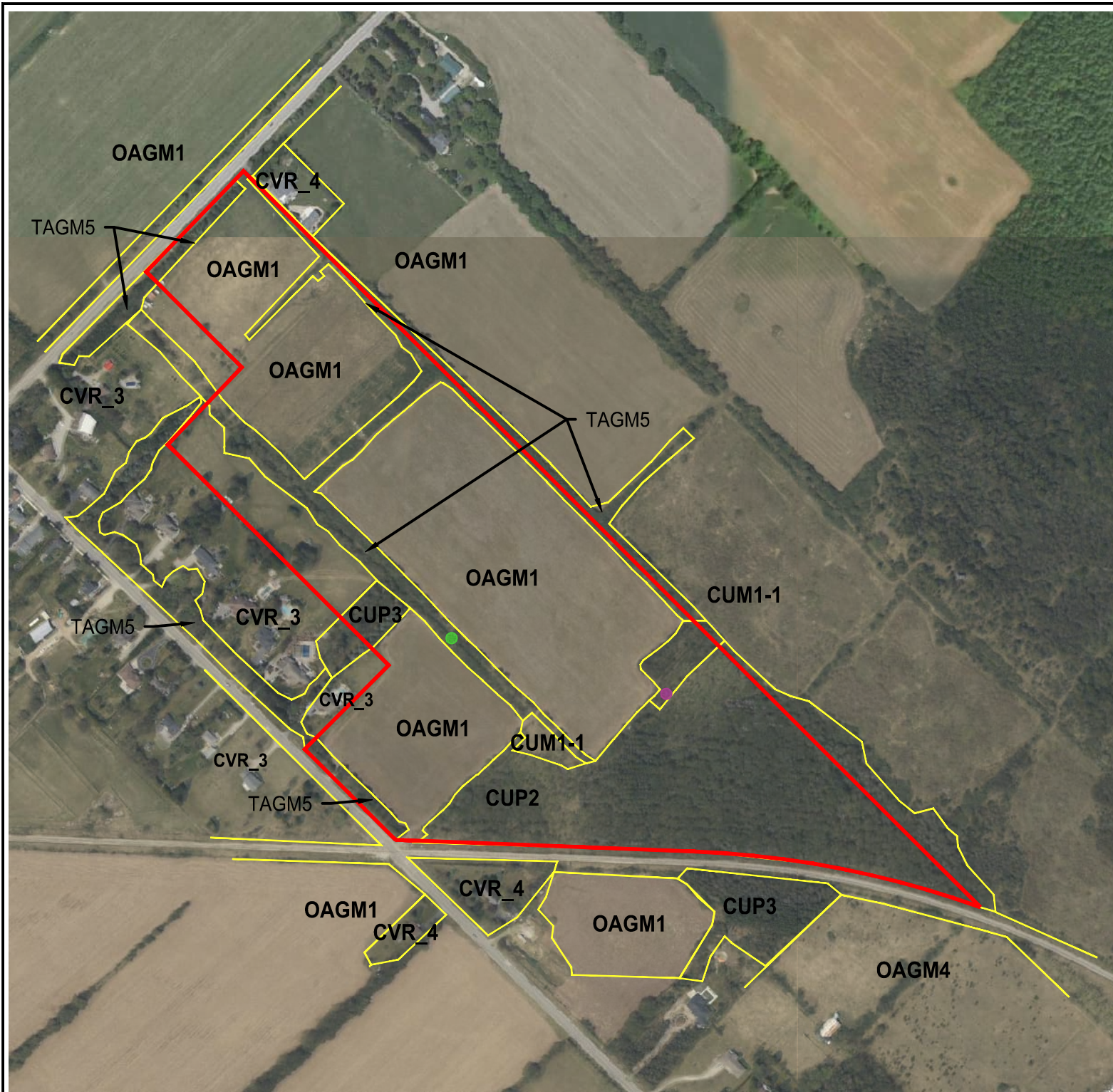
It is estimated that approximately 50% of the plantation contains dead or dying trees, due to Walnut Juglone toxicity in the root zone. The estimated age of the plantation is 45-50 years. Canopy closure is variable due to die off. Tree heights range from 12-20 m. The shrub and ground layers have limited plant diversity due to the Walnut Juglone toxicity. On the edges of the plantation, buckthorn, hawthorn, honeysuckle and basswood are noted. No black ash trees were identified on the site. Appendix F provides a Good Forestry Permit Application for the subject plantation by Aborland Forestry Consulting in 2023. The plantation is largely isolated from adjacent natural heritage features by the presence of GJR (to the south and west) and agricultural lands (to the north and east). There are no significant natural heritage features located within 120m of the plantation. It is recognized that a small woodland unit extends into the easterly farm property. The total size of this unit is approximately 6.5 ha.

**Ecological Land Classification Map
Figure**

PART OF LOTS 7, 8, & 9 CONCESSION 10
ARKELL, ON
PUSLINCH TOWNSHIP
COUNTY OF WELLINGTON

Legend

- Subject Lands
- Limit of Vegetation Unit
- Approx. Location of Eastern Wood Peewee
- Approx. Location of Butternut Tree



SAI
PLANNING, AGROLOGY,
ENVIRONMENTAL.

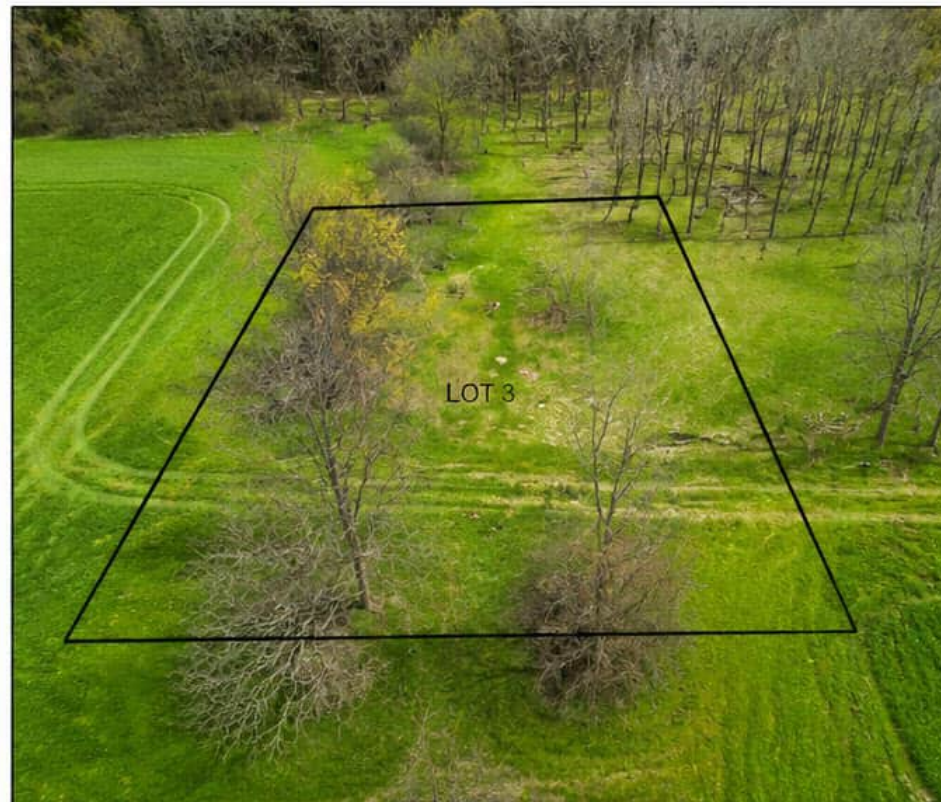
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N1M 1T9
T: 519-766-8042
E: stovel.associates@outlook.com

	<p>DATE: 27-May-26</p>	
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Photo A



Photo B – Lot 3 (SE)

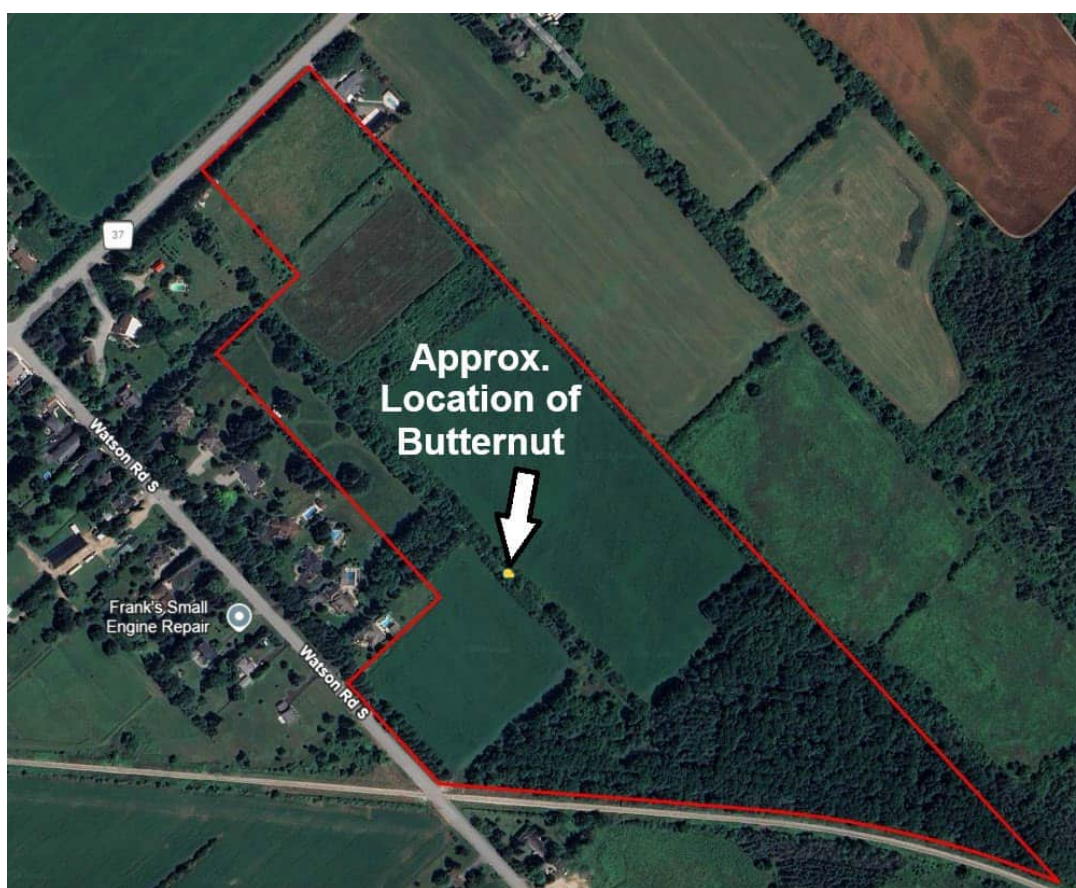


3.4 Description of Hedgerows

The perimeter of the subject lands is demarcated by hedgerows. These hedgerows are described as follows:

- West along Watson Road – Norway spruce hedgerow with some sugar maple and buckthorn along the edges.
- East along the property line – mostly a buckthorn hedgerow with some choke cherry, apple, honeysuckle.
- Central hedgerow – mostly buckthorn hedgerow with some black walnut, sugar maple. A Butternut was identified in the central hedgerow. The location is marked on Figure 6. The butternut was flagged in the field for easy identification in the future.
- North along Arkell Road – Norway spruce and sugar maple with buckthorn in the hedgerow.

Figure 6: Location of Butternut



3.5 Description of Birds

Two breeding bird surveys were completed by Colville Consulting Ltd. (Ian Barrett, M.Sc.) on May 23, June 10, and June 25, 2023 (Appendix I). Surveys were conducted between dawn and no later than 10:00 am under suitable weather conditions. All birds seen or heard calling were recorded and the highest breeding evidence per species was

determined in accordance with the criteria of the Atlas of the Breeding Birds of Ontario (Cadman et al. 2007). The results of the surveys are summarized below:

"A total of 44 species of birds were observed or heard on or above the Subject Property and two additional species were observed on adjacent lands. According to Ontario conservation status ranks (S-rank) designations, with the exception of two non-native species, all recorded species are considered to be "secure" (S5) or "apparently secure" (S4) in the province of Ontario.

Eastern Wood-pewee were documented in the woodland during each of the breeding bird surveys and this species is considered to be breeding in this woodland. One meadow species (Savannah Sparrow) was documented using the agricultural portions of the property and Eastern Meadowlark was documented east of this parcel. No use of the property by Eastern Meadowlark was documented during our surveys and no active nests were verified on the adjacent lands. It is therefore our observation that the Subject Property is not providing significant habitat for this species. Several Barn Swallows were observed flying, foraging and calling over the agricultural portions of the property on the first and second site visits. As no buildings or structures suitable for nesting are present on the property, use of this property by Barn Swallows is considered to be opportunistic." (Colville Consulting Inc., September 19, 2023).

The approximate location of the Eastern Wood-pewee is shown on Figure 7.

Figure 7: Location of Eastern Wood-pewee



3.6 Description of Bats

There are seven SAR bats in Ontario, as per the provincial Protected Species in Ontario (PSO) list, O.Reg. 60/26. Of these, three utilize snag trees for maternity roosting habitat; Little Brown Myotis (*Myotis lucifugus*), Silver-haired bat (*Lasionycteris noctivagans*) and Northern Myotis (*Myotis septentrionalis*). As per the MECP's *Species at Risk Bats Survey Note 2022*, potential woodland SAR bat habitat should be assessed according to the protocol *Treed Habitats –Maternity Roost Surveys (2022)*.

Snag surveys are best performed during the fall to early spring, before leaves have started growing and when visibility of cracks or crevices in trees is greatest. Snag surveys were conducted on April 13, 2026 by ecological staff of R. J. Burnside & Associates Limited ("Burnside"), to identify potential snag bat maternity roosting habitat within the subject lands.

The following criteria were considered when identifying a candidate maternity roosting tree during this survey: Snag Height, presence of habitat characteristics, diameter at breast height (DBH), within 10 m of another tree and / or snag, amount of peeling bark, cavity height, species, percent canopy cover, decay class.

A total of ten snags were identified on the subject lands, as shown on Figure 8 and detailed in Table 1. Of those, eight snags are located within the subject lands area of impact. Six snags are located within hedgerow communities and two are located within wooded areas. These eight snags are anticipated to be removed as per the proposed conceptual development plans. The two snags recorded outside of the area of impact were located immediately adjacent to the proposed drainage swale in the south end of the subject lands and along Watson Road S. which is part of the lands excluded from development.

Table 1: Candidate Bat Maternity Habitat Snags

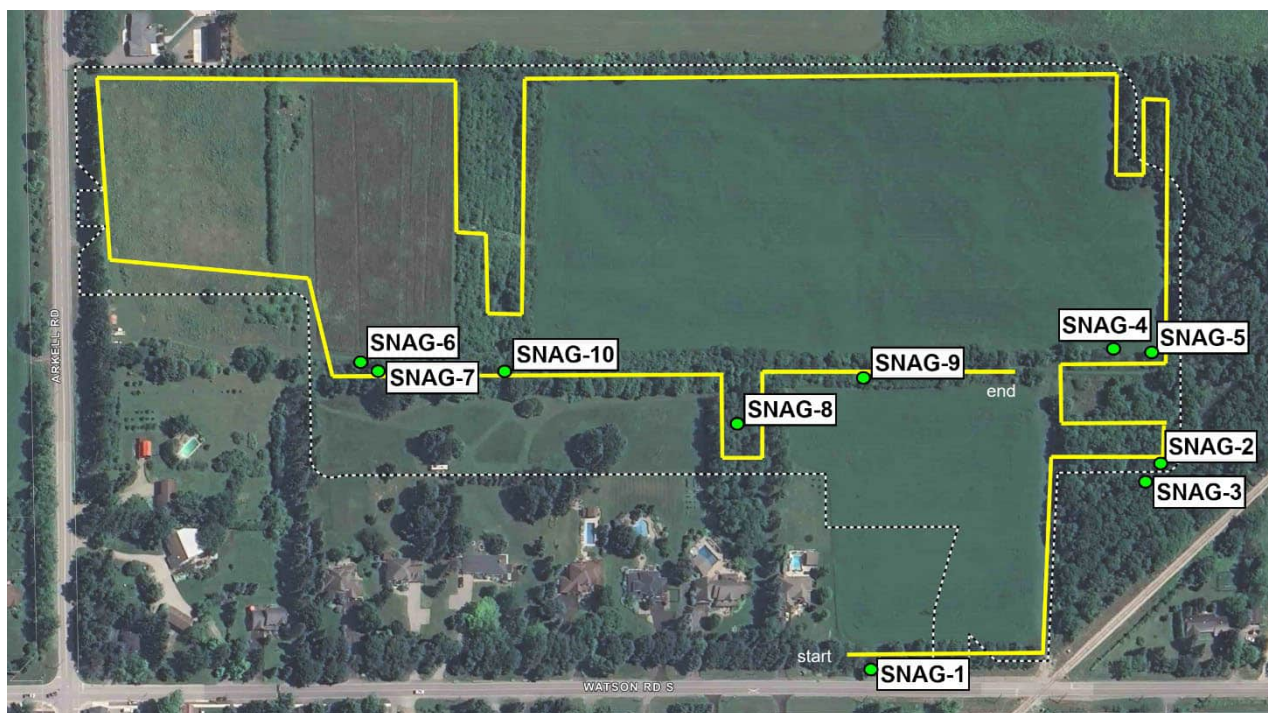
Snag ID	Species	DBH (CM)	Candidate Ranking	Proposed Impact
1	Sugar Maple (<i>Acer saccharum</i>)	37	Medium	No Impact
2	Not Identifiable	39	Medium	Removal
3	Black Locust (<i>Robinia pseudoacacia</i>)	Multi Stemmed 37, 34, 28	Medium	No Impact
4	Not Identifiable	80	Medium	Removal
5	Not Identifiable	Multi Stemmed 26, 26, 38	Low	Removal
6	Not Identifiable	50	Medium	Removal

7	Not Identifiable	66	Medium	Removal
8	Not Identifiable	29	Low	Removal
9	Not Identifiable	Multi Stemmed 33, 39	Medium	Removal
10	Not Identifiable	38	Medium	Removal

Candidate ranking is based on a weighted calculation considering the criteria listed above.

Figure 8 illustrates the Candidate Bat Maternity Habitat Snags. The full Burnside report is attached to this report, as Appendix G.

Figure 8: Candidate Bat Maternity Habitat Snags



4. SIGNIFICANT FEATURES

4.1 Significant Woodland

Figure 2 identifies the Greenlands System in proximity to the subject property. The Greenland System is a composite of many natural heritage features, flood prone areas and hazardous lands. The boundaries of many natural heritage features overlap and inter-relationships frequently exist between these areas. The system is divided into two broad categories: Core Greenlands and Greenlands.

“The Greenlands System will be maintained or enhanced. Activities which diminish or degrade the essential functions of the Greenlands System will be prohibited. Activities which maintain, restore or, where possible, enhance the health of the Greenlands System will be encouraged where reasonable”.

“While the Greenlands System designated on Schedule B is based on those features that have been mapped at a municipal scale, the diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkage between and among natural heritage features and areas, surface water features and ground water features.”

5.4 CORE GREENLANDS

“Within the Greenlands System certain areas have greater sensitivity or significance. These areas are identified in policy and protected. These areas have been included in the “Core” Greenlands designations and include:

- provincially significant wetlands*
- all other wetlands;*
- habitat of endangered or threatened species and fish habitat; and*
- hazardous lands” (Page 52, Wellington County Official Plan, December 2025)*

5.5 GREENLANDS

Other significant natural heritage features including habitat, areas of natural and scientific interest, streams and valleylands, woodlands, environmentally sensitive areas, ponds, lakes and reservoirs and natural links are also intended to be afforded protection from development or site alteration which would have negative impacts.

5.5.4 Woodlands

In the Rural System, woodlands over 4 hectares and plantations over 10 hectares are considered to be significant by the County, and are included in the Greenlands system. Woodlands of this size are important due to their contribution to the amount of forest cover on the County landscape. Exceptions may include a plantation established and continuously managed for the sole purpose of complete removal at rotation without a reforestation objective, as demonstrated with documentation acceptable to the County.

In the Urban System, woodlands over 1 hectare are considered to be significant by the County and are included in the Greenlands System. Woodlands of this size are important due to their economic, visual and environmental contributions to the urban landscape.

Detailed studies such as environmental impact assessments may be used to identify, delineate and evaluate the significance of woodlands based on other criteria such as: proximity to watercourses, wetlands, or other woodlands; linkage functions; age of the stand or individual trees; presence of endangered or threatened species; or overall species composition.

Significant woodlands will be protected from development or site alterations which would negatively impact the woodlands or their ecological functions. Good forestry practices will be encouraged and tree removal shall be subject to the Wellington County Forest Conservation By-law. Smaller woodlands may also have local significance and, where practical, these smaller woodlands should be protected. (Pages 54-55, Wellington County Official Plan, December 2025)

As previously noted, there are no Core Greenlands or Greenlands designated on the subject property. The onsite, mixed plantation is less than 10 ha in size (the estimated of the plantation is approximately 4.7 ha). The plantation was clearly established with the intended purpose of providing timber/wood products. This plantation is in poor condition and requires silviculture management. The plantation has limited connectivity to adjacent woodland systems and provides limited wildlife habitat functions.

4.2 Significant Wildlife Habitat and Species at Risk

There are three species that have been identified on the subject property that need to be assessed: Butternut, Eastern Wood-pewee, Bat Habitat.

4.2.1 Butternut Description

The Butternut was assessed as endangered and added to the Endangered Species Act, 2007 (ESA) in 2008. A reassessment in November 2017 confirmed this status. On March 30, 2026, the Province repealed the Endangered Species Act, 2007 (the “ESA”) and replaced it with the Species Conservation Act, 2025 (“SCA”). The SCA fundamentally changes how activities affecting species at risk are regulated in Ontario, introducing a registration-first system that is expected to reduce permitting timelines but shift greater responsibility onto applicants and their consultants. Under this model, eligible projects can proceed once registered, provided they follow prescribed mitigation measures and conservation requirements. This replaces the ESA’s “approval-first” system, which required permits prior to project initiation for most activities.

Ontario Regulation 60/26 of the SCA sets out the protected species in Ontario. Butternut is listed.

Butternut is a medium-sized tree that can reach up to 30 m in height. It belongs to the walnut family and produces edible nuts in the fall. The bark of younger trees is grey and smooth, becoming ridged as it ages.

In Ontario, Butternut is usually associated with deciduous forests, establishing under canopy openings or along forest edges. It is also found in treed fence lines. It prefers moist, well-drained soil and frequently occurs within the floodplains of streams or small rivers. It is also found on well-drained gravel sites and rarely on dry rocky soil.

This species does not do well in the shade and often grows in sunny openings and near forest edges.

Butternut Canker is a fungal disease that spreads quickly and can kill a tree within a few years. This fungus has already had a devastating impact on North American Butternut populations. Surveys in eastern Ontario show that most trees are infected.

A Butternut Health Assessment was completed by Williams and Associates, 2026. Appendix H provides a copy of this Assessment.

“The assessed tree was determined to be a Category 2 tree. A Category 2 tree is not affected by Butternut Canker or the Butternut tree is affected by Butternut Canker but the degree to which it is affected is not as advanced as a Category 1 Butternut tree and retaining the tree could support the protection or recovery of Butternut trees in the area in which the tree is located. The tree was a multi-stemmed (2 stems) and the main stem was marked with orange paint at the base of the tree.

This butternut will be killed for the purpose of constructing the proposed development.

As less than five Category 3 and less than fifteen Category 2 butternut trees will be killed as a result of construction, no replacement planting will be required, as outlined in Ontario Regulation 830/21 Section 25(3).”

4.2.2 Eastern Wood-Pewee Description

The Eastern Wood-pewee is a small forest bird that grows to about 15 cm long. Adults are generally greyish-olive on their upper parts and pale on the under parts with pale bars on their wings. Males and females are similar in appearance.

This bird is often observed perched in an upright position. It eats mostly small, flying insects. In Ontario, the eastern wood-pewee inhabits a wide variety of wooded upland and lowland habitats, including deciduous, coniferous, or mixed forests. It occurs most frequently in forests with some degree of openness. Intermediate-aged forests with a relatively sparse midstory are preferred. In younger forests with a relatively dense midstory, it tends to inhabit the edges. Also occurs in anthropogenic habitats providing an open forested aspect such as parks and suburban neighborhoods.

Possible threats to the Eastern Wood-pewee are poorly known but may include:

- loss and degrading of habitat due to urban development and/or changes in how forests are managed,
- reductions in the availability of the flying insects they eat, the cause of which is not known,
- loss of eggs and fledgling birds from increasing numbers of predators such as blue jays and red squirrels,

- changes to the make-up of forests due to white-tailed deer over-browsing, which may reduce the number of insects available to eat

These birds may also face other threats during their migration and in their wintering habitat in South America.

With the removal of the automatic listing of the species classified by COSSARO, in accordance with the SCA, the Lieutenant Governor in Council prescribed new Ontario Regulation 60/26, which sets out the list of Protected Species in Ontario. The list maintains all 168 of the species that COSSARO classified as 'extirpated', 'endangered' or 'threatened', but it no longer includes aquatic species and migratory birds as these are protected under the federal government's *Species at Risk Act* ("SARA"). The list also does not include species identified by COSSARO as 'special concern'. While 'special concern' species were listed in former Ontario Regulation 230/08, they were not afforded protection by the *ESA*.²

Ontario Regulation 60/26 of the SCA sets out the protected species in Ontario. The Eastern Wood-pewee is not listed. This species is not designated as may be at risk under the federal government's *Species at Risk Act* (Apparently Secure - S4B).

Threats and Limiting Factors

Threats and limiting factors affecting Eastern Wood-pewees have not been clearly identified and are poorly known, largely because of a lack of research. Possible threats and limiting factors have been suggested as including: 1) loss and degradation of habitat quality on the breeding grounds due to urban development and/or changes in forest management; 2) loss and/or degradation of habitat on the wintering grounds; 3) large-scale changes in the availability of flying-insect prey due to unknown causes; 4) high rates of mortality during migration and/or on the wintering grounds; 5) high rates of nest predation from increasing numbers of avian predators; and 6) changes in forest structure due to White-tailed Deer over-browsing.

Protection, Status, and Ranks

*The Eastern Wood-pewee was ranked as 'globally secure' (G5) in 1996 by NatureServe and is considered 'Least concern' according to the IUCN Red List. In Canada, its nests and eggs are protected under the Migratory Birds Convention Act. Similar protection is afforded under various kinds of provincial legislation. It is considered 'secure and common' nationally; 'apparently secure' in Saskatchewan, Manitoba, Ontario, and Prince Edward Island; 'secure' in New Brunswick; and 'vulnerable' to 'apparently secure' in Québec. COSEWIC. 2012. (Eastern wood-pewee (*Contopus virens*): COSEWIC assessment and status report)*

Suitable habitat for this species is abundant in the local area. The onsite plantation is not considered to be critical to the life functions of this species. The onsite plantation is not considered to be significant wildlife habitat. Protection of this species is required under the Migratory Birds Convention Act. Tree removal work windows are required, i.e., no tree removal during breeding bird season (March 01 – August 31st)

4.2.3 Bat Habitat Description

The following assessment is taken from the Burnside (2026) report.

Based on observations and data collected, the candidate snags identified on the subject lands have the potential to be maternity roost habitat for three species of protected bats: Little Brown Myotis, Silver-haired Bat, and Northern Myotis.

MECP's Species at Risk Bats Survey Note (2022) states that if the proposed activity will only remove a proportionately small number of candidate roosts and thus avoid impairing the function of habitat for supporting bats, and occurs outside the bat active window, then there is no need to conduct additional SAR bat surveys. Please note, that if it is decided to not conduct further acoustic surveys it will be assumed that SAR bats are present on site, due to the presence of snags, and further mitigation, including vegetation removal timing windows, will be applicable.

Reviewing the general area, it is noted that there are large swaths of wooded communities within a 1 km distance of the subject lands, including a large wooded riparian area surrounding the Eramosa River. These areas would provide ample maternity roosting habitat, as well as foraging habitat, for SAR bats.

Since the number of identified candidate snags constitutes a small number of trees on the landscape, it is Burnside's opinion that they can be removed without negatively impacting SAR maternity roost habitat. However, to avoid contravention of the SCA, tree removal must be completed between December 1 and March 14 (of any given year) to mitigate negative impacts. If tree removal is proposed to occur within the active bat window (March 15 to November 30), further consideration will need to be given to registering the project with the Species Conservation Registry as tree removals will then be causing direct impact to the assumed present SAR bat species and their habitat.

5. IMPACT ASSESSMENT

5.1 Mapping and Assessment of Potential Impacts

Figure 9 illustrates that proposed development plan and the environmental features associated with the site. The butternut tree is the single-most significant environmental feature on the site. The butternut tree is located on Lot 37. This tree was assessed by a Butternut Health Assessor as a Category 2 tree. No replacement planting is required as outlined in Ontario Regulation 830/21 Section 25(3).

The lot fabric for the conceptual development plan largely avoids intrusions into the plantation. The onsite plantation is not considered to be a sensitive feature. This limits the potential for environmental impacts. Minor intrusions occur at Lot Nos. 2 and 3.

Lot 2 is approximately 0.23 ha in size. A rough count of trees indicated that approximately 30 healthy walnut trees (less than 20 cm DBH) are in this lot and over 30 unhealthy or dead trees (mainly Black Locust) are on the lot. Lot 2 should be a focus of the Tree Protection and Compensation Plan.

Lot 3 is approximately 0.21 ha in size. It is estimated that 5-10 healthy walnut will be impacted through development of this lot. The specific details of tree loss/compensation should be evaluated in the Tree Protection and Compensation Plan.

A by-pass swale has been recommended by Crozier (Figure 10). This swale varies in depth from 0.8 m (lot 2-3) to 1.4 m (cul de sac). The side slope is engineered to a 3:1 slope. The width of the bypass swale is approximately 6.6 m (Lots 2-5). From Lot 5 to Lot 6 (and the proposed cul-de-sac), the width of the bypass swale is 7.5 m.

Much of the area impacted by the bypass swale consists of buckthorn and hawthorn trees along the edge of the plantation (with limited ecological function). However, it is recognized that a portion of the plantation could be impacted by the bypass swale and for this reason, the Tree Protection and Compensation Plan is an important mitigation measure. Tree removal within this area should recognize the recommended work window (see Section 5.2).

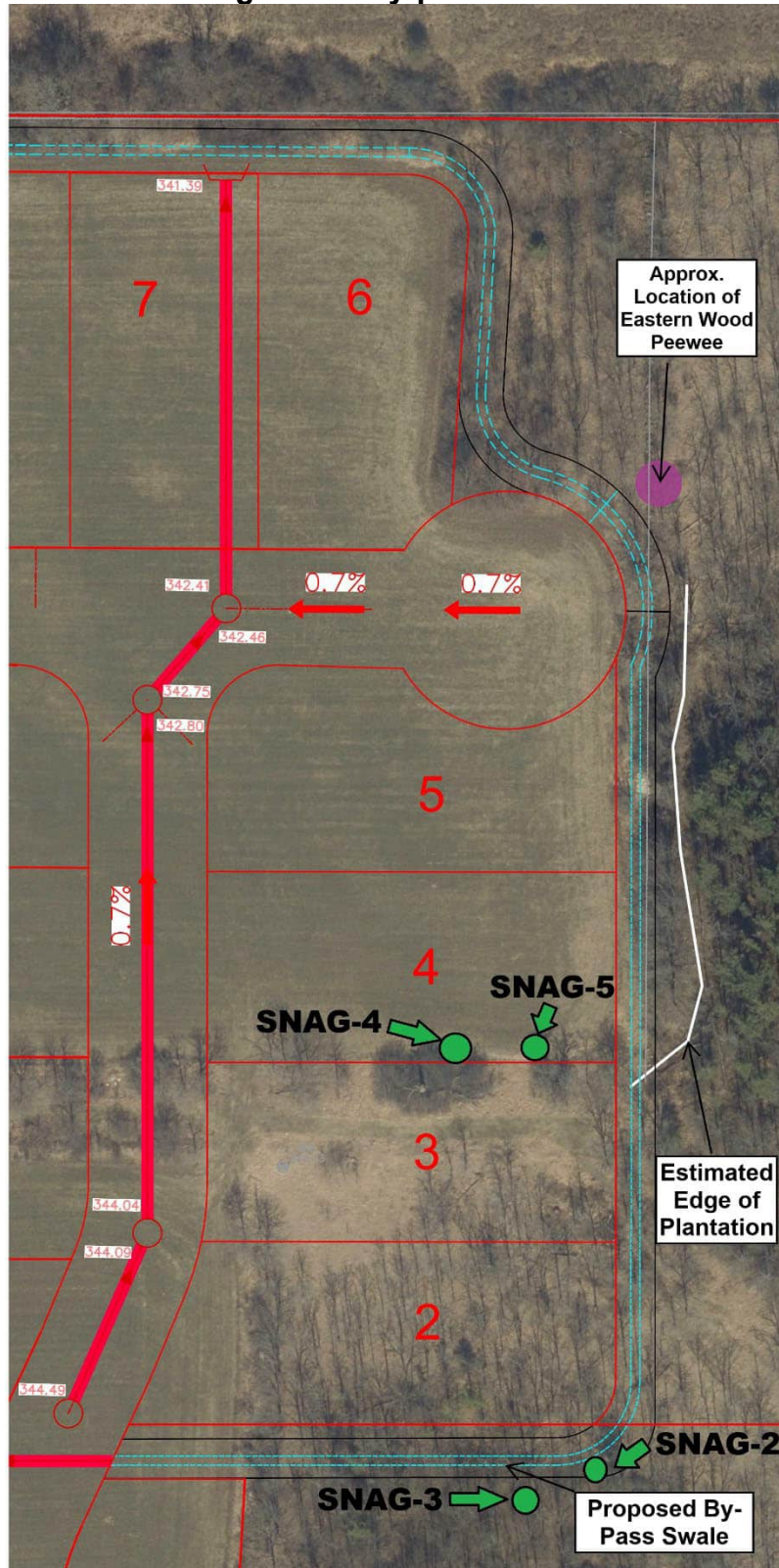
Along the eastern limit of the site, a bypass drain is also proposed by Crozier. This drain will be established in a hedgerow. The hedgerow is dominated by buckthorn and has limited ecological function.

As previously noted, several candidate snags have been identified on the subject land. Snag Nos. 2, 3, and 4 are ranked Medium while Snag 5 is ranked Low. These snags have the potential to be maternity roost habitat for Little Brown Myotis, Silver-haired Bat, and Northern Myotis. At this stage, it is anticipated that tree removal will occur outside of the bat active window and no additional SAR bat surveys will be conducted. Since the number of identified candidate snags constitutes a small number of trees on the landscape, the snags can be removed without negatively impacting SAR maternity roost habitat.

Figure 9: Environmental Constraints Map



Figure 10: By-pass Swale



5.2 Mitigation Measures

The following mitigation measures are recommended:

- Butternut health assessment was undertaken by a qualified professional during the appropriate leaf-on survey window. The assessment is used to inform activities undertaken to assist in the protection and recovery of Butternut (e.g., to identify trees for seed collection, archiving or breeding programs, or for research). The results of the Butternut Assessment indicate that the onsite tree is a Category 2 tree. No replacement planting is required as outlined in Ontario Regulation 830/21 Section 25(3).
- Window for Tree Removal - to avoid contravention of the SCA, tree removal must be completed between December 1 and March 14 (of any given year) to mitigate negative impacts. If tree removal is proposed to occur within the active bat window (March 15 to November 30), further consideration will need to be given to registering the project with the Species Conservation Registry as tree removals will then be causing direct impact to the assumed present SAR bat species and their habitat.
- Native tree and shrub plantings could enhance the local environment. In addition, the removal of buckthorn and other non-native species will be an improvement. A list of preferred native trees and shrubs should be developed for the edge areas along the plantation and for use along the public road system through a Tree Protection and Compensation Plan that would be implemented as part of a condition for draft plan approval. Regular monitoring of the newly planted trees and shrubs should be a requirement of the overall landscaping plan for the site.
- Silviculture Prescription Plan, approved through a Good Forestry Permit, should be implemented as soon as possible, within the prescribed work window (i.e., December 1 and March 14 of any given year). The onsite plantation is in poor condition, with many unsafe trees, and would benefit from management efforts.
- Heavy-Duty Silt Fencing will be installed around the proposed development. Silt fencing along the southern limits, in proximity to the plantation is recommended. The precise location of the silt fence should be assessed as part of the Tree Protection and Compensation Plan. It is recommended that the integrity of the silt fencing should be regularly monitored.
- Rear and Side Yard Grading in proximity to lots 2-6 and the cul de sac could be reviewed by Crozier. The level of detail required to assess the potential for impacts of the bypass drain is appropriate at the Draft Plan of Subdivision stage. The objective for this detailed assessment is to minimize the encroachment into the plantation. This work should be completed in conjunction with the Tree Protection and Compensation Plan. These features should be surveyed/staked in the field to ensure an accurate understanding of the extent of onsite disturbance. Edge management efforts, including appropriate fencing, invasive species management,

no dumping provisions and native buffer plantings, should be considered as part of this Plan.

5.3 Net Effects

Table 2 provides the results of a net effects analysis for the proposed development. Through the implementation of native tree/shrub plantings, it is concluded that the proposed development could have a net benefit to the local ecological community.

Table 2: Net Results of Ecological Impact Assessment						
Anticipated Impact	Key Natural Heritage Sensitivity	Magnitude, Duration and Frequency of Impact	Avoidance / Mitigation Strategy	Residual Impact	Enhancement Strategy	Net Ecological Result
DIRECT: Tree and vegetation removal	No woodlands or significant water features/wetland onsite. There is an onsite plantation. It is anticipated that approximately 30-40 walnut trees will be removed. Site is mostly a farm field.	None	Tree Protection and Compensation Plan	No significant impact anticipated.	Planting of native trees and shrubs around perimeter of site and rear lots of proposed development.	No Net negative impact anticipated and possible Net positive impact.
INDIRECT: Temporary disturbance of wildlife	No significant features onsite. No woodlots or wetlands onsite. Minimal tree in plantation removal to occur.	None	Tree Protection and Compensation Plan	No significant impact anticipated.	None	No net impact anticipated.
INDIRECT: Alterations to water balance and drainage patterns	No significant habitat onsite. Site is mainly a farm field.	None	Stormwater strategy to balance water.	No significant impact anticipated.	None	No net impact anticipated.
INDIRECT: Sedimentation and erosion	No significant water features onsite.	From Start of development until finish.	Use of heavy-duty silt fence. Erosion and sedimentation plan.	No significant impact anticipated.	None	No net impact anticipated.
CUMULATIVE: Land Use Transition and Human Encroachment	No significant features onsite. Site is mainly a farm field.	None	N/A	No significant impact anticipated.	None needed.	No cumulative impact on significant natural heritage features and functions.

6. POLICY CONFORMITY

6.1 Provincial Planning Statement (2024)

The Provincial Planning Statement, 2024 (“PPS”) came into effect on October 20, 2024, and provides policy direction on matters of provincial interest related to land use planning and development in Ontario. Decisions affecting planning matters are required to be consistent with the policies of the PPS.

Policy 4.1 of the PPS addresses Natural Heritage and establish direction regarding the consideration and protection of natural heritage features and areas from development and site alteration.

The subject lands do not contain Significant Wetlands, Significant Valleylands, Areas of Natural and Scientific Interest, or other identified provincially significant natural heritage features (see Figure 11). The primary natural heritage features associated with the subject lands consist of a mixed plantation, hedgerows, and habitat considerations associated with Butternut and Eastern Wood-pewee and Bats.

This Scoped Environmental Impact Study evaluates the potential impacts of the proposed development on natural heritage features and ecological functions onsite and adjacent to the subject lands and identifies mitigation measures where appropriate.

4.1 Natural Heritage

1. Natural features and areas shall be protected for the long term.

2. The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

3. Natural heritage systems shall be identified in Ecoregions 6E & 7E¹, recognizing that natural heritage systems will vary in size and form in settlement areas, rural areas, and prime agricultural areas.

4. Development and site alteration shall not be permitted in:

- a) significant wetlands in Ecoregions 5E, 6E and 7E¹; and*
- b) significant coastal wetlands.*

5. Development and site alteration shall not be permitted in:

- significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E¹;*
- significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)¹;*
- significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)¹;*

- *significant wildlife habitat;*
- *significant areas of natural and scientific interest; and*
- *coastal wetlands in Ecoregions 5E, 6E and 7E1 that are not subject to policy 4.1.4.b),*

unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

6. Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.

7. Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

8. Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 4.1.4, 4.1.5, and 4.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

9. Nothing in policy 4.1 is intended to limit the ability of agricultural uses to continue.

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

The proposed development generally avoids significant intrusions into the onsite plantation. Habitat of endangered and threatened species will be addressed in accordance with Provincial and Federal requirements. The proposed development therefore maintains the long-term ecological function of the existing natural features to the extent feasible.

As previously noted, the site is not located in or adjacent to a significant wetland, significant woodland, significant valleyland, significant wildlife habitat, or area of natural and scientific interest. Policy 4.1.4 states that development and site alteration shall not be permitted in habitat of endangered and threatened species except in accordance with provincial and federal requirements.

A single Butternut tree was identified within a hedgerow onsite. The tree was assessed by a qualified Butternut Health Assessor. Removal of the Butternut tree is permitted as less than five Category 3 and less than fifteen Category 2 butternut trees will be killed as a result of construction, no replacement planting will be required, as outlined in Ontario Regulation 830/21 Section 25(3)





Figure 11: ANSI - Wetland

Map created:5/27/2026








Legend

ANSI

-  Earth Science Provincially Significant/sciences de la terre d'importance provinciale
-  Earth Science Regionally Significant/sciences de la terre d'importance régionale
-  Life Science Provincially Significant/sciences de la vie d'importance provinciale
-  Life Science Regionally Significant/sciences de la vie d'importance régionale

Evaluated Wetland

-  Provincially Significant/considérée d'importance provinciale
-  Non-Provincially Significant/non considérée d'importance provinciale
-  Unevaluated Wetland
-  Conservation Reserve
-  Provincial Park

Notes:
[Redacted]



Absence of a feature in the map does not mean they do not exist in this area.

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources(OMNR) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.
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Eastern Wood-pewee was identified within the plantation; however, the species is not listed as a protected species under Ontario Regulation 60/26 and is not considered a significant constraint to development under the current provincial framework.

Any tree removal will occur within the established work window (i.e., December 1 and March 14 (of any given year) to mitigate negative impacts on bat habitat. This work window will also ensure protection of migratory birds, such as the Eastern Wood-pewee.

Therefore, the proposed development is consistent with the provisions of Policy 4.1 of the PPS, 2024.

6.2 County of Wellington Official Plan

The County of Wellington Official Plan (“County OP”) provides the policy framework for managing growth, protecting environmental resources, and guiding development throughout the County. The subject lands are designated Hamlet, Prime Agricultural, and Secondary Agricultural on Schedule B7 of the County OP. The proposed development requires a settlement boundary expansion and associated planning approvals to permit residential development on the subject lands.

Section 4.6.3 of the County OP establishes the framework for Environmental Impact Assessments (“EIS”). Policy 4.6.3 states:

“Environmental impact assessments prepared by a qualified person may be required to evaluate the impacts a proposed development may have on the natural environment and the means by which negative impacts may be reduced or eliminated. An environmental impact assessment may include some or all of the following:

- a) a description of the proposal, including a statement of purpose;*
- b) a description of the existing land use on the subject lands and adjacent lands, as well as the relevant land use regulations;*
- c) an identification of proposed land uses and activities and potential environmental impacts;*
- d) a delineation of any environmental constraint area on a site plan;*
- e) a description of the terrestrial and aquatic resources, natural and built landforms, surface and groundwater and other significant environmental features or functions on the site;*
- f) an assessment of the impact on groundwater resources and in particular existing private wells and municipal supply wells in the area;*
- g) a consideration of the need for a subwatershed study*
- h) an assessment of the impact on groundwater resources and in particular existing private wells and municipal supply wells in the area;*

- i) a statement of the relative environmental and ecological significance of the natural features and functions affected by the proposal;*
- j) a consideration of the potential to maintain, restore or where possible, improve the long-term ecological function and biodiversity of natural heritage systems;*
- k) requirements to be addressed in Site Plans and/or Development Agreements;*
- l) a statement that there are no negative impacts on provincially significant greenland features and functions and a description of the means by which negative environmental impacts will be mitigated in other greenland areas.*
- m) a consideration of the potential for enhancement of environmental features or functions through site design alternatives;*
- n) a proposal for monitoring, where needed*
- o) such additional concerns as a Council may consider relevant.*

The County may, in consultation with Conservation Authorities, provide consideration for a scoped environmental impact assessment format for use by proponents of development applications, which are generally minor in nature with limited potential impacts.

This Scoped Environmental Impact Study has been prepared in accordance with the intent of Policy 4.6.3 and evaluates the existing environmental conditions onsite, ecological functions associated with the subject lands, and the potential impacts of the proposed development.

Table 3 provides an assessment of the proposed development in the context of Policy 4.6.3 of the County OP.

Table 3: County of Wellington Official Plan Policy 4.6.3 Assessment

#	Policy	Conformity
a)	<i>a description of the proposal, including a statement of purpose;</i>	Section 2.0 of this EIS describes the proposed 44-lot residential plan of subdivision, including the purpose and nature of the proposed development.
b)	<i>a description of the existing land use on the subject lands and adjacent lands, as well as the relevant land use regulations;</i>	Existing land uses onsite and on adjacent lands are described throughout Sections 1.0 and 3.0 of this EIS. The lands consist mainly of farmlands and a small plantation. Applicable County Official Plan designations and Township zoning are described in Section 1.3.

c)	<i>an identification of proposed land uses and activities and potential environmental impacts;</i>	The proposed residential land uses and associated environmental considerations are evaluated in Section 5.0 of this EIS.
d)	<i>a delineation of any environmental constraint area on a site plan;</i>	Environmental features and constraints associated with the subject lands, including the plantation, hedgerows, Butternut tree, and candidate bat snag trees, are identified on the figures prepared in support of this EIS.
e)	<i>a description of the terrestrial and aquatic resources, natural and built landforms, surface and groundwater and other significant environmental features or functions on the site;</i>	Sections 3.1 through 3.8 describe the environmental conditions of the subject lands, including geology, vegetation communities and wildlife habitat. The southern portion of the site includes a small plantation.
f)	<i>an assessment of the impact on groundwater resources and in particular existing private wells and municipal supply wells in the area;</i>	Groundwater and servicing considerations have been evaluated through supporting technical studies, including the Groundwater Supply Assessment prepared in support of the application.
g)	<i>a consideration of the need for a subwatershed study;</i>	Based on the limited environmental features onsite, absence of significant aquatic features, and nature of the proposed development, a subwatershed study is not considered necessary.
h)	<i>an assessment of the impact on groundwater resources and in particular existing private wells and municipal supply wells in the area;</i>	Groundwater resources and servicing impacts have been evaluated through supporting hydrogeological and servicing studies prepared for the proposed development.
i)	<i>a statement of the relative environmental and ecological significance of the natural features and functions affected by the proposal;</i>	This EIS concludes that the onsite plantation is not considered a significant woodland under the County Official Plan and that no Core Greenlands or Greenlands features are located within the proposed development area and is not connected to significant natural heritage features.
j)	<i>a consideration of the potential to maintain, restore or where possible, improve the long-term ecological</i>	The proposed development has generally been designed to avoid significant intrusions into the plantation and minimize environmental disturbance where feasible.

	<i>function and biodiversity of natural heritage systems;</i>	Opportunities for tree preservation and mitigation will be addressed through future detailed design.
k)	<i>requirements to be addressed in Site Plans and/or Development Agreements;</i>	Future detailed design, including tree protection measures, compensation planting, and mitigation requirements, can be addressed through future planning approvals and development agreements.
l)	<i>a statement that there are no negative impacts on provincially significant greenland features and functions and a description of the means by which negative environmental impacts will be mitigated in other greenland areas.</i>	No significant Greenland features have been identified on the subject lands. Based on the findings of this EIS, the proposed development is not anticipated to result in negative impacts on significant natural heritage features or ecological functions.
m)	<i>a consideration of the potential for enhancement of environmental features or functions through site design alternatives;</i>	The conceptual development plan was revised to minimize disturbance within the plantation and reduce impacts to existing vegetation communities where feasible.
n)	<i>a proposal for monitoring, where needed;</i>	Monitoring requirements, if determined necessary through future approvals, may be addressed through detailed design and implementation stages of the development process.
o)	<i>such additional concerns as a Council may consider relevant.</i>	Additional environmental matters identified through agency or municipal review can be addressed through future planning approvals and detailed design processes, where required.

Based on the findings of this Scoped EIS, the proposed development is not anticipated to result in negative impacts on significant natural heritage features or ecological functions and conforms with the environmental policy framework of the County of Wellington Official Plan.

7. CONCLUSIONS AND RECOMMENDATIONS

This Scoped Environmental Impact Study (“EIS”) was prepared in support of a proposed 44-lot residential plan of subdivision on lands located within and adjacent to the Hamlet of Arkell in the Township of Puslinch.

The purpose of this EIS was to evaluate the existing environmental conditions associated with the subject lands, identify ecological features and functions onsite and within the adjacent area, assess the potential impacts of the proposed development, and identify mitigation measures where appropriate.

The subject lands are primarily actively cultivated agricultural lands with limited natural heritage features. The primary environmental features associated with the site include a mixed plantation located in the southern portion of the property, perimeter hedgerows, a single Butternut tree, habitat associated with Eastern Wood-pewee and potential Bat habitat.

The onsite plantation is approximately 4.7 ha in size and does not meet the County of Wellington Official Plan criteria for a significant plantation woodland. The plantation is in generally poor condition and exhibits substantial mortality associated with walnut juglone toxicity. No Provincially Significant Wetlands, Areas of Natural and Scientific Interest, significant valleylands, or other provincially significant natural heritage features were identified onsite or adjacent to the proposed development area.

Breeding bird surveys confirmed the presence of single Eastern Wood-pewee along the edge of the plantation. The conceptual development plan has generally been designed to avoid significant intrusions into the plantation and minimize environmental disturbance where feasible. Impacts associated with the proposed development are expected to be limited primarily to minor edge disturbances adjacent to the plantation.

A single Butternut tree was identified within the central hedgerow onsite. The tree was assessed by a qualified Butternut Health Assessor. Subject to the recommendations of the assessment and implementation of appropriate mitigation measures, impacts associated with the proposed development can be appropriately addressed.

Mitigation measures, including future tree protection measures and compensation plantings where required can be implemented by a Tree Protection and Compensation Plan.

Based on the findings of this Scoped EIS, the proposed development is not anticipated to result in negative impacts on significant natural heritage features or ecological functions and is generally consistent with the Provincial Planning Statement (2024) and conforms to the County of Wellington Official Plan.

7.1 Recommendations for Future Studies

Based on the findings of this Scoped Environmental Impact Study, the following recommendations are provided for consideration through future planning approvals, detailed design, and Draft Plan of Subdivision conditions:

- 1) A Tree Protection and Compensation Plan should be prepared as part of future detailed design to identify trees proposed to be retained, applicable tree protection measures, compensation planting requirements, and long-term management considerations associated with retained vegetation communities. Any tree removal will occur within the established work window (i.e., December 1 and March 14 (of any given year) to mitigate negative impacts on bat habitat. This work window will also ensure protection of migratory birds, such as the Eastern Wood-pewee. This Plan should be tied to detailed engineering drawings (at the Draft Plan Approval stage) and field surveyed to provide the consulting arborist/ecologist the opportunity to visually inspect the extent of proposed disturbance and the potential effect on adjacent trees. Edge management efforts, including appropriate fencing, invasive species management, no dumping provisions and native buffer plantings, should be considered as part of this Plan.

7.2 Future Approvals

In addition to the planning applications associated with the proposed development (i.e., OPA and ZBA), several future approvals, permits, and detailed design requirements may be required prior to construction and implementation of the proposed development.

The following future approvals and requirements may apply:

1. Draft Plan of Subdivision approval and registration of the Plan of Subdivision.
2. Approval of detailed engineering and servicing drawings, including stormwater management, grading, erosion and sediment control, and road design.
3. As a condition of draft plan approval, the preparation and implementation of a Tree Protection and Compensation Plan to the satisfaction of the Township and County.
4. Implementation of any mitigation measures or recommendations identified through supporting technical studies, including hydrogeological, stormwater management, erosion and sediment control plan, noise, and transportation studies.
5. Any additional approvals or permits identified through the municipal review process, agency circulation, or future detailed design stages.
6. If required, registration under the *Species Conservation Act*.

Robert Stovel

ROBERT P. STOVEL, MCIP, RPP, P.A.G.

Appendix A: Terms of Reference

Stovel and Associates Inc.

Planners, Agrologists and Environmental Consultants

April 10, 2026

Dan Stuart, M.Env.Sc.
Azimuth Environmental Consulting, Inc.
624 Welham Road
Barrie, ON
L4N 9A1

**RE: Part of Lots 7–9, Concession 10 (Arkell), Township of Puslinch
Terms of Reference and Table of Contents - Scoped Environmental Impact
Study**

Dear Mr. Stuart:

This Terms of Reference (ToR) outlines the scope of work for the preparation of a scoped Environmental Impact Study (EIS) in support of the proposed residential development on lands described as Part of Lots 7–9, Concession 10 (Arkell), Township of Puslinch.

The purpose of the Scoped EIS is to evaluate potential impacts of the proposed development on natural heritage features and functions, and to demonstrate conformity with applicable policies of the Provincial Planning Statement, 2024 (PPS), the Wellington County Official Plan (OP) and the Township of Puslinch Zoning Bylaw (ZB).

This ToR is informed by agency comments and peer review, including the natural heritage review completed by Azimuth Environmental Consulting, Inc.

Background and Study Rationale

Recent peer reviews have identified:

- Presence of a plantation (~7–7.5 ha) that may qualify as Significant Woodland.
- Potential habitat for Species at Risk (SAR) (e.g., Black Ash, Butternut).
- Observations of Eastern Wood-pewee, indicating potential Significant Wildlife Habitat (SWH).
- Concerns related to the use of outdated environmental data (2007) requiring updated (but scoped) field investigations.

As such, Azimuth Environmental Consulting, Inc. has determined that a scoped EIS is required to:

- Confirm feature significance.
- Assess potential development impacts (including potential encroachment into woodland areas).

-
- Identify mitigation measures, including the need for future studies that could be implemented via a condition of Draft Plan approval.

Policy and Legislative Context

The scoped EIS will address:

- Provincial Planning Statement, 2024 (PPS) – Natural Heritage Policies.
- Wellington County Official Plan, including:
 - Section 4.6.3 (EIS requirements)
 - Section 5.4 (Species at Risk)
 - Section 5.5 (Natural Heritage System)

The following surveys will not be conducted:

- Wetland survey (the site is comprised of tableland areas).
- Offsite surveys (only the breeding bird survey conducted by Colville Consulting described offsite findings).
- Amphibian surveys (the site is comprised of tableland areas).
- Bat acoustic surveys will not be conducted; however, a leaf-off bat habitat assessment will be completed.
- Fisheries survey (the site is comprised of tableland areas).

These scoped exclusions reflect the absence of aquatic and wetland features on the subject lands and are consistent with a risk-based approach to addressing natural heritage constraints identified through background review and previous field investigations.

Scope of Work

A. Background Review

1. Describe the proposed development. Include map of current lot fabric making note of the areas of the plantation that could be encroached by the proposed development plan (i.e. building envelope, road network, drainage channels as a result of the SWM plan, noise mitigation features such as berms and fences).
2. Review relevant background information, including:
 - Previous environmental studies (e.g., GWS 2007; Arborland Forestry Consulting 2023).
 - Wellington County OP mapping and planning provisions and Puslinch Township ZB mapping and provisions.
 - Natural Heritage Information Centre (NHIC) and MNR Natural Areas mapping.
 - Results from Species atlases (breeding birds – appendix material).
3. Complete a MECP/MNRF information request for Species at Risk and natural heritage features.

B. Field Investigations

4. Breeding Bird Surveys

- Two breeding bird surveys were completed by Colville Consulting.
- The results of the surveys will be described.
- Assess significance of Eastern Wood-pewee observation with respect to Significant Wildlife Habitat criteria.

5. Vegetation Community Mapping

- Classify vegetation communities using Ecological Land Classification (ELC) system.
- Description of onsite vegetation and species list.

6. Woodland/Plantation Survey

- Document stocking density and health of plantation.
- Delineate woodland boundaries (dripline).
- Confirm presence of Butternut and Black Ash.
- Assess for Significant Woodland criteria (Wellington OP).

7. Bat Survey (limited to leaf-off survey)

8. Wildlife and Habitat Assessment

- Identify Significant Wildlife Habitat (SWH).
- Identify Species at Risk habitat.
- Record incidental wildlife observations.

C. Scoped Environmental Impact Study (EIS)

9. Mapping and Analysis – identify potential environmental constraints.

10. Impact Assessment – assess potential for environmental impacts based on the potential for encroachment into the plantation (including drainage channels that will be graded in the woodland as part of the SWM program).

11. Mitigation Measures

12. Edge Management and Restoration

13. Policy Conformity

14. Recommendations for future studies (condition of draft plan approval) if needed.

Please confirm that this approach is satisfactory. We will be conducting the leaf-off survey and SAR investigation (butternut and black ash) next week.

Yours truly,



Robert P. Stovel, M.Sc., M.C.I.P., R.P.P., P. Ag.

cc. Shawn Marsh



Environmental Assessments & Approvals

April 21, 2026

AEC 24-348

Township of Puslinch
7404 Wellington Road 34
Puslinch, Ontario N0B 2J0

Attention: Monika Farncombe

Re: Natural Heritage Peer Review of a Terms of Reference for an Environmental Impact Study – Part of Lots 7-9, Concession 10 (Arkell), Township of Puslinch, County of Wellington

Monika Farncombe:

Azimuth Environmental Consulting, Inc. (Azimuth) is pleased to provide this natural heritage peer review letter for Stovel and Associates Inc. with regards to a Scoped Environmental Impact Study (EIS) Terms of Reference prepared for Part of Lots 7-9, Concession 10 (Arkell) in the Township of Puslinch (“Township”), County of Wellington (“County”). It is noted that applications for an Official Plan Amendment (OP-2006-06), Zoning By-law Amendment (P10/2006), and Draft Plan of Subdivision (23T-06003) were previously submitted in 2006.

Azimuth completed a Pre-consultation Ecology Peer Review for the proposed development (File #D00/KUK) on May 11, 2023 that provided a preliminary background review of natural heritage features and functions associated with the property and adjacent lands, and recommended that an Environmental Impact Study (EIS) be prepared including a suite of vegetation and wildlife surveys.

Azimuth subsequently reviewed relevant documents and issued comments as part of a natural heritage peer review letter dated October 14, 2025 as part of the initial submission package, on behalf of the Township. The initial submission natural heritage review letter reiterated the pre-consultation recommendation that an Environmental Impact Study/Environmental Impact Assessment (EIS/EIA) be prepared in accordance with Section 4.6.3 of the Wellington OP and the recommended field program initially described in the May 2023 pre-consultation peer review letter and updated in the October 2025 letter. In the initial submission natural heritage review it was noted



that the Results of Breeding Bird Surveys memo (Colville) is generally acceptable and can be incorporated into a future EIS/EIA report.

After the completion of the initial natural heritage review, Azimuth reviewed additional documents of potential relevance to natural heritage matters, on behalf of the Township, and issued comments as part of a natural heritage peer review letter dated February 12, 2026 (hereafter referred to as the “2nd Review”). It is noted that additional materials submitted January 2026 did not include an EIS/EIA or similar documentation. The 2nd Review continued to reiterate that an EIS/EIA be prepared in accordance with Section 4.6.3 of the Wellington OP and the recommended field program outlined in the May 2023 pre-consultation peer review letter and updated in the October 2025 letter.

Subsequent to 2nd Review, the following document has been reviewed:

- Part of Lots 7–9, Concession 10 (Arkell), Township of Puslinch Terms of Reference and Table of Contents - Scoped Environmental Impact Study (received April 10, 2026).

The document reviewed presents a Terms of Reference for the completion of a Scoped EIS pertaining to Part of Lots 7-9, Concession 10 (Arkell) in the Township of Puslinch, County of Wellington. Azimuth’s scope is to provide a technical peer review of the Terms of Reference for the development application from a natural heritage perspective. A site visit was not conducted as a component of this peer review. Therefore, the review and recommendations presented below are based on background sources and information provided by Stovel and Associates Inc., as well as recommendations provided by Azimuth in the May 2023, October 2025 and February 2026 letters.

Review of Terms of Reference

The Terms of Reference dated April 10, 2026 was prepared by Stovel and Associates Inc., and proposes the following background review, field investigations and Scoped EIS, as summarized below:

- Background Review;
 - Figure depicting proposed development and areas of encroachment into the woodland;
 - Review relevant background information;
 - Submit a Species at Risk (SAR) and natural heritage features information request to the Ministry of Environment, Conservation and Parks (MECP)/ Ministry of Natural Resources (MNR);
- Field Investigations;



- Summarize results of breeding bird surveys previously completed by Colville in spring 2023;
- Ecological Land Classification (ELC) and delineation of vegetation communities;
- Vascular plant inventory;
- Woodland boundary delineation and assess woodland health and tree density;
- Bat habitat survey during leaf conditions;
- Identify potential Significant Wildlife Habitat (SWH) and SAR, and record incidental wildlife observations;
- Scoped EIS;
 - Preparation of mapping identifying potential environmental constraints;
 - Impact assessment of the proposed development upon the woodland, including mitigation measures;
 - Recommendations for Edge Management and Restoration;
 - Policy conformity review; and
 - Recommendation for future studies should they be required.

Recommendations

Based on the above review, **Azimuth is accepting of the Terms of Reference proposed by Stovel and Associates Inc., pending incorporation of the following additional comments/requests into the EIS:**

- **MECP SAR and Information Request:** The Terms of Reference proposes issuing a SAR and natural heritage features information request to MECP/MNR. Given the low complexity of the site and the current direction from MECP, an information request is not likely necessary for this project, however Azimuth defers to the consultant's best judgement regarding MECP engagement with respect to SAR.
- **Environmental Features Mapping:** The Terms of Reference proposes mapping the current lot fabric, making note of areas of encroachment into the plantation, as well as including mapping potential environmental constraints. To provide a more comprehensive representation of the natural heritage features present and potential impacts, it is recommended that the Scoped EIS include a map of the environmental features (*e.g.* ELC and other mapped features) present on-site, as well as a figure overlaying the proposed development over the environment features.
- **Vascular Plant Inventory:** The field program proposes completing a vascular plant inventory but does not indicate the number of surveys or when survey(s) will be completed. Given the minor encroachment within natural features, a single vascular plant inventory during the spring or summer season (*i.e.* approximately late-May to



September) would be deemed sufficient. This survey can be completed in conjunction with the ELC mapping survey.

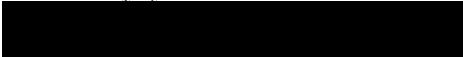
- **Natural Features Assessment:** The Terms of Reference verifies a review and assessment of impacts that will occur for woodlands, SAR, and SWH, as a component of the Scoped EIS. The report should also consider presence/absence of wetlands, Significant Valleyland, Areas of Natural and Scientific Interest, fish habitat, and natural linkages, and if determined to be present (or if treated as present), should be incorporated into the impact assessment and policy conformity reviews. It is understood that based on materials reviewed to date these features are unlikely to be present, however this should be acknowledged in the Scoped EIS.
- **Impact Assessment:** The Terms of Reference proposes assessing potential impacts based on the potential for encroachment into the plantation. While the significant natural heritage features present within the study area are anticipated to be primarily limited to within the plantation, the impact assessment should also consider features (*e.g.* hedgerows, open areas) located outside of the woodland where they occur.

Closure

Azimuth trusts this Terms of Reference peer review provides suitable natural heritage direction for the Township as the project application progresses toward submission of a Scoped EIS. If you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

AZIMUTH ENVIRONMENTAL CONSULTING, INC.


Alexa Pomplio-Grant, F.B.Sc.
Terrestrial Ecologist

Appendix B: Working Vascular Plant List

Arkell Subdivision – Township of Puslinch		ELC – Vegetation Communities		Conservation Status	
Plant List – May 2026		1	2	Global	Provincial
Scientific Name	Common Name	Mixed Plantation	Hedgerows	GRANK	SRANK
<i>Rubus idaeus</i> ssp. <i>Idaeus</i>	Wild Red Raspberry	X	X	G5T5	SE5
<i>Soncha arvensis</i> ssp. <i>arvensis</i>	Sow thistle		X	GNRTNR	SNA
<i>Solidago Canadensis</i>	Canada Goldenrod	X	X	G5	S5
<i>Solidago flexicaulis</i>	Zigzag Goldenrod	X		G5	S5
<i>Solanum Linnaeus</i>	Enchanter's Nightshade	X	X	G5	S5
<i>Taraxacum officinale</i>	Common Dandelion	X	X	G5	SNA
<i>Thalictrum polygamum</i>	Tall Meadowrue	X	X	G5	S5
<i>Thuja occidentalis</i>	E. White Cedar	X	X	G5	S5
<i>Tilia americana</i>	Basswood	X		G5	S5
<i>Trillium grandiflorum</i>	White Trillium	X		G5	S5
<i>Viola sororia</i>	Blue Violet	X		G5	S5
<i>Vitis aestivalis</i>	Summer Grape	X	X	G5	S4
<i>Geranium robertianum</i>	Herb Robert	X	X	G5	SE5
<i>Fraxinus Americana</i>	White Ash	X		G5	S5
<i>Lonicera tatarica</i>	Tatarian Honeysuckle	X	X	G5	SNA
<i>Maianthemum stellatum</i>	Star-flowered Solomons Seal	X		G5	S5, G5
<i>Nepeta cataria</i>	Catnip	X	X	G5	SE5
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	X	X	G5	S4, G5
<i>Plantago major</i>	Common Plantain	x	X	G5	SE5
<i>Pinus strobus</i>	White Pine	x	x		
<i>Picea glauca</i>	White Spruce	x	x		
<i>Populus tremuloides</i>	Aspen Poplar	x	X	G5	S5
<i>Prunus serotina</i>	Black Cherry	X	x	G5	S5
<i>Prunus virginiana</i> ssp. <i>virginiana</i>	Choke Cherry	X	x	G5	S5
<i>Ribes cynosbati</i>	Prickly Gooseberry	X	X	G5	S5
<i>Rhamnus cathartica</i>	Common Buckthorn	X	X	GNR	SNA
<i>Acer saccharum</i> ssp. <i>saccharum</i>	Sugar Maple	X	X	G5T5	S5
<i>Achillea millefolium</i>	Common Yarrow	X	X	G5T5	S5

<i>Alliaria petiolata</i>	Garlic Mustard	X	X	GNR	SE5
<i>Anemone canadensis</i>	Canada Anemone		X	G5	S5
<i>Arctium minus</i> ssp. <i>minus</i>	Common Burdock	X	X	GNRTNR	SNA
<i>Asarum canadense</i>	Wild Ginger	X		G5	S5
<i>Aster novae-angliae</i>	New England Aster		X	G5	S5
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	X	X	G5	S5, G5
<i>Cornus stolonifera</i>	Red-osier Dogwood		X	G5	S5
<i>Daucus Carota</i>	Wild Carrot	X	X	GNR	SNA
<i>Diervilla lonicera</i>	Bush Honeysuckle	X	X	G5	S5
<i>Dipsacus fullonum</i>	Teasel	X	X	GNR	SNA
<i>Erigeron annuus</i>	Daisy Fleabane	X	X	G5	S5
<i>Erythronium americanum</i>	Trout Lily	X		G5T5	S5
<i>Juglans cinerea</i>	Butternut		x	G4	S3?
<i>Juglans nigra</i>	Black Walnut	x	x	G5	S5
<i>Malus domestica</i>	Apple Tree	x	x	GNA	SNA
<i>Picea abies</i>	Norway Spruce		x	G5	SNA
<i>Crataegus</i> spp.	Hawthorn		x	G5	S5
<i>Robinia pseudoacacia</i>	Black Locust	x	x	G5	SNA
<i>Ostrya virginiana</i>	Ironwood	x		G5	S5
<i>Lycoperdon</i> spp.	Puff Ball	x		GNR	SNR
<i>Poaceae</i> spp.	Grasses	x	x	GNR	SNR
<i>Fragaria virginiana</i> ssp. <i>virginiana</i>	Wild Strawberry	x	x	G5	S5
<i>Frangula alnus</i>	Buckthorn	X	X	G?	SE5
<i>Leucanthemum vulgare</i>	Ox-eye Daisy	X	X	G?	SE5

Appendix C: Significant Wildlife Habitat Screening

Significant Wildlife Habitat Assessment Tables

Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E

	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area	
		ELC Codes	Ecosite	Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Waterfowl Stopover and Staging Areas (Terrestrial)						
<p><u>Rationale:</u> Habitat important to migrating waterfowl.</p>	<p>American Black Duck Wood Duck Green-winged Teal Blue-winged Teal Mallard Northern Pintail Northern Shoveler American Wigeon Gadwall</p>	<p>CUM1 CUT1 - Plus evidence of annual spring flooding from melt water or run-off within these Ecosites.</p>	<p>Fields with sheet water during Spring (mid March to May).</p> <ul style="list-style-type: none"> Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. Reports and other information available from Conservation Authorities (CAs) Sites documented through waterfowl planning processes (eg. EHJV implementation plan) Field Naturalist Clubs Ducks Unlimited Canada Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area 	<p>Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".</p> <ul style="list-style-type: none"> Any mixed species aggregations of 100 or more individuals required. The area of the flooded field ecosite habitat plus a 100-300m radius buffer dependent on local site conditions and adjacent land use is the significant wildlife habitat. Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates). 	<p>No aquatic features onsite or on adjacent lands. No evidence of waterfowl observed. Not SWH</p>	

Wildlife Habitat: Waterfowl Stopover and Staging Areas (Aquatic)

<p>Rationale: Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.</p>	<p>Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked Duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback</p>	<p>MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7</p>	<ul style="list-style-type: none"> • Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. • These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water). <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Environment Canada <ul style="list-style-type: none"> • OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. • Sites documented through waterfowl planning processes. • Ducks Unlimited projects <ul style="list-style-type: none"> • NHIC Waterfowl Concentration Area 	<p>Studies carried out and verified presence of:</p> <ul style="list-style-type: none"> • Aggregations of 100 or more of listed species for 7 days, results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH. • The combined area of the ELC ecosites and a 100m radius area is the SWH. • Wetland area and shorelines associated with sites may be significant wildlife habitat. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power." • Annual Use of Habitat as documented from Information Sources or Field Studies. 	<p>No aquatic features onsite or on adjacent lands. No evidence of waterfowl observed. Not SWH</p>
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Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E (continued)

	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Codes	Ecosite Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Shorebird Migratory Stopover Area					
<p><u>Rationale:</u> High quality shorebird stopover habitat is extremely rare and typically has a long history of use.</p>	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird's Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin Whimbrel	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. Great Lakes coastal shorelines are important for migratory shorebirds in May to mid-June and early July to October. Sewage treatment ponds and storm water ponds do not qualify as a SWH. <u>Information Sources</u> <ul style="list-style-type: none"> · Western hemisphere shorebird reserve network. · CWS Ontario Shorebird Survey. <ul style="list-style-type: none"> · Bird Studies Canada · Ontario Nature · NHIC Shorebird Migratory Concentration Area 	Studies confirming: <ul style="list-style-type: none"> · Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period. · Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. · The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area. · Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". 	No aquatic features onsite or on adjacent lands. Not SWH.
Wildlife Habitat: Raptor Wintering Area					

<p><u>Rational:</u> Sites used by multiple species, a high number of individuals and used annually are most significant</p>	<p>Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl</p> <p><u>Special Concern:</u> Short-eared Owl Bald Eagle</p>	<p>Hawks/Owls: Combination of ELC Community Series; need to have present one Community Series from each land class: Forest: FOD, FOM, FOC</p> <p>Upland: CUM, CUT, CUS, CUW</p>	<p>The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors.</p> <p>Raptor wintering sites need to be > 20 ha with a combination of forest and upland. Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands.</p> <p>Field area of the habitat is to be wind swept with limited snow depth or accumulation.</p> <p>Eagle sites have open water, large trees and snags available for roosting</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> · OMNRF Ecologist or Biologist · Natural Heritage Information Center (NHIC) Raptor Winter Concentration Area · Data from Bird Studies Canada 	<p>Studies confirm the use of these habitats by:</p> <ul style="list-style-type: none"> · One or more Short-eared Owls or; One or more Bald Eagles or; At least 10 individuals and two listed hawk/owl species. · A site should be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds · The habitat area for an eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area · Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". 	<p>There is a plantation/ woodland onsite. Adjacent lands consist of agricultural fields. No Eagle, Hawks, Kestrels, Owls identified during bird survey.</p> <p>Not SWH.</p>
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Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E (continued)

	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Codes	Ecosites Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Bat Hibernacula					
<p><u>Rationale</u> Bat hibernacula are rare habitats in Ontario landscapes.</p>	Big Brown Bat Tri-coloured Bat	<p>Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)</p>	<ul style="list-style-type: none"> · Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. · Active mine sites should not be considered as SWH · The locations of bat hibernacula are relatively poorly known. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> · OMNRF for possible locations and contact for local experts · NHIC Bat Hibernaculum · Ministry of Northern Development and Mines for location of mine shafts. · University Biology Departments with bat experts. 	<ul style="list-style-type: none"> · All sites with confirmed hibernating bats are SWH. · The habitat area includes a 200m radius around the entrance of the hibernaculum for most. · Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects". 	<p>Suitable habitat not present within the subject property.</p> <p>Not SWH.</p>
Wildlife Habitat: Bat Maternity Colonies					
<p><u>Rationale:</u> Known locations of forested bat maternity colonies is extremely rare in all Ontario landscapes.</p>	Big Brown Bat Silver-haired Bat	<p>Maternity colonies considered SWH are found in forested Ecosites.</p> <p>All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM</p>	<p>Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH).</p> <ul style="list-style-type: none"> · Maternity roosts are not found in caves and mines in Ontario · Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees · Female Bats generally prefer wildlife (snags) in early stages of decay. · Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> · OMNRF for possible locations. 	<ul style="list-style-type: none"> · Maternity Colonies with confirmed use by: <ul style="list-style-type: none"> · >10 Big Brown Bats · >5 Adult Female Silver-haired Bats · The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Eco-element containing the maternity colonies. · Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for wind Power Projects" 	<p>Onsite snags to be investigated to determine if suitable habitat.</p>

			<ul style="list-style-type: none">• University Biology Departments with bat experts.		
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Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E (continued)

	Wildlife Species	Candidate SWH	Confirmed SWH	Study Area	
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Bat Migratory Stopover Area					
	Hoary Bat Eastern Red Bat Silver-haired Bat	No specified ELC types.	<p>Long distance migratory bats typically migrate during late summer and early fall from summer breeding habitats throughout Ontario to southern wintering areas. Their annual fall migrations concentrate these species of bats at stopover areas. The location and characteristics of stopover habitats are generally unknown.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> · OMNR for possible locations. · University of Waterloo, Biology Department 	<p>Long Point has been identified as a significant stopover habitat for fall migrating Silver-haired Bats, due to significant increases in abundance, activity and feeding that was documented during fall migration.</p> <ul style="list-style-type: none"> · The confirmation criteria and habitat areas for this SWH are still being determined. 	<p>Suitable habitat not present within the subject property.</p> <p>Not SWH.</p>
Wildlife Habitat: Turtle Wintering Area					
<p><u>Rationale:</u> Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant</p>	<p>Midland Painted Turtle</p> <p><u>Special Concern:</u> Northern Map Turtle Snapping Turtle</p>	<p>Snapping and Midland Painted Turtles - ELC Community Classes: SW, MA, OA and SA; ELC Community Series: FEO and BOO</p> <p>Northern Map Turtle - Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.</p>	<p>For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates.</p> <ul style="list-style-type: none"> · Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. <p>Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> · EIS studies carried out by Conservation Authorities. · OMNRF ecologist or biologist · NHIC 	<p>Presence of 5 over-wintering Midland Painted Turtles is significant.</p> <ul style="list-style-type: none"> · One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. · The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. · Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May). 	<p>Potential turtle overwintering habitat not present onsite or on adjacent lands.</p> <p>Not SWH</p>

				Congregation of turtles is more common where wintering areas are limited and therefore significant.	
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Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E (continued)

	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Codes	Ecosite Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Snake Hibernaculum					
<p><u>Rationale:</u> Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant</p>	<p><u>Snakes:</u> Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake</p> <p><u>Special Concern:</u> Milksnake Eastern Ribbonsnake</p> <p><u>Lizard:</u> <u>Special Concern</u> (Southern Shield population): Five-lined Skink</p>	<p>For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice and Cave, and Alvar sites may be directly related to these habitats.</p> <p>Observations of congregations of snakes on sunny warm days in the spring or fall is a good indicator.</p> <p>For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3</p>	<p>· For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural locations. The existence of features that go below the frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH.</p> <p>· Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line.</p> <p>· Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover.</p> <p>· Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures cciiii.</p> <p><u>Information Sources</u></p> <p>· In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells).</p> <p>· Reports and other information from CAs.</p> <p>· NHIC</p> <p>· OMNRF ecologist or biologist may be aware of locations of wintering skinks</p>	<p>Studies confirming:</p> <p>· Presence of snake hibernacula used by a minimum of five individuals of a snake sp. <u>or</u>; individuals of two or more snake spp.</p> <p>· Congregations of a minimum of five individuals of a snake sp. <u>or</u>; individuals of two or more snake spp. near potential hibernacula (eg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct).</p> <p>· <u>Note:</u> If there are Special Concern Species present, then site is SWH</p> <p>· <u>Note:</u> Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population [i.e. strong hibernation site fidelity]. Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30m buffer is the SWH.</p> <p>· Presence of any active hibernaculum for skink is significant.</p>	<p>No potential snake hibernaculum habitat found within the agricultural fields of proposed development area of the site.</p> <p>Potential snake habitat could occur in stone piles in hedgerows and woodland. Stone piles were inspected in Apr/May and no snakes were observed.</p> <p>Not SWH.</p>
Wildlife Habitat: Colonially - Nesting Bird Breeding Habitat (Bank and Cliff)					

<p><u>Rationale:</u> Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow populations are declining in Ontario.</p>	<p>Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)</p>	<p>Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles Cliff faces, bridge abutments, silos, barns</p> <p>Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1</p>	<p>Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area.</p> <ul style="list-style-type: none"> · Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. · Does not include a licensed/permitted Mineral Aggregate Operation. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> · Reports and other information available from CAs · Ontario Breeding Bird Atlas · Bird Studies Canada 	<p>Studies confirming:</p> <ul style="list-style-type: none"> · Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. · A colony identified as SWH will include a 50m radius habitat area from the peripheral nest. · Field surveys to observe and count swallow nests are to be completed during the breeding season <p>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”</p>	<p>No banks and slopes occur on the subject property.</p> <p>Not SWH.</p>
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Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E (continued)

	Wildlife Species	Candidate SWH	Habitat Criteria and Information Sources	Confirmed SWH Criteria for Consideration	Study Area Assessment Details
Wildlife Habitat: Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs)					
<p><u>Rationale:</u> Large Colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Great Blue Heron Black-crowned Night-heron Great Egret Green Heron</p>	<p>SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1</p>	<p>· Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. · Most nests in trees are 11 to 15m from ground, near the top of the tree.</p> <p><u>Information Sources</u></p> <p>· Ontario Breeding Bird Atlas, colonial nest records. · Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNR). · NHIC Mixed Wader Nesting Colony · Aerial photographs can help identify large heronries · Reports and other information available from CAs · MNRF District Offices</p>	<p>Studies confirming: · Presence of 5 or more active nests of Great Blue Heron or other listed species. · The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15 ha with a colony is the SWH.</p> <p>· Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells</p>	<p>Suitable habitat is not present within the subject property or adjacent lands.</p> <p>Not SWH</p>
Wildlife Habitat: Colonially - Nesting Bird Breeding Habitat (Ground)					
<p><u>Rationale:</u> Colonies are important to local bird populations, typically sites are only known colony in area and are used annually.</p>	<p>Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird</p>	<p>Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map).</p> <p>Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird)</p> <p>MAM1 – 6</p>	<p>Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas.</p> <p>· Brewer's Blackbird colonies are found loosely on the ground in or in low bushes in close proximity to streams and irrigation ditches within farmlands.</p> <p><u>Information Sources</u></p> <p>· Ontario Breeding Bird Atlas, rare/colonial species records. · Canadian Wildlife Service · Reports and other information available from CAs · NHIC Colonial Waterbird Nesting Area</p>	<p>Studies confirming: · Presence of >25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. · Presence of 5 or more pairs for Brewer's Blackbird. · Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant.</p> <p>· The edge of the colony and a minimum 150m area of habitat, or the extent of the ELC ecosites containing the colony or any island</p>	<p>Suitable habitat is not present on the subject property or adjacent lands.</p> <p>Not SWH</p>

		MAS1 – 3 CUM CUT CUS	. MNRF District Offices	<3.0ha with a colony is the SWH. Studies would be done during May/June when actively nesting. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”.	
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Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E (continued)

	Wildlife Species	Candidate SWH	Habitat Criteria and Information Sources	Confirmed SWH Criteria for Consideration	Study Area Assessment Details
Wildlife Habitat: Migratory Butterfly Stopover Areas					
<p><u>Rationale:</u> Butterfly stopovers areas are rare habitats and are biologically important for butterfly species that migrate south for the winter.</p>	<p>Painted Lady Red Admiral</p> <p><u>Special Concern:</u> Monarch</p>	<p>Combination of ELC Community Series: Need to have present one Community Series from each land class:</p> <p><u>Field:</u> CUM CUS CUT</p> <p><u>Forest:</u> FOC FOM FOD CUP</p>	<p>A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Ontario.</p> <ul style="list-style-type: none"> The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south. The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> NHIC Agriculture Canada Conservation Authorities 	<p>Studies confirm:</p> <ul style="list-style-type: none"> The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant. 	<p>The subject property or adjacent lands are not located within 5km of Lake Ontario.</p> <p>Not SWH</p>
Wildlife Habitat: Landbird Migratory Stopover Areas					

<p><u>Rationale:</u> Sites with a high diversity of species as well as high number are most significant</p>	<p>All migratory songbirds.</p> <p>All migrant raptors species:</p> <p>Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)</p>	<p>All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD</p>	<p>Woodlots need to be >10 ha in size and within 5km of Lake Ontario.</p> <ul style="list-style-type: none"> · If multiple woodlands are located along the shoreline, those woodlands <2km from Lake Ontario are more significant. · Sites have a variety of habitats, forest, grassland and wetland complexes. · The largest sites are more significant. <p>Woodlots and forest fragments are important habitats to migrating birds. These features located along the shore and located within 5km of Lake Ontario are Candidate SWH.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> · Bird Studies Canada · Ontario Nature 	<p>Studies confirm:</p> <ul style="list-style-type: none"> · Use of the woodlot by >200 birds/day and with >35 spp. with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. · Studies should be completed during spring (Apr/May) and fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". 	<p>The subject property and adjacent lands are not located within 5km of Lake Ontario.</p> <p style="text-align: center;">Not SWH</p>
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Table 1. Characteristics of Seasonal Concentration Areas for Ecoregion 6E (continued)

	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Deer Yarding Areas					
<p><u>Rationale:</u> Winter habitat for deer is considered to be the main factor for northern deer populations. In winter, deer congregate in "yards" to survive severe winter conditions. Deer yards typically have a long history of annual use by deer.</p>	White-tailed Deer	<p>Note: OMNRF to determine this habitat.</p> <p>ELC Community Series providing a thermal cover component for a deer yard would include: FOM, FOC, SWM and SWC.</p> <p>Or these ELC Ecosites: CUP2 CUP3 FOD3 CUT</p>	<ul style="list-style-type: none"> · Deer yarding areas or winter concentration areas are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Deer move to these areas in early winter and generally, when snow depths reach 20cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. · The Core of a deer yard (Stratum I) is located within the Stratum II area and is critical for deer survival in areas where winters become severe. It is primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60%. · OMNRF determines deer yards following methods outlined in "Selected Wildlife and Habitat Features: Inventory Manual". · Woodlots with high densities of deer due to artificial feeding are not considered to be significant. 	<p>Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths > 40cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH.</p> <ul style="list-style-type: none"> · Deer Yards are mapped by OMNRF District offices. Locations of Core or Stratum 1 and Stratum 2 Deer yards considered significant by OMNRF will be available at local MNRF offices or via Land Information Ontario (LIO). · Field investigations that record deer tracks in winter are done to confirm use (best done from an aircraft). Preferably, this is done over a series of winters to establish the boundary of the Stratum I and Stratum II yard in an "average" winter. · MNRF is responsible for completing these field investigations. 	<p>Deer overwintering habitat has not been mapped within or adjacent to the subject property by the MNR.</p> <p style="text-align: center;">Not SWH</p>
Wildlife Habitat: Deer Winter Congregation Areas					

<p><u>Rationale:</u> Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer may congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions.</p>	<p>White-tailed Deer</p>	<p>All Forested Ecosites with these ELC Community Series: FOC FOM FOD SWC SWM SWD</p> <p>Conifer plantations much smaller than 50ha may also be used.</p>	<p>Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment.</p> <p>Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha.</p> <p>Woodlots with high densities of deer due to artificial feeding are not significant.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNRF District Offices 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Deer management is an MNRF responsibility. Deer winter congregation areas considered significant will be mapped by MNRF. Use of the woodlot by white-tailed deer will be determined by MNRF. All woodlots exceeding the area criteria are significant, unless determined not to be significant by MNR. Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys, or a pellet count deer density survey. 	<p>Deer overwintering habitat has not been mapped within or adjacent to the subject property by the MNR.</p> <p>Not SWH</p>
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Significant Wildlife Habitat Assessment Tables

Table 2. Characteristics of Rare Vegetation Communities for Ecoregion 6E

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Study Area
	ELC Ecosite Codes	Habitat Description	Detailed Information and Sources	Criteria for Consideration	Assessment Details
Cliff and Talus Slopes					
Rationale: Cliffs and Talus Slopes are rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO CLO TAS CLS TAT CLT	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris.	Most cliff and talus slopes occur along the Niagara Escarpment. <u>Information Sources</u> · The Niagara Escarpment Commission has detailed information on location of these habitats. · OMNRF District · NHIC has location information on their website · Conservation Authorities	· Confirm any ELC Vegetation Type for Cliffs or Talus Slopes	Vegetation community is not present within the subject property and adjacent lands. Not SWH
Sand Barrens					
Rationale: Sand barrens are rare in Ontario and may support rare species.	ELC Ecosites: SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always <60%.	Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. They have little or no soil and the underlying rock protrudes through the surface. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered but less than 60%.	Any sand barren area, >0.5ha in size. <u>Information Sources</u> · OMNRF Districts. · NHIC has location information on their website · Conservation Authorities	· Confirm any ELC Vegetation Type for Sand Barrens · Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics).	Vegetation community is not present within the subject property and adjacent lands. Not SWH
Alvar					

<p><u>Rationale:</u> Alvars are rare habitats in Ecoregion 6E. Most alvars in Ontario are in Ecoregion 6E and 7E. Alvars in 6E are small and localized north of the Palaeozoic-Precambrian contact.</p>	<p>ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 Five Alvar Indicator Species: 1) Carex crawei 2) Panicum philadelphicum 3) Eleocharis compressa 4) Scutellaria parvula 5) Trichostema branchiatum</p> <p>These indicator species are very specific to Alvars within Ecoregion 6E</p>	<p>An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plant. Vegetation cover varies from patchy to barren with a less than 60% cover.</p>	<p>An Alvar site > 0.5 ha in size.</p> <p><u>Information Sources</u> · Alvars of Ontario (2000), Federation of Ontario Naturalists. · Ontario Nature – Conserving Great Lakes Alvars. · NHIC · Conservation Authorities</p>	<p>Field studies identify four of the five Alvar indicator species at a Candidate Alvar site is Significant.</p> <p>· Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotics sp.).</p> <p>The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses.</p>	<p>Vegetation community is not present within the subject property or the adjacent lands.</p> <p>Not SWH</p>
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Table 2. Characteristics of Rare Vegetation Communities for Ecoregion 6E (continued)

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Study Area
	ELC Ecosite Codes	Habitat Description	Detailed Information and Sources	Criteria for Consideration	Assessment Details
Old Growth Forest					
<p><u>Rationale:</u> Due to historic logging practices, extensive old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by wildlife species.</p>	<p>Forest Community Series: FOD FOC FOM SWD SWC SWM</p>	<p>Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.</p>	<p>Woodland Stands areas 30ha or greater in size or with at least 10 ha interior habitat assuming 100m buffer at edge of forest.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> · OMNRF Forest Resource Inventory mapping · OMNRF Forester, Ecologist or Biologist · Conservation Authorities · Sustainable Forestry License (SFL) companies will possibly know locations through field operations. · Municipal forestry departments 	<p>Field Studies will determine:</p> <ul style="list-style-type: none"> · If dominant trees species of the ecosite are >140 years old, then stand is Significant Wildlife Habitat. · The stand will have experienced no recognizable forestry activities. The area of Forest Ecosites combined to make up the stand is the SWH. · Determine ELC Vegetation Type for forest stand 	<p>Vegetation community is not present within the subject property and the adjacent lands.</p> <p style="text-align: center;">Not SWH</p>
Savannah					
<p><u>Rationale:</u> Savannahs are rare habitats in Ontario.</p>	<p>TPS1 TPS2 TPW1 TPW2 CUS2</p>	<p>A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.</p>	<p>· No minimum size to site Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> · NHIC · OMNRF Ecologists · Conservation Authorities 	<p>Field studies confirm one or more of the Savannah indicator species.</p> <ul style="list-style-type: none"> · Area of the ELC Ecosite is the SWH. · Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics sp.). 	<p>Vegetation community is not present within the subject property and the adjacent lands.</p> <p style="text-align: center;">Not SWH</p>
Tallgrass Prairie					

<p><u>Rationale:</u> Tallgrass Prairies are rare habitats in Ontario.</p>	<p>TPO1 TPO2</p>	<p>A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.</p>	<p>. No minimum size to site Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> . OMNR Districts . NHIC . Conservation Authorities 	<p>Field studies confirm one or more of the Prairie indicators Species.</p> <ul style="list-style-type: none"> . Area of the ELC Ecosite is the SWH . Site must not be dominated by exotic or introduced species (<50% vegetative cover exotics). 	<p>Vegetation community is not present within the subject property and the adjacent lands.</p> <p>Not SWH</p>
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Table 2. Characteristics of Rare Vegetation Communities for Ecoregion 6E (continued)

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Study Area
	ELC Ecosite Codes	Habitat Description	Detailed Information and Sources	Criteria for Consideration	Assessment Details
Other Rare Vegetation Communities					
<p><u>Rationale:</u> Plant communities that often contain rare species which depend on the habitat for survival.</p>	<p>Provincially Rare S1, S2 and S3 vegetation communities. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.</p>	<p>Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.</p>	<p>The OMNR/NHIC will have current listing for vegetation communities.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> · NHIC · OMNRF · Conservation Authorities 	<p>Field studies should confirm ELC Vegetation Type.</p> <ul style="list-style-type: none"> · Area of the ELC Vegetation Type polygon is the SWH. 	<p>No other rare vegetation communities are present within the subject property or adjacent lands.</p> <p style="text-align: center;">Not SWH</p>

Significant Wildlife Habitat Assessment Tables

Table 3. Characteristics of Specialized Wildlife Habitat for Ecoregion 6E

	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Waterfowl Nesting Area					
Rationale: Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 Note: includes lands adjacent to Provincially Significant Wetlands	A waterfowl nesting area extends 120m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120m of each individual wetland where waterfowl nesting is known to occur. Upland areas should be at least 120m wide so that predators such as raccoons, skunks, and foxes have difficulty finding nests. · Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. <u>Information Sources</u> Ducks Unlimited staff may know the locations of particularly productive nesting sites. · OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat. · Reports and other information available from CAs	Studies confirmed: · Presence of 3 or more nesting pairs for listed species excluding Mallards, or · Presence of 10 or more nesting pairs for listed species including Mallards. · Any active nesting site of an American Black Duck is considered significant. · Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". · A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120m from the wetland and will provide enough habitat for waterfowl to successfully nest.	Suitable habitat is not present within the subject property or adjacent lands. Not SWH
Wildlife Habitat: Bald Eagle and Osprey Nesting, Foraging and Perching Habitat					

<p><u>Rationale:</u> Nest sites are uncommon in Eco-region 6E are used annually by these species.</p>	<p>Osprey <u>Special Concern:</u> Bald Eagle</p>	<p>ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands</p>	<ul style="list-style-type: none"> · Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. · Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. · Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms). <p style="text-align: center;"><u>Information Sources</u></p> <ul style="list-style-type: none"> · NHIC · MNRF will list known nesting locations. · Nature Counts, Ontario Nest Records Scheme data. · OMNRF Districts · Sustainable Forestry License (SFL) companies will identify additional nesting locations through field operations. · Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented · Reports and other information available from CAs. 	<p>Studies confirm the use of these nests by: One or more active Osprey or Bald Eagle nests in an area.</p> <ul style="list-style-type: none"> · Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. · For an Osprey, the active nest and a 300m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is Important. · For a Bald Eagle the active nest and a 400-800m radius around the nest is the SWH. Area of the habitat from 400-800m is dependent on site lines from the nest to the development and inclusion of perching and foraging habitat · To be significant a site must be used annually. When found inactive, the site must be known to be inactive for >3 years or suspected of not being used for >5 years before being considered not Significant · Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid March to mid August. 	<p>Suitable habitat not present onsite or on adjacent lands.</p> <p>There are no watercourses within 120m of the site.</p> <p style="text-align: center;">Not SWH</p>
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Table 3. Characteristics of Specialized Wildlife Habitat for Ecoregion 6E (continued)

	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Woodland Raptor Nesting Habitat					
<p><u>Rationale:</u> Nests sites for these species are rarely identified. These area-sensitive habitats and are often used annually by these species.</p>	<p>Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk</p>	<p>May be found in all forested ELC Ecosites.</p> <p>May also be found in SWC, SWM, SWD and CUP3.</p>	<p>All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat</p> <p>Interior habitat determined with a 200m buffer.</p> <p>Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Cooper's hawk nest along forest edges sometimes on peninsulas or small off-shore islands.</p> <p>In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest.</p> <p style="text-align: center;"><u>Information Sources</u></p> <ul style="list-style-type: none"> · OMNRF · Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario. · Bird Studies Canada · Reports and other information available from CAs 	<p>Studies confirm:</p> <ul style="list-style-type: none"> · Presence of 1 or more active nests from species list is considered significant. · Red-shouldered Hawk and Northern Goshawk – a 400m radius around the nest or 28ha area of habitat is the SWH. · Barred Owl – a 200m radius around the nest is the SWH. · Broad-winged Hawk and Coopers Hawk – a 100m radius around the nest is the SWH. · Sharp-shinned Hawk – a 50m radius around the nest is the SWH. · Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. 	<p>Suitable habitat is not present within the subject property or adjacent lands.</p> <p style="text-align: center;">Not SWH</p>
Wildlife Habitat: Turtle Nesting Area					

<p>Rationale: These habitats are rare and when identified will often be the only breeding site for local populations of turtles.</p>	<p>Midland Painted Turtle</p> <p>Special Concern: Northern Map Turtle Snapping Turtle</p>	<p>Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1</p>	<p>· Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals.</p> <p>· For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH.</p> <p>· Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.</p> <p><u>Information Sources</u></p> <p>· Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels).</p> <p>· Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them.</p> <p>· NHIC</p>	<p>Studies confirm:</p> <ul style="list-style-type: none"> · Presence of 5 or more nesting Midland Painted Turtles · One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. <p>The area or collection of sites within an area of exposed mineral soils where the turtle's nest, plus a radius of 30-100m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH.</p> <p>Travel routes from wetland to nesting area are to be considered within the SWH. Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method.</p>	<p>Suitable habitat is not present within the subject property and adjacent lands.</p> <p>Not SWH</p>
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Table 3. Characteristics of Specialized Wildlife Habitat for Ecoregion 6E (continued)

	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Seeps and Springs					
<u>Rationale:</u> Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Seeps are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. · Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species. <u>Information Sources</u> · Topographical Map Hydrological surveys conducted by CAs and MOE Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.	Field Studies confirm: · Presence of a site with 2 or more seeps/springs should be considered SWH. · The area of a ELC forest ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat.	The site and adjacent lands do not provide seepage areas. Not SWH.
Wildlife Habitat: Amphibian Breeding Habitat (Woodland)					
<u>Rationale:</u> These habitats are important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk	Presence of a wetland, pond or woodland pool (including vernal pools) >500m ² (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size. Some small wetlands may not be mapped and may be important breeding pools for amphibians. · Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. <u>Information Sources</u> · Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records	Studies confirm: · Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. · A combination of observational study and call count surveys will be required during the spring March-June when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands.	No suitable amphibian breeding habitat exists onsite or adjacent lands. Not SWH

		to migrating amphibians.	<ul style="list-style-type: none">. OMNRF District. OMNRF wetland evaluations. CWS Amphibian Road Call Survey	<ul style="list-style-type: none">. The habitat is the woodland area plus a 230m radius of woodland area.. If a Wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat.	
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Table 3. Characteristics of Specialized Wildlife Habitat for Ecoregion 6E.

	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Amphibian Breeding Habitat (Wetland)					
<p><u>Rationale:</u> These habitats are important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.</p>	<p>Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Tree frog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog</p>	<p>ELC Community Classes SW, MA, FE, BO, OA and SA.</p> <p>Typically, these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bullfrog) may be adjacent to woodlands.</p>	<p>· Wetlands >500m² (about 25m diameter) supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats.</p> <p>· Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators.</p> <p>· Bullfrogs require permanent water bodies with abundant emergent vegetation.</p> <p style="text-align: center;"><u>Information Sources</u></p> <p>· Ontario Herpetofaunal Summary Atlas (or other similar atlases)</p> <p>· CWS Amphibian Road Surveys.</p> <p>· OMNRF Districts and wetland evaluations</p> <p>· Reports and other information available from CAs.</p>	<p>Studies confirm:</p> <p>· Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species and with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3. or;</p> <p>· Wetland with confirmed breeding Bullfrogs are significant.</p> <p>· The ELC ecosite wetland area and the shoreline are the SWH.</p> <p>· A combination of observational study and call count survey will be required during spring March to June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands.</p> <p>· If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered.</p>	<p>Suitable habitat does not exist onsite or adjacent lands.</p> <p style="text-align: center;">Not SWH</p>

Woodland Area-Sensitive Bird Breeding Habitat					
<p><u>Rationale:</u> Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.</p>	<p>Yellow-Bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Special Concern: Cerulean Warbler Canada Warbler</p>	<p>All Ecosites associated with these ELC Community Series: FOC FOM FOD SWC SWM SWD</p>	<p>· Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha. Interior forest habitats are at least 200m from forest edge habitat. Information Sources · CWS · Reports and other information available from CAs.</p>	<p>· Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. · Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. · Conduct field investigations in spring and early summer when birds are singing and defending their territories. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".</p>	<p>Suitable habitat is not present within the subject property and adjacent lands. Not SWH</p>

Significant Wildlife Habitat Assessment Tables

Table 4. Characteristics of Habitat for Species of Conservation Concern for Ecoregion 6E

	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Marsh Bird Breeding Habitat					
<p><u>Rationale:</u> Wetlands for these bird species are typically productive and rare in Southern Ontario landscapes.</p>	<p>American Bittern Virginia Rail Sora Common Gallinule American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan</p> <p><u>Special Concern:</u> Black Tern Yellow Rail</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1</p> <p>For Green Heron: All SW, MA and CUM1 sites.</p>	<ul style="list-style-type: none"> · Nesting occurs in wetlands · All wetland habitat is to be considered if there is shallow water with emergent aquatic vegetation present. · For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. <p style="text-align: center;"><u>Information Sources</u></p> <ul style="list-style-type: none"> · OMNRF (wetland evaluations). <ul style="list-style-type: none"> · NHIC · Reports and other information available from CAs. · Ontario Breeding Bird Atlas. 	<p>Studies confirm:</p> <ul style="list-style-type: none"> · Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or 1 pair of Sandhill Cranes; or breeding by any combination of 5 or more of the listed species. · Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. <p>Area of the ELC ecosite is the SWH</p> <ul style="list-style-type: none"> · Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. · Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". 	<p>Suitable habitat is not present within the subject property and adjacent lands.</p> <p style="text-align: center;">Not SWH</p>
Wildlife Habitat: Open Country Bird Breeding Habitat					
<p><u>Rationale:</u> This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined the past 40 years based on CWS (2004) trend records.</p>	<p>Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow</p> <p><u>Special Concern:</u> Short-eared Owl</p>	<p>CUM1 CUM2</p>	<p>Large grassland areas (includes natural and cultural fields and meadows) >30 ha.</p> <p>Grasslands not cultivated agricultural lands, and not being actively used for farming (i.e., no row cropping or intensive hay or livestock pasturing in the last 5 years).</p> <p>Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older.</p>	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> · Presence of nesting or breeding of 2 or more of the listed species. · A field with 1 or more breeding Short-eared Owl is to be considered SWH. · The area of SWH is the contiguous ELC ecosite field areas. <p>Conduct field investigations of the most likely areas in spring and early summer when birds</p>	<p>Suitable habitat is not present onsite or adjacent lands.</p> <p style="text-align: center;">Not SWH</p>

		<p>The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species.</p> <p><u>Information Sources</u></p> <p>Agricultural land classification maps, OMAFRA.</p> <ul style="list-style-type: none">· Ontario Breeding Bird Atlas.· Reports and other information available from CAs.	<p>are singing and defending their territories.</p> <ul style="list-style-type: none">· Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".	
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Table 4. Characteristics of Habitat for Species of Conservation Concern for Ecoregion 6E.

	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Shrub/Early Successional Bird Breeding Habitat					
<p><u>Rationale:</u> This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined over the past 40 years based on CWS (2004) trend records.</p>	<p><u>Indicator spp.:</u> Brown Thrasher Clay-coloured Sparrow</p> <p><u>Common spp.:</u> Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher</p> <p><u>Special Concern:</u> Yellow-breasted Chat Golden-winged Warbler</p>	<p>CUT1 CUT2 CUS1 CUS2 CUW1 CUW2</p> <p>Patches of shrub ecosites can be complexed into a larger habitat for some bird species.</p>	<p>Large field areas succeeding to shrub and thicket habitats >10ha in size.</p> <ul style="list-style-type: none"> Shrub land or early successional fields, not cultivated agricultural lands, not being actively used for farming (i.e., no row-cropping, haying or live-stock pasturing in the last 5 years). <p>Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species.</p> <p>Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands.</p> <p style="text-align: center;"><u>Information Sources</u></p> <ul style="list-style-type: none"> Agricultural land classification maps, OMAFRA Ontario Breeding Bird Atlas Reports and other information available from CAs 	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. A field with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. The area of the SWH is the contiguous ELC ecosite field/thicket area. <p>Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories</p> <p>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</p>	<p>Suitable habitat is not present on the subject property and adjacent lands.</p> <p style="text-align: center;">Not SWH</p>
Wildlife Habitat: Terrestrial Crayfish					
<p><u>Rationale:</u> Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.</p>	<p>Chimney or Digger Crayfish: (<i>Fallicambarus fodiens</i>)</p> <p>Devil Crawfish or Meadow Crayfish: (<i>Cambarus Diogenes</i>)</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM</p>	<p>Wet meadow and edges of shallow marshes (no minimum size) identified should be surveyed for terrestrial crayfish.</p> <ul style="list-style-type: none"> Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. <p style="text-align: center;">Information Sources</p>	<p>Studies Confirm:</p> <ul style="list-style-type: none"> Presence of 1 or more individuals of species listed or their burrows in suitable marsh meadow or terrestrial site. Area of ELC Ecosite. <p>Surveys should be done April to August during in temporary or permanent water Note the presence of burrows or chemistry are often the only indicator of presence, observance or collection of individuals is very difficult.</p>	<p>Suitable habitat is not present on the subject property and adjacent lands.</p> <p style="text-align: center;">Not SWH</p>

			<ul style="list-style-type: none">• Information sources from reports such as: "Conservation Status of Freshwater Crayfishes".		
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Table 4. Characteristics of Habitat for Species of Conservation Concern for Ecoregion 6E (continued)

	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Special Concern and Rare Wildlife Species					
<p><u>Rationale:</u> These species are rare or have experienced population declines in Ontario.</p>	<p>All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the NHIC.</p>	<p>All plant and animal element occurrences (EO) within a 1 or 10km grid.</p> <p>Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.</p>	<p>When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosite.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> · NHIC (Special Concern and Provincially Rare, S1-S3, SH) species lists with element occurrences data. · NHIC. · Ontario Breeding Bird Atlas. 	<p>Studies Confirm:</p> <ul style="list-style-type: none"> · Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. · The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs to be mapped and cover an important life stage component for a species e.g., specific nesting habitat or foraging habitat. 	<p>No species of special concern or provincially rare species (S1-S3) found onsite.</p> <p>Not SWH.</p>

Significant Wildlife Habitat Assessment Tables

Table 5. Characteristics of Animal Movement Corridors for Ecoregion 6E

	Wildlife Species	Candidate SWH		Confirmed SWH	Study Area
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Criteria for Consideration	Assessment Details
Wildlife Habitat: Amphibian Movement Corridors					
<p>Rationale: Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be important for local populations.</p>	<p>Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog</p>	<p>Corridors may be found in all ecosites associated with water. · Corridors will be determined based on identifying the significant breeding habitat for these species.</p>	<p>Movement corridors between breeding habitat and summer habitat. Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH . <u>Information Sources</u> · MNR District Office · NHIC · Reports and other information available from CAs</p>	<p>Field Studies to be conducted at the time of year when species are expected to be migrating or entering breeding sites. · Corridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant. Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m. · Shorter corridors are more significant than longer corridors, however, amphibians must be able to get to and from their summer and breeding habitat.</p>	<p>No suitable habitat onsite or adjacent lands Not SWH.</p>

Wildlife Habitat: Deer Movement Corridors					
<p><u>Rationale:</u> Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.</p>	<p>White-tailed Deer</p>	<p>Corridors may be found in all forested ecosites.</p>	<p>Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH. A deer wintering habitat identified by the OMNRF will have corridors that the deer use during fall migration and spring dispersion.</p> <ul style="list-style-type: none"> • Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • MNRF District Office • NHIC • Reports and other information available from CAs 	<p>Studies to be conducted at the time of _____ year when deer are migrating or moving to and from winter concentration areas.</p> <ul style="list-style-type: none"> • Corridors that lead to a deer wintering yard should be unbroken by roads and residential areas. • Corridors should be at least 200m wide with gaps <20m. 	<p>Not SWH</p>

Appendix D: Species at Risk Screening

Taxon	Common Name	Scientific Name	Endangered Species Act ¹	Species at Risk Act (Sch 1) ²	COSEWIC ³	Provincial (SRank) ⁴	Habitat Requirements ⁵	Potential to Occur on Site or in the Study Area	Rationale for Potential to Occur on Site or in the Study Area
Amphibian	Jefferson salamander	Ambystoma jeffersonianum	END	END	END	S2	In Ontario, Jefferson salamander is found only in southern Ontario, along southern portions of the Niagara Escarpment and western portions of the Oak Ridges Moraine. Jefferson salamander prefers moist, well-drained deciduous and mixed forests with a closed canopy. It overwinters underground in mammal burrows and rock fissures, and moves to vernal pools and ephemeral wetlands in the early spring to breed. Breeding ponds are typically located in or near to forested habitats, and contain submerged debris (i.e., sticks, vegetation) for egg attachment sites. Ephemeral breeding pools need to have water until at least mid-summer (mid to late July) (Jefferson Salamander Recovery Team 2010).	None	There is no potential habitat onsite or adjacent lands.
Amphibian	Jefferson X Blue-spotted salamander, Jefferson genome dominates	Ambystoma hybrid pop. 1	—	—	—	S2	In Ontario, Jefferson x blue-spotted salamander prefers moist, well-drained deciduous and mixed forests with a closed canopy. It overwinters underground in mammal burrows and rock fissures, and moves to vernal pools and ephemeral wetlands in the early spring to breed. Breeding ponds are typically located in or near to forested habitats, and contain submerged debris (i.e., sticks, vegetation) for egg attachment sites. Ephemeral breeding pools need to have water until at least mid-summer (mid to late July) (Jefferson Salamander Recovery Team 2010).	None	There is no potential habitat onsite or adjacent lands.

Amphibian	Western chorus frog - Great Lakes St. Lawrence / Canadian Shield population	<i>Pseudacris triseriata</i>	—	THR	THR	S3	In Ontario, habitat of this amphibian species typically consists of marshes or wooded wetlands, particularly those with dense shrub layers and grasses, as this species is a poor climber. They will breed in almost any fishless pond including roadside ditches, gravel pits and flooded swales in meadows. This species hibernates in terrestrial habitats under rocks, dead trees or leaves, in loose soil or in animal burrows. During hibernation, this species is tolerant of flooding (Environment Canada 2015).	None	There is no potential habitat onsite or adjacent lands.
Arthropod	Black dash	<i>Euphyes conspicua</i>	—	—	—	S3	This small skipper primarily inhabits large graminoid meadow marshes, but can also be found in open areas along small streams. The main larval host is tussock sedge (<i>Carex stricta</i>) (Layberry et al. 1998).	None	There is no potential habitat onsite or adjacent lands.
Arthropod	Monarch	<i>Danaus plexippus</i>	SC	SC	END	S2N, S4B	In Ontario, monarch is found throughout the northern and southern regions of the province. This butterfly is found wherever there are milkweed (<i>Asclepias</i> spp.) plants for its caterpillars and wildflowers that supply a nectar source for adults. It is often found on abandoned farmland, meadows, open wetlands, prairies and roadsides, but also in city gardens and parks. Important staging areas during migration occur along the north shores of the Great Lakes (COSEWIC 2010).	None	No Monarchs were observed onsite during the survey.

Arthropod	Rusty-patched bumble bee	<i>Bombus affinis</i>	END	END	END	S1	In Ontario, rusty-patched bumble bee is found in areas from the southern Great Lakes – St. Lawrence forest region southwards into the Carolinian forest. It is a habitat generalist, but it is typically found in open habitats, such as mixed farmland, savannah, marshes, sand dunes, urban and lightly wooded areas. It is cold-tolerant and can be found at high elevations. Most recent sightings in Ontario have been in oak savannah habitat with well-drained, sandy soils and moderately open canopy. It requires an abundance of flowering plants for forage. This species most often builds nests underground in old rodent burrows, but also in hollow tree stumps and fallen dead wood (Colla and Taylor-Pindar 2011). The only recent sightings in Ontario are from the Pinery Provincial Park.	None	This species is only known to occur within Pinery Provincial Park in southwestern Ontario.
Arthropod	West Virginia white	<i>Pieris virginiensis</i>	SC	—	—	S3	In Ontario, west Virginia white is found primarily in the central and southern regions of the province. This butterfly lives in moist, mature, deciduous and mixed woodlands, and the caterpillars feed only on the leaves of toothwort (<i>Cardamine</i> spp.), which are small, spring-blooming plants of the forest floor. These woodland habitats are typically maple-beech-birch dominated. This species is associated with woodlands growing on calcareous bedrock or thin soils over bedrock (Burke 2013).	None	There were no toothwort host plants observed on the site or in the study area. In addition, this species has only been historically recorded in the region (Jones et al. 2019).
Arthropod	Yellow-banded bumble bee	<i>Bombus terricola</i>	SC	SC	SC	S2	This species is a forage and habitat generalist. Mixed woodlands are commonly used for nesting and overwintering, but it also occupies various open habitats including native grasslands, farmlands and urban areas. It is an early emerging species, making it likely an important pollinator of early blooming wild flowering plants (e.g., wild blueberry) and agricultural	None	Field edges and roadsides on the site and in the study area may provide suitable foraging habitat. The forests offsite (beyond 120 m) of the study area may also provide habitat for nesting and overwintering.

							crops (e.g., apple). Nest sites are mostly abandoned rodent burrows (COSEWIC 2015).		
Bird	Bald eagle	Haliaeetus leucocephalus	SC	—	NAR	S2N, S4B	In Ontario, bald eagle nests are typically found near the shorelines of lakes or large rivers, often on forested islands. The large, conspicuous nests are typically found in large super-canopy trees along water bodies (Buehler 2000).	None	There are no lakes or large rivers on the site to provide suitable habitat for this species. In addition, no individuals were observed during field surveys.
Bird	Bank swallow	Riparia riparia	THR	THR	THR	S4B	In Ontario, bank swallow breeds in a variety of natural and anthropogenic habitats, including lake bluffs, stream and river banks, sand and gravel pits, and roadcuts. Nests are generally built in a vertical or near-vertical bank. Breeding sites are typically located near open foraging sites such as rivers, lakes, grasslands, agricultural fields, wetlands and riparian woods. Forested areas are generally avoided (Garrison 1999).	None	There is no potential habitat onsite.
Bird	Barn swallow	Hirundo rustica	SC	THR	SC	S4B	In Ontario, barn swallow breeds in areas that contain a suitable nesting structure, open areas for foraging, and a body of water. This species nests in human made structures including barns, buildings, sheds, bridges, and culverts. Preferred foraging habitat includes grassy fields, pastures, agricultural cropland, lake and river shorelines, cleared right-of-ways, and wetlands (COSEWIC 2011). Mud nests are fastened to vertical walls or built on a ledge underneath an overhang. Suitable nests from previous years are reused (Brown and Brown 1999).	None Onsite. Potential on offsite lands.	No onsite habitat. Offsite lands has wooden barns and these structures may be provide suitable habitat.

Bird	Black tern	Chlidonias niger	SC	—	NAR	S3B	In Ontario, black tern breeds in freshwater marshlands where it forms small colonies. It prefers marshes or marsh complexes greater than 20 ha in area and which are not surrounded by wooded area. Black terns are sensitive to the presence of agricultural activities. The black tern nests in wetlands with an even combination of open water and emergent vegetation, and still waters of 0.5-1.2 m deep. Preferred nest sites have short dense vegetation or tall sparse vegetation often consisting of cattails, bulrushes and occasionally burreed or other marshland plants. Black terns also require posts or snags for perching (Weseloh 2007).	None	There are no suitable marshes on the site or in the study area.
Bird	Bobolink	Dolichonyx oryzivorus	THR	THR	THR	S4B	In Ontario, bobolink breeds in grasslands or graminoid dominated hayfields with tall vegetation (Gabhauer 2007). Bobolink prefers grassland habitat with a forb component and a moderate litter layer. They have low tolerance for presence of woody vegetation and are sensitive to frequent mowing within the breeding season. They are most abundant in established, but regularly maintained, hayfields, but also breed in lightly grazed pastures, old or fallow fields, cultural meadows and newly planted hayfields. Their nest is woven from grasses and forbs. It is built on the ground, in dense vegetation, usually under the cover of one or more forbs (Renfrew et al. 2015).	None onsite. Potential on offsite lands.	No bobolink were observed during the 2025 survey. There is potential suitable nesting habitat on adjacent lands to the site.

Bird	Canada warbler	Cardellina canadensis	SC	THR	SC	S4B	In Ontario, breeding habitat for Canada warbler consists of moist mixed forests with a well-developed shrubby understory. This includes low-lying areas such as cedar and alder swamps, and riparian thickets (McLaren 2007). It is also found in densely vegetated regenerating forest openings. Suitable habitat often contains a developed moss layer and an uneven forest floor. Nests are well concealed on or near the ground in dense shrub or fern cover, often in stumps, fallen logs, overhanging stream banks or mossy hummocks (Reitsma et al. 2010).	None	No suitable habitat onsite. No individuals were observed during field surveys.
Bird	Eastern meadowlark	Sturnella magna	THR	THR	THR	S4B	In Ontario, eastern meadowlark breeds in pastures, hayfields, meadows and old fields. Eastern meadowlark prefers moderately tall grasslands with abundant litter cover, high grass proportion, and a forb component (Hull 2003). They prefer well drained sites or slopes, and sites with different cover layers (Roseberry and Klimstra 1970).	None onsite. Potential on offsite lands.	No Eastern meadowlark were observed during the 2025 survey. There is potential suitable nesting habitat on adjacent lands to the site.
Bird	Eastern wood-pewee	Contopus virens	SC* (note: the ESA was replaced by Species Conservation Act: Eastern Wood Pewee is not listed in the SCA O. Reg. 60/26).	SC	SC	S4B	In Ontario, eastern wood-pewee inhabits a wide variety of wooded upland and lowland habitats, including deciduous, coniferous, or mixed forests. It occurs most frequently in forests with some degree of openness. Intermediate-aged forests with a relatively sparse midstory are preferred. In younger forests with a relatively dense midstory, it tends to inhabit the edges. Also occurs in anthropogenic habitats providing an open forested aspect such as parks and suburban neighborhoods. Nest is constructed atop a horizontal branch, 1-2 m above the ground, in a wide variety of deciduous and coniferous trees (COSEWIC 2012).	Yes.	There is potential habitat onsite. A single bird was inventoried at the edge of the plantation during breeding bird window.

Bird	Golden-winged warbler	Vermivora chrysoptera	SC	THR	THR	S4B	In Ontario, golden-winged warbler breeds in regenerating scrub habitat with dense ground cover and a patchwork of shrubs, usually surrounded by forest. Their preferred habitat is characteristic of a successional landscape associated with natural or anthropogenic disturbance such as rights-of-way, and field edges or openings resulting from logging or burning. The nest of the golden-winged warbler is built on the ground at the base of a shrub or leafy plant, often at the shaded edge of the forest or at the edge of a forest opening (Confer et al. 2011).	None	Site is an agricultural field. No suitable habitat onsite. None inventoried onsite.
Bird	Grasshopper sparrow pratensis subspecies	Ammodramus savannarum (pratensis subspecies)	SC	SC	SC	S4B	In Ontario, grasshopper sparrow is found in medium to large grasslands with low herbaceous cover and few shrubs. It also uses a wide variety of agricultural fields, including cereal crops and pastures. Close-grazed pastures and limestone plains (e.g., Carden and Napanee Plains) support highest density of this bird in the province (COSEWIC 2013).	None	Site is a small agricultural field. No suitable habitat onsite.
Bird	Henslow's sparrow	Ammodramus henslowii	END	END	END	SHB	In Ontario, Henslow's sparrow breeds in large grasslands with low disturbance, such as lightly grazed and ungrazed pastures, fallow hayfields, grassy swales in open farmland, and wet meadows. Preferred habitat contains tall, dense grass cover, usually over 30 cm high, with a high percentage of ground cover, and a thick mat of dead plant material. Henslow's sparrow generally avoids areas with emergent woody shrubs or trees, and fence lines. Areas of standing water or ephemerally wet patches appear to be important. This species breeds more frequently in patches of habitat greater than 30 ha and preferably greater than 100 ha (COSEWIC 2011).	None	Site is a small agricultural field. No suitable habitat onsite.

Bird	Red-headed woodpecker	Melanerpes erythrocephalus	END	END	END	S4B	In Ontario, red-headed woodpecker breeds in open, deciduous woodlands or woodland edges and are often found in parks, cemeteries, golf courses, orchards and savannahs (Woodliffe 2007). They may also breed in forest clearings or open agricultural areas provided that large trees are available for nesting. They prefer forests with little or no understory vegetation. They are often associated with beech or oak forests, beaver ponds and swamp forests where snags are numerous. Nests are excavated in the trunks of large dead trees (Smith et al. 2000).	Potential exists but none inventoried.	Site is an agricultural field. Potential habitat onsite in the plantation. None inventoried.
Bird	Wood thrush	Hylocichla mustelina	SC	THR	THR	S4B	In Ontario, wood thrush breeds in moist, deciduous hardwood or mixed stands that are often previously disturbed, with a dense deciduous undergrowth and with tall trees for singing perches. This species selects nesting sites with the following characteristics: lower elevations with trees less than 16 m in height, a closed canopy cover (>70 %), a high variety of deciduous tree species, moderate subcanopy and shrub density, shade, fairly open forest floor, moist soil, and decaying leaf litter (COSEWIC 2012).	None	Site is an agricultural field. No suitable habitat onsite.
Mammal	Eastern small-footed myotis	Myotis leibii	END	—	—	S2S3	This species is not known to roost within trees, but there is very little known about its roosting habits. The species generally roosts on the ground under rocks, in rock crevices, talus slopes and rock piles. It occasionally inhabits buildings. Areas near the entrances of caves or abandoned mines may be used for hibernaculum, where the conditions are drafty with low humidity, and may be subfreezing (Humphrey 2017).	None	Site is an agricultural field. No suitable habitat onsite. Potential habitat on offsite lands.

Mammal	Gray fox	<i>Urocyon cinereoargenteus</i>	THR	THR	THR	S1	While the Ontario range of this species extends across much of southern and southeastern Ontario, the only known population in the province is on Pelee Island, with very rare sightings elsewhere in the province at points close to the border with the United States. This species inhabits deciduous forests and marshes and will den in a variety of features including rock outcroppings, hollow trees, burrows or brush piles, usually where dense brush provides cover and in close proximity to water. This species is considered a habitat generalist (COSEWIC 2015).	None	This species is currently only known to occur on Pelee Island.
Mammal	Little brown myotis	<i>Myotis lucifugus</i>	END	END	END	S3	In Ontario, this species' range is extensive and covers much of the province. It will roost in both natural and man-made structures. Roosting colonies require a number of large dead trees, in specific stages of decay and that project above the canopy in relatively open areas. May form nursery colonies in the attics of buildings within 1 km of water. Caves or abandoned mines may be used as hibernacula, but high humidity and stable above freezing temperatures are required (ECCC 2018).	None	Site mainly consists of an agricultural field. Onsite snags to be investigated to determine if suitable habitat.
Mammal	Northern myotis	<i>Myotis septentrionalis</i>	END	END	END	S3	In Ontario, this species' range is extensive and covers much of the province. It will usually roost in hollows, crevices, and under loose bark of mature trees. Roosts may be established in the main trunk or a large branch of either living or dead trees. Caves or abandoned mines may be used as hibernacula, but high humidity and stable above freezing temperatures are required (ECCC 2018).	None	Site mainly consists of an agricultural field. Onsite snags to be investigated to determine if suitable habitat.

Mammal	Tri-colored bat	Perimyotis subflavus	END	END	END	S3?	In Ontario, tri-colored bat may roost in foliage, in clumps of old leaves, hanging moss or squirrel nests. They are occasionally found in buildings although there are no records of this in Canada. They typically feed over aquatic areas with an affinity to large-bodied water and will likely roost in close proximity to these. Hibernation sites are found deep within caves or mines in areas of relatively warm temperatures. These bats have strong roost fidelity to their winter hibernation sites and may choose the exact same spot in a cave or mine from year to year (ECCC 2018).	None	Site mainly consists of an agricultural field. Onsite snags to be investigated to determine if suitable habitat.
Mammal	Woodland vole	Microtus pinetorum	SC	SC	SC	S3?	In Ontario, woodland vole is associated with mature deciduous forests with soft, often sandy soils and a deep litter and humic layer, suitable for burrowing. Common associates include oaks, hickory, black walnut, American beech and tulip tree. This species is often found at woodland edges near roads, railway tracks and field edges. Woodland vole is restricted to the Carolinian forest zone (COSEWIC 2010).	None	There is no potential habitat onsite.
Reptile	Blanding's turtle - Great Lakes / St. Lawrence / Lawrence population	Emydoidea blandingii	THR	END	END	S3	In Ontario, Blanding's turtle will use a range of aquatic habitats, but favor those with shallow, standing or slow-moving water, rich nutrient levels, organic substrates and abundant aquatic vegetation. They will use rivers, but prefer slow-moving currents and are likely only transients in this type of habitat. This species is known to travel great distances over land in the spring in order to reach nesting sites, which can include dry conifer or mixed forests, partially vegetated fields, and roadsides. Suitable nesting substrates include organic soils, sands, gravel and cobble. They hibernate underwater and	None	There is no potential habitat onsite.

							infrequently under debris close to water bodies (COSEWIC 2016).		
Reptile	Eastern ribbonsnake - Great Lakes population	<i>Thamnophis sauritus</i>	SC	SC	SC	S4	In Ontario, eastern ribbonsnake is semi-aquatic, and is rarely found far from shallow ponds, marshes, bogs, streams or swamps bordered by dense vegetation. They prefer sunny locations and bask in low shrub branches. Hibernation occurs in mammal burrows, rock fissures or even ant mounds (COSEWIC 2012).	None	There is no potential habitat onsite.
Reptile	Midland painted turtle	<i>Chrysemys picta marginata</i>	—	SC	SC	S4	In Ontario, painted turtles use waterbodies, such as ponds, marshes, lakes and slow-moving creeks, with a soft bottom and abundant basking sites and aquatic vegetation. This species hibernates on the bottom of waterbodies (Ontario Nature 2018).	Possible	There is potential suitable habitat onsite.
Reptile	Milksnake	<i>Lampropeltis triangulum</i>	NAR	SC	SC	S4	In Ontario, milksnake uses a wide range of habitats including prairies, pastures, hayfields, wetlands and various forest types, and is well-known in rural areas where it frequents older buildings. Proximity to water and cover enhances habitat suitability. Hibernation takes place in mammal burrows, hollow logs, gravel or soil banks, and old foundations (COSEWIC 2014).	None	There is no potential habitat onsite.

Reptile	Northern map turtle	<i>Graptemys geographica</i>	SC	SC	SC	S3	In Ontario, the northern map turtle prefers large waterbodies with slow-moving currents, soft substrates, and abundant aquatic vegetation. Ideal stretches of shoreline contain suitable basking sites, such as rocks and logs. Along Lakes Erie and Ontario, this species occurs in marsh habitat and undeveloped shorelines. It is also found in small to large rivers with slow to moderate flow. Hibernation takes place in soft substrates under deep water (COSEWIC 2012).	None	There is no potential habitat onsite.
Reptile	Snapping turtle	<i>Chelydra serpentina</i>	SC	SC	SC	S4	In Ontario, snapping turtle uses a wide range of waterbodies, but shows preference for areas with shallow, slow-moving water, soft substrates and dense aquatic vegetation. Hibernation takes place in soft substrates under water. Nesting sites consist of sand or gravel banks along waterways or roadways (COSEWIC 2008).	Yes	Site is an agricultural field. There is no potential habitat onsite.
Vascular Plant	American chestnut	<i>Castanea dentata</i>	END	END	END	S1S2	In Ontario, American chestnut occurs in mixed or deciduous forests in the Carolinian zone (Farrar 1995). It is often found in communities with dense canopy cover and often associated with oak and maple. This tree grows primarily on acidic, sand or gravel soils (Boland et al. 2012).	None	No American Chestnut trees onsite.
Vascular Plant	American ginseng	<i>Panax quinquefolius</i>	END	END	END	S2	In Ontario, American ginseng is found in moist, undisturbed and relatively mature deciduous woods often dominated by sugar maple. It is commonly found on well-drained, south-facing slopes. American ginseng grows under closed canopies in well-drained soils of glaciary origin that have a neutral pH (ECCC 2018).	None	There is no potential habitat onsite.

Vascular Plant	American hart's-tongue fern	Asplenium scolopendrium	SC	SC	SC	S3	In Ontario, hart's-tongue fern grows on thin calcareous soils on or near dolomitic limestone of the Niagara Escarpment, and occasionally on open talus/scree slopes. Most populations are found on steep, moderately moist slopes that face north to northeast and are under a hardwood canopy cover (Environment Canada 2013).	None	There is no potential habitat onsite.
Vascular Plant	Black ash	Fraxinus nigra	END (temporary suspension of protection until Jan 2024)	—	THR	S3	Found throughout Ontario in moist ecosystems; commonly found in northern swampy woodlands (MNR 2018). This species is commonly associated on mucky or peaty soils and is considered a facultative wetland species (Reznicek et al. 2011).	None	There is no potential habitat onsite.
Vascular Plant	Butternut	Juglans cinerea	END	END	END	S2?	In Ontario, butternut is found along stream banks, on wooded valley slopes, and in deciduous and mixed forests. It is commonly associated with beech, maple, oak and hickory (Voss and Reznicek 2012). Butternut prefers moist, fertile, well-drained soils, but can also be found in rocky limestone soils. This species is shade intolerant (Farrar 1995).	Yes	A Butternut tree was identified onsite. A Butternut Assessment was completed.
Vascular Plant	False hop sedge	Carex lupuliformis	END	END	END	S1	In Ontario, false hop sedge occurs in marshes, riverine swamps, borders of vernal pools, and wet depressions of forests. It occasionally occurs in shallow water or very wet floodplain forests. Usually grows under a moderately open canopy but can tolerate high levels of sunshine. Substrates are calcareous or neutral and include moist wet mucks, silt loams, or alluvial deposits with a sandy texture (Environment Canada 2014).	None	There is no potential habitat onsite.
Vascular Plant	Ram's-head lady's-slipper	Cypripedium arietinum	—	—	—	S3	Ram's-head lady's-slipper can be found in moist coniferous swamps, dry sandy woods and limestone barrens (Oldham and Brinker 2009).	None	There is no potential habitat onsite.

Appendix E: NHIC Data

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	Last Observation Date	ATLAS NAD83 IDENT	COMMENTS
967404	SPECIES	Eastern Wood-pewee	<i>Contopus virens</i>	S4B	SC	SC	2017-06-16	17NJ6720	
967404	SPECIES	Barn Swallow	<i>Hirundo rustica</i>	S4B	SC	SC	2018-06-25	17NJ6720	
967404	SPECIES	Wood Thrush	<i>Hylocichla mustelina</i>	S4B	SC	THR	2004-06-15	17NJ6720	
967404	SPECIES	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	S4B	SC	SC	2017-06-14	17NJ6720	
967404	SPECIES	Bobolink	<i>Dolichonyx oryzivorus</i>	S4B	THR	SC	2020-05-30	17NJ6720	
967404	SPECIES	Eastern Meadowlark	<i>Sturnella magna</i>	S4B,S3N	THR	THR	2020-05-30	17NJ6720	
967404	SPECIES	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	S4		SC	1981-09-21	17NJ6720	
967404	SPECIES	American Burying Beetle	<i>Nicrophorus americanus</i>	SH	EXP	EXP	1930-09-01	17NJ6720	
967404	SPECIES	Eastern Ribbonsnake	<i>Thamnophis saurita</i>	S4	SC	SC	1990-04-25	17NJ6720	
967404	SPECIES	Transverse Lady Beetle	<i>Coccinella transversoguttata</i>	S1	END	SC	1987-09-04	17NJ6720	
967404	SPECIES	Rusty-patched Bumble Bee	<i>Bombus affinis</i>	S1	END	END	1993-05-06	17NJ6720	
967404	SPECIES	Yellow-banded Bumble Bee	<i>Bombus terricola</i>	S3S5	SC	SC	2018-07-30	17NJ6720	
967404	SPECIES	American Bumble Bee	<i>Bombus pennsylvanicus</i>	S3	SC	SC	2019-06-08	17NJ6720	
967404	SPECIES	Gypsy Cuckoo Bumble Bee	<i>Bombus bohemicus</i>	S1S2	END	END	1986-08-13	17NJ6720	

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	Last Observation Date	ATLAS NAD83 IDENT	COMMENTS
967405	SPECIES	Black Ash	<i>Fraxinus nigra</i>	S4	END	THR	2022-06-15	17NJ6721	
967405	SPECIES	Eastern Wood-pewee	<i>Contopus virens</i>	S4B	SC	SC	2014-07-18	17NJ6721	
967405	SPECIES	Barn Swallow	<i>Hirundo rustica</i>	S4B	SC	SC	2018-06-25	17NJ6721	
967405	SPECIES	Wood Thrush	<i>Hylocichla mustelina</i>	S4B	SC	THR	2013-06-01	17NJ6721	
967405	SPECIES	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	S4B	SC	SC	2022-05-25	17NJ6721	
967405	SPECIES	Bobolink	<i>Dolichonyx oryzivorus</i>	S4B	THR	SC	2022-06-15	17NJ6721	
967405	SPECIES	Eastern Meadowlark	<i>Sturnella magna</i>	S4B,S3N	THR	THR	2020-06-17	17NJ6721	
967405	SPECIES	Snapping Turtle	<i>Chelydra serpentina</i>	S4	SC	SC	2011-06-09	17NJ6721	
967405	SPECIES	American Burying Beetle	<i>Nicrophorus americanus</i>	SH	EXP	EXP	1930-09-01	17NJ6721	

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	Last Observation Date	ATLAS NAD83 IDENT	COMMENTS
967414	SPECIES	Black Ash	<i>Fraxinus nigra</i>	S4	END	THR	2021-08-31	17NJ6820	
967414	SPECIES	Eastern Wood-pewee	<i>Contopus virens</i>	S4B	SC	SC	2022-06-30	17NJ6820	
967414	SPECIES	Barn Swallow	<i>Hirundo rustica</i>	S4B	SC	SC	2018-06-25	17NJ6820	
967414	SPECIES	Wood Thrush	<i>Hylocichla mustelina</i>	S4B	SC	THR	2022-06-30	17NJ6820	
967414	SPECIES	Henslow's Sparrow	<i>Centronyx henslowii</i>	S1B	END	END	1988-06-12	17NJ6820	
967414	SPECIES	Midland Painted Turtle	<i>Chrysemys picta marginata</i>	S4		SC	2021-05-26	17NJ6820	
967414	SPECIES	American Burying Beetle	<i>Nicrophorus americanus</i>	SH	EXP	EXP	1930-09-01	17NJ6820	

Appendix F: Good Forestry Permit Application
GOOD FORESTRY PERMIT APPLICATION
THE CORPORATION OF THE COUNTY OF WELLINGTON
PURSUANT TO FOREST CONSERVATION BY-LAW NO. 5115-09

THIS PERMIT APPLICATION TO BE COMPLETED, SIGNED BY ALL APPROPRIATE INDIVIDUALS AND DELIVERED TO THE OFFICE OF THE FOREST CONSERVATION BY-LAW OFFICER, COUNTY OF WELLINGTON BEFORE THE PERMIT APPLICATION WILL BE CONSIDERED. PROVIDE AT LEAST 14 DAYS BEFORE A PERMIT MAY BE ISSUED.

Fill in or Circle the appropriate information. The County may also require additional documentation.

Property Owner: _____ **Civic Address:** _____
Telephone: _____ **Fax:** _____ **Email:** _____
Mailing Address: _____

Postal Code: _____ **Date of Purchase of Property:** _____

Information on Property where trees are to be harvested:

Civic Address (number & road name) of property: _____

Legal Description of property: Lot _____ Concession _____ Township _____
 Area of Property (acres): _____ Forest Area on Property: _____ Forest area to be cut: _____

Is this woodland enrolled in the Managed Forest Tax Incentive Program? **Yes No**
 Is this woodland enrolled in the Conservation Land Tax Incentive Program? **Yes No**

FORESTER INFORMATION:

Company: ARBORLAND FORESTRY CONSULTING
 Name & OPFA # BRUCE ZAULTZ # 2084
 Address: PO BOX 460 ST. GEORGE ON
NOEINO
 Tel: 519.732.2814 Fax: -

TREE MARKER INFORMATION:

Name & Company: _____
 Qualifications: _____
 Address: _____
 Tel: _____

The **Forester** was employed by: Landowner **Contractor** **Other**
 The **Tree Marker** was employed by: Landowner **Contractor** **Other**
 Has the marking been audited by the Forester? **Yes No**
 Will the **Forester** or **Tree Marker** be monitoring the harvest for contract compliance? **Yes No**

CONTRACTOR INFORMATION:

Name & Company: _____
 Address: _____
 Tel: _____ Fax: _____

A SILVICULTURAL PRESCRIPTION IS REQUIRED FOR EACH STAND

STAND 1: Forest Type Upland Lowland **Species:** Hardwood Mixed Cedar Plantation
 (Circle one) (Circle one)

Purpose of cutting: Harvest mostly large/mature trees
 (Circle one) Improvement - thin mostly smaller trees for firewood and logs
 Combination - thin a mixture of larger and smaller trees, *-dead/dying trees only*

Initial Basal Area (BA): _____ Units (Circle one) ft²/acre m²/hectare
 BA to be removed: _____ How Basal Area was determined prism ___ plots ___ other _____
 BA to be left after cutting: _____ Number of plots: _____ (Specify)

STAND 2: Forest Type Upland Lowland **Species:** Hardwood Mixed Cedar Plantation
 (Circle one) (Circle one)

Purpose of cutting: Harvest mostly large/mature trees
 (Circle one) Improvement - thin mostly smaller trees for firewood and logs
 Combination - thin a mixture of larger and smaller trees,
 Initial Basal Area (BA): _____ Units (Circle one) ft²/acre m²/hectare
 BA to be removed: _____ How Basal Area was determined prism ___ plots ___ other _____
 BA to be left after cutting: _____ Number of plots: _____ (Specify)

STAND 3: Forest Type Upland Lowland **Species:** Hardwood Mixed Cedar Plantation
 (Circle one) (Circle one)

Purpose of cutting: Harvest mostly large/mature trees
 (Circle one) Improvement - thin mostly smaller trees for firewood and logs
 Combination - thin a mixture of larger and smaller trees,
 Initial Basal Area (BA): _____ Units (Circle one) ft²/acre m²/hectare
 BA to be removed: _____ How Basal Area was determined prism ___ plots ___ other _____
 BA to be left after cutting: _____ Number of plots: _____ (Specify)

(Attach additional sheets for STANDS if required)

- I agree that operations will be in accordance with the provisions of Forest Conservation By-law No. 5115-09 of the County of Wellington and that I am familiar with the contents and requirements of this By-law.
- Further, I agree to contact the Forest Conservation Officer assigned, one day prior to the start of cutting and one day prior to the resumption of work after a fourteen day delay.

Signature of Owner: _____ **Date:** _____

Signature of Contractor: _____ **Date:** _____

Signature of Forester: _____ **Date:** DEC 16 / 23

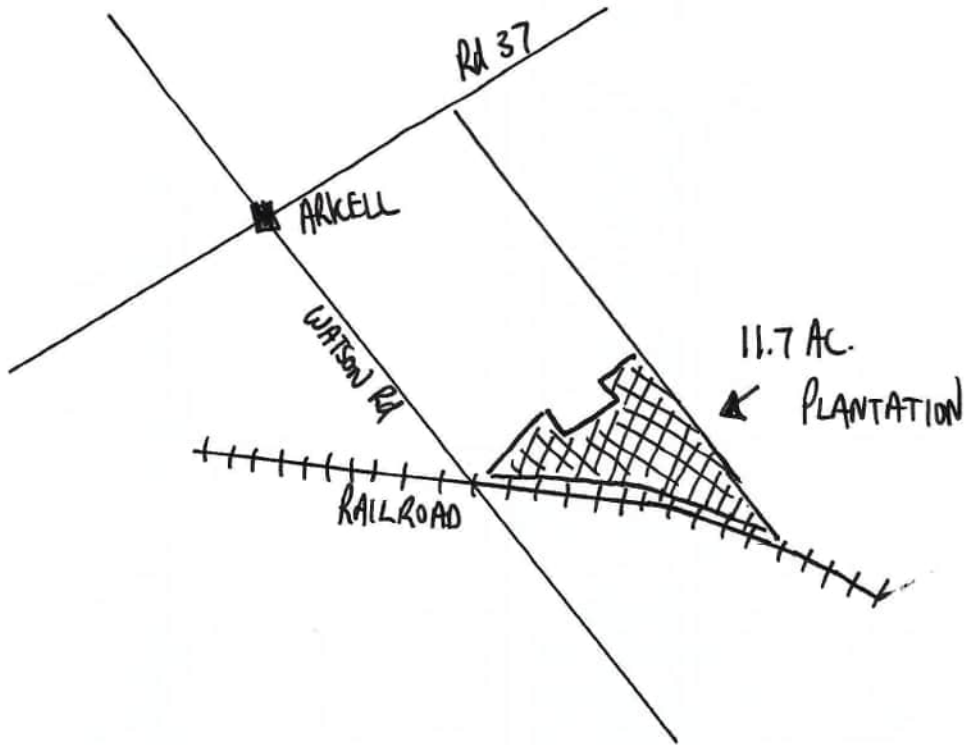
Signature of Tree Marker: _____ **Date:** DEC 16 / 23

WELLINGTON COUNTY MAILING ADDRESS:

Carli Rietkerk, c/o Planning and Development Department, County of Wellington, 74 Woolwich Street, Guelph, ON N1H 3T9.
 Email carlir@wellington.ca

Please provide sketch of property showing stands to be harvested below:

Show property boundary, area where trees are marked, other forest stands, buildings, roads, logging access, north arrow, access for By-law officer, roads, drains, watercourses & other features.



Tree Marking - Color of Paint Used: NO PAINT - DEAD/DYING TREES ONLY (Paint not required)

List of Marked Trees by Species

Number

Total number of trees number to be cut: 2500 (rough estimate) - mainly dead/dying
- mostly small diameters
(10-26 cm)

(Attach additional sheet(s) if necessary)

TREE MARKING PRESCRIPTION

Ass. Roll # 2301000008034800000

DATE: Dec/16/23

Wellington County - Lot 8,9 Conc 10 Puslinch

FOREST TYPE: Mixed Plantation

SOILS: Silt

OBJECTIVES:

Long Term: To manage Black Walnut using the selection silvicultural system (*Good Forestry Practice*) to produce quality stems for sawlog and veneer production. To continue to enhance the mixture of tree species in existence and to provide for maximum wildlife opportunities when performing any forest management activities. (**Last harvest - n/a**).

Short Term: Harvest will concentrate on reduction of dead & dying White pine, Spruce and Black Locust killed by Walnut Juglone toxicity in their root zone. Proper spacing of residual trees will maximize growth of acceptable growing stock (AGS). All conifer species will eventually be killed in Walnut root zones. Some healthy pine will be retained now for species diversity.

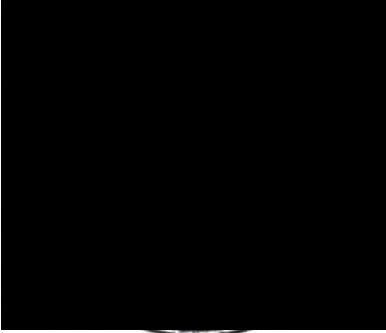
STAND INFORMATION:

Species: Wb60 (Pw,Sw,Aw,Lb,Po,other mostly dead)40

Stand Area (ha): 4.7 **Topography:** Flat **Age:** 45-50 **Ht (m):** 12-20

Stocking (%): 80 **Regeneration:** Low – Wb,Ash, other

Stand Quality: Walnut cankers, (Pine, Spruce, Locust are dead / dying).



BASAL AREA DISTRIBUTION (m²/ha): Note – Basal area is typically lower in walnut areas due to Juglone.

Tree Size Classes (cm)>>>	10-24 AGS / UGS	26-36 AGS / UGS	38-48 AGS / UGS	50-60 AGS / UGS	62+ AGS / UGS	TOTAL AGS / UGS
Now	9.8 / 10.0	9.2 / 4.4	1.4 / 0.4	0.2 / 0.2	- / -	20.6 / 15.0
Residual	9.8 / -	9.2 / -	1.4 / -	0.2 / -	- / -	20.6 / -
Ideal	5	5	4	4	2	20

of Plots Installed = 10 *Unacceptable growing stock includes trees that are dead standing stems (very deteriorated).*

STAND PRESCRIPTION:

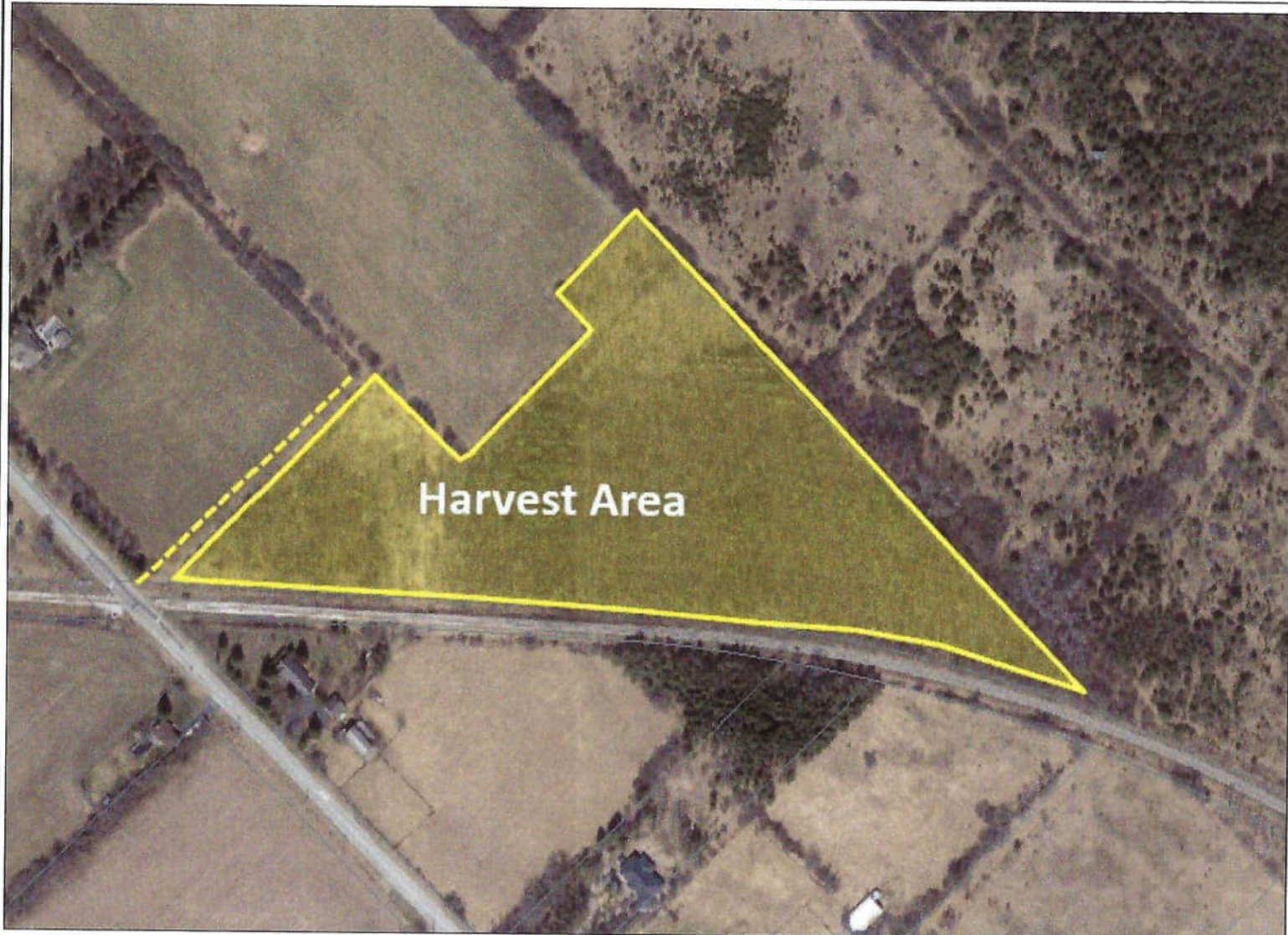
Treatment Instructions: *Harvest* will concentrate on reduction of dead and dying trees of primarily White Pine, Spruce and Locust being killed by Black Walnut Juglone. Roughly 40% of the plantation are dying or dead trees and do not need to be marked. *Contractor will select only dead and dying trees to remove.* Target residual basal area is 20.6 m²/ha.

Invasive Species Control: All non-native buckthorn and honeysuckle should be eradicated from the plantation.

No Rare, Threatened or Endangered species were noted.



Harvest Area - Lot 8,9 Conc 10 Notes:
Puslinch



Legend

- Building as Symbol
- Building in Gate
- Airport
- Hospital
- Helipad
- Ski Jump Base
- Ferry Route
- Trail
- River Trail
- Oxbow Road
- Rideau Trail
- Trans Canada Trail
- Voyageur Trail
- Waterfront Trail
- Railway 1 Train Station
- Railway with Bridge
- Railway with Tunnel
- Road (Major -> Minor)
- Winter Road
- Road with Bridge
- Road with Tunnel
- Provincial, Kings or 400 Series Highway
- Secondary Highway
- Tertiary Highway
- District, County, Regional or Municipal Road
- Sub Highway
- One Way Road
- Road with Permanent Blocked Passage
- Road with Address Ranges
- Hydro Line, Communication Line or Unknown Transmission Line
- Natural Gas Pipeline, Water Pipeline or Unknown Pipeline
- Spot Height
- Index Contour
- Contour
- Wooded Area
- Wetland
- Waterbody
- Waterbody Elevation
- Watercourse
- Falls
- Rapids
- Rapids 1 Falls
- Rapids
- Rocks
- Lock Gate
- Dam 1 Hydro Wall
- Dam 1 Hydro Wall
- Provincial / State Boundary
- International Boundary
- Upper Tier 1 District Municipal Boundary
- Lower Tier 1 Single Tier Municipal Boundary
- Municipal Boundary
- Lot Line
- Indian Reserve
- Provincial Park
- National Park
- Conservation Reserve
- Military Lands

0 0.2 km

Projection: Web Mercator



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Appendix G: Bat Maternity Habitat Assessment

R.J. Burnside & Associates Limited 292 Speedvale Avenue West Unit 20 Guelph ON N1H 1C4 CANADA
telephone (519) 823-4995 fax (226) 526-9660 web www.rjburnside.com



Technical Memorandum

Date: May 5, 2026 **Project No.:** 300061693.0000

Project Name: Arkell Watson Ecology Support

Client Name: Bat Leaf-Off Assessment

Submitted To: Timberworx Custom Homes Development

Submitted By: Erica Mekli, B.A., ERPG, and Sophie Roy, M.W.B., B.Sc.

Reviewed By: Kevin Butt, B.Sc. (Env)., Eco. Rest. Cert.

1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) has been retained by Timberworx Custom Homes Development (the Client) to complete a Bat Maternity Roost Habitat Assessment for the proposed residential subdivision development in the south-east corner of the Arkell Road Watson Street S. intersection (part of Lots 7, 8 & 9, Concession 10), located in the Township of Puslinch. The subject lands consist of formerly cultivated fields, naturally vegetated areas, and wooded areas.

2.0 Proposed Development

The proposed development, designed by SAI (2025), consists of 44 detached residential lots, 3 cul-de-sacs and two main access points, one connecting to Arkell Road, and the other connecting to Watson Road S. The proposed development also includes a Stormwater Management (SWM) pond at the north end of the property and a drainage swale around the perimeter of the proposed lots. The proposed development will impact natural features such as wooded areas, hedgerows, and a naturalized area in the center of the agricultural field.

3.0 Bat Maternity Habitat Assessment

There are seven SAR bats in Ontario, as per the provincial Protected Species in Ontario (PSO) list, O.Reg. 60/26. Of these, three utilize snag trees for maternity roosting habitat; Little Brown Myotis (*Myotis lucifugus*), Silver-haired bat (*Lasionycteris noctivagans*) and Northern Myotis (*Myotis septentrionalis*). As per the MECP's *Species at Risk Bats Survey Note 2022*, potential

woodland SAR bat habitat should be assessed according to the protocol *Treed Habitats – Maternity Roost Surveys (2022)*.

3.1 Snag Survey Methodology

Snag surveys are best performed during the fall to early spring, before leaves have started growing and when visibility of cracks or crevices in trees is greatest. Snag surveys were conducted on April 13, 2026, to identify potential snag bat maternity roosting habitat within the subject lands.

The following criteria were considered when identifying a candidate maternity roosting tree during this survey:

- Snag Height
- Presence of habitat characteristics
- Diameter at Breast Height (DBH)
- Within 10 m of another tree and / or snag
- Amount of peeling bark
- Cavity height
- Species
- Percent canopy cover
- Decay class

Buildings were absent throughout the subject lands. However, numerous anthropogenic structures (rock features) were observed. These are further discussed in Section 6.0.

4.0 Snag Survey Results

A total of ten snags were identified on the subject lands, as shown on Figure 1 and detailed in Table 1. Of those, eight snags are located within the subject lands area of impact. Six snags are located within hedgerow communities and two are located within wooded areas. These eight snags are anticipated to be removed as per the proposed development plans (SAI, 2025). The two snags recorded outside of the area of impact were located immediately adjacent to the proposed drainage swale in the south end of the subject lands and along Watson Road S. which is part of the lands excluded from development.

Table 1: Candidate Bat Maternity Habitat Snags

Snag ID	Species	DBH (CM)	Candidate Ranking	Proposed Impact
1	Sugar Maple (<i>Acer saccharum</i>)	37	Medium	No Impact
2	Not Identifiable	39	Medium	Removal
3	Black Locust	Multi Stemmed	Medium	No Impact

Snag ID	Species	DBH (CM)	Candidate Ranking	Proposed Impact
	<i>(Robinia pseudoacacia)</i>	37, 34, 28		
4	Not Identifiable	80	Medium	Removal
5	Not Identifiable	Multi Stemmed 26, 26, 38	Low	Removal
6	Not Identifiable	50	Medium	Removal
7	Not Identifiable	66	Medium	Removal
8	Not Identifiable	29	Low	Removal
9	Not Identifiable	Multi Stemmed 33, 39	Medium	Removal
10	Not Identifiable	38	Medium	Removal

Candidate ranking is based on a weighted calculation taking into account the criteria listed in Section 3.1.

5.0 Impact Assessment

Based on observations and data collected, the candidate snags identified on the subject lands have the potential to be maternity roost habitat for three species of protected bats: Little Brown Myotis, Silver-haired Bat, and Northern Myotis.

MECP's Species at Risk Bats Survey Note (2022) states that if the proposed activity will only remove a proportionately small number of candidate roosts and thus avoid impairing the function of habitat for supporting bats, and occurs outside the bat active window, then there is no need to conduct additional SAR bat surveys. Please note, that if it is decided to not conduct further acoustic surveys it will be assumed that SAR bats are present on site, due to the presence of snags, and further mitigation, including vegetation removal timing windows, will be applicable.

Reviewing the general area, it is noted that there are large swaths of wooded communities within a 1 km distance of the subject lands, including a large wooded riparian area surrounding the Eramosa River. These areas would provide ample maternity roosting habitat, as well as foraging habitat, for SAR bats.

Since the number of identified candidate snags constitutes a small number of trees on the landscape, it is Burnside's opinion that they can be removed without negatively impacting SAR maternity roost habitat. However, to avoid contravention of the SCA, tree removal must be completed between December 1 and March 14 (of any given year) to mitigate negative impacts. If tree removal is proposed to occur within the active bat window (March 15 to November 30), further consideration will need to be given to registering the project with the Species Conservation Registry as tree removals will then be causing direct impact to the assumed present SAR bat species and their habitat.

6.0 Next Steps

Through detailed investigation of the subject lands, it has been determined that the tree removal needed for the proposed development will not have a notable negative impact on SAR species utilizing snags and trees for maternity roosting habitat.

7.0 References

Ministry of Environment, Conservation and Parks. 2022. *Species at Risk Bats Survey Note 2022*.

Ministry of Environment, Conservation and Parks. 2022. *Treed Habitats – Maternity Roost Surveys (2022)*.

SAI. 2025. Conceptual Plan 44 Lots Part of Lots 7, 8 & 9, Concession 10. Version July 29, 2025.

R.J. Burnside & Associates Limited



Erica Mekli, B.A., ERPG
Ecologist

EM:js

Sophie Roy, M.V.B., B.S
Ecologist

Enclosure(s) Figure 1: Bat Maternity Habitat
Photo Pages

Other than by the addressee, copying or distribution of this document, in whole or in part, is not permitted without the express written consent of R.J. Burnside & Associates Limited.

In the preparation of the various instruments of service contained herein, R.J. Burnside & Associates Limited was required to use and rely upon various sources of information (including but not limited to: reports, data, drawings, observations) produced by parties other than R.J. Burnside & Associates Limited. For its part R.J. Burnside & Associates Limited has proceeded based on the belief that the third party/parties in question produced this documentation using accepted industry standards and best practices and that all information was therefore accurate, correct and free of errors at the time of consultation. As such, the comments, recommendations and materials presented in this instrument of service reflect our best judgment in light of the information available at the time of preparation. R.J. Burnside & Associates Limited, its employees, affiliates and subcontractors accept no liability for inaccuracies or errors in the instruments of service provided to the client, arising from deficiencies in the aforementioned third party materials and documents.

R.J. Burnside & Associates Limited makes no warranties, either express or implied, of merchantability and fitness of the documents and other instruments of service for any purpose other than that specified by the contract.



Photo 1: Candidate Snag #1



Photo 1: Candidate Snag #2



Photo 3: Candidate Snag #3



Photo 4: Candidate Snag #4



Photo 5: Candidate Snag #5



Photo 6: Candidate Snag #6



Photo 7: Candidate Snag #7



Photo 8: Candidate Snag #8



Photo 9: Candidate Snag #9



Photo 10: Candidate Snag #10

To:

Shawn Marsh

Timberworx Custom Homes Inc.

376 Maltby Rd. E, Guelph, ON, N1L 1G4

Re: Development Project in Arkell - Butternut Assessment

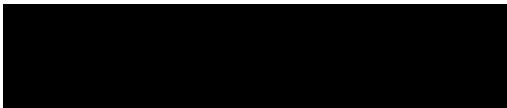
This report describes the assessment and findings of a Butternut tree at the intersection of Arkell and Watson Rd, Pt Lots 7, 8 & 9, Concession 10, Puslinch Township. The tree is located in a hedgerow and will be within the disturbance area of the proposed development. The property location map is shown in Figure 1, and a map displaying the proposed development and butternut location is shown in Attachment 1. The Butternut Health Expert's Report (KAS002) and Butternut Data Collection Forms are attached in Attachments 2 and 3.

The assessed tree was determined to be a Category 2 tree. A Category 2 tree is "is not affected by Butternut Canker or the Butternut tree is affected by Butternut Canker but the degree to which it is affected is not as advanced as a Category 1 Butternut tree and retaining the tree could support the protection or recovery of Butternut trees in the area in which the tree is located". The tree was multi-stemmed (2 stems) and the main stem was marked with orange paint at the base of the tree.

This butternut will be killed for the purpose of constructing the proposed development.

As less than five Category 3 and less than fifteen Category 2 butternut trees will be killed as result of construction, no replacement planting will be required, as outlined in Ontario Regulation 830/21 Section 25(3).

Sincerely,



Luke Kastelic, R.P.F,
Consulting Forester



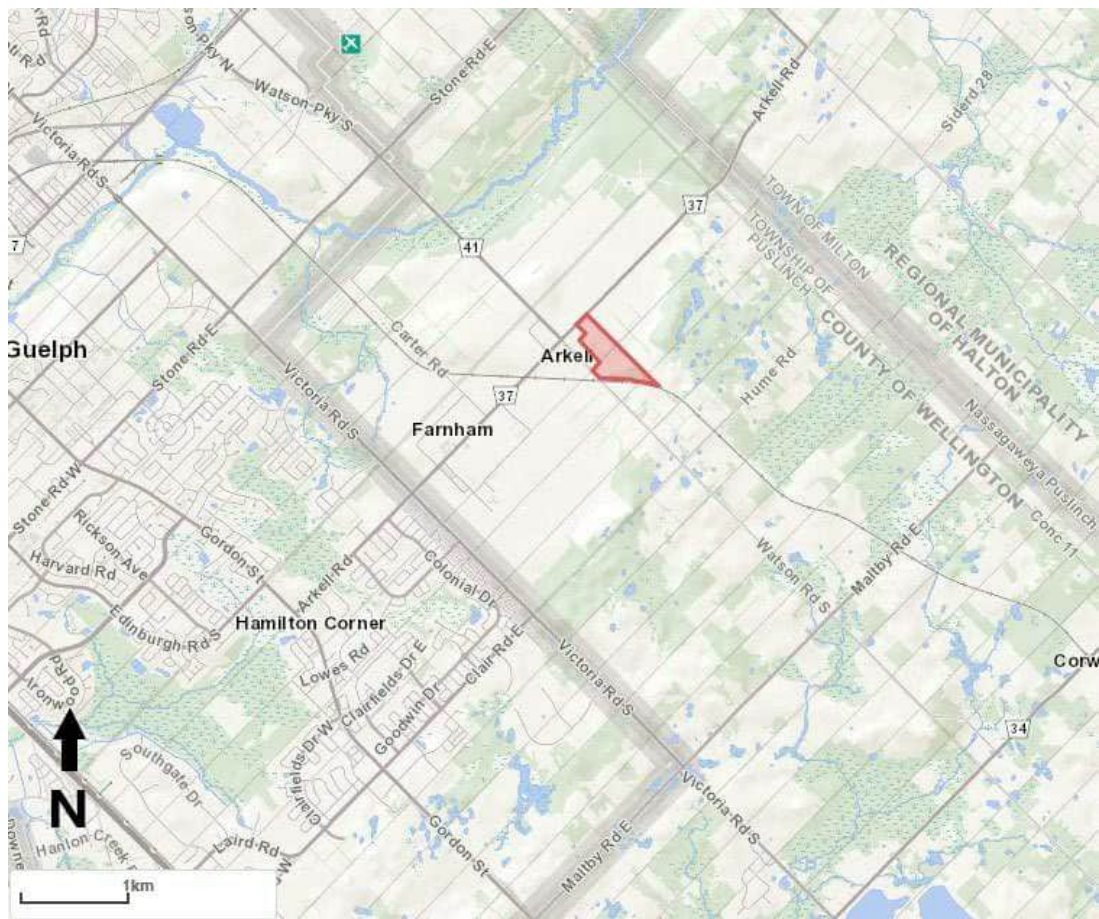


Figure 1: Property Location Map

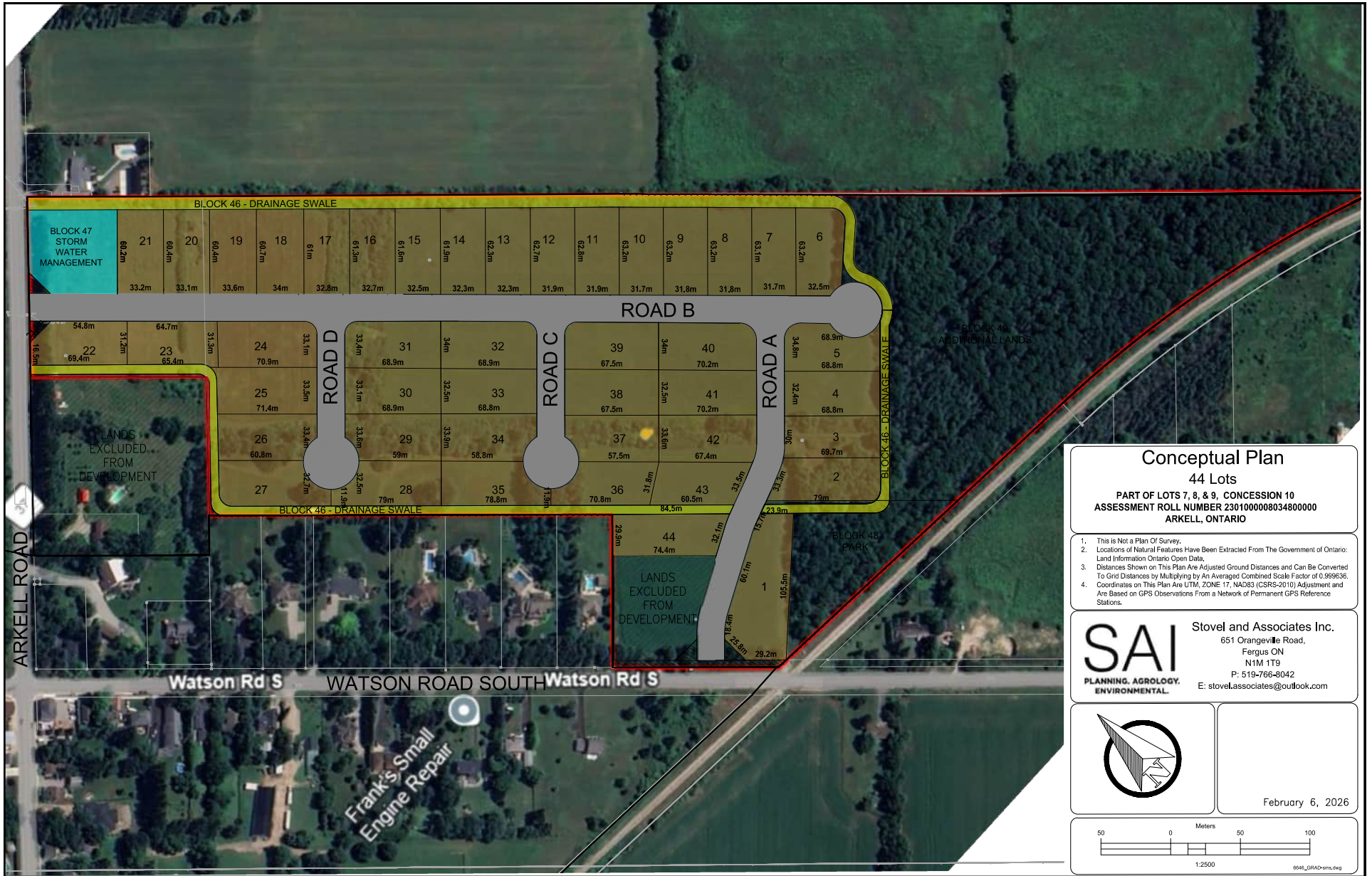
ATTACHED:

Attachment 1: Proposed Development and Butternut Location Map

Attachment 2: Butternut Health Expert's Report (KAS002)

Attachment 3: Butternut Data Collection Form.

Attachment 1: Proposed Development and Butternut Location Map



Attachment 2: Butternut Health Expert's Report

Instructions to Butternut Health Experts (BHEs):

Please enter the 6-character BHE Report number: [KAS002](#) _____

BHE Report numbering format:

BHE Report numbers are to be assigned by the BHE using the first 3 letters of BHE's last name, followed by BHE's own 3-digit report numbering system. If the BHE's last name has fewer than 3 letters, use the full last name and numbers for the remaining characters.

Cover letter to client:

Insert your cover letter to your client here and include the below list of enclosures.

Shawn Marsh
Timberworx Custom Homes Inc.
376 Maltby Rd. E, Guelph, ON, N1L 1G4

Re: Development Project in Arkell - Butternut Assessment

This report describes the assessment and findings of a Butternut tree at the intersection of Arkell and Watson Rd, Pt Lots 7, 8 & 9, Concession 10, Puslinch Township. The tree is located in a hedgerow and will be within the disturbance area of the proposed development. The property location map is shown in Figure 1, and a map displaying the proposed development and butternut location is shown in Attachment 1. The Butternut Health Expert's Report (KAS002) and Butternut Data Collection Forms are attached in Attachments 2 and 3. The assessed tree was determined to be a Category 2 tree. A Category 2 tree is "is not affected by Butternut Canker or the Butternut tree is affected by Butternut Canker but the degree to which it is affected is not as advanced as a Category 1 Butternut tree and retaining the tree could support the protection or recovery of Butternut trees in the area in which the tree is located". The tree was multi-stemmed (2 stems) and the main stem was marked with orange paint at the base of the tree.

This butternut will be killed for the purpose of constructing the proposed development.

As less than five Category 3 and less than fifteen Category 2 butternut trees will be killed as result of construction, no replacement planting will be required, as outlined in Ontario Regulation 830/21 Section 25(3).

Sincerely,

Luke Kastelic, R.P.F.,
Consulting Forester

Enclosures:

1. Information from the Ministry of the Environment, Conservation and Parks about Butternut and the *Endangered Species Act, 2007*
2. Butternut Health Expert's Report, including the completed Butternut Data Collection Form

Species at Risk Branch
40 St. Clair Avenue West
14th Floor
Toronto ON M4V 1M2

Direction des espèces en péril
40, avenue St. Clair Ouest
14^e étage
Toronto ON M4V 1M2

Information for the Property Owner (or person(s) who requested the enclosed Butternut Health Expert's Report):

The enclosed Butternut Health Expert's Report (BHE Report) documents the results of the Butternut health assessment that was conducted by the Butternut Health Expert (BHE) identified in the top section of the report. If there are other Butternut trees (of any size or age) at the site that may be impacted by a proposed activity that are not identified in the enclosed BHE Report, they too must be assessed by a BHE before commencing any actions that may impact those Butternut trees or their habitat.

Butternut (*Juglans cinerea*) is listed as an endangered species in Schedule 2 of Ontario Regulation (O. Reg.) 230/08 "the Species at Risk in Ontario List". As an endangered species, the *Endangered Species Act, 2007* (ESA) prohibits adversely impacting Butternut and its habitat. A permit or agreement under the ESA is required before engaging in an activity that is otherwise prohibited under the ESA. The activity may be eligible for the Butternut conditional exemption in Part V of O. Reg. 830/21, provided the requirements of the regulation are met.

If the proposed activity is eligible for the conditional exemption in Part V of O. Reg. 830/21, the next step is to submit the BHE Report and the Butternut Data Collection Form enclosed in this package to the Ministry of the Environment, Conservation and Parks (MECP).

If the enclosed BHE Report does not identify which Butternut tree(s) are proposed to be killed, harmed or taken and the reasons for doing so (e.g., if "unknown" is indicated in Table 1) or if the information in the last two columns of Table 1 has changed since the date this BHE Report was produced, **do not edit the BHE Report to update this information**. Instead, the report must be submitted together with a cover letter that identifies which Butternut tree(s) are proposed to be killed, harmed or taken (by referencing the tree identification numbers) when you submit the BHE Report to MECP.

The BHE Report must be submitted to MECP at least 30 days before registering an activity in respect of the Butternut conditional exemption. MECP may need to examine the Butternut trees subject to the report during this 30-day period. **Adversely impacting Butternut trees during this 30-day period or before registration is completed is prohibited by the ESA**. Further, the conditional exemption for Butternut does not apply unless the requirements of Part V of O. Reg. 830/21 are being followed.

If the proposed activity is eligible for the Butternut conditional exemption, you may register the proposed activity using the “**Notice of Butternut Impact**” form after the 30-day period has elapsed.

If the proposed activity is not eligible for a regulatory exemption, please contact MECP to determine whether the proposed activity would require a permit or agreement under the ESA in order to proceed.

Please retain this information and a copy of the BHE Report for your records, along with any other documentation you may receive from MECP should an examination of the trees occur.

This information should not be relied upon to determine legal obligations. To determine your legal obligations, consult the *Endangered Species Act, 2007* and the relevant regulations made thereunder. These may be found at www.ontario.ca/laws. If legal advice is required, consult a legal professional. In the event of an error on this template or a conflict between this template and any applicable law, the law prevails.

If you have any questions, please contact MECP at SAROntario@ontario.ca.

Butternut Health Expert's Report (BHE Report)

BHE Report Number: [KAS002](#)

Butternut Health Expert Contact Information

Name of Butternut Health Expert

Last Name

[Kastelic](#)

First Name

[Luke](#)

Mailing Address

Unit Number

Street Number

[5369](#)

Street Name

[Wellington County Rd. 27 RR1](#)

PO Box

City/Town

[Rockwood](#)

Province

[ON](#)

Postal Code

[N0B 2K0](#)

Telephone Number

[705-341-2300](#)

Email Address

lukekastelic@gmail.com

Summary of qualifications as a Butternut Health Expert

a) expertise in relation to butternut

[Took Butternut Health Expert Workshop with FGCA, Registered professional forester, BscF in Forestry from UNB, Forest Technician Diploma from Fleming College](#)

b) expertise, education, training and experience necessary to assess the health of butternut trees

[Above, plus working alongside experienced butternut health assessors since 2022.](#)

Property Owner Contact Information

Name of Property Owner (or representative)

Last Name

[Marsh](#)

First Name

[Shawn](#)

Mailing Address

Unit Number

Street Number

Street Name

PO Box

Lot Number

Concession

Township

Rural Route

City/Town

[Guelph](#)

Province

[Ontario](#)

Postal Code

[N1L 1G4](#)

Telephone Number

Email Address

shawn@timberworx.ca

Site Location

Unit Number

Street Number

[N/A](#)

Street Name

[Watson Rd.](#)

PO Box

Lot Number

[Pt Lots 7, 8, 9](#)

Concession

[10](#)

Township

[Puslinch](#)

Rural Route

City/Town

[Arkeil](#)

Province

[ON](#)

Postal Code

Additional Site Location Information

Date(s) of Butternut health assessment

Start Date (yyyy/mm/dd) 2026/05/11

End Date (yyyy/mm/dd) 2026/05/11

Date BHE Report prepared (yyyy/mm/dd) 2026/05/13

Map datum used: NAD83 WGS84

Total number of trees assessed in this BHE Report 1

The assessed trees were numbered on site using **Orange Paint**

The numbers at the site correspond to the tree identification numbers referenced in this report.

This BHE Report includes the following tables:

- Table 1: Butternut trees assessed by the BHE
- Table 2: Trees determined by the BHE to be Butternut hybrids
- Table 3: Summary of Butternut health assessment results

Table 1: Butternut trees assessed by the BHE

Tree ID #	UTM coordinates	Accuracy (+/-)	Category ¹ (1, 2 or 3)	Tree stem diameter ² (cm)	Is tree stem shorter than 1.37 m? (Yes/No)	Cultivated? (Yes/No)	Proposed to be: (killed, harmed, taken, or unknown ³)	If tree is proposed to be killed, harmed or taken, indicate reason tree is to be killed, harmed or taken, if known
1	4820624 mN, 567681 mE	5 m	2	28	No	No	killed	For the puposes of development
		m						
		m						

¹ Details regarding the extent to which the tree is affected by Butternut Canker is presented in the Butternut Data Collection Form that accompanies this BHE Report.

² Diameter of the tree stem rounded to nearest cm, measured in accordance with the Butternut Assessment Guidelines: Assessment of Butternut Tree Health for the Purposes of the *Endangered Species Act, 2007*

³ In this column, “unknown” indicates that at the time of assessment and reporting, there are no proposals to kill, harm or take this tree that are known to the BHE.

Table 2: Trees determined by the BHE to be Butternut hybrids

Tree ID #	UTM coordinates	Method used (genetic testing or field identification)	Additional Comments on Method Used

Table 3: Summary of Butternut health assessment results

Result	Total number of trees in this category	Information for persons planning activities that may impact Butternut
Category 1	0	<ul style="list-style-type: none"> Category 1 Butternut tree — the Butternut tree is affected by Butternut Canker to such an advanced degree that retaining the tree would not support the protection or recovery of Butternut trees in the area in which the tree is located. If the proposed activity will kill, harm or take one or more Butternut trees of any category (including Category 1), the BHE Report must be submitted to MECP at SARontario@ontario.ca.
Category 2	1	<ul style="list-style-type: none"> Category 2 Butternut tree — the Butternut tree is not affected by Butternut Canker or the Butternut tree is affected by Butternut Canker but the degree to which it is affected is not as advanced as a Category 1 Butternut tree and retaining the tree could support the protection or recovery of Butternut trees in the area in which the tree is located. Activities that may kill, harm or take up to a maximum of fifteen (15) Category 2 trees may be eligible for the conditional exemption in Part V of Ontario Regulation 830/21. Refer to the regulation for eligibility conditions and requirements that must be fulfilled. If the proposed activity will kill, harm or take more than fifteen (15) Category 2 trees, contact MECP for information on how to seek an ESA authorization (e.g., a permit).
Category 3	0	<ul style="list-style-type: none"> Category 3 Butternut tree — the Butternut tree may be useful in determining sources of resistance to Butternut Canker. Activities that may kill, harm or take up to a maximum of five (5) Category 3 trees may be eligible for the conditional exemption in Part V of Ontario Regulation 830/21. Refer to the regulation for eligibility conditions and requirements that must be fulfilled. If the proposed activity will kill, harm or take more than five (5) Category 3 trees, contact MECP for information on how to seek an ESA authorization (e.g., a permit).
Cultivated	0	<ul style="list-style-type: none"> An activity that will kill, harm or take a cultivated Butternut tree that was required to be planted to fulfil a condition of an ESA permit or agreement, or a conditional exemption, is not eligible for the exemption for cultivated trees that is provided by subsection 25 (5) of O. Reg. 830/21. Refer to the regulation for eligibility conditions.

Result	Total number of trees in this category	Information for persons planning activities that may impact Butternut
Hybrid	0	<ul style="list-style-type: none"> Hybrid Butternut trees are not protected under the ESA but impacts to these trees may be subject to local municipal by-laws and other legislation.

Additional Information on Cultivated Tree Determination

Please note:

- A BHE Report that is submitted to MECP must include the completed Butternut Data Collection Form. As appropriate, please also ensure additional relevant documentation to support the assessment (e.g., completed Data Sheets for Field Identification of Butternut Hybrids, evidence that the Butternut was cultivated) and all relevant maps and photographs are provided.
- During the 30-day period that follows the submission of this BHE Report to MECP, no Butternut trees (of any category) may be killed, harmed or taken. MECP may need to examine the Butternut trees subject to the report during this 30-day period.

Butternut Health Expert's Comments

Note to BHEs: use this space to provide general comments.

Attachment 3: Butternut Data Collection Form

Butternut (*Juglans cinerea*) is listed as an endangered species in Schedule 2 of Ontario Regulation 230/08 “the Species at Risk in Ontario List”. As an endangered species, the *Endangered Species Act, 2007* (ESA) prohibits adversely impacting Butternut and its habitat. A permit or agreement under the ESA is required before engaging in an activity that is otherwise prohibited under the ESA. The activity may be eligible for the Butternut conditional exemption in Part V of Ontario Regulation 830/21, provided the requirements of the regulation are met. For more information please refer to the following links:

- [Endangered Species Act, 2007](#)
- [Ontario Regulation 830/21 \(Exemptions – Species Subject to Species Conservation Charges\)](#)
- [Ontario Regulation 230/08 \(Species at Risk in Ontario List\)](#)
- [Ontario Regulation 242/08 \(General Regulation\)](#)
- [Information about ESA permits and authorizations](#)
- [Butternut Assessment Guidelines: Assessment of Butternut Tree Health for the Purposes of the Endangered Species Act, 2007](#)

A Butternut Health Expert’s Report (BHE Report) completed by a “Butternut Health Expert” (BHE) as defined in section 21 of Ontario Regulation 830/21 is typically required as part of an application to the Ministry of the Environment, Conservation and Parks (MECP) for a permit or agreement under the ESA and is required in respect of the conditions of the Butternut conditional exemption in Part V of O. Reg. 830/21. **This Butternut Data Collection Form must be completed by the BHE and included in their BHE Report.**

This form should not be relied upon to determine your legal obligations. To determine your legal obligations, consult the *Endangered Species Act, 2007* and the relevant regulations made thereunder. These may be found at www.ontario.ca/laws. If legal advice is required, consult a legal professional. In the event of an error on this form or a conflict between this form and any applicable law, the law prevails.

Notice of Collection and Use

Personal information on this form is collected under the authority of Section 53 of the ESA and section 38 of the *Freedom of Information and Protection of Privacy Act*. Forms that have been submitted to MECP may be used by MECP staff to contact the property owner (or person acting on their behalf) to request permission to access the assessed trees for the purpose of examining the trees or to contact the BHE who prepared the BHE Report. Questions about the use of your personal information should be directed to the Species at Risk Branch, Ministry of the Environment, Conservation and Parks, 300 Water Street, Peterborough Ontario, K9J 3C7 at speciesatriskregistry@ontario.ca.

Fields marked with an asterisk (*) are mandatory.

Butternut Health Expert’s Report Number* KAS002	Start Date of Butternut Health Assessment (yyyy/mm/dd)* 2026/05/11	End Date of Butternut Health Assessment (yyyy/mm/dd)* 2026/05/11
--	---	---

Butternut Health Expert (BHE) Contact Information

Last Name* Kastelic	First Name* Luke
Telephone Number* [REDACTED]	Alternate Telephone Number
Email Address* [REDACTED]	

Summary of Qualifications as a Butternut Health Expert*
[Registered Professional Forester](#)
[Attended Butternut Health Assessment Course at FGCA in 2023](#)
[BScF Forestry from UNB](#)
[Forest Technician Diploma from Fleming College](#)

Property Owner Contact Information

Last Name*		First Name*	
Marsh		Shawn	
Company Name			
Timberworx Custom Homes Inc			
Mailing Address*			
Unit Number	Street Number	Street Name	PO Box
	376	Maltby Road East	
Lot Number	Concession	Township	Rural Route
City/Town	Province	Postal Code	
Guelph	Ontario	N1L 1G4	
Telephone Number *	Alternate Telephone Number	Email Address	
		shawn@timberworx.ca	

Butternut Tree(s) Location Information

Address*	<input type="checkbox"/> Select if location of Butternut is the same as the property owner's mailing address		
Unit Number	Street Number	Street Name	PO Box
N/A	N/A	Watson Rd	
Lot Number	Concession	Township	Rural Route
Pt Lots 7,8 & 9	10	Puslinch	
City/Town	Province	Postal Code	
Arkell	ON		

General description of area containing Butternut (select one)

Natural Rural Urban - Suburban Industry / Resource Extraction Area

Soil drainage (select one)

Well Drained Moderately Drained Poorly Drained Unknown

Have any of the Butternut at this site produced seeds?

Yes No Unknown

General Comments

Butternut Tree Data

Tree Identification Number* 1 Date of Assessment (yyyy/mm/dd)* 2026/05/11

UTM Zone* 17N

Northing* 4820624

Easting* 567681

Is this tree a Butternut tree or a putative hybrid? * Butternut Putative Hybrid

Is the stem of this tree shorter than 1.37 m? * Yes No

Is this a single or multi-stemmed tree? * Single Stem Multiple Stems

Live Crown %* 90

Tree Stem Diameter (cm)* 28

Number of sooty cankers* At or below 2m (the lower stem) 3 Above 2m 0 At the root (root flares) 0

Number of open cankers* At or below 2m (the lower stem) 1 Above 2m 0 At the root (root flares) 0

Metres from badly cankered tree* 40 metres or less Greater than 40 metres None found

Crown Class

Dominant, full sun

Co-dominant, two sides in the sun

Intermediate, sun only from above

Suppressed, shaded crown

Signs of Stress

Twig dieback

Branch dieback

Defoliation

Discolouration

Seed Signs

Mature stamens or pollen

Receptive pistils

Seed set

None

Unknown

Below Crown

Number of stems 2

Main stem length (m) below crown 3

Number of epic-live 0

Number of epic-dead 0

Number of callused wounds 0

Bark type: Deep furrows/Narrow ridges

Shallow furrows/Wide ridges

Tree Origin

Naturally-occurring

Planted (cultivated)

Unknown

Is this tree located in an area that is upland, wetland, or riparian?

Upland

Wetland

Riparian

Vegetation Community

Open

Shrub thicket

Savannah - Woodland

Forest

If Savannah-Woodland or Forest selected, select one option from both groups:

Deciduous Coniferous Mixed

Climax Regenerating

Does this tree occupy edge habitat?

Yes No

If "Yes", select which edge habitat:

Road

Trail

Utility corridor

Fencerow

Forest/woodlot edge

Watercourse/waterbody

Competing Species

1. Wb

2. MM

3. Bucktho

Comments about this tree

Appears to be in good health. Largest stem had no canker.

BHE Report Number KAS002	Start Date of Butternut Health Assessment (yyyy/mm/dd) 2026/05/11	End Date of Butternut Health Assessment (yyyy/mm/dd) 2026/05/11
Total Number Butternut Trees in BHE Report 1	Butternut Health Expert's Name Kastelic, Luke	

Property Owner/Client Name Marsh, Shawn	Property Address N/A-N/A Pt Lots 7,8 & 9 10 Watson Rd Arkeil ON
--	---

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
Tree #	Live Crown %	Tree stem diameter (cm)	# bole cankers (BC)				# root flare cankers (RF)		40 m or less from cankered tree? (Y or N)	Circ. (cm) = Pi * tree stem diameter	Total BC Width (cm) = (D * 2.5) + (E * 2.5) + (F * 5) + (G * 5)	Total RF Width (cm) = (H * 2.5) + (I * 5)	Total BC Width % of Circ. = L / K * 100	Total RF Width % of Circ. = M / K * 100	Total BC + RF Width % of 2 * Circ. = (N + O) / 2	Tree Categories: 1, 2, or 3				
			Sooty (S) (will be assigned 2.5 cm per canker) Open (O) (will be assigned 5 cm per canker)													= Cat 2 if B >= 50 and N=0 else = Cat 1	= Cat 2 if B > 70 and P < 20 else = Cat 1	= Cat 2 if B > 70 and N < 20 else = Cat 1	Preliminary tree call = Cat 2 if Q= Cat 2 or R= Cat 2 or S= Cat 2 else = Cat 1	Final tree call = Cat 3 if T= Cat 2 and C > 19 and J='Y' else T
			S <= 2m	S > 2m	O <= 2m	O > 2m	S	O												
1	90	28	3	0	1	0	0	0	N	87.92	12.5	0.0	14.22	0	7.11	1	2	2	2	2

Appendix I: Results of Breeding Bird Surveys – Colville



September 19, 2023

Mr. Rob Stovel
Stovel and Associates Inc.
Delivered Via Email

RE: **Results of Breeding Bird Surveys – 890 Watson Road, Arkell**

Thank you for contacting Colville Consulting Inc. regarding the completion of breeding bird surveys on the 890 Watson Road property, Arkell (Township of Puslinch). This letter report is intended to present the results of surveys completed on this property.

Study Area

The Subject Property for these surveys is located south of Arkell Road and east of Watson Road, in Arkell (see Figure 1). This property measures approximately 17.4ha (43.1 acres) in size and has been assigned the address of 890 Watson Road. A majority of the property is currently in agricultural production, with a woodland and thicket community on the southern portion of the property.

Results

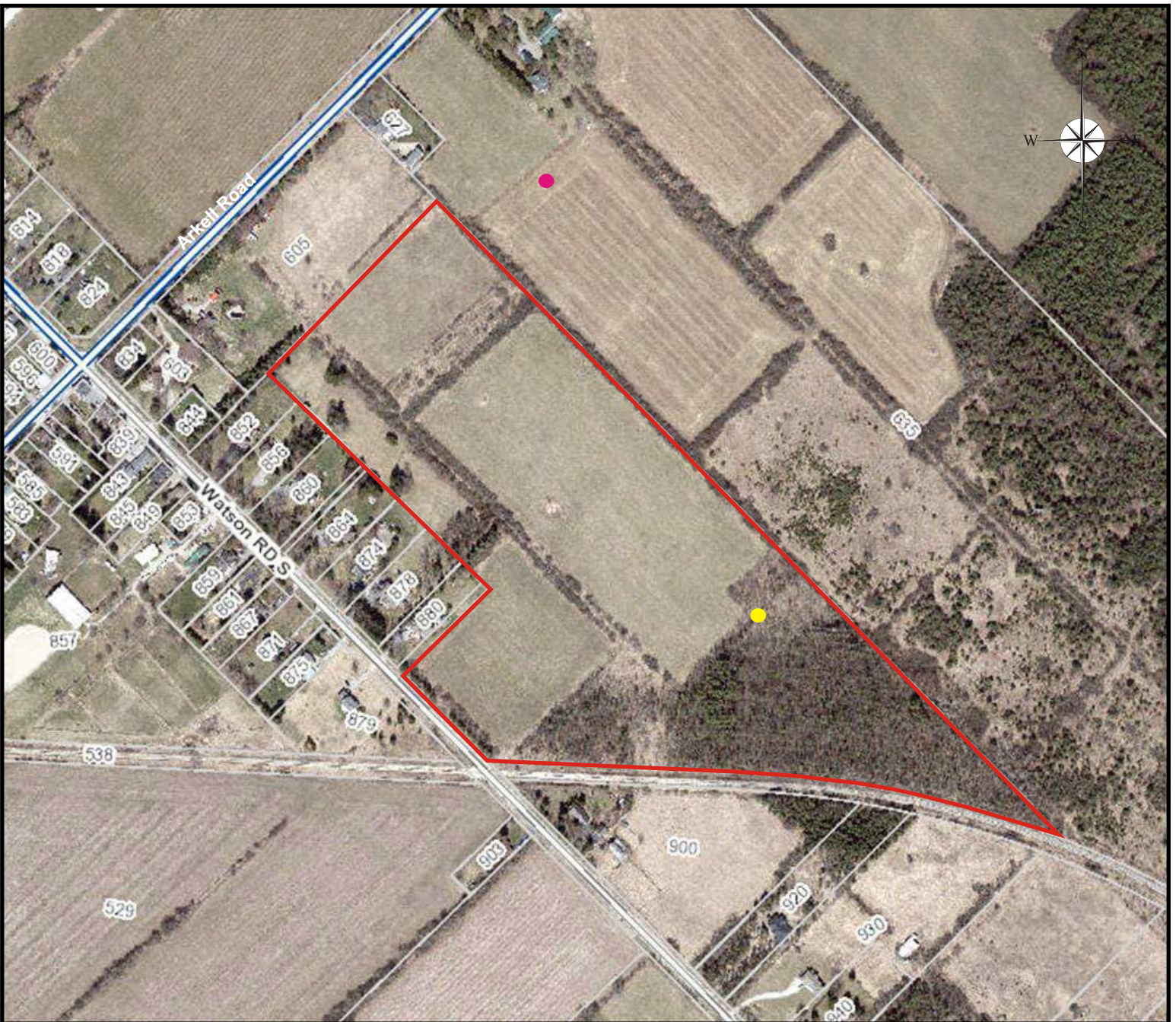
Breeding bird surveys were conducted on May 23, June 10 and June 25, 2023. Surveys were completed at least a week apart, under suitable weather conditions with little to no wind or precipitation. A thorough search of the Subject Property was completed during all surveys between dawn and no later than 10:00 am. All birds seen or heard calling were recorded and the highest breeding evidence per species was determined in accordance with the criteria of the Atlas of the Breeding Birds of Ontario (Cadman et al. 2007).

A total of 44 species of birds were observed or heard on or above the Subject Property and two additional species were observed on adjacent lands (see Table 1). According to Ontario conservation status ranks (S-rank) designations, with the exception of two non-native species, all recorded species are considered to be "secure" (S5 - common, widespread and abundant) or "apparently secure" (S4 - uncommon but not rare) in the province of Ontario.

Several Barn Swallows were observed flying, foraging and calling over the agricultural portions of the property on the first and second site visits. This species is listed as Special Concern in Ontario, and also designated as Special Concern federally. No buildings or structures suitable for nesting are present on the property, and therefore this property is considered to be providing incidental foraging opportunities.

An Eastern Wood-pewee was heard calling in the woodland at the south end of the property during all three site visits. An individual was also observed frequenting a nest site on the second site visit. The approximate location of observations is illustrated in Figure 1. This species is designated as Special Concern in Ontario and Canada.

Although not detected on the property, an Eastern Meadowlark was heard calling from lands east of the property during the second and third site visits. This species is designated as Threatened in Ontario and is also considered to be Threatened in Canada. The estimated location



Legend

- Subject Property
- Approximate Location of Eastern Wood-pewee
- Approximate Location of Eastern Meadowlark

**Figure 1
Extent of Subject Property**

**Breeding Bird Surveys
890 Watson Road, Arkell**

Prepared for: **Stovel and Associates Inc.**

Prepared by: **COLVILLE CONSULTING INC.**

September 2023

FILE: C23055

Table 1. List of bird species documented within and adjacent to the Study Area.

Species	S Rank	Agricultural Lands	Hedgerow	Woodland	Adjacent Lands	Highest Breeding Evidence*	Breeding Code**
American Crow	S5B		X	X		PO	H
American Goldfinch	S5B		X	X		PO	H
American Robin	S5B		X	X		PO	S
Baltimore Oriole	S4B		X	X		PO	S
Barn Swallow	S4B	X				OBS	
Black-billed Cuckoo	S4S5B			X		PO	S
Black-capped	S5		X	X		PO	S
Blue Jay	S5			X		PO	H
Blue-winged Warbler	S4B			X		CO	CF
Brown-headed	S4B		X	X		PO	
Canada Goose	S5	X				OBS	X
Cedar Waxwing	S5B		X	X		PO	H
Chipping Sparrow	S5B		X	X		PO	S
Common Grackle	S5B		X	X		PO	H
Common Raven	S5				X	PO	H
Common Yellowthroat	S5B		X	X		PO	S
Downy Woodpecker	S5			X		CO	NY
Eastern Bluebird	S5B,S4N			X	X	PO	S
Eastern Kingbird	S4B			X		PO	S
Eastern Meadowlark	S4B,S3N				X	PO	S
Eastern Towhee	S4B		X	X		PO	S
Eastern Wood-pewee	S4B			X		CO	AE
European Starling	SNA			X		PO	H
Field Sparrow	S4B,S3N		X	X	X	PO	S
Gray Catbird	S4B		X	X		PO	S
Great Blue Heron	S4	X				OBS	X
Great Crested	S4B			X		PO	S
Horned Lark	S4	X	X			PO	S
House Finch	SNA			X	X	PO	S
House Wren	S5B		X	X		CO	FY
Indigo Bunting	S5B		X	X		PR	A
Killdeer	S5B	X			X	PO	H
Mallard	S5	X				OBS	X
Mourning Dove	S5		X	X		PO	S
Mourning Warbler	S5B			X		PR	T
Northern Cardinal	S5		X	X		PO	S
Northern Flicker	S4B		X	X		PO	S
Red-eyed Vireo	S5B			X		PR	A
Red-winged Blackbird	S4			X		PO	S
Ring-billed Gull	S5	X				OBS	X
Rose-breasted	S4B			X		PO	S
Ruby-throated	S5B			X		PO	H
Savannah Sparrow	S5B,S3N	X	X		X	PO	S
Sharp-shinned Hawk	S5		X			PO	H
Song Sparrow	S5B		X	X		PO	S
Wild Turkey	S5			X	X	PO	S

Table 1 Legend

* OBS – observed, no evidence of breeding; PO – possible breeding; PR – probable breeding; CO - confirmed breeding
** X – observed in its breeding season, no evidence of breeding
H – species observed in its breeding season in suitable nesting habitat
S – singing male present in its breeding season in suitable nesting habitat
P – pair observed in their breeding season in suitable nesting habitat A – agitated behavior or anxiety calls of an adult
N – nest building or excavation of nest hole FY – recently fledged young
CF – adult carrying food for young NY – nest with young

of this individual is illustrated in Figure 1, however it should be noted that access to this property was not available and no nests were confirmed on the adjacent lands.

Summary and Recommendations

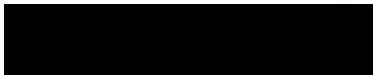
As indicated in Table 1, a majority of the bird species documented on this property were observed in and adjacent to the woodland and hedgerow. All bird species documented using these habitats are considered to be common and secure in the province of Ontario, with one of these species (Eastern Wood-pewee) considered to be a Species of Special Concern. Eastern Wood-pewee were documented in the woodland during each of the breeding bird surveys and this species is considered to be breeding in this woodland.

One meadow species (Savannah Sparrow) was documented using the agricultural portions of the property and Eastern Meadowlark was documented east of this parcel. No use of the property by Eastern Meadowlark was documented during our surveys and no active nests were verified on the adjacent lands. It is therefore our observation that the Subject Property is not providing significant habitat for this species.

Several Barn Swallows were observed flying, foraging and calling over the agricultural portions of the property on the first and second site visits. As no buildings or structures suitable for nesting are present on the property, use of this property by Barn Swallows is considered to be opportunistic.

Please do not hesitate to contact the undersigned should you have any questions regarding the results in this report.

Respectively submitted by:



Ian Barrett, M.Sc.
Colville Consulting Inc.

Appendix J: CV's

ROBERT P. STOVEL, M.Sc., RPP, MCIP, P.Ag.

EDUCATION

M.Sc, Rural Planning, University of Guelph, 1988.

B.A. Geography, (Resources Management), Wilfrid Laurier University, 1986.

MEMBERSHIPS

Member of the Ontario Institute of Agrologists.
Member of the Ontario Professional Planners Institute and the Canadian Institute of Planners.
Member of the Ontario Stone, Sand and Gravel Association.

POSITIONS HELD

1995 - Present: Stovel and Associates Inc., Fergus, Ontario - President.

1993 - 1995: Ecological Services For Planning Ltd., Guelph, Ontario - Senior Project Manager.

1988 - 1992: Ecological Services For Planning Ltd., Guelph, Ontario - Environmental Planner.

1986 - 1987: Environmental Consultant. Waterloo, Ontario.

EXPERIENCE

- extensive project experience in environmental assessments, environmental management plans and ecological enhancement plans in Ontario. These projects have required considerable government and non-government agency liaison, interdisciplinary team coordination and the integration of a variety of scientific disciplines.

Environmental Assessments

- prepared the ecological and agricultural components for municipal road projects in King Township and the City of Stratford.
- prepared agricultural impact assessments for provincial road projects in the County of Essex and the County of Peterborough.
- coordinated environmental assessment projects for waste management master plans in Victoria County, Essex County, Peterborough County and the Regional Municipality of Haldimand-Norfolk (agricultural component).
- prepared route selection reports for the proposed development of an 8" pipeline in Orillia. This project received provincial approval at the Ontario Energy Board in 1994.
- managed the environmental constraint mapping and geotechnical selection component of Ontario Hydro's construction of a 500 kV transmission line from Lennox to Bowmanville. This transmission line was constructed in 1992.

Environmental Inventories and Monitoring

- designed and implemented wetland vegetation monitoring programs for proposed aggregate and estate residential developments.
- designed a transplanting and propagation plan for *Carex jamesii*.
- completed the required seminar on the Ontario Wetland Evaluation System and the Wetland Environmental Impact Study; Technical Manual.
- completed surveys for the following wetlands: Orangeville Reservoir Wetland Complex, Hayesland-Christie Wetland Complex, Dalrymple Lake Wetland Complex, Star Wetland Complex, Eramosa River-Blue Springs Creek Wetland Complex, Orillia Filtration Swamp, Phillips Lake Wetland Complex, Mossington Park Wetland Complex, Cranberry/Oil Well Bog, Humber River Marshes Wetland Complex, Speed River Wetland Complex and the Beaverton River Wetland Complex.
- managed deer wintering surveys in Ramara Township, Carden Township, Erin Township and Puslinch Township.
- coordinated fisheries inventories for coldwater and warmwater systems in Ontario (e.g., Eramosa River, Speed River, West Credit River, Dalrymple Lake, Warnock Lake, Caledon Creek, Greenock Creek and Spencer Creek).
- prepared terrestrial enhancement plans for a deer wintering area in Puslinch Township.
- completed forestry evaluations for woodland areas in Wellington County, Simcoe County and the Regional Municipalities of York, Peel and Hamilton-Wentworth.
- managed bird surveys in various Southern Ontario municipalities.
- coordinated vegetation surveys for alvar communities in Simcoe County, Victoria County and the Regional Municipality of Hamilton-Wentworth.
- completed vegetation management plan for alvar communities and upland forest communities for a proposed quarry in the Regional Municipality of Hamilton-Wentworth.

Subwatershed Planning

- participated in subwatershed planning studies in Laurel Creek, Grindstone Creek and Nichol Drain No. 2.
- completed historic vegetation mapping programs in Caledon Creek Subwatershed.

Aggregate Applications

- certified to prepare site plans under Section 8.4 of the Aggregate Resources Act.
- assisted in the preparation of environmental plans and agricultural rehabilitation plans for the proposed Batterman Pit (Grey County), Puslinch Pit, Caledon Sand & Gravel Inc. Pit and Shoemaker Pit.
- conducted environmental evaluations and agricultural appraisals for various aggregate operations in southern Ontario.

- assisted in the preparation of Environmental Impact Studies for the proposed expansions of the Ospringe Pit, the Darrington Pit and Flamboro Quarries.
- prepared Level 1 & 2 Natural Environment and Environmental Impact Statements for aggregate developments in Simcoe County, Wellington County and the Regional Municipalities of York, Halton, Waterloo and Hamilton-Wentworth. These reports were prepared in accordance with the policy requirements of the Aggregate Resources Act (Technical Study Requirements), Wetland Policy Statement, Provincial Policy Statement and/or local/regional Official Plans.
- prepared applications for Certificate of Approvals for pit and quarry operations in southern Ontario.



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Rockwood, Ontario N0B 2K0
Tel 519 856 1286 Fx 519 856 4288

★ ★ ★ ★

Email: forstar@execulink.com
Website: <http://www.forestar.ca>

**PETER A. WILLIAMS, M. Sc.,
Registered Professional Forester, Certified Arborist**

EDUCATION:

<u>Degree</u>	<u>Institution</u>	<u>Major</u>	<u>Year</u>
B.Sc.	SUNY College of Environmental Science and Forestry	Environmental Resources Management	1977
M.Sc.	University of Tennessee	Forestry and Soils	1983
Ph.D	University of Guelph	Environmental Biology [Agroforestry]	1989 -1998 not completed (ABD)

EXPERTISE:

Urban Forestry/Arboriculture, Forest Management/Silviculture, Harvest Planning and Management, Forest Ecology/Research, Environmental Consulting, Agroforestry, Technology Transfer/Extension, Certified Arborist, Economic Valuations/Forests Loss of Use. Butternut Health Assessor, Education/Publishing/Workshops.

EXPERIENCE:

<u>Dates</u>	<u>Position</u>	<u>Agency</u>
1985 - present	Consulting Forester, Principal	Williams & Associates, Forestry Consulting Ltd.
1985 -1995	Research Associate - Program Manager, Agroforestry	University of Guelph, Dept of Env. Biology
1986	Resource Technician	Ontario Ministry of Natural Resources
1984-1985	Forester/Assistant Environmental Planner	Ecologistics Ltd. - Waterloo, Ontario
1983	Forester/Arborist, Principal	White Oak Forestry and Landscaping - Knoxville, Tn.
1982	Forester	USDI Bureau of Indian Affairs - Dulce, New Mexico
1979-1983	Graduate Research Assistant	University of Tennessee, Knoxville
1976-1979	Forest Technician	USDA Forest Service - Yampa, Colorado

AWARDS:

Ken Armson Award 2024; Ontario Woodlot Association - Presented to individuals, groups or businesses exemplifying outstanding professional contributions to the vision, mission and values of the OWA.

Distinguished Alumni Award 2025 - SUNY College of Environmental Science and Forestry Presented to those whose accomplishments might be considered "pioneering," whose work has positively affected society, or who are otherwise inspirational to students and fellow alumni.

Developed Extension and in-service training courses in:

- Forest soil/site interpretations for the O.M.N.R. Ecological Land Classification Field Staff
- *Introduction to Forest Soils* (O.M.N.R.)
- *Forest Soils & Silviculture Workshop* (sponsored by the O.P.F.A.)
- *Managing For Oak Decline, A Workshop for Managers of Oak Forests*
- *Sustainable Harvest Systems* (Business management and low impact harvest workshop for loggers) - 2006, 2004, 2003.
- *Skidder Bridge Loan Program*
- *Woodlot Management Training Course for Landowners*
- *Woodlot Tour for Farmers* - 2000, 2003, 2007, 2010.
- Numerous workshops and tours for the Ontario Woodlot Association, Stewardship councils
- *Gypsy Moth Workshop*, Town of Oakville, 2007
- Technical Steering Committee for *A Landowner's Guide to Careful Logging Practices* (2008)
- Author of Draft: *A Landowner's Guide to Careful Logging Practices Workshop Series* (2009)
- Author: Extension Note *Careful Logging Practices: Selecting the Right Harvesting Equipment* (2009)

Produced: *Citizen Arborist Study Guide* (Int. Soc. Arboriculture/Tree Plan Canada)

Forestry Training Course for Landowners (OATI & Waterloo/Wellington Woodlot Owners' Assn.)

Edited & Published: *Key to Silvicultural Treatments for Common Southern Ontario Stand Types*
(Waterloo Stewardship Network and the O.M.N.R.)

MEMBER OF:

Ontario Professional Foresters Association

Society of American Foresters

Ontario Woodlot Association (Past Chapter Chair, current Treasurer)

International Society of Arboriculture

Grand River Conservation Authority, Guelph Representative (1988-1994)

Ontario Horticultural Crops Research and Advisory Committee (Agroforestry Sub-Committee)
(1990-1995; Co-Chair 1993-1995)

REFEREED JOURNAL ARTICLES:

- Gordon, A.M., P.A. Williams and E.P. Taylor. 1988. Site index curves for Norway Spruce in southern Ontario. *North. J. App. For.* 6(2): 23-26.
- Williams, P.A., A.M. Gordon and A. Moeller. 1989. Effect of anti-transpirants on seedling growth of *Picea glauca* and *Pinus strobus*. *Tree Planter's Notes* 41(1): 34-38.
- Williams, P.A. and A.M. Gordon. 1990. Site index curves and site factors affecting the growth of white pine in southern Ontario. *North. J. Appl. For.* 7(4): 183-186.
- Gordon AM and PA Williams. 1991. Intercropping Valuable Hardwood Tree Species and Agricultural Crops in Southern Ontario. *For. Chronicle*, Vol 67(3): 200-208.253-263.
- Williams, P.A. and A.M. Gordon. 1992. The potential of intercropping as an alternative land-use system in temperate North America. *Agroforestry Systems* 19: 253-263.
- Matthews, S., S.M. Pease, A.M. Gordon and P.A. Williams. 1993. Landowner perceptions and the adoption of agroforestry practices in southern Ontario, Canada. *Agroforestry Systems* 21: 159-168.
- Williams, P.A. and A.M. Gordon. 1994. Agroforestry applications in forestry. *Forestry Chron.* 70(2): 143-145.
- Williams, P.A. and A.M. Gordon. 1995. Microclimate and soil moisture effects of three intercrops on the tree rows of a newly planted intercropped plantation. *Agroforestry Systems* 29: 285-302.
- Gordon, A.M., J.A. Simpson and P.A. Williams 1995. Six-year response of red oak seedlings planted under a shelterwood in central Ontario. *Can. J. For. Res.* 25(4): 603-613
- Verzino, G., P.A. Williams, M. Sagadin and M. Joseau. 1995. Multipurpose tree species for sustainable development in Valle de Punilla, Cordoba, Argentina. *Women in Natural Resources* 17(2): 28-31.
- Gibbs S, H Koblents, B Coleman, A Gordon, N Thevathasan & P Williams. 2016. Avian diversity in a temperate tree-based intercropping from inception to now. *Agroforestry Systems* 90, p 905-916.

BOOKS AND CHAPTERS IN BOOKS:

- Williams, P.A. 1991. (Ed) Proceedings of the First Conference on Agroforestry in North America, Guelph, Ontario, August 13-16, 1989. Published by the Ontario Ministry of Agriculture and Food. 262 pp.
- Williams P A, SM Pease and AM Gordon 1994. Introduction to Forestry. Department of Environmental Biology, University of Guelph, Guelph, Ontario, N1G 2W1. 264 p.
- Williams, P.A., S.M. Pease and A.M. Gordon. 1993. Introduction to agroforestry. Department of Environmental Biology, University of Guelph, Guelph, Ontario, N1G 2W1. 227 p.
- Williams, P.A. and S.M. Pease. 1994. An Advanced Course in Agroforestry. Department of Environmental Biology, University of Guelph, Guelph, Ontario, N1G 2W1. 164 p.
- Pease, S.M. and P.A. Williams. 1995. Citizen Arborist Study Guide. International Society of Arboriculture, Inc., Box 995, Stn. B., Willowdale, Ontario, M2K 2T6. March, 1995. 142 p.
- Gordon, A.M., S.M. Newman and P.A. Williams 1987. Temperate Agroforestry Systems: an overview. In: Temperate Agroforestry Systems (A.M. Gordon and S. Newman, Eds). C.A.B. International. 198 Madison Ave, NY. p 1-9. 269 p.
- Williams, P.A., A.M. Gordon, L. Buck, and H.E. Garrett. 1997. North American Agroforestry and its Role in Farming Systems. In: Temperate Agroforestry Systems (A.M. Gordon and S. Newman, Eds). C.A.B. International. 198 Madison Ave, NY. p 9-71. 269 p.

OTHER PUBLICATIONS:

- Williams, PA. 2025. Transitioning Conifer Plantations to Mixed Forests. In Press: Presented at 3rd Northern Hardwoods Conference, August 5-7, 2025, Syracuse, NY. 3 p.
- Williams, PA and T McCay. 2025. Irregular Shelterwood Systems in Ontario. Ontario Woodlander, Issue 120. P 20-22.
- Williams, PA and EP Taylor 2024. Soil-Site Relationships with Sugar Maple Heartwood/Color Formation in Southern Ontario. Proceedings of the 22nd Central Hardwoods Forest Conference: managing future forests today. Gen. Tech. Rep. NRS-219, Madison, WI: US Dep of AG, Forest Service, N. Res. Stn. P 102-109. <https://doi.org/10.2737/NRS-GTR-219>
- Williams, PA. 2021. Using irregular shelterwood systems to optimize value growth in southern Ontario maple forests. In Press: Extended Abstract presented at the 1st Northern Hardwoods Forest Conference, June 15-16, Green Bay, Wisconsin. P 175-178.
- Williams, PA. 2018. Using irregular and multi-entry shelterwood systems to optimize value growth in southern Ontario Woodlands. In Press: Extended Abstract presented at the 21st Central Hardwoods Forest Conference, May 15-17, Bloomington Indiana
- Williams, PA and C Karandiuk. 2016. Planning for and implementing an emerald ash borer borer-induced forest restoration program in municipal woodland in Oakville, Ontario. In Kabrick, John et al. eds Proceedings 20th Cent. Hardwood Forest Conference, March 28-April 1 2016; Columbia, Missouri. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station P 167: pp 248-256.
- Williams, PA. 2014. Salvaging Ash from Urban Woodlands in Southern Ontario (Abstract). In: Groninger, John W.; Holzmueller et al., eds, Proceedings, 19th Central Hardwood Forest Conference; 2014 March 10-12; Carbondale IL. U.S. Department of Agriculture, Forest Service; Newtown Square, PA; p 387.
- Williams, PA, TD Schwan and K Elliot. 2013. A Perspective on S. Ontario Forests. Newsletter, Ont. Prof. For. Assn. Newsletter # 212, December, 2013. p 9.
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Luke Kastelic Forester

EDUCATION:

<u>Degree</u>	<u>Institution</u>	<u>Major</u>	<u>Year</u>
B.Sc.F.	University of New Brunswick	Forestry	2019
Diploma,	Sir Sandford Fleming College	Forest Technician	2016
Sticks and Stones	Wilderness School	Apprentice	2014

CERTIFICATIONS:

Registered Professional Forester, Mechanical Harvesting Equipment Operator Supervisor and Approved Evaluator, First Aid & CPR, Certified Ontario Tree Marker, Managed Forest Plan Approver, Ontario Pesticide Applicator (Forestry).

EXPERTISE:

Forest inventory, managed forest plan development, forestry bylaw infraction assessment, silvicultural prescription development, forest assessment-sensitive site mapping; road and harvest block layout, planning and implementing afforestation projects and restoration projects in S. Ontario, invasive plant control, tree marking, forest harvest preparation and monitoring, arborist reports, butternut health assessment, municipal canopy cover analysis.

EMPLOYMENT EXPERIENCE

Sept. 2022- Current	Forester – Woodland Management planning & management. Forest inventory, Data Management, GIS mapping, Bylaw infraction assessment	Williams & Associates, Forestry Consulting Ltd., Rockwood, Ont
2020 - 2023	Forest Technician, Operational Forester – Planning and implementing afforestation and forest restoration projects – invasive mgt, planting	Bartram Woodlands Ltd. Guelph, Ontario
2018 – 2020	Woodlands Operations Supervisor,	EACOM Timber Ear Falls, Ontario
Summer 2018	Summer Student Forest harvest preparation and management.	EACOM Timber Ear Falls, Ontario
Summer 2017	Summer Watershed Management Student	Halifax Water Halifax, NS
Summer 2016	Timber Layout Technician	Spectrum Resource Group Prince George, BC



Profession

Project Manager- Terrestrial Ecologist

Education

Bachelor of Arts, University of Guelph, Ontario
2013

Ecosystem Restoration Post Graduate Diploma, Niagara College, Ontario
2014

Professional Societies

International Society of Arboriculture certified Arborist

Employment Record

Project Manager- Terrestrial Ecologist, R.J. Burnside & Associates Limited (March 2022- Present)

Ecologist, Matrix Solutions Inc. (January 2015- February 2022)

Field Technician, Parish Geomorphic Ltd. (June 2015- December 2015)

GIS Technician, Durham District School Board- Transportation Dept. (May- September 2014)

Water Resource Technician, Central Lake Ontario Conservation Authority (May- September 2012 & 2013)

Citizenship

Canadian

Languages

English

Erica Mekli, B.A.

As Project Manager/ Terrestrial Ecologist for R.J. Burnside & Associates Limited, Ms. Mekli's role includes involvement in multiple land development projects from initial natural heritage constraints investigations through to post-construction ecological restoration and monitoring, while also coordinating the management of project budget, scope, and deliverables. Ms. Mekli has a wide variety of experience with field program coordination, field data collection, data management, reporting, and project management. She has extensive experience conducting natural heritage assessments, tree inventories, SAR and SAR habitat assessments, ELC mapping, aquatic habitat mapping, and vegetation monitoring. Ms. Mekli is also an ISA certified arborist (ON-2367A) and Butternut Health Assessor (BHA #658).

Select Project Experience

Private Sector Development

Thompson's Corners- Neighbourhood 20, Seaton TFPM Inc., Seaton, Pickering, Ontario (2022-Present)

Terrestrial Ecologist responsible for ongoing ecological components of overall site development. Coordinates and leads field work related to ELC, amphibian breeding surveys, tree inventories, and SAR habitat assessments. Aids in coordination of compensation and restoration strategies, SAR authorizations, and contributes to scoped environmental impact studies (EIS).

Park 505, City of Mississauga, Mississauga, Ontario (2022-2025)

Terrestrial Ecologist responsible for ongoing ecological components of overall site development. Coordinates and leads field work related to ELC, amphibian breeding surveys, tree inventories, and SAR habitat assessments. Aids in coordination of compensation and restoration strategies, SAR authorizations, and contributes to scoped environmental impact studies (EIS).

Innis Lake Due Diligence, Mattamy Homes, Caledon, Ontario (2022)

Terrestrial Ecologist responsible for ecological data collection of vegetation community identification, SAR habitat assessment, and delineation of environmental setbacks. Main author of a due diligence report that included summary of site visit findings and policy related site constraints.

Salem Environmental Impact Study, Mattamy Homes, Barrie, Ontario (2022-2025)

Project manager responsible for the technical studies, schedule, and budget of the project. Also, the Terrestrial Ecologist responsible for conducting ELC, botanical inventory, and SAR habitat assessments. Led the compilation and completion of the EIS report, including impact assessments. Aided in the completion of an Information Gathering Form (IGF) for SAR bats and Butternut and led the registration of Butternut under O.Reg. 830/21.

Brooklin- Ashburn Environmental Impact Study, Mattamy Homes, Whitby, Ontario (2018-Present)

Led the second submission of the Environmental Impact Study, including updating report to satisfy Conservation Authority first submission comments, evaluating study area for compensation opportunities, and working with engineers and planners to refine environmental constraints during draft plan approval phase.



Wellington Bay Estates Due Diligence, Parkbridge, Prince Edward County, Ontario (2022)

Terrestrial Ecologist responsible for ecological data collection of vegetation community identifications, SAR habitat assessment and delineation of environmental setbacks. Authored a due diligence report that included a summary of findings, policy related constraints, and provided client with next steps relating to natural heritage and SAR.

Environmental Inspection and Monitoring

Parkside Heights Wetland Monitoring, PARTACC Gate Kennedy Developments Inc., Brampton, Ontario (2018-Present)

Conducted amphibian breeding surveys following the *Marsh Monitoring Program Participant's Handbook for Surveying Amphibians* (2008), as well as turtle surveys following the *Survey Protocol for Blanding's Turtle in Ontario* (2015). Provided input into the Year 4, 5 and 6 monitoring reports.

Berczy Glen Restoration Planting Monitoring, Mattamy Homes, Markham, Ontario (2023- ongoing)

Following an approved Adaptive Management Plan (AMP), designed and led the restoration planting monitoring plan to the satisfaction of the Town and TRCA. Used surveyed transects to provide consistent data collection year over year and recorded vegetation density information for comparative discussion. Completed annual monitoring field work and authored the annual vegetation monitoring report.

Seaton i57 Geomorphic and Vegetation Monitoring, Morrison Hershfield, Pickering, Ontario (2020- ongoing)

Aided in the installation of geomorphic monitoring techniques and coordinated the multi-year vegetation monitoring plan. Conducted the remeasurement of longitudinal surveys, erosion pins, and benchmarked cross-sections. Conducted post installation planting investigations to ensure correct quantity of plantings had been installed and that the health of vegetation was adequate. Led the follow up monitoring to report on planting success rates and recommendations for replacement. Completed annual reporting on both geomorphic and vegetation findings to provide client an understanding of post-construction site characteristics.

Natural Heritage Assessments/ Environmental Impact Studies

Pinder Subwatershed Impact Study, Pinder Development Group, Milton, Ontario 2023-ongoing)

Project Coordinator of the ecological field studies and completion of a large-scale Subwatershed Impact Study (SIS). Completed policy review and evaluation of field study results to determine the boundary of the Natural Heritage System and development limit. Lead author of environmental sections of the SIS report, as well as coordinated multiple disciplines/ consultants on compiling SIS document for submission.

Innis Lake Secondary Plan Subwatershed Study, Mattamy Homes, Caledon, Ontario (2025-ongoing)

Managed natural heritage field program including the completion of detailed ELC, amphibian breeding surveys, breeding bird surveys, SAR habitat assessments, significant wildlife habitat verification, and incidental wildlife observations. Completed policy review of newly approved Future Caledon Official Plan to determine significant woodlands and other environmental constraints. Authored existing conditions, significant woodland evaluation, and proposed linkages.

Various Species at Risk Bat Assessments, Infrastructure Ontario, various locations, Ontario (2020-2022)

Co-managed various SAR bat assessments throughout Southern Ontario. Management included field coordination, internal/external structure assessments, acoustic data collection, data management, and authoring large scale reports.

Municipal Infrastructure

Seaton Assignment 12, TFPM Inc./ Durham Region, Pickering, Ontario (2024 to ongoing)

Project Coordinator for terrestrial ecology aspects and lead author of EISs, impact compensation and tracking, restoration planning, and agency liaison for SAR. This includes Ecological Land Classification, amphibian breeding surveys, Butternut Health Assessments, tree management plan, and SAR Information Gathering Form.

Burnhamthorpe Trail Crossing, City of Mississauga, Mississauga, Ontario (2025- 2026)

Completed tree inventory and natural heritage evaluation as it related to the installation of a Multi-Use Trail (MUT) as part of a municipal Active Transportation plan. Created a Tree Preservation Plan (TPP) to be used during the construction phase of the project. Also authored a Natural Heritage Evaluation to determine impacts to the adjacent watercourse and wooded valley based on planned construction work.



Guelph Victoria & Stone Rd Environmental Assessment, Guelph, Ontario (2025-ongoing)

Lead arborist for the collection, management and reporting of all tree data related to road realignment and grading. Co-coordinated the terrestrial ecology fieldwork for the Natural Environment Report including, Ecological Land Classification, amphibian breeding surveys, breeding bird surveys, and Species at Risk habitat assessment. |

D14-KUK – Comment Summary – 5th Submission

Consultant	Comments
NPG Planning	See attached letter
Township Noise Consultant	See attached letter
NRSI – Ecology	The submission package includes a Scoped Environmental Impact Study (EIS)(Stovel and Associates Inc.) as requested through the Terms of Reference process. Deemed complete re: natural heritage matters.



June 19, 2026

Monika Farncombe
7404 Wellington Road 34,
Puslinch, Ontario

Dear Monika Farncombe,

RE: **NPG Comments**
605 Arkell Road & Part of Lots 7,8,9, and Concession 10
RE: Application for Zoning By-law Amendment – Determination if Required
Information and Materials Have Been Provided

NPG Planning Solutions Inc. (NPG) has been retained to provide comments on whether required information and materials have been provided regarding a Zoning By-law Amendment Application on lands known as Part of Lots 7, 8, 9 and Concession 10 and part of the lands municipally known as 605 Arkell Road (“Subject Lands”).

The applicant is proposing a residential subdivision consisting of 44 single detached dwelling lots, a park, and a stormwater management block on The Subject Lands. The Subject Lands are approximately 20.57 hectares in size and have 260 meters of frontage along Arkell Road and 118 meters of frontage along Watson Road South. The Subject Lands contain a single detached dwelling and an accessory structure on the 605 Arkell Road Property, the rest of the Subject Lands are vacant. Surrounding uses consist of agricultural and rural residential uses. In addition, the southwestern portion of the Subject Lands abut the Guelph Junction Railway.

The Subject Lands are located outside of the Grand River Conservation Authority’s (GRCA) regulation limit, however, there appear to be woodland features on the Subject Lands in accordance with the GRCA’s mapping.

This is the fourth submission for a Zoning By-law Amendment (ZBA) application. As part of the submission, NPG has reviewed the following documents:

- Agricultural Impact Assessment prepared by Stovel and Associates Inc., dated May 2026;
- Planning Justification Report prepared by Stovel and Associates Inc., dated May 2026;
- Draft Zoning By-law Amendment;

- Responses to Peer Review Comments Letter prepared by HGC Noise Vibration Acoustics, dated June 1, 2026
- Noise and Vibration Feasibility Study prepared by HGC Noise Vibration Acoustics, dated June 1, 2026; and
- Scoped Environmental Impact Study prepared by Stovel and Associates Inc., dated May 2026.

We understand that there are two (2) *Planning Act* applications with the County of Wellington as it relates to the Subject Lands - an Official Plan Amendment to facilitate the expansion to the Hamlet of Arkell and a Draft Plan of Subdivision. Once the Official Plan Amendment application and/or Draft Plan of Subdivision application are circulated by the County, we will provide comments for those applications accordingly. The comments provided in this comment's letter pertain solely to the ZBA application.

1. Determination of Completeness:

- a. We have no objections with the Township deeming the Zoning By-law Amendment application complete from a planning's perspective, provided that there is no objection from other commenting parties.

2. Additional Requirements:

- a. No additional requirements.

3. Comments:

- a. Once the ZBA application has been deemed complete, we will conduct a detailed review of the submitted materials for consistency with the PPS and conformity with the County Official Plan.
- b. As previously requested, please advise the timeline of the other applications in relation to the ZBA application. Without the approval of an expansion to the Hamlet boundary through the Official Plan Amendment, the ZBA application would not be consistent with the PPS nor conform with the County of Wellington Official Plan (County Official Plan).
- c. We've consolidated our previous comments from our letters dated February 13, 2026, and April 13, 2026 for ease of responding and addressing comments. Please provide a comments matrix addressing our comments in the next submission.
- d. As previously noted, the proposal involves a portion of the lands municipally known as 605 Arkell Road. Please advise the timing and proposed process to sever this portion. We note that the retained portion of this property is not proposed to be part of the hamlet expansion.

- e. As previously requested, please provide a zoning matrix for the retained portion of 605 Arkell Road and the lands identified as “Lands excluded from development” to verify compliance with the Agricultural Zone (A) and the Hamlet Residential Zone (HR), respectively.
- f. With respect to the Draft Zoning By-law, we offer the following comments:
 - i. The draft Zoning By-law proposes a range of uses which are not illustrated on the Concept Plan, which includes, home businesses, and additional residential units. If applicant seeks to permit these uses, the Concept Plan should be updated to reflect where they are proposed and the Planning Justification Report should be updated to justify the proposed uses, and other relevant supporting studies should be updated to confirm they can be accommodated. Otherwise, the proposed permitted uses in the draft Zoning By-law should be revised accordingly.
 - ii. We note that Clause 6 of the draft Zoning By-law may not be necessary as it is our understanding that the ZBA application and the amending By-law are contingent on the Official Plan Amendment application being approved by the County of Wellington.
- g. With respect to the Concept Plan, our previous comments included in our letter dated February 13, 2026, remain relevant. The comments have been included below for reference:
 - i. Please provide dimensions and areas of all future lots, including Blocks 46, 47, 48, 49, the retained portion of 605 Arkell Road and the lands immediately to the south of Block 44.
 - ii. Block 46 appears to straddle across some proposed residential lots. Please confirm that the dimensions and areas of the residential lots are not inclusive of Block 46.
 - iii. We note that there is no Block 45 on the Concept Plan and Block 46 may need to be in two contiguous blocks as it is divided by Road A.
 - iv. The Concept Plan should demonstrate the current uses of adjacent lands and the width of abutting roads.
 - v. Please clarify the purpose of the strip of lands immediately abutting Watson Road South as illustrated on the Concept Plan.
 - vi. Following the submission of the EIS and the updated Noise & Vibration Study, the Concept Plan may need to be updated to address the findings and recommendations of these studies.
 - vii. For information, Section 4.26.1 of the Puslinch Zoning By-law prohibits building, structure, parked vehicles, grading or landscaping (exceeding 0.6

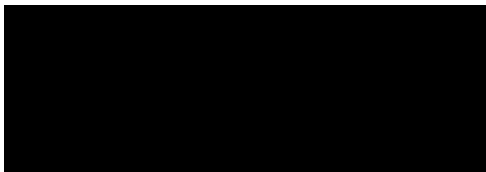
meters in height) within sight triangles. Section 4.26.2 outlines the dimension requirements of sight triangles. In particular, the extent of sight triangles where a street intersects a railway right-of-way at grade is 46 meters.

- h. With respect to the Noise and Vibration Feasibility Study (NVFS), our previous comments included in our letter dated April 13, 2026, remain relevant. The comments have been included below for reference:
 - i. There appear to be incorrect references in this study that should be updated. For instance, references of “Table 5” on page 12 and “0.18 mm/s at M2” on page 13 should have been “Table 6” and “0.18 mm/s at M3”, respectively.
 - ii. Please provide clarification why the outdoor landscape area noise receptors A_{OLA} , B_{OLA} and C_{OLA} are not located at the closest possible locations for outdoor landscape area on their respective lots relative from the railway. The same clarification is requested for D_{OLA} and E_{OLA} in relation from Arkell Road.
 - iii. Figure 1 outlines the extent of the proposed development that is subject to the evaluation of this study and Figure 2 shows locations of potential noise receptors. This is, however, different from the extent of lands subject to the ZBA application as detailed in the schedule of the draft Zoning By-law. Please ensure alignment between the extent of the study area of the NVFS and the extent of lands subject to the proposed ZBA application;
 - iv. It is noted that the study assumed a front yard setback of 6 metres. However, the applicant is proposing a minimum front yard setback of 3 metres. Please confirm if the assumption needs to be revised to be consistent with the proposed provision of the Draft Zoning By-law.
 - v. Part of the proposed 2.7-metre-high acoustic barrier for Lot 1 is located at the southwest corner of this lot. Please confirm that this barrier does not lie within the required sight triangle for this lot. Otherwise, either a zoning amendment to provide relief from section 4.26 of the Puslinch Zoning By-law or this recommendation should be revised to comply with the Zoning By-law; and
 - vi. Please review and incorporate the recommendations of the NVFS into the draft Zoning By-law as appropriate.
- i. With respect to the Minimum Distance Separation analysis, we had previously identified the following comments:
 - i. Guideline #36 establishes that MDS is not required for proposed land use changes within Settlement Areas. Accordingly, compliance with MDS is

not required for the portion of the Subject Lands currently located within the settlement area of Arkell Hamlet that is proposed to be rezoned. MDS I Setback is still required for the balance of the lands proposed for rezoning in accordance with Guideline #10.

- ii. The MDS I setback required for Farm 3 appears to impact the Subject Lands. Please provide relevant dimensions of the affected portion and the extent of the rezoned areas in the draft Zoning By-law schedule should be updated to reflect this constraint.
 - iii. We acknowledge that the Agricultural Impact Assessment, which includes the MDS analysis, has been updated. We will review the updated study and update our comments, if necessary, once the application is circulated for technical review.
- j. We acknowledge that an Environmental Impact Study has been submitted. We defer to the Township's ecologist to evaluate the appropriateness of this study's characterization of the natural features, assessment of impacts on these features and recommendations. We will review the EIS against relevant policies of the PPS and the County OP and provide comments following the technical review.
- k. More detailed technical comments will be provided once the application has been deemed complete and circulated for a technical review.
- l. Parkland dedication and Development Charges may be required in accordance with the prevailing Township's by-laws.
- m. The following information is available to assist with a submission:
- i. Site Plan and Drawing Requirements - https://puslinch.ca/wp-content/uploads/2020/09/Site-Plan-and-Drawing_Guidelines.pdf
 - ii. Municipal Development Standards - https://puslinch.ca/wp-content/uploads/2022/07/117006-3-Puslinch-Standards_FINAL-September-2019.pdf

Sincerely,



Jeremy Tran, MCIP, RPP
Manager, Urban Design & Development Planning
NPG Planning Solutions Inc.
Jtran@npgsolutions.ca

June 18, 2026
Township of Puslinch
7404 Wellington Road 34
Puslinch, Ontario
N0B 2J0

Attention: Monika Farncombe
mfarncombe@puslinch.ca

VIA E-MAIL

**Re: Review of Responses to Peer Review Comments for Arkell Subdivision, South of
Arkell Road and East of Watson Road South, Puslinch, ON
Proposed Residential Subdivision
VCL File: 0267210.0131**

Dear Ms. Farncombe:

We have completed our review of the letter from Howe Gastmeier Chapnik Limited (HGC), dated June 1, 2026, responding to our peer review comments provided in our letter dated April 21, 2026.

The responses provided address all of our comments. As recommended in the HGC response letter, we agree that the acoustic requirements should be re-evaluated once grading information, site plans for the dwellings and detailed house plans are available.

If there are any questions, please do not hesitate to call.

Yours truly,

TRINITY CONSULTANTS CANADA INC.

Per: 
John Emeljanow, P.Eng.

JEV
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