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Document:	**WHITECHURCH URBAN BOUNDARY EXPANSION** **CITY OF HAMILTON** **AGRICULTURAL IMPACT ASSESSMENT**		
Prepared for:	Whitechurch Landowners Group Inc. 7501 Keele Street, Suite 200 Vaughn, Ontario L4K 1Y2	Date Our Ref. No. Your Ref. No.	February 10, 2025 2025-08
Attention:	Whitechurch Landowners Group Inc.	DRAFT	FINAL ☑

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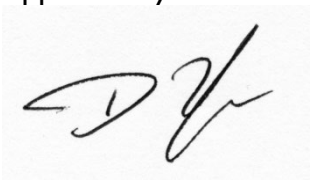

President

DBH Soil Services Inc.

WHITECHURCH URBAN BOUNDARY EXPANSION
CITY OF HAMILTON
AGRICULTURAL IMPACT ASSESSMENT

DBH Soil Services Inc.

February 10, 2025

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CITY OF HAMILTON
AGRICULTURAL IMPACT ASSESSMENT

Prepared for:

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1 INTRODUCTION

DBH Soil Services Inc was retained by the Whitechurch Landowners Group Inc. to complete an Agricultural Impact Assessment (AIA) Report for the Whitechurch Urban Boundary Expansion area.

This AIA was completed in support of an application for an Official Plan Amendment (OPA) to include the Whitechurch lands as part of an urban boundary expansion. This AIA identifies and assesses agricultural impacts based on roadside reconnaissance surveys and online resources and provides avoidance or mitigative measures as necessary to offset or lessen any impacts. Further, this AIA considers whether the proposed urban boundary expansion is consistent with the Provincial Planning Statement (2024) policies 2.3.2.1 c, d, e, and f.

For the purposes of this AIA, the Whitechurch Urban Boundary Expansion Area was identified as the Primary Study Area (PSA) and comprises approximately 326 ha. A Secondary Study Area (SSA) was created as a 1500 m buffer beyond the boundaries of the PSA. The SSA of 1500 m beyond the boundaries of the PSA was used for the characterization of the agricultural community and the assessment of potential impacts both on and in the immediate vicinity of the PSA. The 1500 m SSA was defined in accordance with the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFA) *Draft Agricultural Impact Assessment Guidance Document (March 2018)* as is required for a settlement area boundary expansion.

In the regional/city context, the PSA is bounded by Upper James Street on the west, White Church Road East on the south, Miles Road on the east, and Airport Road East on the north. The PSA abuts the community of Mount Hope on the west. Mount Hope is located within the City of Hamilton's Urban Boundary.

The PSA and the SSA comprise a mix of land uses including recreation (golf course), commercial, rural uses, agricultural lands, scrublands, ponds, and woodlands. The western portion of the SSA includes portions of the John C. Munro Hamilton International Airport, a portion of the urban area of Mount Hope, and a portion of Highway 6.

This report documents the methodology, findings, conclusions, and mapping completed for this AIA study. Figure 1 illustrates the relative location and shape of the PSA and SSA with respect to the above-mentioned geographical and community features.

Legend

- Hydro Line (MNR)
- Railway Corridor Trail (MNR)
- Roads (MNR)
- City of Hamilton Urban Boundary (CoH)
- Lot Lines (MNR)
- Primary Study Area (PSA)
- Secondary Study Area (SSA) (1.5 km)

John C. Munro Hamilton International Airport

- John C. Munro Hamilton International Airport
- John C. Munro Hamilton International Airport Runway

Figure 1

Location

DBH Soil Services Inc.

December 2024

CoH - City of Hamilton, MNR - Ministry of Natural Resources

2 METHODOLOGY

A variety of data sources were evaluated to characterize the extent of agriculture resources and to assess any potential existing (or future) impacts to agriculture within the PSA and the surrounding SSA that may occur as a result of the proposed future development of the PSA.

In an effort to determine the requirements for completion of an AIA, a review of the *City of Hamilton Rural Official Plan (February 2021)* and associated schedules was completed. The review of the official plan determined that there was no specific information on the requirements of how to complete an AIA. As a result, a further review was completed to determine the existence and use of AIA Guidelines in Ontario.

The review on the existence and use of AIA Guidelines revealed that the OMAFA had released draft Agricultural Impact Assessment guidelines in a document titled *Draft Agricultural Impact Assessment (AIA) Guidance Document, March 2018*. The OMAFA document is considered as "Draft for Discussion Purposes" and does not have status but is the basis for how OMAFA addresses agricultural impacts and mitigation and is the standard to which AIA should be completed in Ontario.

As a result of the review on the existence and use of AIA guidelines in Ontario, this AIA report has been completed with regard to the review/reference and requirements of the OMAFA *Draft Agricultural Impact Assessment (AIA) Guidance Document, March 2018*.

2.1 CONSULTATION

Agriculture is an important component of the economy in the City of Hamilton. As such, consultation with various agencies, provincial and municipal offices, and the local farm community was completed.

The Whitechurch Landowners Group hosted an information meeting on November 12, 2024, and notice was provided to all landowners within the PSA and 400 metres beyond the boundary of the PSA. Further, a statutory public meeting will be hosted by the City of Hamilton after the submission is deemed complete as prescribed in the Planning Act.

2.2 DATA COLLECTION

A variety of data sources were utilized in the assessment of agriculture in the PSA and SSA. Data was collected in a variety of formats including digital (shapefiles and imagery), paper copy, and through correspondence (telephone, meetings, email, etc), as necessary. A synopsis of the type of data and the collection of the relevant data is provided below.

2.2.1 POLICY

Relevant policy, by-laws and guidelines related to agriculture and urban development were reviewed for this study.

The review included an examination of Provincial and Municipal policy as is presented in the *Provincial Planning Statement (PPS 2024), the Greenbelt Plan (2017), the Oak Ridges Moraine Conservation Plan (2017),* the Niagara Escarpment Plan (2017), *Urban Hamilton Official Plan (November 2022*), and the *City of Hamilton Rural Official Plan (February 2021)*. It was determined that the PSA is not located within the Oak Ridges Moraine Conservation Plan area nor the Niagara Escarpment Plan area, therefore those policy plans do not apply to this application.

The review also included a review of *By-Law No. 87-57 The Zoning By-law of the Town of Ancaster (now City of Hamilton) (May 2022), City of Hamilton Comprehensive Zoning By-law No. 05-200 (April 2019),* and the *Corporation of the Township of Glanbrook By-law No. 464 (Consolidated November 2023)*.

Further, the review included an assessment of *the Minimum Distance Separation (MDS) Document – Formulae and Guidelines for Livestock Facility and Anaerobic Digester Odour Setbacks. Publication 853. Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFA, 2016)*. The MDS document was reviewed to determine the applicability of the document's use for this study.

An assessment of online data resources including OMAFA, the Ministry of Natural Resources and Forestry (MNRF) Land Information Warehouse (Land Information Ontario (LIO)), and the City of Hamilton website. Further, this assessment included telephone, email and in person communication/correspondence to derive a list of relevant policy, by-law and guidelines. Each relevant policy, by-law and guideline was collected in digital or paper format for examination for this study.

2.2.1 EVALUATION OF ALTERNATIVE LOCATIONS

The PPS 2024 Policy 2.3.2.1d identifies the requirement to complete an *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*. Of particular importance is the term "reasonable alternatives".

The PPS 2024 does not specifically define lower priority agricultural lands but provides a number of considerations to determine the agricultural priority of an area. These criteria include consideration of existing land use, capital investment in agriculture, degree of fragmentation, and proximity to non-agricultural lands uses (incompatibility). This AIA will consider these criteria to assess the agricultural priority and assessment of alternative locations.

2.2.2 PHYSIOGRAPHY

A review of the *Physiography of Southern Ontario 3rd Edition, Ontario Geological Survey Special*

Volume 2, Ministry of Natural Resources (1984) and the associated digital GIS shapefiles was completed to document the type(s) and depth of bedrock and soil parent materials, and how these materials, in conjunction with glacial landforming processes, have led to the development of the existing soil resources.

2.2.3 TOPOGRAPHY AND CLIMATE

Topographic information was reviewed from the 1:10000 scale Ontario Base Mapping, Land Information Ontario digital contour mapping and windshield surveys.

Climate data was taken from the OMAFA document titled *Agronomy Guide for Field Crops – Publication 811 (June 2017)* and online OMAFA data sources. The use of this climate information is consistent with the description within the *Draft OMAFA Agricultural Impact Assessment (AIA) Guidance Document (March 2018)* where there is a requirement to provide a general description of climatic features (crop heat units, frost free days, and general climatic patterns of the area).

The *Draft OMAFA Agricultural Impact Assessment (AIA) Guidance Document (March 2018)* indicates the need to provide greater detail on climate only in specialty crop areas.

2.2.4 AGRICULTURAL LAND USE

Agricultural land use data was collected through observations made from both online imagery and roadside reconnaissance surveys. Data collected included the identification of land use (both agricultural and non-agricultural), the documentation of the location and type of agricultural facilities/services, the location of non-farm residential units and the location of non-farm buildings (businesses, storage facilities, industrial, commercial, and institutional usage).

Agricultural land use designations were correlated to the *Agricultural Resource Inventory* (ARI) and the information provided in the Agricultural System Portal (OMAFA) for the purpose of updating the OMAFA Land Use Systems mapping for both the PSA and SSA.

2.2.5 MINIMUM DISTANCE SEPARATION

Minimum Distance Separation (MDS) formulae were developed by OMAFA to reduce and minimize nuisance complaints due to odour from livestock facilities and to reduce land use incompatibility.

A review of the OMAFA document titled *The Minimum Distance Separation (MDS) Document: Formulae and Guidelines for Livestock Facility and Anaerobic Digester Odour Setbacks* (Publication 853, Ontario Ministry of Agriculture, Food and Rural Affairs. 2016) was completed.

It is stated under guideline #1:

> *In accordance with the Provincial Planning Statement, 2014, this MDS Document shall apply in prime agricultural areas and on rural lands.*

This AIA is based on an OPA for a proposed settlement area boundary expansion in an agricultural area. Therefore, an assessment of MDS1 is required.

Agricultural buildings in the PSA and SSA were assessed during a roadside reconnaissance survey and through a review of online imagery. Agricultural buildings housing livestock or having the capability to house livestock were identified and require MDS1 assessment and calculations.

2.2.6 LAND FRAGMENTATION/SEVERANCE

Land fragmentation data was collected through a review of online interactive mapping on the Agmaps (OMAFA) website, the Agricultural System Portal (OMAFA), and the City of Hamilton websites. This data was used to determine the extent, location, relative shape of each parcel/property within both the PSA and the SSA based on the data that was available.

Land fragmentation can be defined as the increase in the number of smaller parcels, which are generally non-agricultural uses, within a predominantly agricultural area. Over time the increase in smaller non-agricultural land uses creates a patchwork-like distribution of rural land uses, resulting in lands lost to agricultural production. Generally, good productive areas of farmland are comprised of larger parcels with few (if any) smaller parcels interspersed.

The assessment of fragmentation looked at the size, shape and number of parcels within a given area, and provided comments on the potential effect on agriculture.

Land severance is the severing or dividing of a parcel into multiple sections. An assessment of land severance was completed to determine the extent of parcels that may be severed as a result of the proposed future development of the PSA.

2.2.7 SOIL SURVEY

Soil survey data and Canada Land Inventory (CLI) data was provided by OMAFA in digital format through the LIO website warehouse. The soils/CLI data is considered the most recent iteration of the soil information from OMAFA.

The digital soil survey data was also correlated to the printed soil survey reports and maps (Soils of Wentworth County, Report No. 32 of the Ontario Soil Survey (Presant, E.W., R.E. Wicklund, and B.C. Matthews, 1965)) to determine if the digital soils data have been modified from the original soil survey data.

Further, discussions with OMAFA indicated that the Provincial soils data base has been updated to include some slope information in an effort to provide the digital data at a scale of 1:50000. The original reports and associated mapping were generally completed to a scale of 1:63360 or 1 inch to 1 mile.

2.2.8 AGRICULTURAL SYSTEM

The Ontario Ministry of Agriculture, Food and Rural Affairs online Agricultural Systems mapping was reviewed to determine the extent of agricultural services and infrastructure in the PSA, in the SSA, and the City of Hamilton in general.

OMAFA identifies that the Agricultural System comprises two parts: Agricultural Land Base; and the Agri-Food Network.

The Agricultural Land Base illustrates the Prime Agricultural Areas (including specialty crop areas), while the Agri-Food Network illustrates regional infrastructure/transportation networks, buildings, services, markets, distributors, primary processing, and agriculture communities.

The review of the Agricultural Network included a visual assessment of any agricultural services and transportation networks within the PSA and the SSA, a review of the OMAFA Agricultural Systems Portal mapping, and the identification of any agricultural services or facilities noted in the PSA and SSA during the roadside reconnaissance surveys.

2.2.9 AGRCULTURAL STATISTICS

Agricultural statistics were provided by Statistics Canada and downloaded from the OMAFA website. The statistics were provided in Excel format for the City of Hamilton. The data sets provide information up to (and including) the 2021 Census.

The OMAFA draft AIA Guidelines indicates that the background data collection and review should include:

- *Agricultural crop statistics, over several recent census periods (Statistics Canada, Census of Agriculture).*

It is understood that the Census of Agriculture data is very extensive and detailed. This AIA utilized the Census of Agriculture data to provide a review of basic crop statistics over a minimum of three census periods extending from 2006 to 2021.

It is noted that the Census of Agriculture data does not always provide the most recent or updated municipality name. For the purposes of this AIA the review and assessment of the Census of Agriculture made use of the municipality name as was stated in the Census of Agriculture data sets.

3 POLICY REVIEW

Clearly defined and organized environmental practices are necessary for the conservation of land and resources. The long-term protection of quality agricultural lands is a priority of the Province of Ontario and has been addressed in the *Provincial Planning Statement (PPS 2024)*. Further, in an effort to protect agricultural lands, the Province of Ontario has adopted policy and guidelines to provide a framework for managing growth. These three provincial land use plans: *the Greenbelt Plan (2017); the Niagara Escarpment Plan (2017), and the Oak Ridges Moraine Conservation Plan (2017)* support the long-term protection of farmland. The provincial land use plans have policies that require the completion of AIA studies for changes in agricultural land use.

With this in mind, the: *Provincial Planning Statement (PPS 2024); the Greenbelt Plan (2017); the Niagara Escarpment Plan (2017); and the Oak Ridges Moraine Conservation Plan (2017)* were reviewed.

With respect to this AIA and the three provincial land use plans, a review of the boundaries of the Greenbelt Plan Area, the Niagara Escarpment Plan and the Oak Ridges Moraine Conservation Area was completed. It was determined that the PSA was located outside the boundaries of the Greenbelt Plan mapping, the Niagara Escarpment Plan mapping and the Oak Ridges Moraine Conservation Plan mapping, therefore those policy plans do not apply to this AIA. The SSA comprised portions of the Greenbelt Plan mapping area and was outside the boundaries of the Niagara Escarpment Plan mapping and the Oak Ridges Moraine Conservation Plan mapping areas.

Municipal Governments , consistent with the PPS, have similar regard for the protection and preservation of agricultural lands and address their specific concerns within their respective Official Plans on County/Regional level and Township level.

A review of municipal policy was based on an examination of the *City of Hamilton Rural Official Plan (February 2021)* and the *Urban Hamilton Official Plan (November 2022*).

A review was completed for *By-Law No. 87-57 The Zoning By-law of the Town of Ancaster (now City of Hamilton) (May 2022), City of Hamilton Comprehensive Zoning By-law No. 05-200 (April 2019),* and the *Corporation of the Township of Glanbrook By-law No. 464 (Consolidated November 2023)*.

It was determined through these reviews that no portions of the PSA or the SSA were located in a Provincially or municipally designated specialty crop area.

The relevant policies from the above-mentioned documents are presented as follows.

3.1 PROVINCIAL AGRICULTURAL POLICY

The *Provincial Planning Statement (PPS 2024)* was enacted to document the Ontario Provincial Governments development and land use planning strategies. The *PPS 2024* provides the policy foundation for regulating the development and use of land. Agricultural policies are addressed within *Sections 2.3 (Settlement Areas and Settlement Area Boundary Expansions) and 4.3 (Agriculture) of the PPS 2024.* With respect to the OPA for the PSA, the following policies may apply.

2.3.1 General Policies for Settlement Areas

1. *Settlement areas shall be the focus of growth and development. Within settlement areas, growth should be focused in, where applicable, strategic growth areas, including major transit station areas.*
2. *Land use patterns within settlement areas should be based on densities and a mix of land uses which:*
   a) *efficiently use land and resources;*
   b) *optimize existing and planned infrastructure and public service facilities;*
   c) *support active transportation;*
   d) *are transit-supportive, as appropriate; and*
   e) *are freight-supportive.*
3. *Planning authorities shall support general intensification and redevelopment to support the achievement of complete communities, including by planning for a range and mix of housing options and prioritizing planning and investment in the necessary infrastructure and public service facilities.*
4. *Planning authorities shall establish and implement minimum targets for intensification and redevelopment within built-up areas, based on local conditions.*
5. *Planning authorities are encouraged to establish density targets for designated growth areas, based on local conditions. Large and fast-growing municipalities are encouraged to plan for a target of 50 residents and jobs per gross hectare in designated growth areas.*
6. *Planning authorities should establish and implement phasing policies, where appropriate, to ensure that development within designated growth areas is orderly and aligns with the timely provision of the infrastructure and public service facilities.*

This AIA provides comment on existing conditions, potential impacts, and mitigative measures to offset the potential impacts. A separate planning document will be developed to address the planning component of the PPS 2024.

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.*

Specific to Policy 2.3.2, the need for additional lands and the assessment of sufficient capacity will be addressed under separate planning report cover. This AIA will address Policies 2.3.2.1 c, d, e, and f. It has been identified in this AIA that the PSA is not a designated Specialty Crop Area. An evaluation of alternatives will be addressed in this AIA. Minimum Distance Separation (MDS1) will be addressed within this AIA along with a discussion of potential impacts and mitigation measures.

4.3.1 General Policies for Agriculture

1. *Planning authorities are required to use an agricultural system approach, based on provincial guidance, to maintain and enhance a geographically continuous agricultural land base and support and foster the long-term economic prosperity and productive capacity of the agri-food network.*
2. *As part of the agricultural land base, prime agricultural areas, including specialty crop areas, shall be designated and protected for long-term use for agriculture.*
3. *Specialty crop areas shall be given the highest priority for protection, followed by Canada Land Inventory Class 1, 2, and 3 lands, and any associated Class 4 through 7 lands within the prime agricultural area, in this order of priority.*

4.3.2 Permitted Uses

1. *In prime agricultural areas, permitted uses and activities are: agricultural uses, agriculture-related uses and on-farm diversified uses based on provincial guidance. Proposed agriculture-related uses and on-farm diversified uses shall be compatible with, and shall not hinder, surrounding agricultural operations. Criteria for these uses may be based on provincial guidance or municipal approaches, as set out in municipal planning documents, which achieve the same objectives.*
2. *In prime agricultural areas, all types, sizes and intensities of agricultural uses and normal farm practices shall be promoted and protected in accordance with provincial standards.*

3. *New land uses in prime agricultural areas, including the creation of lots and new or expanding livestock facilities, shall comply with the minimum distance separation formulae.*
4. *A principal dwelling associated with an agricultural operation shall be permitted in prime agricultural areas as an agricultural use, in accordance with provincial guidance, except where prohibited in accordance with policy 4.3.3.1.c).*

4.3.3 Lot Creation and Lot Adjustments

3. *The creation of new residential lots in prime agricultural areas shall not be permitted, except in accordance with policy 4.3.3.1.c).*

4.3.4 Removal of Land from Prime Agricultural Areas

1. *Planning authorities may only exclude land from prime agricultural areas for expansions of or identification of settlement areas in accordance with policy 2.3.2.*

4.3.5 Non-Agricultural Uses in Prime Agricultural Areas

1. *Planning authorities may only permit non-agricultural uses in prime agricultural areas for:*
   a) extraction of minerals, petroleum resources and mineral aggregate resources; or
   b) limited non-residential uses, provided that all of the following are demonstrated:
      1 the land does not comprise a specialty crop area;
      2 the proposed use complies with the minimum distance separation formulae;
      3 there is an identified need within the planning horizon identified in the official plan as provided for in policy 2.1.3 for additional land to accommodate the proposed use; and
      4 alternative locations have been evaluated, and
         i. there are no reasonable alternative locations which avoid prime agricultural areas; and
         ii. there are no reasonable alternative locations in prime agricultural areas with lower priority agricultural lands.
2. *Impacts from any new or expanding non-agricultural uses on the agricultural system are to be avoided, or where avoidance is not possible, minimized and mitigated as determined through an agricultural impact assessment or equivalent analysis, based on provincial guidance.*

4.3.6 Supporting Local Food and the Agri-food Network

1. Planning authorities are encouraged to support local food, facilitate near-urban and urban agriculture, and foster a robust agri-food network.

While it is noted that an AIA is required to identify policy related to agriculture, this AIA is intended to inform and address the requirements of the PPS 2024 Policies 2.3.2 c, d, e, and f.

3.2 PROVINCIAL AGRICULTURAL LAND BASE MAPPING

Provincial policy requires that prime agricultural areas be protected for long-term use for agriculture. The province identified the agricultural land base through a Land Evaluation and Area Review (LEAR) assessment for the Greater Golden Horseshoe area to assist municipalities in making informed land-use planning decisions. Municipalities were required to review the agricultural land base mapping and provide refinements to the agricultural land base as part of Official Plan updates.

Figure 2 illustrates the relative location of the PSA and the SSA with respect to the Provincial Agricultural Land Base Mapping. It is noted that the Provincial Land Base mapping is now considered a legacy map and is not being updated by the province. Further, the province has indicated on the Agricultural Systems Portal website that *For the most up-to-date prime agricultural area mapping, check the applicable, approved municipal official plan.*

3.3 THE GREENBELT PLAN

A review of the Greenbelt Plan (2017) mapping indicated that the PSA and portions of the SSA are located outside the boundaries of the Greenbelt Plan area. The portions of the SSA that are within the Greenbelt Plan Area are considered as Protected Countryside. Figure 3 illustrates the relative location of the portions of the SSA that are within the Greenbelt Plan mapping.

The Greenbelt Plan has specific policies for Prime Agricultural Lands and provides the policies in Section 3.13.

Section 3.1.3 states:

> *For lands falling within prime agricultural areas of the Protected Countryside, the following policies shall apply:*
>
> *1. All types, sizes and intensities of agricultural uses and normal farm practices shall be promoted and protected, and a full range of agricultural uses, agriculture-related uses and on-farm diversified uses are permitted based on provincial Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas. Proposed agriculture-related uses and on-farm diversified uses shall be compatible with and shall not hinder surrounding agricultural operations.*
>
> *2. Lands shall not be redesignated in official plans for non-agricultural uses except for:*
>
> *a) Refinements to the prime agricultural area and rural lands designations, subject to the policies of section 5.3; or*
>
> *b) Settlement area boundary expansions, subject to the policies of section 3.4.*

Legend

- Hydro Line (MNR)
- Railway Corridor Trail (MNR)
- Roads (MNR)
- City of Hamilton Urban Boundary (CoH)
- Lot Lines (MNR)
- Primary Study Area (PSA)
- Secondary Study Area (SSA) (1.5 km)

John C. Munro Hamilton International Airport

- John C. Munro Hamilton International Airport
- John C. Munro Hamilton International Airport Runway

Provincial Land Base (OMAFRA)

- Candidate Area
- Prime Agricultural Area

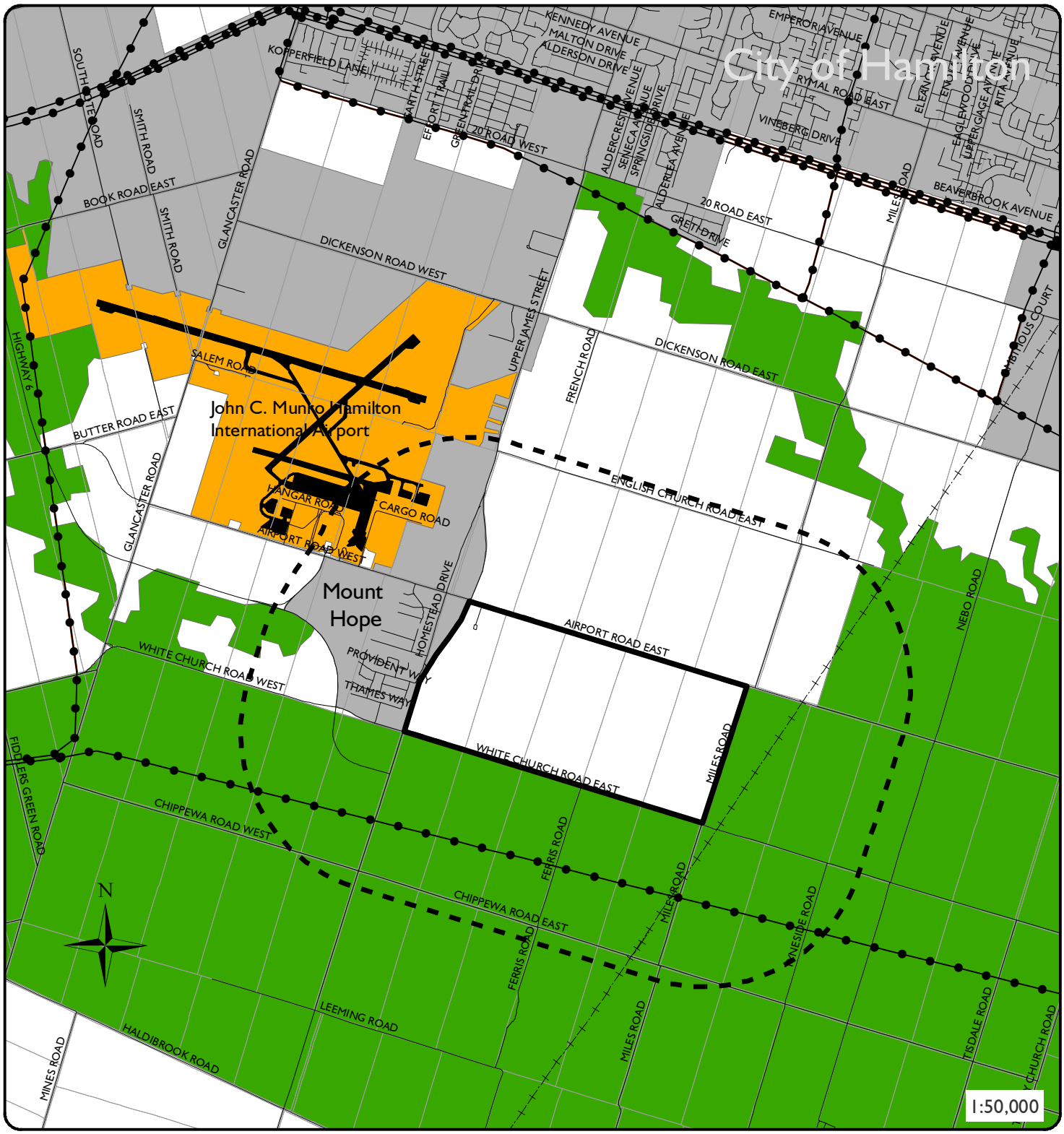
Figure 2

Provincial Agricultural Land Base Legacy Mapping

DBH Soil Services Inc.

December 2024

CoH - City of Hamilton, MNR - Ministry of Natural Resources



Legend

- Hydro Line (MNR)
- Railway Corridor Trail (MNR)
- Roads (MNR)
- City of Hamilton Urban Boundary (CoH)
- Greenbelt Plan - Protected Countryside
- Lot Lines (MNR)
- Primary Study Area (PSA)
- Secondary Study Area (SSA) (1.5 km)

John C. Munro Hamilton International Airport

- John C. Munro Hamilton International Airport
- John C. Munro Hamilton International Airport Runway

Figure 3

Greenbelt Plan Mapping

DBH Soil Services Inc.

December 2024

CoH - City of Hamilton, MNR - Ministry of Natural Resources

3. *Non-agricultural uses may be permitted subject to the policies of sections 4.2 to 4.6. These uses are generally discouraged in prime agricultural areas and may only be permitted after the completion of an agricultural impact assessment.*
4. *New land uses, including the creation of lots (as permitted by the policies of this Plan), and new or expanding livestock facilities, shall comply with the minimum distance separation formulae.*
5. *Where agricultural uses and non-agricultural uses interface, land use compatibility shall be achieved by avoiding or, where avoidance is not possible, minimizing and mitigating adverse impacts on the Agricultural System, based on provincial guidance. Where mitigation is required, measures should be incorporated as part of the non-agricultural uses, as appropriate, within the area being developed.*
6. *The geographic continuity of the agricultural land base and the functional and economic connections to the agri-food network shall be maintained and enhanced.*

Section 3.4.2 states:
For lands within the Protected Countryside, the following policies shall apply:

1. *Settlement areas outside the Greenbelt are not permitted to expand into the Greenbelt.*

The proposed OPA to bring the PSA into the urban boundary does not include lands within the Greenbelt Protected Countryside. Only a portion of the SSA was comprised of Greenbelt Protected Countryside lands.

3.4 THE NIAGARA ESCARPMENT PLAN

A review of the boundaries of the Niagara Escarpment Plan (and associated digital mapping) was completed. The review indicated that no portions of the PSA or the SSA are located within the Niagara Escarpment Plan area. Therefore, the policies of the Niagara Escarpment Plan do not apply to this AIA study.

3.5 THE OAK RIDGES MORAINE CONSERVATION PLAN

A review of the boundaries of the Oak Ridges Conservation Plan (and associated digital mapping) was completed. The review indicated that no portions of the PSA or the SSA are located within the Oak Ridges Conservation Plan area. Therefore, the policies of the Oak Ridges Moraine Conservation Plan do not apply to this AIA study.

3.6 OFFICIAL PLAN POLICY

Official Plan policies are prepared under the Planning Act, as amended, of the Province of Ontario. Official Plans generally provide policy direction for land use planning while taking into consideration the economic, social, and environmental impacts of land use and development concerns. A review for Official Plan documents revealed that the City of Hamilton is a single-

tier municipality. As a result, for the purpose of this AIA study, the review included an examination of the *City of Hamilton Rural Official Plan (February 2021)*.

3.6.1 CITY OF HAMILTON RURAL OFFICIAL PLAN

The review of the *City of Hamilton Rural Hamilton Official Plan (February 2021)* – Rural Hamilton Official Plan Schedule D, Rural Land Use Designations revealed that portions of the PSA were designated as Open Space, Rural, and Agriculture. The Rural and Open Space areas were located in the western portion of the PSA.

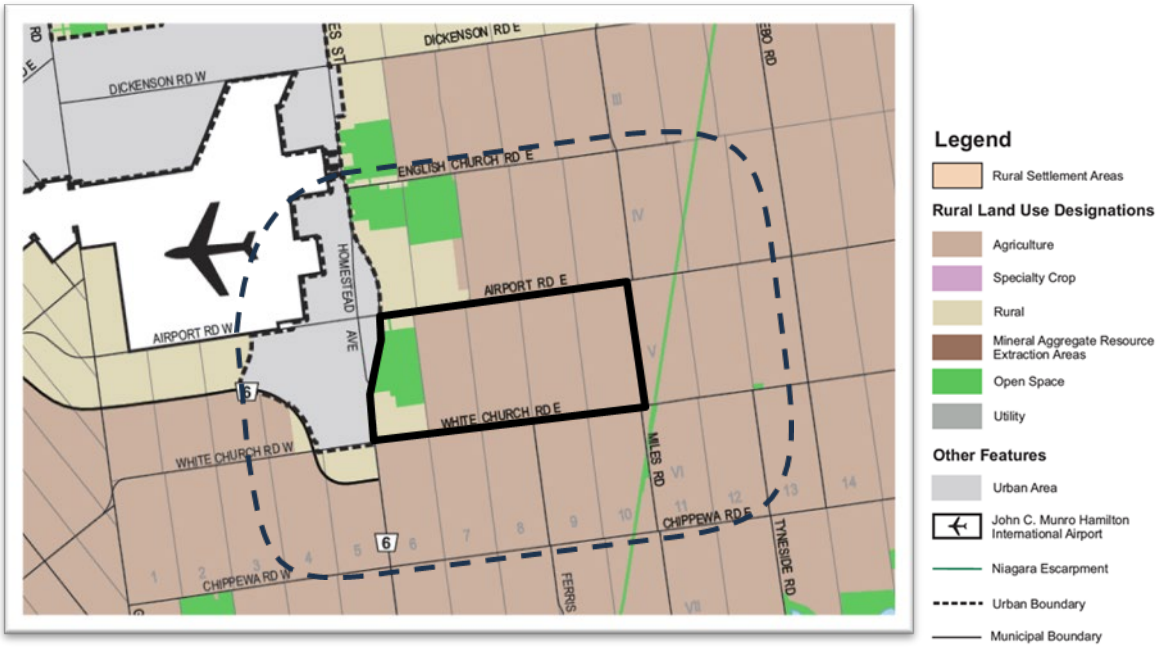
The SSA was comprised of lands designated as Agriculture, Rural, Open Space, Utility areas, and the John C. Munro Hamilton International Airport. The Rural, Open Space, and Utility areas were located in the western portion of the SSA.

An update notice on the City of Hamilton website stated:

> *On December 6, 2023, Bill 150, the Planning Statute Law Amendment Act, 2023 received royal assent enacting the Official Plan Adjustments Act, 2023.*
>
> *The legislation results in all but three of the provincial modifications made on November 4, 2022, to Rural Hamilton Official Plan Amendment 34 and Urban Hamilton Official Plan Amendment 167, to accommodate population and job growth to the year 2051, as having never been made. The effect of this legislation includes restoring the no urban boundary expansion growth strategy approved by City Council in June 2022.*
>
> *Staff are in the process of updating both the Urban Hamilton Official Plan and Rural Hamilton Official Plan to reflect the new legislation.*
>
> *Additional information, including the City's response to the Ministry of Municipal Affairs and Housing (MMAH) announcement and the introduction of Bill 150 can be found on the City's Provincial Planning Matters Page.*

Figure 4 illustrates a select portion of Schedule D showing the Land Use designations for the PSA and SSA. The PSA is identified as a solid black line, while the SSA is identified as a dashed black line. The PSA comprises approximately 302 ha of Official Plan designated Agriculture land.

Figure 4 City of Hamilton Rural Official Plan Schedule D



Source: *City of Hamilton Rural Hamilton Official Plan (February 2021)* – Rural Hamilton Official Plan Schedule D

The review of the *City of Hamilton Rural Hamilton Official Plan (February 2021)* indicated that the Land Use Designations are defined in Chapter D – Rural Systems, Designations and Resources. Select Agriculture Policies are provided as follows.

2.1 Permitted Uses

Uses permitted in the Agriculture designation are limited to agricultural uses, agricultural-related commercial and agricultural-related industrial uses and on-farm secondary uses as set out in the following policies.

Agricultural Uses

2.1.1 Agricultural uses are permitted subject to the policies of this Plan.

2.1.1.1 Mushroom operations, including the growing, harvesting, cleaning, packaging and shipping of mushrooms produced on the site and any other uses directly related to mushroom production including the creation of compost are permitted. The establishment of a new mushroom operation or the expansion of an existing operation shall be subject to Site Plan approval to address the appropriate building location, drainage, and any other matters.

2.1.1.2 Tree farms are permitted, provided that any goods and materials offered for sale are limited to small scale retailing of agricultural products grown and produced primarily on-site in accordance with the policies of Section D.2.1.3.2 c) of this Plan for on-farm secondary uses.

2.1.1.3 Farm greenhouses are greenhouses used primarily for the growing of crops for off-site wholesale. Farm greenhouses may be permitted provided the following conditions are met: (OPA 5)

a) Site Plan approval shall be required to address appropriate building location, storm water management and drainage; and

b) Any goods or materials offered for sale shall be limited to small scale retailing of products grown and produced primarily on site in accordance with the policies of Section D.2.1.3.2 c) of this Plan for on-farm secondary uses.

Agricultural-Related Uses

2.1.2 Agricultural-related uses are farm-related commercial and farm-related industrial uses that are small scale, producing products and services, wholly and directly related to a farming operation and which are required in close proximity to an agricultural use. They are uses necessary to support agricultural uses and are permitted provided the following conditions are met:

a) The use must produce products or services directly related to a farming operation and requires a location in close proximity to a farm operation. Permitted uses shall be limited to grain dryers, feed mills, grain and seed storage facilities, primary farm produce bulk storage and agricultural processing facilities, farm product supply dealers, livestock assembly points, agricultural research operations, and veterinary services for farm animals;(OPA 9)

b) The use shall be located to minimize the amount of land removed from agricultural production;

c) The use shall be located where access is by a road capable of handling the traffic generated. Access to the site shall not create a traffic hazard due to inadequate sight lines or any other traffic hazard;

d)The use shall not negatively affect environmental features in accordance with Section C.2.0, Natural Heritage System of this Plan; and

e) Agricultural-related uses shall be subject to Site Plan approval to address appropriate setbacks, building size and location, parking, lighting, drainage, buffering, screening and landscaping, and any other matter.

2.1.2.1 Appropriate development standards shall be established in the Zoning By-law regarding the maximum floor area for such uses, access, parking, outside storage, and any other appropriate requirements.

It is noted that the PSA included portions of designated Agriculture lands (approximately 302 ha). As such, the *City of Hamilton Rural Hamilton Official Plan* Agriculture policies apply in those areas. Similarly, the Agriculture policies apply to the portions of the SSA that comprise Agriculture designated areas.

3.6.2 ZONING BY-LAW

Official Plans set out a municipality's general policies for existing and future land use. Zoning bylaws specify permitted uses and standards for each municipally designated zone. The specific requirements identified within a zoning bylaw are legally enforceable. Local municipalities are the approval authority for zoning bylaws. A review was completed for *By-Law No. 87-57 The Zoning By-law of the Town of Ancaster (now City of Hamilton) (May 2022), City of Hamilton Comprehensive Zoning By-law No. 05-200 (April 2019),* and the *Corporation of the Township of Glanbrook By-law No. 464 (Consolidated November 2023)*.

It is noted that the City of Hamilton, for most of the properties in the former municipalities, the zoning for institutional, industrial, parks and open spaces, as well as Downtown Hamilton relies on Zoning By-law No. 05-200. The remaining areas in the City of Hamilton are regulated by the By-laws from the respective former municipal zoning by-laws. Therefore, with respect to this AIA study, *the Corporation of the Township of Glanbrook By-law No. 464 (Consolidated November 2023)*, *By-Law No. 87-57 The Zoning By-law of the Town of Ancaster (now City of Hamilton) (May 2022),* and the online digital zoning information were reviewed. The City of Hamilton allows online access to digital information through the ArcGIS online data portal.

A review of online interactive mapping (and data from the data portal) illustrated that portions of the PSA were zoned as Agriculture, Rural, Conservation/Hazard Lands, and Open Space.

A similar review of online interactive mapping (and data from the data portal) illustrated that portions of the SSA were zoned as Agriculture, Open Space, Conservation/Hazard Lands, Rural, Commercial, Residential, Institutional, and Deferred Development.

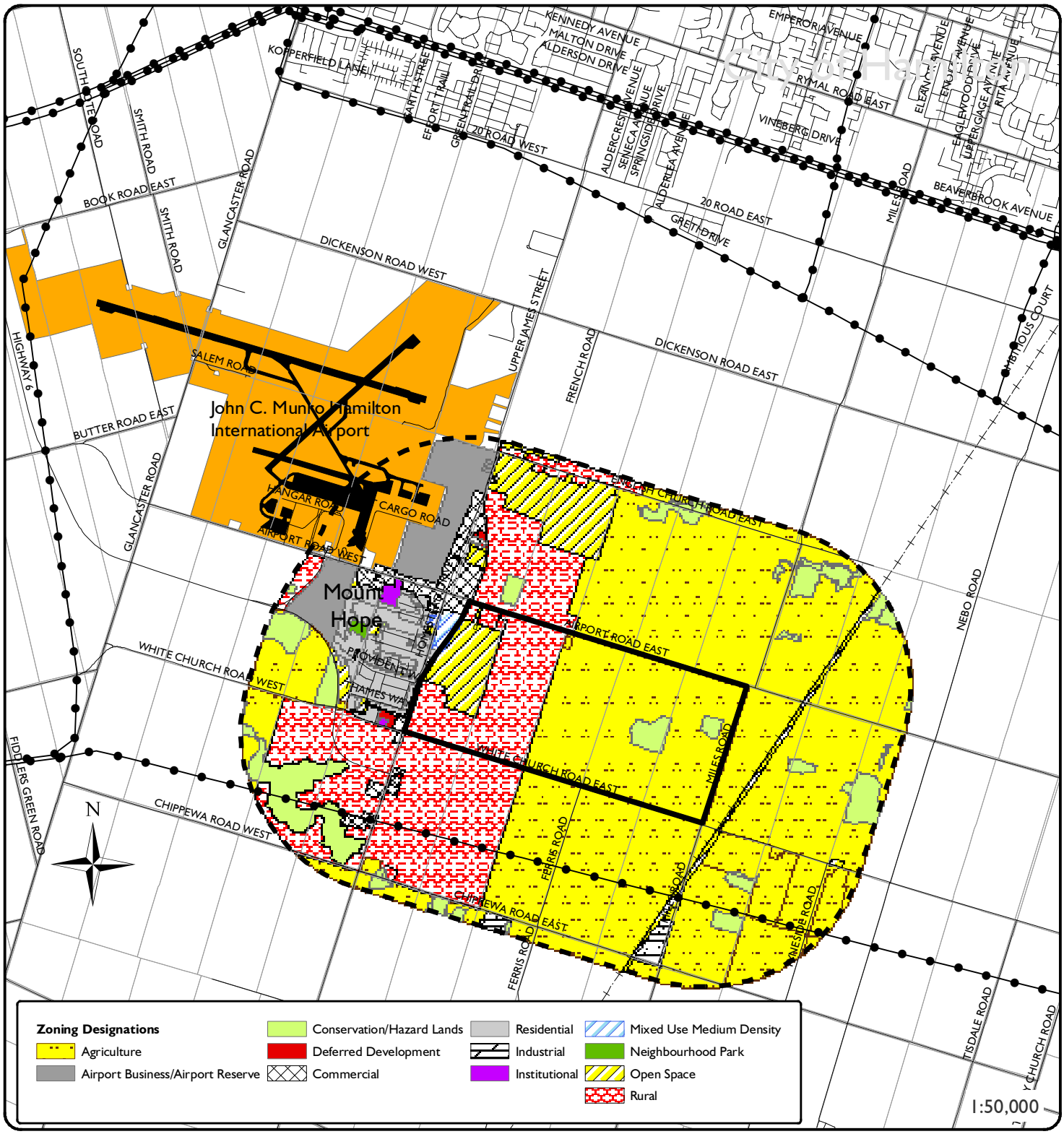
Figure 5 illustrates the respective zoning within both the PSA and SSA. The zoning information presented in Figure 5 was derived from the City of Hamilton online digital data from the ArcGIS portal that was available at the time of reporting.

3.6.2.1 The Corporation of the Township of Glanbrook By-law No. 464

The *Corporation of the Township of Glanbrook By-law No. 464 (November 2023)* was reviewed as part of this AIA study. As identified above, the PSA and SSA comprised areas zoned Agriculture.

Zone standards for Agriculture were provided in Section 8 – General Agricultural "A1" Zone, and Section 9 – Restricted Agricultural "A2" Zone. Select Agricultural Zone permitted uses and zone standards are provided below.

> *SECTION 8: GENERAL AGRICULTURAL "A1" ZONE*
> *8.1 PERMITTED USES*
>
> *(a) Agricultural uses, and buildings, structures and uses accessory thereto, including one (1) single detached dwelling for the farm owner or operator.*
>
> *(b) One (1) single detached dwelling on one (1) lot, and buildings, structures and uses accessory thereto.*



Legend

- Hydro Line (MNR)
- Railway Corridor Trail (MNR)
- Roads (MNR)
- Lot Lines (MNR)
- Primary Study Area (PSA)
- Secondary Study Area (SSA) (1.5 km)

John C. Munro Hamilton International Airport

- John C. Munro Hamilton International Airport
- John C. Munro Hamilton International Airport Runway

Figure 5

Zoning

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(c) Commercial Greenhouse Operations for horticultural purposes only (meaning only for the growing of flowers, plants, shrubs, trees and garden vegetables), and uses, buildings and structures accessory thereto, including one (1) single detached dwelling for the greenhouse owner or operator. (d) Kennels
(e) Farm Help Houses
(f) Seasonal Farm Produce Stands
(g) Home Occupations and Home Professions
(h) Home Industries
(i) Bed and Breakfast Establishments
(j) Outside Parking and Storage of Larger Vehicles
(k) Fish, Wildlife and/or Forest Management

SECTION 9: RESTRICTED AGRICULTURAL"A2" ZONE
All uses permitted and the zone regulations of the General Agricultural "A1" shall apply to the Restricted Agricultural "A2" Zone, save and except for new intensive livestock operations and kennels, which shall not be permitted uses in the Restricted Agricultural "A2" Zone.

4 AGRICULTURAL RESOURCE POTENTIAL

4.1 PHYSICAL CHARACTERISTICS

The physiographic resources within the PSA and the SSA are described in this section. The physiographic resources identify the overall large area physical characteristics documented as background to the soils and landform features. These characteristics are used to support the description of the soils and agricultural potential of an area.

Specific to this AIA, the agricultural resource potential to inform and address the PPS 2024 Policies 2.3.2 c, d, e, and f.

4.1.1 PHYSIOGRAPHY

On review of the Land Information Ontario (LIO) digital physiographic region data, and *The Physiography of Southern Ontario 3rd Edition*, (Ontario Geological Survey Special Volume 2, Ministry of Natural Resources, 1984), it was determined that the PSA and the SSA are located within the Haldimand Clay Plain physiographic region.

The Haldimand Clay Plain is described as an area that is located between the Niagara Escarpment and Lake Erie. The area is defined as a series of parallel belts, with the first belt on the high ground near the brow of the Niagara Escarpment. The first belt is comprised of recessional moraine materials with the exception of the Font Hills area where the materials are sand and gravel hills. The central belt is described as clay and silt materials. The southeastern belt is characterized by relatively level topography and poorly drained clay materials.

Figure 6 illustrates the geographic location and shape of the respective physiographic region as compared to the location and shape of the PSA and SSA.

4.1.2 TOPOGRAPHY AND CLIMATE

Topographic information was reviewed and correlated to the 1:10000 scale Ontario Base Mapping, Land Information Ontario digital contour mapping, and aerial photo interpretation. Contour mapping will be further refined during the roadside reconnaissance survey and windshield surveys to be completed as part of the full AIA.

The PSA and the SSA are a complex mix of topography. Based on the online topographic mapping there appears to be a ridge of lands at higher elevations extending from the intersection of Upper James Street and Airport Road West to the intersection of White Church Road East and the rail trail. The remaining lands within the PSA drop in elevation toward Lake Ontario to the north, and Lake Erie to the south from this ridge. The topography in the SSA lands continues to drop in elevation as distance from the PSA increases.

Climate data was taken from the OMAFA document titled *Agronomy Guide for Field Crops –*

Legend

- Hydro Line (MNR)
- Railway Corridor Trail (MNR)
- Roads (MNR)
- Lot Lines (MNR)
- Primary Study Area (PSA)
- Secondary Study Area (SSA) (1.5 km)

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Physiographic Region

- Haldimand Clay Plain

Figure 6

Physiography

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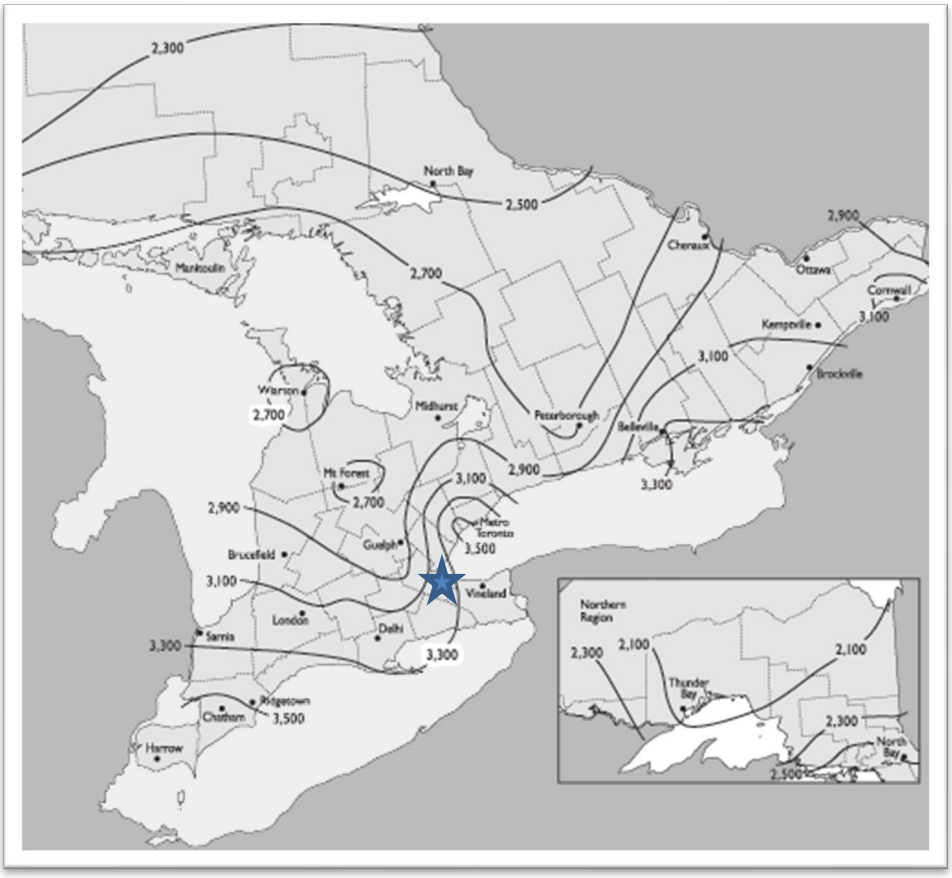
Publication 811 (June 2017) and the *Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFA) Factsheet – Crop Heat Units for Corn and Other Warm Season Crops in Ontario, 1993*.

The PSA and SSA are located between the 3100 and 3300 Crop Heat Units isolines (CHU-M1) 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 greater are the opportunities for growing value crops.

Crop Heat Units for corn (based on 1971-2000 observed daily minimum and maximum temperature (OMAFA, 2017)) map is illustrated on Figure 7. The approximate location of the PSA and SSA was marked with a blue star.

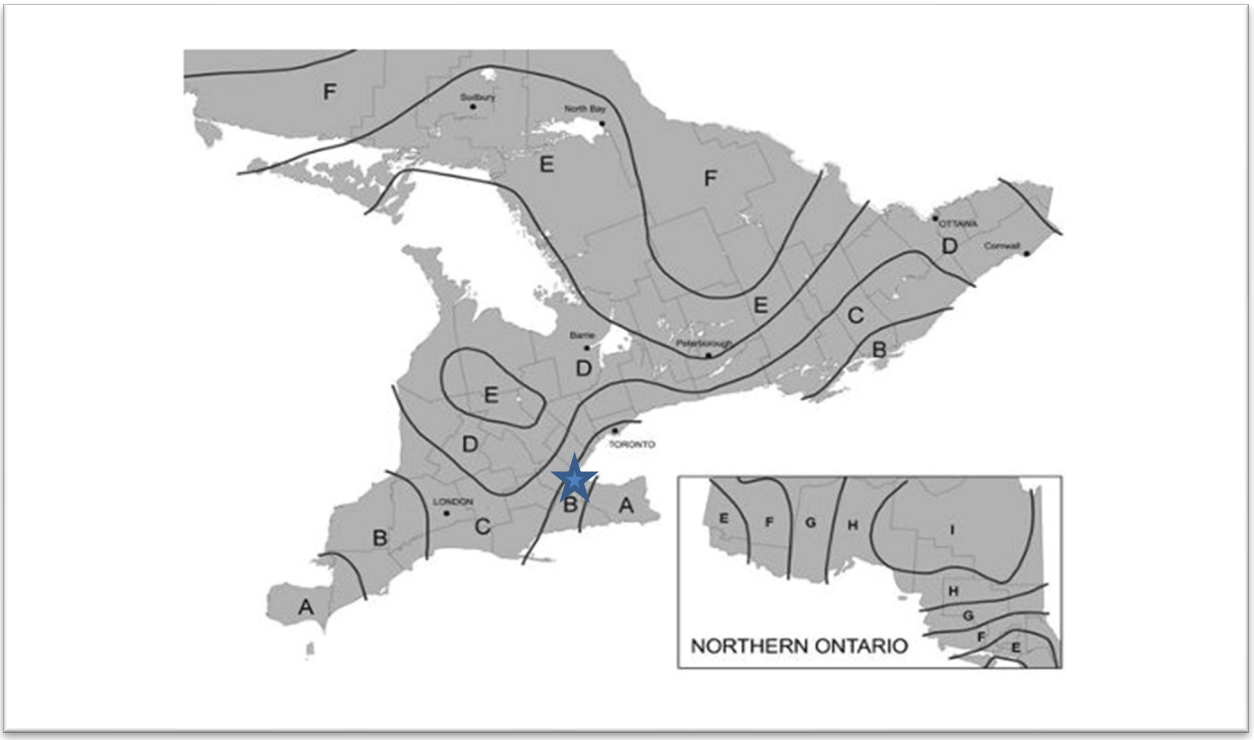
Figure 7 Crop Heat Units Map



Source: Figure 1-1 Crop Heat Units – Agronomy Guide for Field Crops (Publication 811)

A review of OMAFA Climate Zone Mapping revealed that the PSA and the SSA are located within Zone B. Figure 8 from the OMAFA website illustrates the Climate Zone Map of Ontario.

Figure 8 OMAFA Climate Zone Map



Source: OMAFA Climate Zone Mapping (https://www.ontario.ca/page/climate-zones-and-planting-dates-vegetables-ontario)

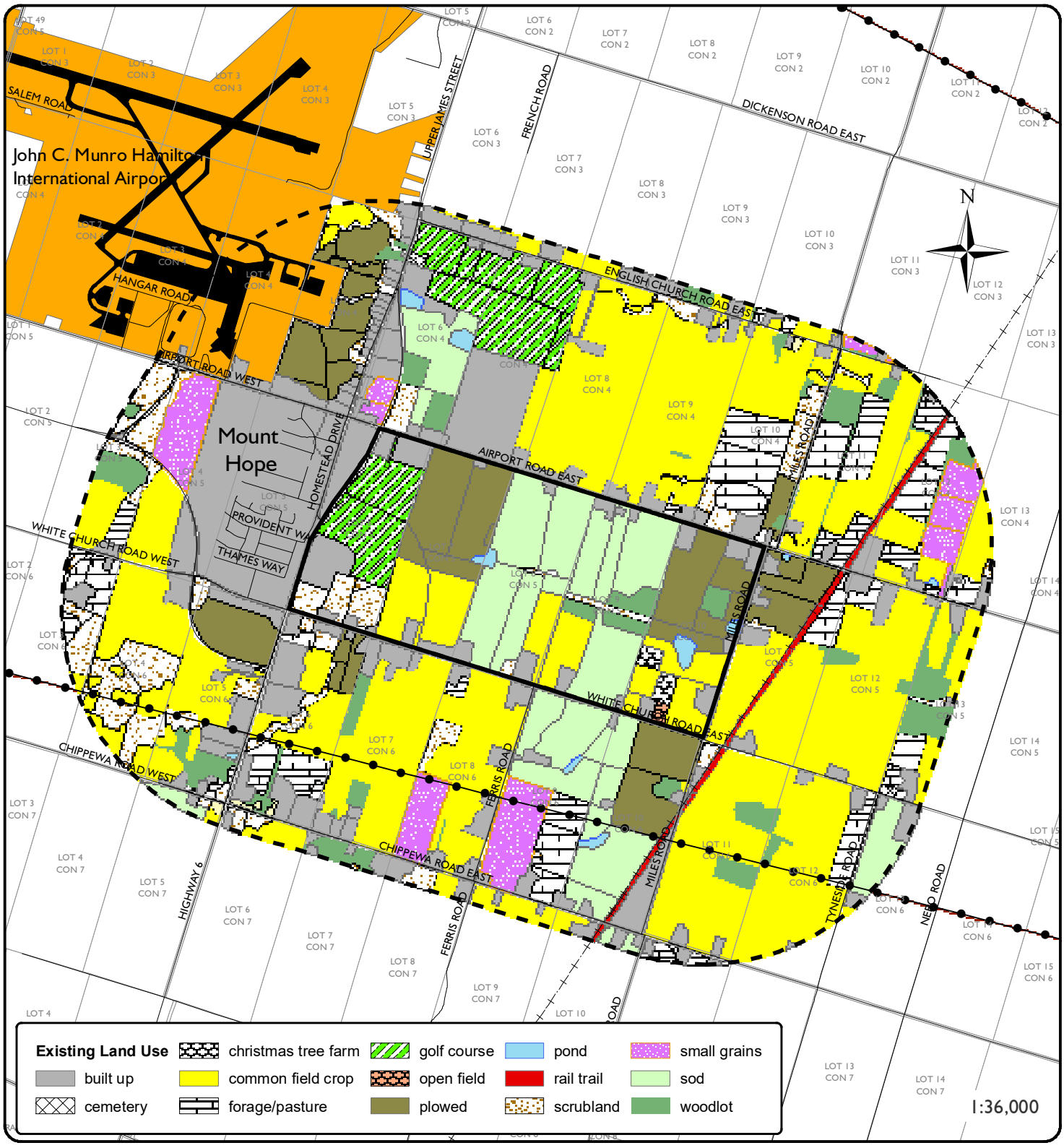
Zone B has an average Frost-Free period of 160-170 days, an Average Date of Last Spring Frost of April 30, and an Average Date of First Fall Frost of October 13.

4.2 EXISTING LAND USE

The existing land use for both the PSA and the SSA was completed through a review of recent aerial photography, Google Earth Imagery, Bing Imagery, Birdseye Imagery, the City of Hamilton online imagery, correlation to the OMAFA Land Use Systems mapping, and roadside reconnaissance surveys completed in November/December 2024. Agricultural and non-agricultural existing land uses are illustrated in Figure 9.

The terms used in the agricultural existing land use assessment were derived from the OMAFA Agricultural Resource Inventory (ARI) 1983 Coverage. It should be noted that not all terms were relevant or used in this AIA. Only the terms that were appropriate for this area were utilized. For the purposes of this AIA additional terms or more relevant terms such as 'common field crop' were used. As example, 'common field crop' indicates crop production that includes corn and soybean. The ARI 1983 Coverage land use terms include:

- Built up
- Cherries
- Corn System
- Extraction Pits and Quarries



Legend

- Hydro Line (MNR)
- Railway Corridor Trail (MNR)
- Roads (MNR)
- Lot Lines (MNR)
- Primary Study Area (PSA)
- Secondary Study Area (SSA) (1.5 km)

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- John C. Munro Hamilton International Airport
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Figure 9

Existing Land Use

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MNR - Ministry of Natural Resources

- Grazing System
- Hay System
- Idle Agricultural Land (5 - 10 years)
- Idle Agricultural Land (> 10 years)
- Market Gardens/Truck Farms
- Mixed System
- Nursery
- Orchard
- Pasture System
- Recreation
- Reforestation
- Sod Farm
- Swamp/Marsh/Bog
- Unknown
- Vineyard
- Vineyard-Orchard
- Water
- Woodlands

The review of online data identified the types of existing land uses including farm and non-farm uses (built up areas, commercial, and roads). Farms were identified as livestock or cash crop. Livestock operations were further differentiated to the type of livestock based on the livestock seen in online imagery, through a review of on farm infrastructure (type of buildings, manure system, feed (bins, bales), and types of equipment) or through any signage associated with the respective agricultural operation (as noted during the review of online data).

It should be noted that the roadside reconnaissance survey is based on a line-of-sight assessment process. Therefore, dense brush, woodlands, and topography can prevent an accurate assessment of some fields. In those instances, measures are taken to try to identify the crop through conversations with landowners (if applicable) or review of aerial photography and online imagery. In some instances, no information is available. In those instances, the field polygon will be identified as 'unknown crop'.

The roadside reconnaissance survey identified the types of existing land uses including farm and non-farm uses (built up areas, commercial, and roads). Due to the timing of the existing land use survey in November/December 2024, some fields had been harvested and plowed as part of the farm operations crop cycle. In those instances, it was unknown what the crop type was during the 2024 growing season. Discussions with local land owners provided the crop types in the 2024 growing season.

Agricultural cropping patterns were identified and mapped. Corn and soybean crops were mapped as common field crops. Small grains are typically characterized as including winter wheat, barley, spring wheat, oats and rye. Forage crops may include mixed grass, clovers and alfalfa. Other areas used for pasture, haylage or hay were mapped as 'forage/pasture'.

Non-farm (built up or disturbed areas) uses may include non-farm residential units, commercial, recreational, estate lots, services (utilities), industrial development and any areas that have been man-modified and are unsuitable for agricultural land uses (cropping).

Existing land use information was digitized in Geographic Information System (GIS – Arcmap/ARCGIS Pro) to illustrate the character and extent of the existing land use in both the PSA and the SSA. Area calculations for each type of existing land use polygon (area) were calculated within the GIS software and exported as tabular data. The data is presented as follows. Existing land use designations and existing land use definitions are provided in Table 1.

Table 1 Typical Existing Land Use Designations

Existing Land Use Designation	Existing Land Use Definitions
Built Up/Disturbed Areas	Residential, commercial, industrial, man modified, existing road system and Velodrome area
Common Field Crop	Corn, Soybean, Cultivated
Forage/Pasture	Forage/Pasture
Market Garden	Vegetables, Garden Crops
Ponds	Ponds
Open Field	Unused field (<5 years)
Scrubland	Unused field (>5 years) – woody vegetation regrowth
Sod	Sod Production
Small Grains	Wheat, Oats, Barley
Woodlot	Forested Areas

4.2.1 EXISTING LAND USE – PSA

The PSA consisted of a variety of existing land uses including, but not limited to built-up/disturbed areas, common field crops, forage/pasture lands, open field, rail trail, recreation areas, ponded areas, scrubland, sod, and woodlot areas. Discussions with local sod farm operators indicated that portions of the PSA included lands used for sod production. The lands currently used for sod production included lands that were plowed, and other lands that were currently in sod (on a 3 year rotation).

The PSA comprised land use of approximately 10.8 percent as built up/disturbed areas, 1.2 as Christmas trees, 18.0 percent as common field crop (soybean, corn), 0.1 percent as forage/pasture, 0.3 percent as open field areas, 9.2 percent as recreational area (golf course), 20.7 percent as plowed field, 1.2 percent as ponded areas, 4.8 percent as scrublands, 30.2 percent as sod, and 3.4 percent as woodlot areas.

On review of the existing land use data (as based on an online imagery assessment), it was observed that the predominant land uses in the PSA included the production of common field crops, and sod.

4.2.2 EXISTING LAND USE – SSA

The SSA consisted of a variety of existing land uses including, but not limited to airport lands, built-up/disturbed areas, common field crops, forage/pasture lands, open field, plowed, rail trail recreation (golf course), scrubland, small grains, sod, and woodlot areas.

The SSA comprised land use of approximately 3.3 percent as airport lands, 19.9 percent as built up/disturbed areas, 0.1 percent as cemetery lands, 38.0 percent as common field crop (soybean, corn), 8.0 percent as forage/pasture lands, 0.1 percent as open field, 0.8 percent as rail trail, 3.2 percent as recreational (golf course), 6.0 percent as plowed field, 0.3 percent as ponded, 6.3 percent as scrublands, 4.0 percent as small grains, 5.5 percent as sod, and 4.5 percent as woodland areas.

On review of the existing land use data, it was observed that the predominant land uses in the SSA include the production of common field crops and built up/disturbed areas.

Table 2 illustrates the percentage occurrence of the existing land uses for both the PSA and SSA.

Table 2 Existing Land Use – PSA and SSA

Land Use Designation	PSA Percent Occurrence	SSA Percent Occurrence
Airport Lands	-	3.3
Built Up/Disturbed Areas	10.8	19.9
Cemetery	-	0.1
Christmas Tree Farm	1.2	-
Common Field Crop	18.0	38.0
Forage/Pasture	0.1	8.0
Open Field	0.3	0.1
Rail Trail	-	0.8
Recreation (golf course)	9.2	3.2
Plowed Field	20.7	6.0
Pond	1.2	0.3
Scrubland	4.8	6.3
Small Grains	-	4.0
Sod	30.2	5.5
Woodlot	3.4	4.5
Totals	100.0	100.0

The relatively high amount of land in non-agricultural land use is typical of areas in close proximity to urban spaces, an airport, and an existing highway corridor (Highway 6).

The proposed OPA and future development of the PSA will result in the loss of the use of the existing lands within the PSA. Based on the existing land use assessment approximately 70.5

percent of land presently used for agricultural production in the PSA will be lost. There will be no loss of land in the SSA as a result of the proposed OPA and future development of the PSA.

4.3 AGRICULTURAL INVESTMENT

Agricultural investment is directly associated with the increase in capital investment to agricultural lands and facilities/buildings. In short, the investment in agriculture is directly related to the money used for the improvement of land through tile drainage or irrigation equipment, and through the improvements to the agricultural facilities/buildings (barns, silos, manure storage, sheds, processing, and storage).

As a result, the lands and facilities that have increased capital investment are often considered as having greater affinity for preservation than similar capability lands and facilities that are undergoing degradation and decline. Investment in agriculture is often readily identifiable through observations of the condition and type of the facilities, field observations and a review of OMAFA artificial tile drainage mapping.

Investment in agriculture is illustrated in Figure 10 – Agricultural Investment.

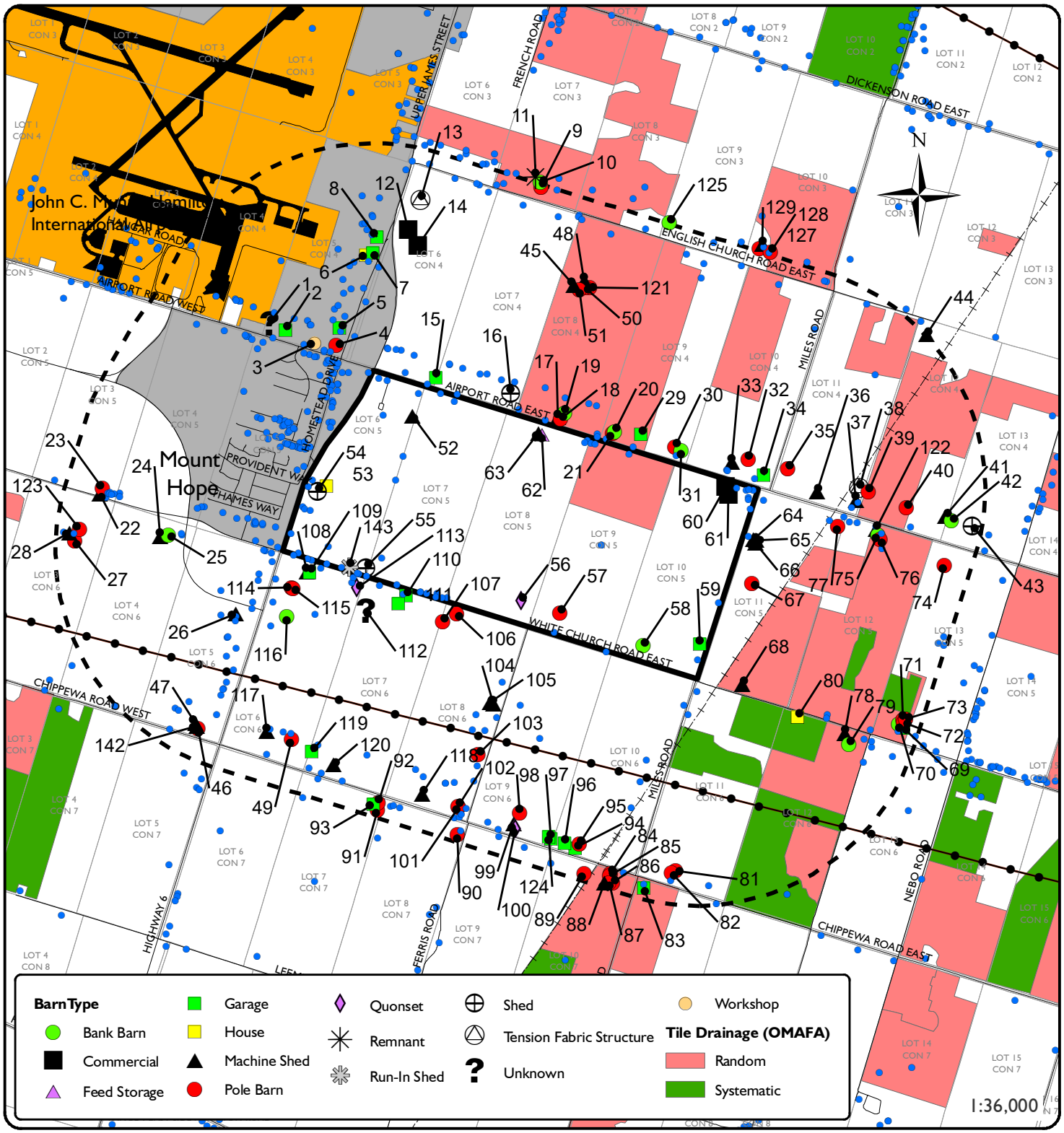
4.3.1 AGRICULTURAL BUILDINGS

Agricultural buildings (including buildings that may be capable of housing livestock), barns, storage and processing facilities were identified through a combination of aerial photographic interpretation, a review of online digital imagery (Google Earth Pro, Bing Mapping, Provincial and municipal online imagery, and Birds Eye Imagery), review of Ontario Base Mapping, and through roadside reconnaissance surveys conducted in November/December 2024.

The agricultural facilities or potential livestock facilities that were identified on mapping and imagery included buildings used for the active housing of livestock, barns that were empty and not used to house livestock, barns in poor structural condition, barns used for storage and any other large building that had the potential to house livestock.

Agricultural activities such as livestock rearing usually involve an investment in agricultural facilities. Dairy operations require extensive facilities for the production of milk. Poultry and hog operations require facilities specific for those operations. Beef production, hobby horse and sheep operations usually require less investment capital (when compared to dairy operations or other high valve operations).

Some cash crop operations are considered as having a large investment in agriculture if they have facilities that include grain handling equipment such as storage, grain driers and mixing equipment that is used to support ongoing agricultural activities.



Legend

- Water Wells (MECP)
- Hydro Line (MNR)
- Railway Corridor Trail (MNR)
- Roads (MNR)
- City of Hamilton Urban Boundary (CoH)
- Lot Lines (MNR)
- Primary Study Area (PSA)
- Secondary Study Area (SSA) (1.5 km)

John C. Munro Hamilton International Airport

- John C. Munro Hamilton International Airport
- John C. Munro Hamilton International Airport Runway

Figure 10

Agricultural Investment

DBH Soil Services Inc.

December 2024

CoH - City of Hamilton, MECP - Ministry of Environment, Conservation and Parks, MNR - Ministry of Natural Resources

For the purposes of this AIA, all agricultural buildings that were identified through a review of online imagery and roadside reconnaissance surveys in the PSA and the SSA were illustrated in Figure 10.

A total of 123 agricultural buildings were identified within the PSA and SSA. There were 13 agricultural buildings within the PSA. A total of 110 agricultural buildings were observed in the SSA. The review also identified an additional 7 agricultural buildings just beyond the boundary of the SSA. These additional buildings were included in this AIA due to the proximity to the SSA boundary and other agricultural buildings within the SSA.

It was noted that a number of farms that appeared to be suited for livestock, were no longer utilizing the farm operation as a livestock operation and had shifted the farm operation to cash crop activities. There appeared to be a net decline and loss of investments in agricultural facilities and land improvements due to the retirement of facilities and transition to cash crop production. This shift of livestock operations to cash crop operations is common in areas of close proximity to urban boundaries in the Greater Toronto Area.

Overall, there appeared to be a net decline and loss of investments in agricultural facilities due to the retirement of facilities and transition to cash crop production.

A listing of the agricultural buildings is provided in Appendix A.

Photographs and/or aerial photography/satellite imagery of the respective agricultural buildings is included as Appendix B.

4.3.2 ARTIFICIAL DRAINAGE

An evaluation of artificial drainage in the PSA and within the SSA was completed through a review of online aerial photographic/aerial imagery interpretation and a review of the Ontario Ministry of Agriculture and Food (OMAF) Artificial Drainage System Mapping.

Visual evidence supporting the use of subsurface tile drains included observations of drain outlets to roadside ditches or surface waterways, and surface inlet structures (hickenbottom or French drain inlets).

Evidence in support of subsurface tile drainage on aerial photographs would be based on the visual pattern of tile drainage lines as identified by linear features in the agricultural lands and by the respective light and dark tones on the aerial photographs, often referred to as a ‘herring bone’ pattern. The light and dark tones relate to the moisture content in the surface soils at the time the aerial photograph was taken.

OMAFA Artificial Drainage System Maps were downloaded from LIO in September 2024 and were reviewed to determine if an agricultural tile drainage system had been registered anywhere in the PSA, or in the SSA. The OMAFA Artificial Drainage System data illustrates the location and type of tile drainage systems. The type of tile drainage system is defined as either ‘random’

or ‘systematic’. A random tile drainage system is installed to drain only the low areas or areas of poor drainage within a field. A systematic tile drainage system refers to a method of installing drain tile at specific intervals across a field, in an effort to drain the entire field area. From a cost perspective, a systematic tile drainage system would be a greater cost, or investment in agriculture when compared to a random tile drainage system.

Figure 10 illustrates the OMAFA Artificial Drainage Systems Mapping for the PSA, SSA, and the adjacent surrounding areas.

As observed in Figure 10, one area of random tile drainage was noted in the PSA just south of Airport Road East (Lot 9, Concession 5).

Figure 10 illustrates that the SSA comprised areas of random tile drainage to the north of Airport Road East and east of Miles Road. Smaller areas of systematic tile drainage were noted to the east of rail trail between Airport Road East and White Church Road East, and east of the rail trail south of White Church Road East.

A review and calculation of the OMAFA digital data indicated that approximately 27.0 ha of random tile drainage will be impacted by the proposed future development of the PSA.

There will be a net loss of tile drainage (random system) in the PSA as a result of the OPA and proposed future development of the PSA (27.0 ha). There will be no loss of tile drainage systems in the SSA as a result of the OPA and proposed future development of the PSA.

4.3.3 WATER WELLS

A review was completed of the MECP Water Well records to determine the extent of water wells in the PSA and the SSA. The review of water well records involved a download of the latest version of the Water Well Records from the LIO data warehouse in September 2024. The Water Well locations are identified in Figure 10. As illustrated in Figure 10, numerous water wells are located within both the PSA and the SSA.

The review of water well records was completed to determine the location and extent of water wells in the area, and to identify any potential concerns or impacts that may occur as a result of the OPA and proposed future development of the PSA. Generally, many livestock operations and some crop farms (nursery stock farms) use ground water for their livestock or crops, and any disruption to the water in terms of quality and/or quantity could have a significant impact to the operation.

There appears to be capital investment in water wells in the PSA and the SSA, as based on the review of the online water well record data. It is unknown if these wells are used in livestock production, or possibly irrigation purposes.

An assessment of the type and use of water wells would need to be addressed under separate cover by an appropriate expert.

4.3.4 IRRIGATION

The review of online imagery and the roadside reconnaissance surveys for land use and agricultural operations did not identify any irrigation systems within the PSA or the SSA.

Visual evidence supporting the use of irrigation equipment would include the presence of the irrigation equipment (piping, water guns, sprayers, tubing/piping, etc), the presence of a body of water (pond, lake, water course) capable of sustaining the irrigation operation and lands that are appropriate for the use of such equipment (large open and level fields).

4.3.5 LANDFORMING

Landforming is the physical movement of soil materials to create more uniformly sloped lands for the ease of mechanized operations. The costs associated with landforming can be exorbitant, depending on the volume of soils moved.

No landforming for the purposes of enhancing an agricultural operation was noted in the online imagery review or during the roadside reconnaissance surveys in the PSA or the SSA.

4.4 MINIMUM DISTANCE SEPARATION (MDS 1)

The Minimum Distance Separation formulae and implementation guidelines are a planning tool developed by OMAFA to prevent land use conflicts and minimize nuisance complaints related to odour and to reduce land use incompatibility. MDS1 setbacks are calculated to separate uses so as to reduce incompatibility concerns about odour from livestock facilities. The OMAFA document titled *The Minimum Distance Separation (MDS) Document: Formulae and Guidelines for Livestock Facility and Anaerobic Digester Odour Setbacks* (Publication 853, Ontario Ministry of Agriculture, Food and Rural Affairs. 2016) was utilized for this MDS1 assessment. The assessment of MDS1 was completed to inform and address PPS 2024 Policy 2.3.2 e.

Typically, the need for an MDS1 assessment is triggered by the *Provincial Planning Statement (PPS, 2024)* whereby new land uses in prime agricultural areas and rural areas shall comply with the Minimum Distance Separation formulae. There is a requirement that the MDS1 guidelines shall be referenced in municipal official plans and zoning by-laws such that MDS1 setbacks are required in all designations and zones where livestock facilities and anaerobic digesters are permitted.

In order to confirm/establish the need for an MDS1 assessment, a review was completed of various Provincial and Municipal policies and documents. For this assessment the review included the *Provincial Planning Statement (PPS 2024),* and the *City of Hamilton Rural Official Plan (February 2021)*.

A review of the OMAFA document titled *The Minimum Distance Separation (MDS) Document: Formulae and Guidelines for Livestock Facility and Anaerobic Digester Odour Setbacks* (Publication 853, Ontario Ministry of Agriculture, Food and Rural Affairs. 2016) was completed.

It is stated under guideline #1:

> *In accordance with the Provincial Policy Statement, 2014, this MDS Document shall apply in prime agricultural areas and on rural lands.*

It is stated under guideline #2:

> *The MDS I setback distances shall be met prior to the approval of: proposed lot creation in accordance with Implementation Guidelines #8 and #9; rezonings or re-designations in accordance with Implementation Guideline#10; building permits on a lot which exists prior to March 1, 2017 in accordance with Implementation Guideline #7; and as directed by municipalities for local approvals for agriculture related uses or on-farm diversified uses in accordance with Implementation Guideline #35.*

It is stated under guideline #34:

> *For the purposes of MDS I, proposed Type B land uses are characterized by a higher density of human occupancy, habitation or activity including, but not limited to:*
> *• new or expanded settlement area boundaries;*
> *• an official plan amendment to permit development, excluding industrial uses, on land outside a settlement area;*
> *• a zoning by-law amendment to permit development, excluding industrial uses or dwellings, on land outside a settlement area; and*
> *• the creation of one or more lots for development on land outside a settlement area, that results in four or more lots for development, which are in immediate proximity to one another (e.g., sharing a common contiguous boundary, across the road from one another, etc.), regardless of whether any of the lots are vacant.*

Because of the increased sensitivity of these uses, a new or expanding Type B land use will generate an MDS I setback that is twice the distance as the MDS I setback for a Type A land use. This is reflected in the value of Factor E which is 2.2 for Type B versus 1.1 for Type A.

The proposed future development of the PSA would be characterized as a higher density of human occupancy, habitation or activity and would be considered as Type B land use.

It is stated under guideline #6:

> *A separate MDS I setback shall be required to be measured from all existing livestock facilities and anaerobic digesters on lots in the surrounding area that are reasonably expected by an approval authority to be impacted by the proposed application.*
>
> *As part of municipal consideration of planning or building permit applications, all existing livestock facilities or anaerobic digesters within a 750 m distance of a proposed Type A land*

use and within a 1,500 m distance of a proposed Type B land use shall be investigated and MDS I setback calculations undertaken where warranted.

This AIA is based on an OPA for a proposed future development of the PSA for a settlement area boundary expansion (higher density of human occupation); therefore, it is a Type B land use and requires an assessment of barns out to a distance of 1500 m from the PSA.

As required in the MDS1 Guidelines (MDS Guideline # 16 – Obtaining Required Information to Calculate the MDS Setbacks) every effort is to be made to contact landowners in an attempt to collect accurate and site-specific data for each of the agricultural buildings that have the potential to house livestock within the 1500 m buffer. Data was collected through use of online imagery (Google Earth, Bing Imagery, Birdseye Imagery), the City of Hamilton online mapping and imagery, internet searches (including Facebook, business data sources, real-estate listings), and discussions with landowners where possible.

If it was not possible to contact landowners, the livestock potential was based on the most appropriate livestock for that particular livestock facility (ie: based on observed signage, manure piles, feed storage, building type/style, review of online data sources including historical imagery). The respective size of each farm property was determined from Municipal Assessment data (or the OMAFA Agricultural Information Atlas website), further, the relative size of the potential livestock buildings (in sq m) was measured from online imagery sources. The use of these data sources will provide a potentially greater MDS1 calculated distance than if the data is collected from the landowner, due to the measurement of the entire building roof area (including eaves/overhang) and that the entire area measured is considered as potential livestock space (ie. assumes that the entire building area is only used for livestock and that there is no area for feed rooms, offices, tack rooms, etc).

MDS1 data was collected through observations made during roadside reconnaissance surveys completed in November/December 2024. Data collected in these surveys assisted with the visual assessment of any buildings capable of housing livestock, identification of animal types and number (if observed on the property or noted on signage on the property), and manure storage location. It should be noted that reconnaissance surveys are often limited by 'line of sight' restrictions. Topography and vegetation (density and/or height) may preclude an accurate assessment of individual agricultural buildings. With this in mind, recent aerial photography and online digital imagery were used to assist in the identification and assessment of any partially or totally concealed agricultural building.

It should be noted that MDS1 calculations are based on a cumulative design capacity of livestock buildings on a lot. MDS Guideline #19 states:

MDS calculations shall be based on the combined design capacity for all livestock barns on a lot, even if they are unoccupied livestock barns or separated by a substantial distance on the lot.

> *Where there are no livestock barns on a lot, MDS calculations shall be based on the combined design capacity for all manure storages on a lot, even if they are unused manure storages or separated by a substantial distance on the lot.*

MDS Guideline #19 indicates that the calculated MDS1 arc should be based on a combined design capacity of all livestock barns, even if unoccupied, on a property. The combined MDS1 calculation is then measured from the closest point of the PSA to the closest point of the livestock occupied portion of the agricultural building (MDS1 Guideline #40). MDS1 Guideline #40 states:

MDS1 guideline #40 states:

> *For proposed development, MDS I setbacks are measured as the shortest distance between the area proposed to be rezoned or redesignated to permit development and either: the surrounding livestock occupied portions of livestock barns, manure storages or anaerobic digesters.*

MDS1 calculations were completed for the agricultural buildings individually, or as a cumulative calculation of livestock for farms with more than one building capable of housing livestock. MDS1 calculations were completed using the OMAFA online Agrisuite software (https://agrisuite.OMAFA.gov.on.ca/).

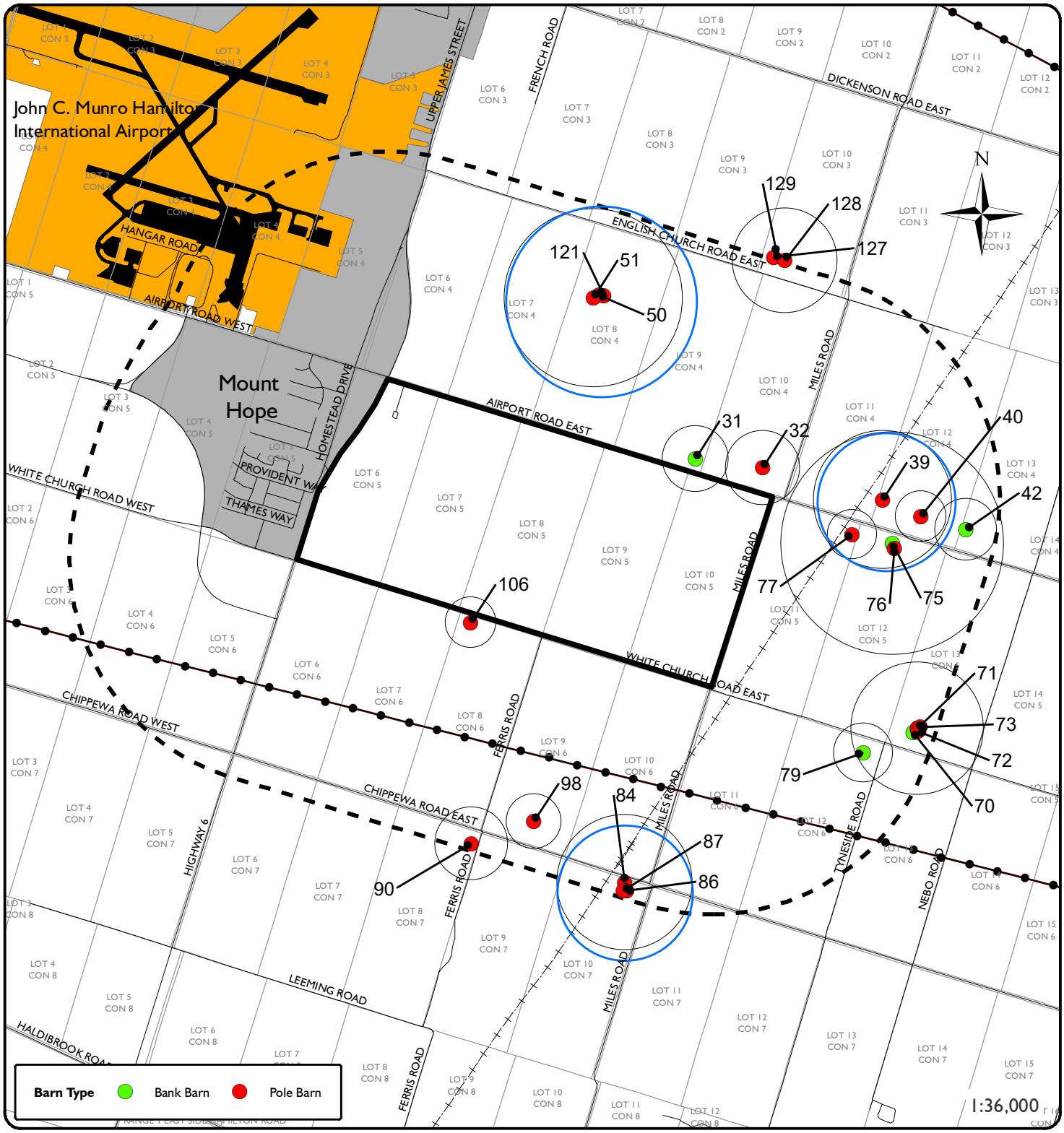
The Agrisuite software calculates MDS1 based on the inputs for each agricultural building. Data input includes the respective farm location information, type of livestock, number of agricultural buildings, type of manure storage, size of farm parcel, and numbers of livestock or barn area.

The Agrisuite software completes an MDS1 calculation for an agricultural operation (single agricultural building (barn), or cumulative (agricultural buildings). The Agrisuite calculation defines a distance which is to be measured from the closest point of the agricultural building (and the permanent manure storage) toward the closest point of the PSA. Each Agrisuite software agricultural building data sheet and calculated MDS1 value are presented in Appendix C.

Table 3 provides an overview of the agricultural building number, type of building, building use, potential livestock, and the calculated MDS1 value from barn and from manure storage.

Figure 11 illustrates the location of all agricultural buildings, the calculated MDS1 arcs for individual agricultural buildings, or the calculated cumulative design capacity MDS1 arc for lots with more than one the agricultural building capable of housing livestock. MDS1 arcs from permanent manure storages were also illustrated on Figure 11. MDS1 arcs from manure piles (non-permanent manure storages) were not illustrated, as the manure piles were in close proximity to the respective barns.

Table 3 provides the calculated MDS1 values for the 24 agricultural buildings. It should be noted that Table 3 also provides the cumulative calculated MDS1 values (two or more barns capable of housing livestock on the same parcel), where necessary, resulting in 15 MDS1 arcs



Legend

- Hydro Line (MNR)
- Railway Corridor Trail (MNR)
- Roads (MNR)
- City of Hamilton Urban Boundary (CoH)
- Lot Lines (MNR)
- Primary Study Area (PSA)
- Minimum Distance Separation (MDS1) Arc from Barn
- Minimum Distance Separation (MDS1) Arc from Permanent Manure Storage
- Secondary Study Area (SSA) (1.5 km)

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- John C. Munro Hamilton International Airport
- John C. Munro Hamilton International Airport Runway

CoH - City of Hamilton, MNR - Ministry of Natural Resources

Figure 11

Minimum Distance Separation (MDS1)

DBH Soil Services Inc.

December 2024

As observed in Figure 11, there were three MDS1 arcs that impacted the PSA. The MDS1 arc from barn 31 (Lot 9, Con 4) and barn 32 (Lot 10, Con 4) impacts a portion of PSA on the north side, while the MDS1 arc from barn 106 (Lot 8, Con 6) impacts the PSA from the south.

For the purposes of the OPA and the proposed future development of the PSA, the secondary planning process will need to review the MDS1 from those respective barns to determine if the potential impact still exists. If the potential impact still exists, then mitigation would be required for those areas where the MDS1 arc impinges on the PSA. Potential mitigation measures are provided in this AIA. The use of MDS in this instance is a best management practice for the purposes of identifying areas within the PSA where passive land uses could be considered (parks, infrastructure (storm water management ponds, roads, parking areas)) or lower density of residential development.

Table 3 Minimum Distance Separation (MDS 1)

Agricultural Building Number	Type of Building	Use	Type of Livestock	MDS1 Barn (m)	MDS1 Manure Storage (m)
31	Bank Barn	Livestock	Horses	219	219
32	Pole Barn	Livestock	Horses	244	244
39	Pole Barn	Livestock	Beef	456	456
40	Pole Barn	Livestock	Horses	170	170
42	Bank Barn	Livestock	Horses	206	206
50	Pole Barn	Livestock	Dairy		
51	Pole Barn	Livestock	Dairy		
121	Pole Barn	Livestock	Dairy	587	629
70	Bank Barn	Livestock	Beef		
71	Pole Barn	Livestock	Beef		
72	Pole Barn	Livestock	Beef		
73	Bank Barn	Livestock	Beef	437	437
75	Bank Barn	Livestock	Dairy		
76	Pole Barn	Livestock	Dairy	734	761
77	Pole Barn	Livestock	Horses	165	165
79	Bank Barn	Livestock	Horses	196	196
84	Pole Barn	Livestock	Beef		
86	Pole Barn	Livestock	Beef		
87	Pole Barn	Livestock	Beef	448	448
90	Pole Barn	Livestock	Goats	240	240
98	Pole Barn	Livestock	Sheep	183	183
106	Pole Barn	Livestock	Horses	170	170
127	Pole Barn	Livestock	Horses		
128	Pole Barn	Livestock	Sheep	347	347

Based on the assessment of MDS1, three potential livestock barns (numbers 31, 32, and 106) had calculated MDS1 arcs minimally impact the PSA. Specific mitigation measures to offset those impacted areas of the PSA can be addressed in the secondary planning process whereby those areas may be utilized for non-residential uses such as parks, storm water ponds, parking, etc.

As a result of the use of mitigative measures, the MDS1 (and PPS 2024 Policy 2.3.2 f) have been satisfied.

4.5 FRAGMENTATION

Assessment data was evaluated to determine the characteristics and the degree of land fragmentation in the PSA and the SSA.

In order to evaluate land fragmentation, the most recent Assessment Roll mapping and Assessment Roll information from the City of Hamilton was referenced on a property-by-property basis (for the PSA and the SSA) to determine the approximate location, shape and size of each parcel. The assessment of fragmentation looked at the numbers of and proximity of properties within the PSA and the SSA.

While a minimum size for an agricultural property is not specified in the *Provincial Planning Statement (PPS, 2024),* the PPS does state in Section 4.3.2.2 that:

> "In *prime agricultural areas*, all types, sizes and intensities of *agricultural uses* and *normal farm practices* shall be promoted and protected in accordance with provincial standards."

A review of the *City of Hamilton Rural Official Plan (February 2021)* did not provide a specific minimum lot size for an agricultural property.

A review of the *Corporation of the Township of Glanbrook Zoning By-law (By-law No. 464, consolidated November 2022)* was completed and identified a minimum lot area of 10.0 ha (25.0 acres) for an Agriculture zoning.

Historically, Statistics Canada Census of Agriculture (2011) indicated that the average farm size in Ontario was 98.7 ha (244 acres). This average size is based on the number of Census farms divided by the acreage of those Census farms (Total Farm Area). The Total Farm Area is land owned or operated by an agricultural operation and includes cropland, summer fallow, improved and unimproved pasture, woodlands and wetlands, and all other lands (including idle land, and land on which farm buildings are located) (Statistics Canada, 2017). It should be noted that the average farm size is based on farmland holdings, which may include more than one parcel (property). Further, the Census of Agriculture (2011) information indicated that the average farm size in the Hamilton Division is 59.7 ha (147.6 acres).

Further, the historical Census of Agriculture (2016) data indicated that the average farm size in Ontario (for Census farms) was 100.8 ha (249) acres. Again, the Census of Agriculture (2016) average farm size is based on farmland holdings, which may include more than one parcel

(property). The Census of Agriculture (2016) information indicated that the average farm size in the Hamilton Division is 64.2 ha (158.7 acres).

The more recent Census of Agriculture (2021) data indicated that the average farm size in Ontario (for Census farms) was 98.3 ha (243 acres). Again, the Census of Agriculture (2021) average farm size is based on farmland holdings, which may include more than one parcel (property). Further, the Census of Agriculture (2021) information indicates that the average farm size in the Hamilton Division is 70.4 ha (173.9 acres).

Figure 12 illustrates the complexity of the land fragmentation within the PSA and SSA. GIS was utilized to calculate the area (in acres) of each parcel within the PSA and SSA from which MPAC (Municipal Property Assessment Corporation) data was not available. Acre calculations were completed to allow an assessment or comparison of all the parcels within the PSA and the SSA. This assessment was not limited to only the agricultural properties but included all parcels.

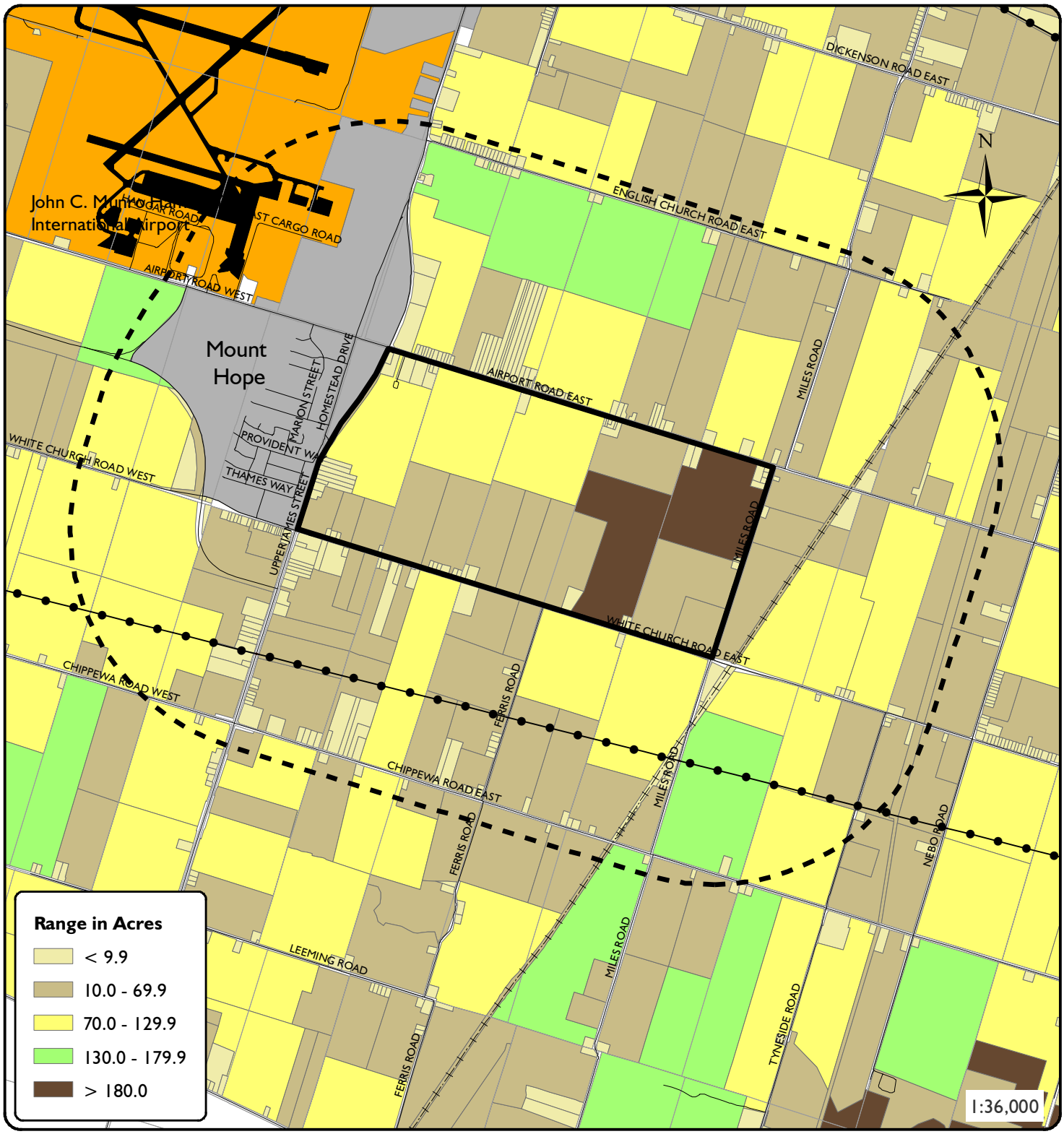
The Census data provides detailed information on Census farms (farms which provided census data). Census data is provided in the unit format of acres, with the splits in the data at 0.0 – 9.9, 10.0 – 69.9, 70.0 – 129.9, 130.0 – 179.9 and greater than 180.0 acres. For the purposes of this AIA, similar splits in acre data were used for the comparison.

Statistics Canada defines a Census Farm as:

> *a unit that produces agricultural products and reports revenues or expenses for tax purposes to the Canada Revenue Agency.*
>
> 1. *Agricultural products include the following:*
>   - a) *crops: grains, oilseeds, leguminous crops, potatoes, vegetables, fruits, berries, greenhouse products, mushrooms, sod, nursery products, Christmas trees, maple tree taps, hay and fodder crops, hemp, and other crops*
>   - b) *livestock: dairy and beef cattle (including feedlots), pigs, poultry and eggs (including hatcheries), turkeys, ducks, geese, sheep, goats, horses and other equines, bison (buffalo), elk (wapiti), deer, llamas and alpacas, rabbits, mink, bees, and other animals.*
> 2. *Not included are forestry and logging, hunting and trapping, fishing and aquaculture, support activities for agriculture and post-harvest activities, horse boarding and riding lessons, and operations making products that are not for human consumption (e.g., genetic operations, insect farms for pet food).*

As illustrated in Figure 12, the PSA comprised of a variety of area sizes, ranging from 0.01 acres to > than 180 acres. It appears that much of the PSA is comprised of parcels in the range of 10.0 – 129.9 acres. Numerous smaller parcels (< 9.9 acres) were also noted along Upper James Street, Airport Road East and White Church Road East.

The review of fragmentation in the SSA revealed similar conditions and characteristics. Significant linear development (small individual parcels along roads/streets) was noted along White Church Road West, Upper James Street, Chippewa Road East and Ferris Road.



Legend

- Hydro Line (MNR)
- Railway Corridor Trail (MNR)
- Roads (MNR)
- City of Hamilton Urban Boundary (CoH)
- Lot Lines (MNR)
- Primary Study Area (PSA)
- Secondary Study Area (SSA) (1.5 km)

John C. Munro Hamilton International Airport

- John C. Munro Hamilton International Airport
- John C. Munro Hamilton International Airport Runway

Figure 12

Fragmentation

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The review of parcel data as a means of determining the existing fragmentation of the PSA and the SSA revealed that both areas comprised numerous parcels of varying sizes. Table 4 provides a comparison between the parcel count of the PSA, the SSA and the Census farm data. The parcel count for the City of Hamilton reflects the Census Farms from the 2021, 2016, and 2011 census. It should be noted that the parcel data for the urban areas around Mount Hope was not available at the time of writing this report. Therefore, those data are not provided in the following table.

As illustrated in Table 4, the parcel count for the PSA and the SSA indicates the presence of numerous small parcels, and fewer larger parcels. This type of fragmentation pattern is common in areas near urban boundaries and within the Greater Toronto Area (GTA) and Greater Golden Horseshoe (GGH) areas. It is noted that there are large clusters of smaller parcels associated with the urban areas of the City of Hamilton and urban areas nearer to Hamilton Airport.

Table 4 Parcel Size and Parcel Count

Parcel Size Range (Acre)	PSA	SSA	City of Hamilton (2021 Census)	City of Hamilton (2016 Census)	City of Hamilton (2011 Census)
0.0 – 9.9	46	236	92	119	104
10.0 – 69.9	12	75	282	334	375
70.0 – 129.9	1	26	138	148	182
130.0 – 179.9	0	5	39	64	66
>180	1	2	128	145	158

A direct comparison of the parcel size count of the PSA and SSA to the Census data cannot be made, as the census data only refers to census farms while the parcel data refers to all parcels.

There will be no increase in fragmentation in the SSA as a result of the OPA and proposed future development of the PSA.

4.6 PARCEL OR LAND SEVERANCE

A parcel or land severance is defined as an authorized separation of a piece of land to form a new lot or parcel of land.

The PSA is bound by the local road system. As a result, the PSA has well defined boundaries that do not cross parcel boundaries. Therefore, there is no opportunity for land severance and no parcels will be severed as a result of the OPA and proposed future development of the PSA.

4.7 SOILS AND CANADA LAND INVENTORY (CLI)

A review was completed of the soils and Canada Land Inventory (CLI) data base for the PSA and the SSA. The review was completed to determine the extent and location of the high capability

soils. Digital soils data was retrieved from the Land Information Ontario data warehouse in September 2024.

The review included a download of the latest version of the soils data from the Land Information Ontario website and discussions with OMAFA staff to determine if the downloaded data set is the latest iteration of the soils data.

Due to the continual updates to the soil survey complex datasets, it is prudent to verify or at least confirm that the soil series data and CLI information within the datasets is accurate across the City of Hamilton. In an effort to confirm the correctness of the soils and the CLI data on a soil series basis, the dbase data file that is associated with the City of Hamilton soil survey complex file was exported to excel to run a unique symbols list based on Soil Series, topography (slope), CLI class and CLI subclass.

In the City of Hamilton soil data (2433 records), the unique symbols list (based on the SYMBOL1 column) provided 1152 unique symbols combined with the associated slope and CLI class and CLI subclass (CLI_1 and CLI_2). The unique symbols list is provided in Appendix D.

For the purposes of this AIA, the soil and CLI data presented on Figure 13 are considered appropriate in soil code and CLI rating.

4.7.1 SOIL CAPABILITY FOR AGRICULTURE

Basic information about the soils of Ontario is made more useful by providing an interpretation of the agricultural capability of the soil for various crops. The Canada Land Inventory (CLI)

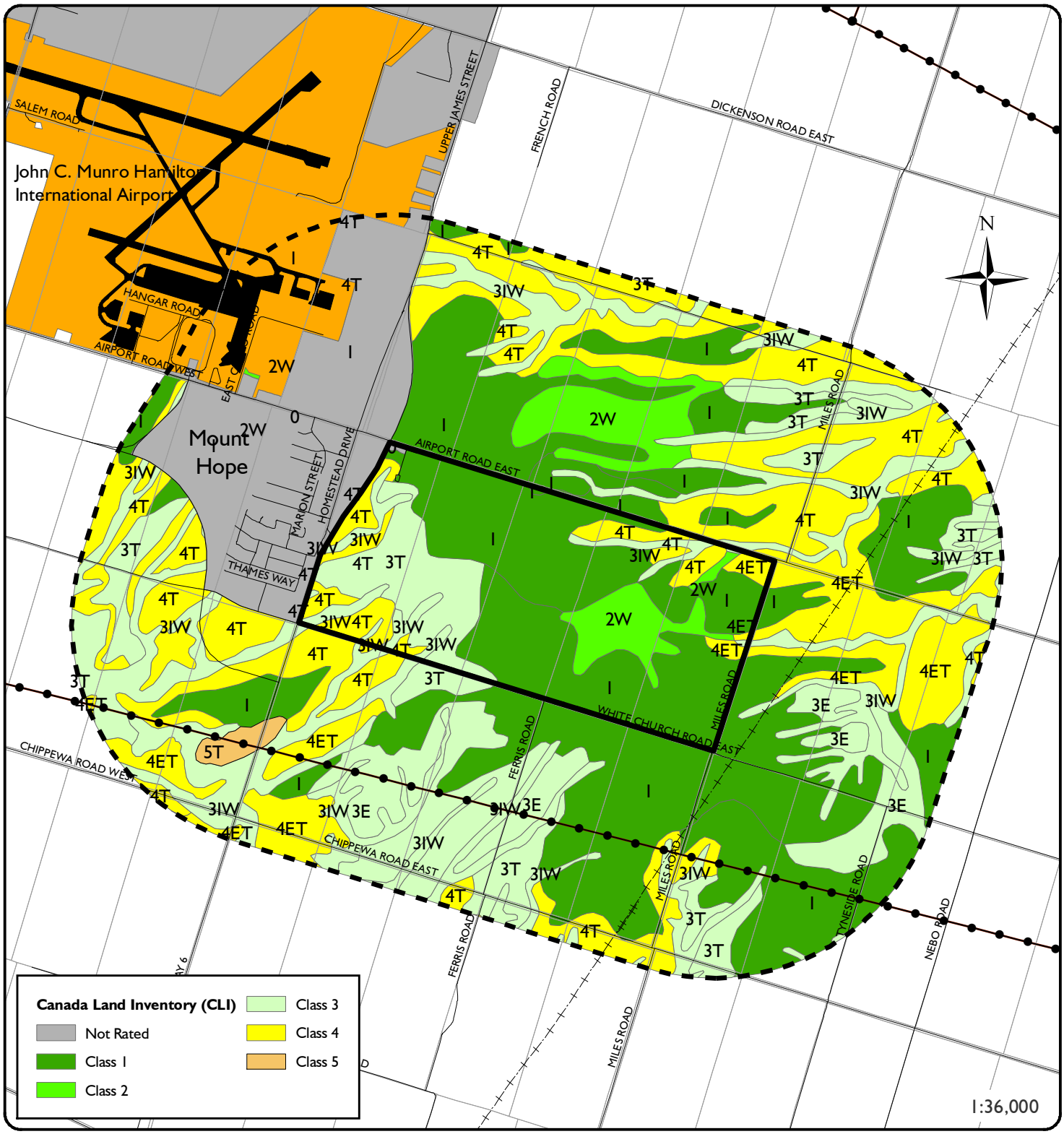
system combines attributes of the soil to place the soils into a seven-class system of land use capabilities. The CLI soil capability classification system groups mineral soils according to their potentialities and limitations for agricultural use. The first three classes are considered capable of sustained production of common field crops, the fourth is marginal for sustained agriculture, the fifth is capable for use of permanent pasture and hay, the sixth for wild pasture and the seventh class is for soils or landforms incapable for use for arable culture or permanent pasture.

Organic (O) or Muck (M) soils are not classified under this system. Disturbed Soil Areas are not rated under this system.

4.7.1.1 Canada Land Inventory (CLI) Class

The Ontario Ministry of Agriculture, Food and Rural Affairs document "Classifying Prime and Marginal Agricultural Soils and Landscapes: Guidelines for Application of the Canada Land Inventory in Ontario" defines the Canada Land Inventory (CLI) classification as follows:

> *"Class 1 - Soils in this class have no significant limitations in use for crops. Soils in Class 1 are level to nearly level, deep, well to imperfectly drained and have good nutrient and*



Legend

- Hydro Line (MNR)
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- Primary Study Area (PSA)
- Secondary Study Area (SSA) (1.5 km)

John C. Munro Hamilton International Airport

- John C. Munro Hamilton International Airport
- John C. Munro Hamilton International Airport Runway

Figure 13

Canada Land Inventory (CLI)

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water holding capacity. They can be managed and cropped without difficulty. Under good management they are moderately high to high in productivity for the full range of common field crops

Class 2 - Soils in this class have moderate limitations that reduce the choice of crops, or require moderate conservation practices. These soils are deep and may not hold moisture and nutrients as well as Class 1 soils. The limitations are moderate and the soils can be managed and cropped with little difficulty. Under good management they are moderately high to high in productivity for a wide range of common field crops.

Class 3 - Soils in this class have moderately severe limitations that reduce the choice of crops or require special conservation practices. The limitations are more severe than for Class 2 soils. They affect one or more of the following practices: timing and ease of tillage; planting and harvesting; choice of crops; and methods of conservation. Under good management these soils are fair to moderately high in productivity for a wide range of common field crops.

Class 4 - Soils in this class have severe limitations that restrict the choice of crops, or require special conservation practices and very careful management, or both. The severe limitations seriously affect one or more of the following practices: timing and ease of tillage; planting and harvesting; choice of crops; and methods of conservation. These soils are low to medium in productivity for a narrow to wide range of common field crops, but may have higher productivity for a specially adapted crop.

Class 5 - Soils in this class have very severe limitations that restrict their capability to producing perennial forage crops, and improvement practices are feasible. The limitations are so severe that the soils are not capable of use for sustained production of annual field crops. The soils are capable of producing native or tame species of perennial forage plants and may be improved through the use of farm machinery. Feasible improvement practices may include clearing of bush, cultivation, seeding, fertilizing or water control.

Class 6 - Soils in this class are unsuited for cultivation, but are capable of use for unimproved permanent pasture. These soils may provide some sustained grazing for farm animals, but the limitations are so severe that improvement through the use of farm machinery is impractical. The terrain may be unsuitable for the use of farm machinery, or the soils may not respond to improvement, or the grazing season may be very short.

Class 7 - Soils in this class have no capability for arable culture or permanent pasture. This class includes marsh, rockland and soil on very steep slopes."

4.7.1.2 Canada Land Inventory (CLI) Subclass

With respect to the soils and Canada Land Inventory (CLI) identified in the PSA and SSA, The Ontario Ministry of Agriculture, Food and Rural Affairs document "Classifying Prime and Marginal Agricultural Soils and Landscapes: Guidelines for Application of the Canada Land Inventory in Ontario" defines the Canada Land Inventory (CLI) subclassification as follows:

Subclass D – Undesirable Structure and/or Low Permeability

Subclass D denotes soils which are difficult to till, or which absorb or release water very slowly, or in which the depth of rooting zone is restricted by conditions other than a

high water table or consolidated bedrock. In Ontario this Subclass is based on the existence of critical clay contents in the upper soil profile. These soils are generally more susceptible to compaction than are lighter textured soils.

Subclass E - Erosion

Subclass E is applied to soils which have been badly damaged by erosion. The productivity of such soils is therefore reduced. Organic matter, topsoil and subsoil losses in these soils reduce yields. In extreme situations, where erosion has caused deep gullies, farm machinery use is obstructed.

Subclass F - Low Natural Fertility

Subclass F denotes soils having low fertility that is either correctable through fertility management or is difficult to correct in a feasible way. Low fertility may be due to low cation exchange capacity, low pH, presence of elements in toxic concentrations (primarily iron and aluminum), or a combination of these factors.

Subclass I – Inundation by Streams or Lakes

Subclass I denotes soils that are subject to periodic flooding by streams and lakes which causes crop damage or restricts agricultural use.

Subclass M – Moisture Deficiency

Subclass M denotes soils which have low moisture holding capacities and are more prone to droughtiness.

Subclass S – Adverse Soil Characteristics

This subclass denotes a combination of limitations of equal severity. In Ontario it has often been used to denote a combination of fertility (F) and moisture (M) when these are present with a third limitation such as topography (T) or stoniness (P).

Subclass T - Topography

The steepness of the surface slope and the pattern or frequency of slopes in different directions are considered topographic limitations if they: 1) increase the cost of farming the land over that of level or less sloping land; 2) decrease the uniformity of growth and maturity of crops; and 3) increase the potential of water and tillage erosion.

Subclass W – Excess Water

The presence of excess soil moisture (other than that from inundation) may result from inadequate soil drainage, a high water table, seepage, or runoff from surrounding areas. This limitation only applies to soils classified as poorly drained or very poorly drained.

Disturbed soil areas (built up or developed areas) are considered as Not Rated within the Canada Land Inventory (CLI) classification system. Muck (organic soils) are not rated in the Canada Land Inventory (CLI) classification system.

Figure 13 – Canada Land Inventory (CLI) illustrated the OMAFA digital soils data for the PSA and the SSA. The OMAFA soils data base has not removed or discounted soils from roads, railways, urban or developed areas.

Table 5 illustrates the soils data as derived by percent occurrence within the respective polygons and summarizes the relative percent area occupied by each capability class for the PSA. Soil materials in the SSA will not be impacted as a result of the proposed development of the PSA. The relative percent occurrence of soil class in the SSA is provided in Table 5 as a reference.

Table 5 Canada Land Inventory – Percent Occurrence

Canada Land Inventory Class (CLI)	PSA Percent Occurrence	SSA Percent Occurrence
Class 1	57.2	31.0
Class 2	8.8	4.4
Class 3	21.4	29.0
Class 4	12.5	28.0
Class 5	-	0.5
Class 6	-	-
Class 7	-	-
Not Rated	0.1	7.1
Organic Soil	-	-
Totals	100.0	100.0

The PSA comprised approximately 87.3 percent Canada Land Inventory (CLI) capability of Class 1 – 3, with approximately 57.2 percent as Class 1, 8.8 percent as Class 2, and 21.6 percent as Class 3. Approximately 12.5 percent of the PSA was Class 4 lands, with the remaining 0.1 percent as Not Rated.

The SSA comprised approximately 64.4 percent Canada Land Inventory (CLI) capability of Class 1 – 3, with approximately 31.0 percent as Class 1, 4.4 percent as Class 2, and 29.0 percent as Class 3. Approximately 28.0 percent of the PSA was Class 4 lands, 0.5 percent as Class 5 lands, with the remaining 7.1 percent as Not Rated. It is noted that the Not Rated lands relate to the urban areas of Mount Hope and the John C. Munro Hamilton International Airport.

The proposed OPA and future development of the PSA will result in the loss of use of the PSA soil for agricultural production. The future development of the PSA will not alter the soils or soil capability in the SSA.

It is noted that the review of CLI in the White Belt Area identified that the White Belt lands are comprised of predominantly high capability soils and that any development in the White Belt Area will result in the loss of prime agricultural soils.

4.8 AGRICULTURAL SYSTEMS PORTAL

A review of the OMAFA Agricultural System Portal online resource for agricultural services/agricultural network (markets, abattoirs, renderers, livestock auctions, investment, warehousing and storage, wineries and breweries) noted that all of the PSA and much of the SSA were located in the Prime Agricultural Area of the Agricultural Land Base of the Greater Golden Horseshoe as has been illustrated in Figure 2 of this AIA.

A review of the online Agricultural System Portal (OMAFA) indicated that there were no registered farmers markets, pick your own operations, nurseries, frozen food manufacturing, refrigerated warehousing/storage, livestock assets, abattoirs, or other agricultural services in the PSA.

The review of agricultural services and agricultural operations from the Agricultural Systems Portal for the SSA revealed there are no registered agricultural resources/services in the SSA.

The closest transportation network (major roadway) is Highway 6 and Highway 403 which are located to the southwest and west of the PSA. Further, Hamilton international airport (John C. Munro Hamilton International Airport) is located west of the PSA.

Figure 14 provides an illustration of the agricultural resources (OMAFA Livestock, Fish and Poultry) within the PSA based on a search of the OMAFA Agricultural Systems Portal website. Figure 15 provides an illustration of the agricultural resources (OMAFA Field Crop) as based on the OMAFA Agricultural Systems Portal. Figure 16 illustrates the Food and Beverage Manufacturing based on a review of the OMAFA Agricultural Systems Portal information.

As noted in Figures 14, 15 and 16, there were no agricultural services identified in the PSA as based on the OMAFA Agricultural Systems Portal mapping and online data.

4.9 AGRICULTURAL SYSTEM AND AGRICULTURAL NETWORK

The PPS (2024) required the review of the agricultural system. The Agricultural System comprises two parts: Agricultural Land Base; and the Agri-Food Network. The Agricultural Land Base was evaluated through a review of Canada Land Inventory (CLI) in Section 4.7 of this AIA.

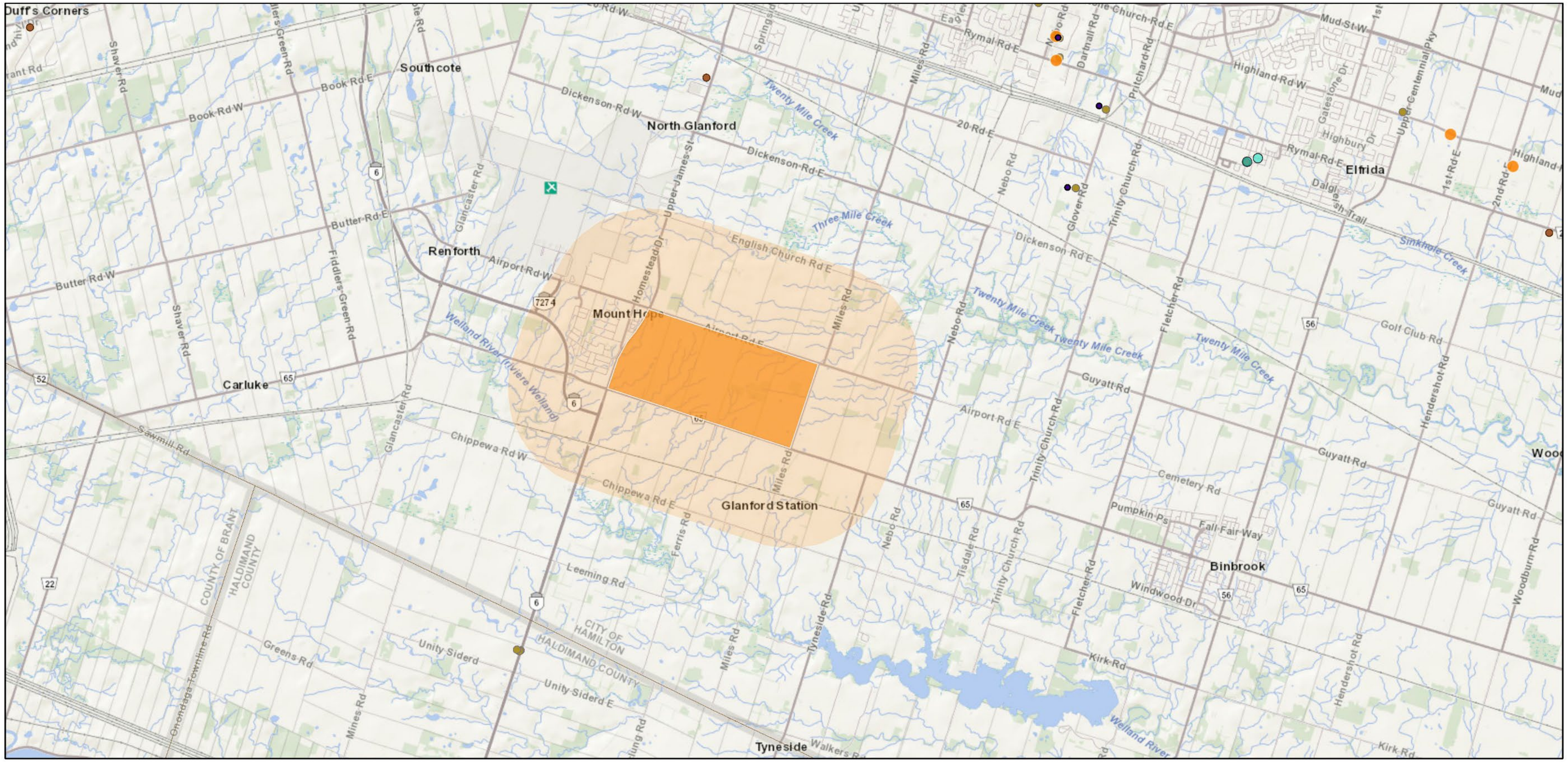
This AIA has determined that both the PSA and the SSA comprised portions of Prime Agricultural Area and were comprised of a portions of high capability soil resources.

As stated previously, it was noted that the review of CLI in the White Belt Area identified that the White Belt lands are comprised of predominantly high capability soils and that any development in the White Belt Area will result in the loss of prime agricultural soils.

The City of Hamilton identified that the White Belt comprised approximately 4320 ha of land located between the Greenbelt Plan Area and the City of Hamilton urban boundary. The PSA area has been defined as 326 ha, with the designated Prime Agricultural Area defined as

Figure 14 Agricultural Systems Mapping Livestock, Fish and Poultry

Livestock, Fish and Poultry



2024-12-10, 2:48:08 p.m.

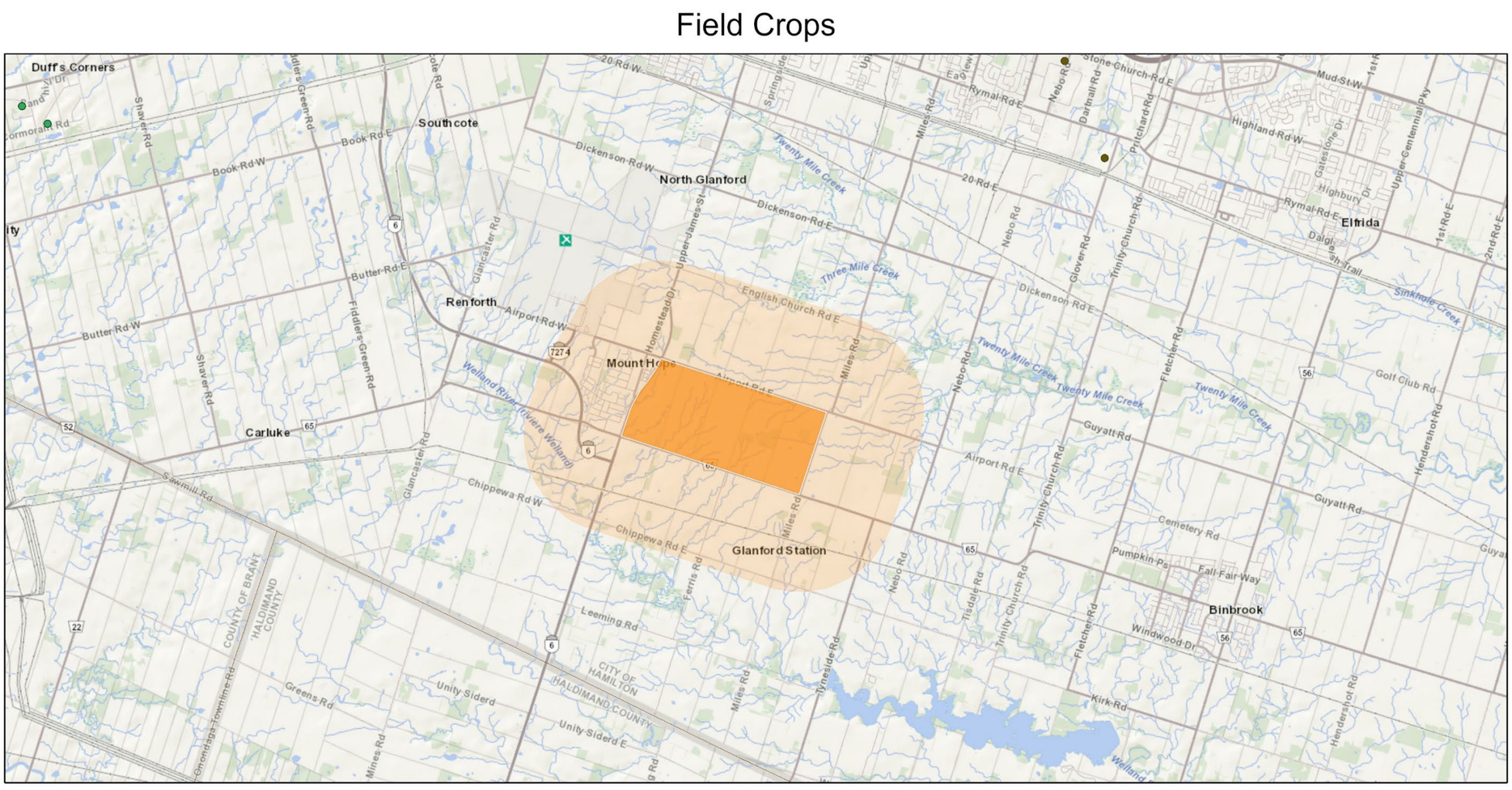
1:78,317

0 0.5 1 2 mi

0 1 2 4 km

- Primary Study Area (PSA)
- Secondary Study Area (SSA) (1.5 km)
- Farm Product Merchant Wholesalers NAICS 4111 (ConnectON)
- Federally Regulated Meat Plants (Canadian Food Inspection Agency)
- Provincially Licensed Meat Plants (OMAFRA)
- Dairy Product Manufacturing NAICS 3115 (ConnectON)
- Meat Product Manufacturing NAICS 3116 (ConnectON)
- Support Activities for Animal Production NAICS 115210 (ConnectON)
- Farm Product Warehousing and Storage NAICS 493130 (ConnectON)
- Refrigerated Warehousing and Storage NAICS 493120 (ConnectON)
- Lower And Single Tier Municipal Boundaries (LIO)

Figure 15 Agricultural Systems Mapping Field Crops



2024-12-10, 2:54:23 p.m.

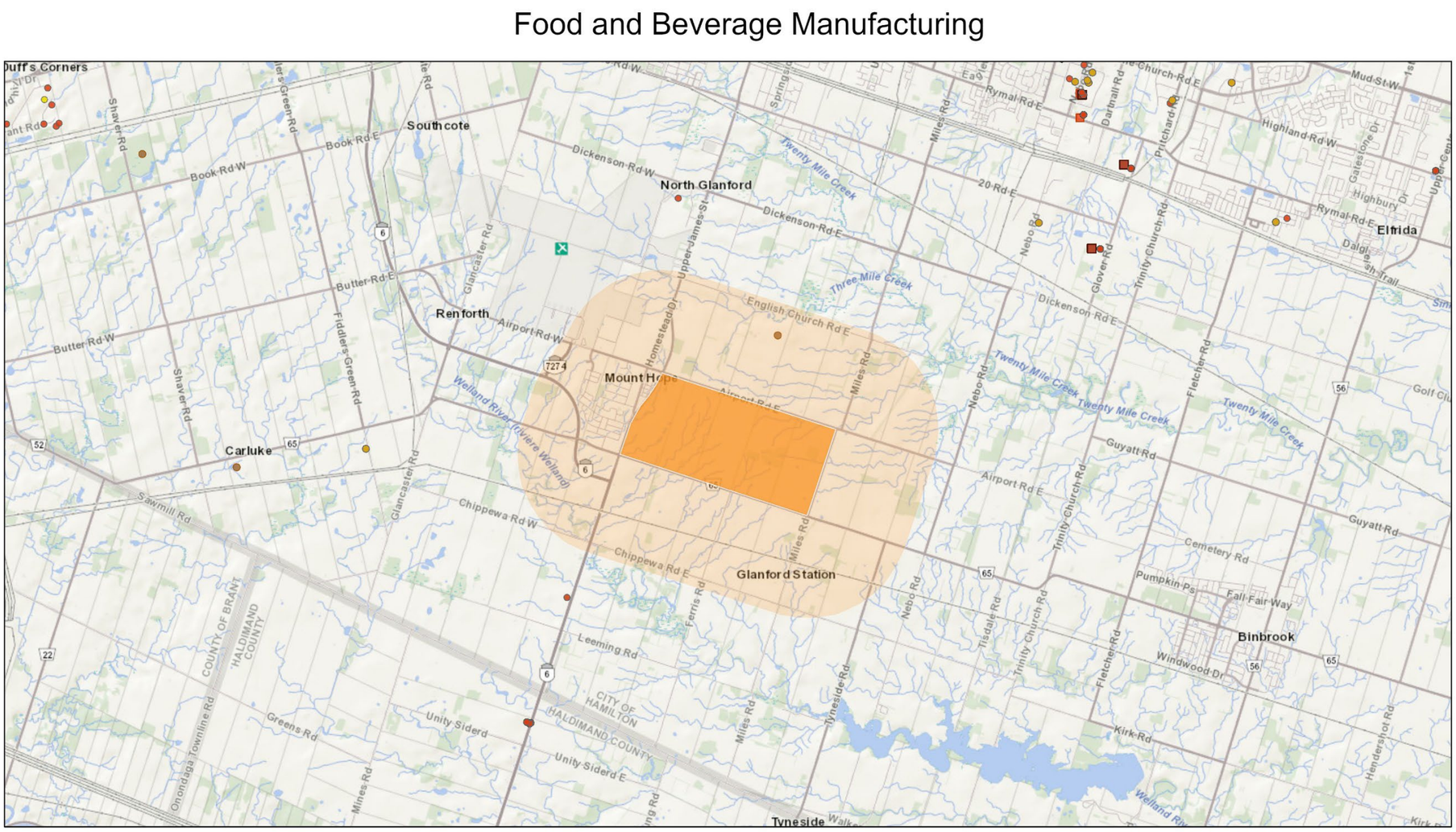
1:77,395

0 0.5 1 2 mi

0 1 2 4 km

- Secondary Study Area (SSA) (1.5 km)
- Primary Study Area (PSA)
- Pesticide, Fertilizer and Other Agricultural Chemical Manufacturers NAICS 3253 (ConnectON)
- Service Establishment Machinery, Equipment & Supply Merchant Wholesalers NAICS 41792 (ConnectON)
- Lower And Single Tier Municipal Boundaries (LIO)

Figure 16 Agricultural Systems Mapping Food and Beverage Manufacturing



approximately 302 ha. The PSA represents 8.4 percent of the White Belt Area, while the Official Plan designated area of the PSA representing approximately 7.0 percent of the White Belt Area. The proposed development of the PSA will result in the loss of approximately 8.4 percent of the White Belt Area.

The Agricultural Network includes the services and infrastructure that are important components of the agricultural industry. Section 4.8 of this AIA provided comments on the agricultural services and infrastructure in the surrounding area. It was noted that there are no services in the PSA. One food and beverage manufacturing facility/operation was noted in the SSA, north of the PSA (see Figure 16). The food and beverage manufacturing facility/operation was determined to be the Applecreek Farms Inc.

A review of online data identified an Applecreek Farms near Binbrook (to the east of the SSA) and that the farm was permanently closed.

The proposed development of the PSA should have no impact on the agricultural network.

4.10 AGRICULTURAL CENSUS DATA

A review of the Census of Agricultural data (Census 2021, including 2016, 2011 and 2006 data) was completed to determine the agricultural characteristics of Hamilton Division and to allow comparison to the agricultural characteristics of the Province.

4.10.1 HAMILTON DIVISION

Table 6 provides Census 2021 data for agricultural land use in Hamilton Division and provides a comparison to the Provincial Census 2021, 2016, 2011 and 2006 agricultural data. As indicated in the census data, Hamilton Division comprises approximately 1.00 percent of the total area of farms in Ontario (Census 2021).

A review of Census 2021 data for Hamilton Division reveals that the total area in farms is 118,070 acres (Census Farms). Much of the farmed land is in crops with a total of 100,089 acres. The remaining lands are listed as summerfallow land, tame or seeded pasture, Christmas trees, woodlands and wetlands and all other land.

Table 6 Hamilton Division Census 2021 Data – Land Use

Item	Hamilton Division	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
Land Use, 2021 Census (acres)						
Land in crops	100,089	9,051,011	1.11	1.15	1.17	1.13
Summerfallow land	393	13,964	2.81	4.71	5.21	2.00
Tame or seeded pasture	3,219	400,480	0.80	0.56	0.60	0.53

Natural land for pasture	F	626,366	-	0.39	0.33	0.42
Christmas trees, woodland & wetland	7,200	1,269,535	0.57	0.62	0.69	0.72
All other land	4,673	404,714	1.15	1.71	1.39	1.52
Total area of farms	118,070	11,766,071	1.00	1.04	1.03	1.00

F – too unreliable to be published
Sources: 2021 & 2016 Census of Agriculture, OMAFA

Table 6 illustrates that a fluctuation in acreage has occurred over the last 15 years in total area farms and now reflects the same acreage as 2006. Fluctuations in acreage have also been noted in land in crops, summerfallow land, tame or seeded pasture and all other land. Decreases in acreage have occurred for Christmas trees, woodland and wetland. Data with respect to natural land for pasture was too unreliable to be published therefore a comparison could not be made to 2021 data. However, the general trend in data from 2006 to 2016 indicates fluctuations in acreage.

Table 7 provides a more detailed inventory of agricultural lands, and it is evident from this data that Hamilton Division contributes a limited amount to the Provincial totals for production in major field crops (As based on Census farm data).

Table 7 Hamilton Division Census 2021 Data – Crops

Item	Hamilton Division	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
Major Field Crops, 2021 Census (acres)						
Winter wheat	10,528	1,144,406	0.92	0.98	0.92	0.77
Oats for grain	F	84,320	-	0.58	0.42	1.68
Barley for grain	887	68,756	1.29	0.37	0.35	0.67
Mixed grains	200	59,961	0.33	0.55	0.45	0.63
Corn for grain	23,637	2,202,465	1.07	1.16	1.24	1.28
Corn for silage	1,383	289,678	0.48	0.70	0.63	0.70
Hay	14,100	1,704,017	0.83	0.91	0.90	0.94
Soybeans	34,420	2,806,255	1.23	1.28	1.29	1.25
Potatoes	923	39,193	2.36	2.93	3.43	3.34
Major Fruit Crops, 2021 Census (acres)						
Total fruit crops	F	48,661	-	-	2.52	3.39
Apples	F	16,008	-	2.18	2.99	3.14
Sour Cherries	F	1,383	-	1.18	1.07	0.90
Peaches	F	4,608	-	1.59	-	0.28
Grapes	F	18,432	-	1.92	2.30	4.20
Strawberries	F	2,633	-	3.57	4.29	4.03
Raspberries	15	438	3.42	3.09	2.66	2.17
Major Vegetable Crops, 2021 Census (acres)						
Total vegetables	2,229	127,893	1.74	-	2.66	3.14
Sweet corn	F	20,518	-	1.24	1.40	1.45
Tomatoes	F	14,614	-	0.32	0.41	0.96
Green peas	47	14,044	0.33	0.34	0.28	0.57
Green or wax beans	375	8,709	4.31	-	-	5.24

F – too unreliable to be published
Sources: 2021 & 2016 Census of Agriculture, OMAFA

Table 7 also illustrates the percentage of province in Hamilton County and provides a comparison from 2021, 2016, 2011 and 2006. The census data indicates there have been fluctuations in all major field crop production in the last 15 years with the exception of corn for grain where there have been decreases in acreage. Data with respect to oats for grain was too unreliable to be published therefore a comparison could not be made to 2021 data. However, the general trend in data from 2006 to 2016 indicates fluctuations in production.

With respect to fruit crops, Hamilton Division is a small contributor to the Provincial totals for major fruit crops. There have been increases in Hamilton Division (as a percent of the Provincial totals) in acreage of raspberries since 2006. Data with respect to total fruit crops, apples, sour cherries, peaches, grapes, and strawberries was too unreliable to be published therefore a comparison could not be made to 2021 data. However, the general trend in data from 2006 to 2016 indicates decreases for acreage in total fruit crops, apples, and grapes. Increases in acreage were noted for sour cherries, and fluctuations in acreage for peaches and strawberries.

Hamilton Division contributes a limited amount to the Provincial totals for production of vegetables. There have been decreases in Hamilton Division (as a percentage of the Provincial totals) for total vegetables and green or wax beans since 2006. Fluctuations were noted in acreage of green peas over the last 15 years. Data with respect to sweet corn and tomatoes was too unreliable to be published therefore a comparison could not be made to 2021 data. However, the general trend in data from 2006 to 2016 indicates a decrease in production.

Table 8 illustrates the Census 2021 data for livestock. Hamilton division is a small contributor to the provincial totals for livestock inventories. Fluctuations were noted in inventory for total cattle and calves, beef and dairy cows, and total sheep and lambs in the last 15 years. Data with respect to steers and total pigs was too unreliable to be published therefore a comparison could not be made to 2021 data. However, the general trend in data from 2006 to 2016 indicates a decrease in inventory.

It was also noted that Hamilton Division is not a significant producer of total hens and chickens and turkeys. Decreases have also been noted in poultry inventories since 2006.

Table 8 Hamilton Division Census Data (2021) – Livestock

Item	Hamilton Division	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
Livestock Inventories, 2021 Census (number)						
Total cattle and calves	8,817	1,604,810	0.55	0.49	0.55	0.61
Steers	F	299,540	-	0.20	0.20	0.32
Beef Cows	1,365	224,194	0.61	0.51	0.60	0.69
Dairy Cows	2,280	327,272	0.70	0.72	0.77	0.70

Total Pigs	F	4,071,902	-	0.16	0.22	0.44
Total sheep and lambs	1,530	322,508	0.47	0.65	1.74	1.02
Poultry Inventories, 2021 Census (number)						
Total hens and chickens	699,282	53,802,772	1.30	1.43	2.15	3.67
Total turkeys	F	2,453,126	-	0.03	0.25	3.70

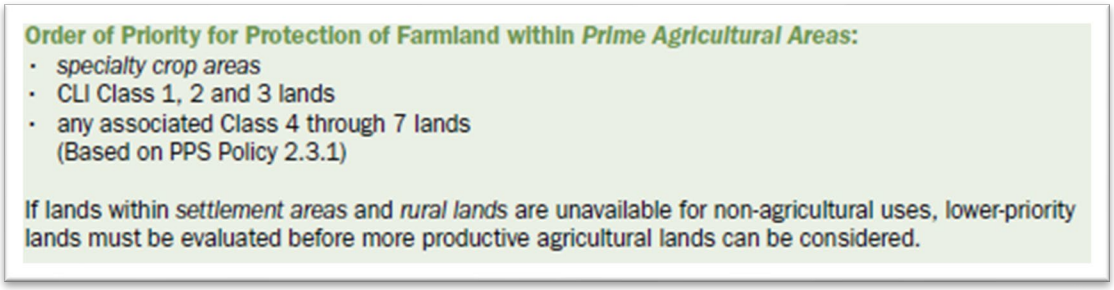
F – too unreliable to be published
Sources: 2021 & 2016 Census of Agriculture, OMAFA

The review and comparison of the census data illustrates that the entire PSA, and the portion of the PSA located in Prime Agricultural Areas comprise very small percentages of the Provincial land base and agricultural production. As a result, the proposed development of the PSA will have a negligible effect on the agricultural land base in the City of Hamilton and the Province of Ontario.

4.11 EVALUATION OF ALTERNATIVE LOCATIONS

As identified above in the PPS 2024 Policy 2.3.2.1d identifies the requirement to complete an *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*. Of particular importance is the term "reasonable alternatives".

The PPS 2024 does not specifically define lower priority agricultural lands. Discussions with staff from OMAFA indicated that the process for completing an assessment of alternative locations is referred to in the OMAFA document Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas (Publication 851, 2016) *where lower priority agricultural lands within the prime agricultural areas must be identified and considered.*



Source: OMAFA Guidelines on Permitted Ises in Ontario's Prime Agricultural Areas (Publication 851, 2016, Page 34)

Further considerations on determining lower priority may include considerations of Minimum Distance Separation (MDS1) impact, current land use, capital investment, agricultural infrastructure, degree of existing fragmentation, and proximity to non-agricultural land uses.

As this project is a settlement area boundary expansion for the City of Hamilton, it is reasonable to look at the areas immediately adjacent to the existing City of Hamilton urban boundary as a starting point.

The urban area of the City of Hamilton is bounded on the north by Lake Ontario thereby removing the area to the north as a potential expansion area. The urban area of the City of Hamilton is bounded on the east (below the escarpment) by the urban area of the Town of Grimsby and Specialty Crop Areas. As indicated previously in this AIA, the PPS 2024 Policy 2.3.2 identified that any new settlement area or settlement area boundary expansion shall consider whether the applicable lands comprise Specialty Crop Areas. The PPS 2024 has identified that Specialty Crop Areas shall be given the highest priority for protection. Therefore, the lands to the east of the City of Hamilton urban boundary below the escarpment would be removed as consideration for a potential expansion area. Similarly, the lands to the east and above of the escarpment (bounded by Upper Centennial, Mud Street, the escarpment, and the Town of Grimsby) are Specialty Crop Areas and are therefore, not a reasonable expansion area. The lands to the west include Core Areas of the Natural Heritage System and Greenbelt Protected Countryside lands, which are not reasonable expansion areas. The lands to the south of the City of Hamilton urban boundary (roughly bounded by Trinity Road, Butter Road, Fiddlers Green Road, Whitechurch Road East, Miles Road, Airport Road, Trinity Church Road, Golf Club Road, Hendershot Road, and Mud Street) include Rural Settlement Areas, which would be appropriate lands for a settlement area boundary expansion.

Further, the province has approved changes to planning policy that allow landowners to propose urban boundary expansions of any size and location provided that those lands are outside the Greenbelt Plan Area.

The City of Hamilton has identified that there is approximately 4320 ha of land outside the Greenbelt Plan Area and outside the existing urban boundary. These lands are referred to as the white belt area.

With respect to the White Church Secondary Plan (PSA), the PSA was determined to be lower priority agricultural lands for the following reasons:

- The PSA is not located in a Specialty Crop Area (municipally or provincially).
- The PSA is not located in the Greenbelt Plan Area (Protected Countryside
- The PSA abuts the existing urban boundary of the City of Hamilton, in close proximity to a high concentration of non-agricultural land uses within an urban area which can increase the potential for conflicts between agricultural uses and non-agricultural uses.
- The PSA is bounded by Upper James Street, Airport Road, Whitechurch Road East, and Miles Road. Each of which with high traffic volumes. With the exception of Upper James Street, the roads are narrow with no significant shoulders which can make the movement of farm machinery difficult.
- The PSA includes portions of Rural lands and Green Space (golf course).

- The PSA includes non-agricultural land uses (Storage, golf course, landscaping)
- The PSA is located in a fragmented agricultural area, with numerous rural residential units along Upper James Street, Airport Road, and White Church Road East.
- The PSA is in close proximity to the John C. Munro International Airport and the airport influence zone.
- There is not a significant amount of capital investment in agricultural infrastructure and land improvements in the PSA.
- Minimum Distance Separation (MDS1) setbacks can be met for the proposed development on the PSA through the secondary plan process.
- With respect to the other UBEs, the Canada Land Inventory (CLI) soil capability is similar between each application, however, the Elfrida lands abut a Provincially designated Specialty Crop area which may lead to conflict between incompatible land uses.
- The PSA included lands that were previously included in the urban boundary.

This evaluation of alternative locations has identified that the expansion of the City of Hamilton Urban boundary into the White Belt Area will impact prime agricultural areas and that the lands within the White Belt Area comprise similar CLI capability. As identified above, the PSA is considered a reasonable alternative in a prime agricultural area. Therefore, the proposal is consistent with PPS 2024 Policy 2.3.2 d

5 RESOURCE ALLOCATION AND CONFLICT POTENTIAL

Land use planning decisions involves trade-offs among the competing demands for land. The fundamental base used for the evaluation of agricultural lands is land quality, i.e. CLI soil capability ratings. Within the rural/urban interface, there are a number of other factors which contribute to the long-term uncertainty of the economic viability of the industry and these, in turn, are reflected in the lack of investments in agricultural facilities, land and infrastructure and changes to agricultural land use patterns in these areas. Several of these factors include, but are not limited to, the presence of rural non-farm residents, land fragmentation, intrusions of non-agriculture land uses, non-resident ownership of lands and inflated land values. This section summarizes the impact of these factors on agriculture in the area.

5.1 IMPACTS, ASSESSMENT AND COMPATABILITY WITH SURROUNDING LAND USES

The identification and assessment of potential impacts is paramount to determining potential mitigation measures to either eliminate or offset the impact to the extent feasible. The following list includes potential impacts to agriculture that were identified in the OMAFA 2018 draft AIA Guidance Document, and includes other impacts identified by farmers and landowners. This list is a basis for documenting potential impacts within AIA's and can be modified as necessary to suit the local agricultural community, operations, and services. The determination of impacts due to the proposed future development of the PSA related to this list of potential impacts to infrastructure development projects on agricultural lands may include the following:

- Interim or permanent loss of agricultural lands
- Fragmentation of agricultural lands and operations
- The loss of existing and future farming opportunities
- The loss of infrastructure, services, or assets
- The loss of investments in structures and land improvements
- Disruption or loss of functional drainage systems
- Disruption or loss of irrigation systems
- Changes to soil drainage
- Changes to surface drainage
- Changes to landforms
- Changes to hydrogeological conditions
- Disruption to surrounding farm operations
- Effects of noise, vibration, dust
- Potential interim compatibility concerns
- Traffic concerns
- Changes to adjacent cropping due to light pollution

It should be noted that this AIA report should be read in conjunction with any and all other discipline reports in an effort to provide an adequate evaluation of the above-mentioned potential impacts.

The agricultural character of both the PSA and the SSA has been documented in this AIA. It has been determined that the PSA comprises portions of active agricultural land uses (including livestock, and cash crop operations), rural residential use, recreational uses, and woodlands. It was also determined that the SSA comprises portions of active agricultural land uses (including livestock, and cash crop operations), built areas (urban land uses), commercial enterprises, rural residential use, recreational uses, woodlands, and scrublands.

It has been documented in this AIA that the SSA includes portions of the built areas of Mount Hope and the John C. Munro Hamilton International Airport.

The PSA and the SSA comprise a mix of land fragmentation. Numerous small parcels (associated with the urban areas of Mount Hope) were noted in the SSA.

These types of fragmentation (and business/commercial intrusions) are a clear indication of an area impacted by non-agricultural uses. These types of uses provide an indication of lands that are in transition from an agricultural land base to a more rural environment. The large number of small parcels and commercial/industrial lands provide an indication as to the lack of long-term intensions for agriculture in those portions of the PSA and the SSA.

With respect to the potential impacts as listed on the previous page of this report, and the proposed future development of the PSA lands, Table 9 provides some context as to the extent of the potential impacts.

Table 9 Potential Impacts

Potential Impact	Impacts Associated with the Proposed Future Development of the PSA Lands Before Mitigation
Interim or permanent loss of agricultural lands	There will be a permanent loss of the use of agricultural lands within the PSA. There will be no loss of agricultural lands in the SSA. The impact is applicable for both the construction and the future use of the PSA.
Fragmentation, severing or land locking of agricultural lands and operations	This project is an OPA for a proposed future development of the PSA lands which will fragment the land base in the PSA. There will be no fragmentation in the SSA as a result of the OPA and proposed future development of the PSA.

Potential Impact	Impacts Associated with the Proposed Future Development of the PSA Lands Before Mitigation
	The impact is applicable for both the construction and the future use of the PSA.
The loss of existing and future farming opportunities	There will be a loss of existing and future farming opportunities on the portions of the PSA lands which were utilized for agricultural production. There will be no loss of farming opportunities in the SSA.
The loss of infrastructure, services or assets	There will be no loss of infrastructure or services in the SSA as a result of the OPA and future development of the PSA.
The loss of investments in structures and land improvements	There will be a net loss of investment in agricultural buildings in the PSA. There will be no net loss of investment in agricultural buildings in the SSA. The impact is applicable for both the construction and the future use of the PSA.
The loss of use of ground water wells	There exists the potential for impact from the loss of the use of ground water wells due to lack of quantity and/or quality. The potential impact is applicable for the construction and future use of the PSA.
Disruption or loss of functional drainage systems	There will be a net loss of artificial tile drainage on the PSA, and there is no net loss or disruption to artificial tile drainage systems in the SSA. The impact is applicable for the construction and future use of the PSA.
Disruption or loss of irrigation systems	There does not appear to be a loss of irrigation systems in the PSA. There would be no loss of irrigation systems in the SSA.
Changes to soil drainage	There will be no net change in soil drainage in the SSA as a result of the OPA and proposed future development of the PSA lands.
Changes to surface drainage	There will be no net change in surface drainage within the SSA as a result of the OPA and proposed future development of the PSA lands.

Potential Impact	Impacts Associated with the Proposed Future Development of the PSA Lands Before Mitigation
Changes to landforms	There will be no changes to landforms (with respect to agriculture) in the SSA as a result of future development of the PSA lands.
Changes to hydrogeological conditions	Any potential changes in hydrogeological conditions would need to be addressed under separate cover in future stages of the project.
Disruption to surrounding farm operations	There will be limited disruption for surrounding/adjacent farms in the SSA. The impact is applicable for the construction.
Effects of noise, vibration, dust	There should be limited potential for additional vibration and dust during the construction of the future development of the PSA lands. The impact is applicable for both the construction and the future use of the PSA.
Potential compatibility concerns	There should be limited potential for compatibility concerns with the proposed future development of the PSA and the adjacent agricultural lands in the SSA as the PSA is bounded by the local road system providing an effective buffer to the adjacent agricultural operations.
Traffic concerns	It is noted that this project is for an OPA and the proposed future development of the PSA lands which will result in an increase in human occupancy. Increased traffic will occur as a result of an increase in human occupancy. Any potential changes to local traffic patterns would need to be addressed under a separate cover as part of a traffic study.
Changes to adjacent cropping due to light pollution	There is potential for changes in cropping due to light pollution in the SSA, as it is assumed that the OPA and proposed future development of the PSA will include lighting. Any use of lighting should take into consideration the impact on adjacent agricultural

Potential Impact	Impacts Associated with the Proposed Future Development of the PSA Lands Before Mitigation
	lands. The impact is applicable for both the construction and the future use of the PSA.

5.2 TRAFFIC, TRESPASS AND VANDALISM

Specific to agriculture, increased vehicle traffic along roadways can lead to safety issues with respect to the movement of slow moving, long, wide farm machinery and, as well, interrupt or alter farm traffic flow patterns.

It may be necessary to reduce conflicts by designing roads and traffic controls to accommodate the heavy, wide, slow-moving farm equipment (e.g. wide shoulders, no curbs, reduced speed limits, and if traffic circles (roundabouts) are to be used, then they need to accommodate large slow moving farm equipment. Discussions with farm groups in various parts of Ontario have indicated that roundabouts in agricultural areas are a poor consideration due to difficulties maneuvering large tractors pulling multiple trailers through tight turns. Further, due to the slow speed of farm equipment, roundabouts do not allow adequate time for the equipment to move with the flow of traffic. Comments from the farm groups suggest that traffic lights or stop signs (hard stops) would better serve the farm community and farm traffic by forcing traffic to stop and allowing controlled access to the local road system.

Trespassing and vandalism are more often a concern with specialty crop operations and livestock operations. The location of the proposed future development of the PSA is not located in or near a Provincially designated specialty crop area. The Minimum Distance Separation (MDS1) assessment identified the location of potential livestock facilities in the SSA. A review of the MDS1 data indicated that most of the livestock operations are fairly removed from the PSA and are located across roads, woodlots, streams, or other separation features.

Therefore, the proposed development of the PSA lands will have limited impact with respect to trespassing and vandalism on adjacent agricultural operations.

5.3 AGRICULTURAL INFRASTRUCTURE

The review of the OMAFA Agricultural System Portal was completed to identify the presence of any registered livestock assets and services (renderers, meat plants, abattoirs), refrigerated warehousing and storage, frozen food manufacturing, farm markets, wineries, or cideries within the PSA. None of these features were identified within the PSA. One manufacturing facility was noted in the Agricultural Systems Portal mapping to the north of the PSA.

The OPA and proposed development of the PSA will not impact any registered agricultural assets and services (renderers, meat plants, abattoirs), refrigerated warehousing and storage, frozen food manufacturing, farm markets, wineries, or cideries.

5.4 MITIGATION MEASURES

The PPS 2024 defines an Agricultural Impact Assessment as:

> *Agricultural impact assessment: means the evaluation of potential impacts of non-agricultural uses on the agricultural system. An assessment recommends ways to avoid or if avoidance is not possible, minimize and mitigate adverse impacts.*

With respect to this AIA, the following sections provide comments with regard to the avoidance, minimization, and mitigation of any potential adverse impacts.

5.4.1 AVOIDANCE

Any change in land use within or adjacent to an identified or designated prime agricultural area will result in the potential for impacts to the adjacent agricultural area. The severity of the potential impacts is related to the type and size of the change in land use, and the degree of agricultural activities and operations in the surrounding area.

The first method of addressing potential impacts is to avoid the potential impact. The proposed future development of the PSA will be a permanent use in an agricultural area. As a result, there will be agricultural lands lost. This cannot be avoided.

As stated above in the census data section, the review and comparison of the census data illustrates that the entire PSA, and the portion of the PSA located in Prime Agricultural Areas comprise very small percentages of the Provincial land base and agricultural production. As a result, the proposed development of the PSA will have a negligible effect on the agricultural land base in the City of Hamilton and the Province of Ontario.

5.4.2 MINIMIZING IMPACTS

When avoidance is not possible, the next priority would be to minimize impacts to the extent feasible. Mitigation measures should be developed to lessen the potential impacts. The minimization of impacts can often be achieved during the design or secondary planning process and through proactive planning measures that provide for the separation of incompatible land uses.

5.4.3 MITIGATING IMPACTS

With respect to this proposal the following potential mitigation measures could be considered during the secondary/future planning process. Secondary/future planning processes would provide the ability to secure and implement appropriate mitigation measures. Those mitigation measures may include:

- The use of berms, vegetated features, or fencing, where feasible, between the different types and intensities of land uses to reduce the potential for trespassing and potential vandalism. These types of buffers reduce impacts by preventing trespassing and associated problems such as litter and vandalism.
- The use of buffers between agriculture and transportation/urban uses may combine a separation of uses, vegetation/plantings, windbreaks, and berms. Vegetated buffers should include the use of deciduous and coniferous plants, with foliage from base to crown to mitigate against dust, light trespass, and litter.
- The use of salt management plans to reduce the amount of salt required for de-icing (liquid de-icers, broad casting and selective broad casting).
- The use of plantings/vegetation as screens and buffers to reduce visual impacts. Consideration of plantings/vegetation barriers within the PSA as visual screening where appropriate.
- Design new structures and side road improvements to be compatible with farm equipment.
- Further assessment of potential impacts to existing groundwater and surface water monitoring and providing new well or water access to those potentially impacted by groundwater disruption in future stages of the Project.
- Restore tile drainage systems in the SSA that may be impacted by the proposed future development of the PSA (as necessary).
- Restore impacts to irrigation systems (as necessary).
- Create a traffic plan that identifies closures and open routes to minimize impacts to local traffic during construction.
- Maintain local roads to allow access for the movement of oversized agricultural equipment.
- Due to the locations and numbers of water wells in the PSA and the SSA, it will be important to either preserve the existing wells, or properly engineer the closing/capping of any water well, where necessary, to prevent potential groundwater contamination.
- Field entrances and farm accesses that may be impacted by the proposed future development of the PSA will be relocated and/or accommodated to the extent possible.

- Phased development may be utilized to allow for agricultural production to continue in undeveloped areas of the PSA while other areas are built out in a comprehensive method.
- Edge planning principles to be incorporated during the secondary planning phase along the interface of the proposed development and the adjacent agricultural lands and operations.
- Place lower impact development (low occupancy uses) adjacent to farmland and operations.
- Design principles which accommodate agriculture to reduce negative impacts can minimize conflicts, noise, dust and odours through consideration of barriers, setbacks, buffers, road design and reduced speed limits.
- Road design to direct traffic away from farming areas.
- Increase depth of lots along the urban-agricultural boundary to create greater separation distances.

5.4.4 EDGE PLANNING

The implementation of edge planning may be considered to support the mitigation of a future development of a settlement area boundary expansion. Edge planning considers land uses at the urban-agricultural interface to determine potential conflicts and identify practical means to improve land use compatibility. Edge planning requirements can be tailored to the local context through a secondary planning process.

Edge planning can be implemented using a variety of planning tools including official plans, secondary plans, subdivision design, bylaws, signage and other means.

6 SUMMARY AND CONCLUSIONS

DBH Soil Services Inc was retained to complete an Agricultural Impact Assessment (AIA) Report for the Whitechurch Urban Boundary Expansion area.

This AIA was completed as part of an Official Plan Amendment (OPA) to include the Whitechurch lands as part of an urban boundary expansion. Specifically, this AIA has was completed to demonstrate that the proposal was consistent with the Provincial Planning Statement (2024) policies 2.3.2.1 c, d, e, and f.

This AIA identified and assessed agricultural impacts based on roadside reconnaissance surveys and online resources to provide avoidance/mitigative measures as necessary to offset or lessen any impacts.

This AIA report identified the Whitechurch Urban Expansion Area as the Prime Agricultural Study Area (PSA). A Secondary Study Area (SSA) was defined as a 1500 m buffer beyond the boundary of the PSA.

In the regional/city context, the PSA is bounded by Upper James Street on the west, White Church Road East on the south, Miles Road on the east, and Airport Road East on the north. The PSA abuts the community of Mount Hope on the west. Mount Hope is located within the City of Hamilton's Urban Boundary.

The PSA and the SSA comprise a mix of land uses including recreation (golf course), commercial, rural uses, agricultural lands, scrublands, ponds, and woodlands. The western portion of the SSA includes portions of the John C. Munro Hamilton International Airport, a portion of the urban area of Mount Hope, and a portion of Highway 6.

A summary of the results of this AIA are presented below:

- **Geographical Limits**

  The PSA and the SSA are located within the Haldimand Clay Plain physiographic region.

  The Haldimand Clay Plain is described as an area that is located between the Niagara Escarpment and Lake Erie. The area is defined as a series of parallel belts, with the first belt on the high ground near the brow of the Niagara Escarpment. The first belt comprised recessional moraine materials with the exception of the Font Hills area where the materials are sand and gravel hills. The central belt is described as clay and silt materials. The southeastern belt is characterized by relatively level topography and poorly drained clay materials.

The PSA and the SSA are a complex mix of topography. Based on the online topographic mapping there appears to be a ridge of lands at higher elevations extending from the intersection of Upper James Street and Airport Road West to the intersection of White Church Road East and the rail trail. The remaining lands within the PSA drop in elevation toward Lake Ontario to the north, and Lake Erie to the south from this ridge. The topography in the SSA lands continues to drop in elevation as distance from the PSA increases.

The PSA and SSA are located between the 3100 and 3300 Crop Heat Units isolines (CHU-M1) available for corn production in Ontario.

The PSA and SSA are located in the OMAFA Climate Zone B and have an average Frost-Free period of 160-170 days, an Average Date of Last Spring Frost of April 30, and an Average Date of First Fall Frost of October 13

The PSA comprised approximately 87.3 percent Canada Land Inventory (CLI) capability of Class 1 – 3, with approximately 57.2 percent as Class 1, 8.8 percent as Class 2, and 21.6 percent as Class 3. Approximately 12.5 percent of the PSA was Class 4 lands, with the remaining 0.1 percent as Not Rated.

The SSA comprised approximately 64.4 percent Canada Land Inventory (CLI) capability of Class 1 – 3, with approximately 31.0 percent as Class 1, 4.4 percent as Class 2, and 29.0 percent as Class 3. Approximately 28.0 percent of the PSA was Class 4 lands, 0.5 percent as Class 5 lands, with the remaining 7.1 percent as Not Rated. It is noted that the Not Rated lands relate to the urban areas of Mount Hope and the John C. Munro Hamilton International Airport.

- **Assessment of Alternatives**

The review of CLI in the White Belt Area determined that the majority of the White Belt Area is comprised of prime agricultural area and high capability agricultural lands. The PPS 2024 directs growth away from prime agricultural areas and where it is not possible or practical to avoid lands within a prime agricultural area to direct growth to lower agricultural priority lands. It has been demonstrated that the PSA are lower priority agricultural lands as the PSA is not a Specialty Crop Area, is located in the White Belt Area, abuts the existing urban boundary of the City of Hamilton, includes Rural lands and Green Space, includes non-agricultural land uses, is located in a fragmented agricultural area, there is no significant amount of capital investment in agricultural infrastructure and land improvements. Further, the PSA included lands that were previously included in the urban boundary.

Based on these conditions, the PSA lands are a reasonable alternative location for development. Therefore, the proposal is consistent with PPS 2024 Policy 2.3.2 d.

- **Agricultural Policy**

  A review of the boundaries of the Provincial Legacy Agricultural Land Base Mapping determined that much of the PSA and the SSA lands comprise Prime Agricultural Areas. The PSA is located within the White Belt area (lands between the City of Hamilton and the Greenbelt Plan Area). No areas of provincially designated specialty crop lands were identified in either the PSA or the SSA. Therefore, the proposal is consistent with PPS 2024 Policy 2.3.2 c.

  A review of the Greenbelt Plan (2017) mapping indicated that no portions of the PSA were located in the Greenbelt Plan Area, while portions of the SSA are located within the Greenbelt Plan area. The portions of the SSA that are within the Greenbelt Plan Area are considered Protected Countryside.

  The review of the *City of Hamilton Rural Hamilton Official Plan (February 2021)* – Rural Hamilton Official Plan Schedule D, Rural Land Use Designations revealed that portions of the PSA were designated as Open Space, Rural, and Agriculture. The Rural and Open Space areas were located in the western portion of the PSA.

  The SSA was comprised of lands designated as Agriculture, Rural, Open Space, Utility areas, and the John C. Munro Hamilton International Airport. The Rural, Open Space, and Utility areas were located in the western portion of the SSA.

  A review of the *Corporation of the Township of Glanbrook By-law No. 464 (Consolidated November 2022)*, and the online digital zoning information identified that portions of the PSA and the SSA were zoned Agriculture.

  No portions of the PSA or the SSA were within any provincially or municipally designated specialty crop area. Therefore, the proposal is consistent with PPS 2024 Policy 2.3.2 c.

- **Agricultural Land Use**

  The PSA comprised land use of approximately 10.8 percent as built up/disturbed areas, 1.2 as Christmas trees, 18.0 percent as common field crop (soybean, corn), 0.1 percent as forage/pasture, 0.3 percent as open field areas, 9.2 percent as recreational area (golf course), 20.7 percent as plowed field, 1.2 percent as ponded areas, 4.8 percent as scrublands, 30.2 percent as sod, and 3.4 percent as woodlot areas.

  The SSA comprised land use of approximately 3.3 percent as airport lands, 19.9 percent as built up/disturbed areas, 0.1 percent as cemetery lands, 38.0 percent as common field crop (soybean, corn), 8.0 percent as forage/pasture lands, 0.1 percent as open field, 0.8 percent as rail trail, 3.2 percent as recreational (golf course), 6.0 percent as plowed field, 0.3 percent as ponded, 6.3 percent as

scrublands, 4.0 percent as small grains, 5.5 percent as sod, and 4.5 percent as woodland areas.

The predominant land uses in the PSA include the production of common field crops and sod.

- **Agricultural Investment**

A total of 123 agricultural buildings were identified within the PSA and SSA. There were 13 agricultural buildings within the PSA. A total of 110 agricultural buildings were observed in the SSA.

There is investment in artificial tile drainage in the PSA.

Systematic and random tile drainage were noted on various lands within the SSA.

There is no investment in landforming for agricultural purposes in either the PSA or the SSA.

Minimum Distance Separation 1 (MDS 1) calculations were completed (as required) for this AIA. This AIA was completed as part of the OPA process in which the PSA would become part of a settlement area boundary expansion. It is assumed that all barns within the PSA will be removed as part of the proposed future development of the PSA. Therefore, MDS1 calculations were not completed for agricultural buildings within the PSA. It is noted that most of the agricultural buildings in the PSA were not capable of housing livestock.

MDS1 calculations were completed for agricultural buildings in the SSA which housed livestock or had the potential capability to house livestock. A total of 24 buildings were identified in the SSA that housed livestock or had the potential to house livestock.

MDS1 arcs from three barns in the SSA extended marginally into the PSA. Mitigative measures for those MDS1 arc areas may include utilizing those areas for non-residential areas such as storm water ponds, parks, parking, etc. As a result of implementation of mitigation measures to offset any impacts from MDS1, the proposal is consistent with PPS 2024 Policy 2.3.2 e.

A review of the online Agricultural System Portal (OMAFA) indicated that there were no registered nurseries, specialty farms (crop or livestock), frozen food manufacturing, refrigerated warehousing/storage, livestock assets or abattoirs in the PSA.

There are no registered agricultural services within the PSA.

The review of agricultural services and agricultural operations from the Agricultural Systems Portal for the SSA revealed one registered agricultural resources/services in the SSA.

The closest transportation network (major roadway) is Highway 6 and Highway 403 which are located to the southwest and west of the PSA. Further, Hamilton international airport (John C. Munro Hamilton International Airport) is located west of the PSA. It was determined that there are no impacts to the agricultural network. It has been demonstrated that impacts to the agricultural land base would be similar for any proposed development in the White Belt Area. Therefore, it has been demonstrated that the proposal is consistent with PPS 2024 Policy 2.3.2 f.

- **Land Fragmentation – Land fragmentation represents a major impact to the long-term viability of agriculture in the SSA and is typical of areas under pressure from non-agricultural land uses.**

  A review of parcel data for property size within the PSA revealed a variety of area sizes, ranging from 0.01 acres to > than 180 acres. It appears that much of the PSA is comprised of parcels in the range of 10.0 – 129.9 acres. Numerous smaller parcels (< 9.9 acres) were also noted along Upper James Street, Airport Road East and White Church Road East.

  The review of fragmentation in the SSA revealed similar conditions and characteristics. Significant linear development (small individual parcels along roads/streets) was noted along White Church Road West, Upper James Street, Chippewa Road East and Ferris Road.

The foregoing represents a comprehensive AIA with the purpose of evaluating the PSA and SSA to document the existing agricultural character and to determine any potential impacts to agriculture as a result of the OPA and proposed future development of the PSA. This AIA has demonstrated that the proposal is consistent with the Provincial Planning Statement (2024) policies 2.3.2.1 c, d, e, and f.

This AIA has identified that the PSA is located in a Prime Agricultural Area, as are most lands surrounding the Mount Hope. Any Settlement Area Boundary Expansion of Mount Hope (west, south or east) will result in the loss of Prime Agricultural land. Similarly, the lands adjacent to and in the area surrounding Mount Hope are comprised of agricultural operations including livestock rearing and cash cropping. Again, any Settlement Area Boundary Expansion of Mount Hope (west, south or east) will result in potential impacts to agricultural operations. The PSA is in a Prime Agricultural Area but is adjacent to similar development.

The PSA does not comprise a specialty crop area.

It is also noted that the entirety of the PSA is not used for agricultural purposes, and that a portion of the PSA is utilized for recreational uses (golf course), rural residential, and commercial uses (Street City Storage Inc, Three Seasons Landscapes, etc). Similarly, the SSA comprises other non-agricultural land uses including, recreational (golf course, rail trail), urban areas (Mount Hope)), rural residential, and the John C. Munro Hamilton International Airport. There is significant non-agricultural linear development along Airport Road and White Church Road East.

A review of MDS identified that the PSA is impacted by three MDS1 arcs. The MDS1 arc from barn 31 (Lot 9, Con 4) and barn 32 (Lot 10, Con 4) impacts a portion of PSA on the north side, while the MDS1 arc from barn 106 (Lot 8, Con 6) impacts the PSA from the south. With the exception of these three barns, MDS1 setback distances meet the MDS requirements. A phased approach to development, and a re-evaluation of MDS1 for those barns prior to development in those areas is recommended.

It was noted that a number of farms that appeared to be suited for livestock, were no longer utilizing the farm operation as a livestock operation and had shifted the farm operation to cash crop activities. There appeared to be a net decline and loss of investments in agricultural facilities and land improvements due to the retirement of facilities and transition to cash crop production. This shift of livestock operations to cash crop operations is common in areas of close proximity to urban boundaries in the Greater Toronto Area.

The City of Hamilton is characterised by its large agricultural community and amount of prime agricultural land. The expansion of any urban boundaries will have an impact on prime agricultural lands. As has been demonstrated in the preceding sections of this report, this cannot be avoided. A potential impact for the OPA and future proposed development of the PSA lands is the interface between urban development and abutting farms. Consideration needs to be taken to ensure that any future urban development does not impact the operations of abutting farms particularly where MDS setbacks have been identified.

'Farm-Friendly' urban development can play a significant role in promoting compatibility and stabilizing the urban-agricultural interface. The future Secondary Planning process and subsequent planning process will be a key mechanism to ensure impacts on the agricultural community are minimized and mitigated. The phasing of development will also be key to minimizing and mitigating the impact on the agricultural community and land base.

Given the geographical location of the PSA lands and the close proximity to the settlement of Mount Hope, and that these lands were previously designated as settlement area boundary expansion lands, it is the conclusion of this study that the proposed future development of the PSA would have minimal impact on the surrounding agricultural activities within the SSA and would form a logical extension of an existing community.

Sincerely
DBH Soil Services Inc.

Dave Hodgson, P. Ag
President

7 REFERENCES

1:10000 scale Ontario Base Map Index. (2024, September). Ontario GeoHub.

1:50000 scale NTS Maps. Canada Land Inventory (CLI) Capability Mapping. (n.d.).

1:50000 scale NTS Maps. Ministry of Energy Mines and Resources, Canada. (1984). Indexes of the National Topographic System of Canada

2016 Census of Agriculture. (2024, November). Statistics Canada.

Agricultural Impact Assessment (AIA) Guidelines Regional Official Plan Guideline. (2014). Halton Region

Agricultural Resource Inventory. (1983)

Agricultural System Portal. (2024, November). OMAFA

Agriculture Canada Expert Committee on Soil Survey. (1998). *The Canadian System of Soil Classification, 3rd edition. Agriculture of Canada Publication 1646*. Government of Canada.

Agronomy Guide for Field Crops - Publication 811. (June 2017). OMAFA.

Artificial Drainage Mapping Dataset. (2024, November). Land Information Ontario. (OMAFA

Birdseye Online Imagery. (2024, November).

Bing Imagery. (2024, November).

Canada Land Inventory (CLI). (2024, November). Government of Canada.

City of Hamilton website. (2024).

Classifying Prime and Marginal Agricultural Soils and Landscapes: Guidelines for Application of the Canada Land Inventory in Ontario. (2021, February 12). OMAFA.

Draft Agricultural Impact Assessment Guidance Document. (2018, March). OMAFA.

Google Earth Pro. (2024, July). Google Earth.

Greenbelt Plan (2017). Ministry of Municipal Affairs and Housing.

Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas Publication 851. (2016). OMAFA.

Land Use Systems Mapping Dataset (LIO). (2024, November). Land Information Ontario.

Niagara Escarpment Plan. (2017). Niagara Escarpment Commission.

Oak Ridges Moraine Conservation Plan. (2017). Ministry of Municipal Affairs and Housing.

OMAFA. (2024, November). *Agricultural Information Atlas*. AgMaps Geographic Information Portal.

Provincial Planning Statement (PPS), 2024. Ministry of Municipal Affairs and Housing.

Rural Hamilton Official Plan (February 2021).

Soils of Wentworth County, Report No. 32 of the Ontario Soil Survey (Presant, E.W., R. E. Wicklund and B.C. Matthews, 1965).

The City of Hamilton Comprehensive Zoning By-law 05-200 (April 2019).

The Corporation of the Township of Glanbrook Zoning By-Law, By-Law No. 464 (Consolidated November 2022.

The Minimum Distance Separation (MDS) Document: Formulae and Guidelines for Livestock Facility and Anaerobic Digester Odour Setbacks - Publication 853. (2016). OMAFA.

The Physiography of Southern Ontario. Ontario Geological Survey Special (3rd ed., Vol. 2). (1984). Ministry of Natural Resources.

Urban Hamilton Official Plan (November 2022).

APPENDIX A

AGRICULTURAL BUILDING LIST

2025 – 08 Property Information			Online Imagery Survey								Roadside Reconnaissance Survey (Date)					
Agricultural Building Number	Address	Roll Number	Residential Unit	Type of Building	"Line of Sight" Restriction	Additional Details	Evidence of Livestock	Type of Livestock	Evidence of Feed Storage	Evidence of Manure Storage	Findings	Visual Evidence of Livestock	Type of Livestock	Visual Evidence of Feed Storage	Visual Evidence of Manure Storage	MDS Y/N
1	9166 Airport Road	2518902310306000	N	Unknown	Y		N		N	N	Line of sight restriction	N		N	N	N
2	9132 Airport Road	2518902310296000	Y	Garage	Y		N		N	N		N		N	N	N
3	9066 Airport Road	2518902310278000	Y	Workshop	N	Mount Hope Custom Fabrication Plastic Wood & Metal Fabrication	N		N	N		N		N	N	N
4	3144 Homestead Drive	2518902310264000	Y	Pole Barn	Y		N		N	N	Line of sight restriction Overgrown vegetation	N		N	N	N
5	3114 Homestead Drive	2518902310256000	Y	Garage	Y		N		N	N		N		N	N	N
6	2976 Homestead Drive	2518902310256000	Y	Assumed second residence	Y		N		N	N	Hip roof, garage door and windows	N		N	N	N
7	2966 Homestead Drive	2518902310226000	Y	Garage	Y		N		N	N		N		N	N	N
8	2942 Homestead Drive	2518902310220000	Y	Garage	N		N		N	N		N		N	N	N
9	8360 English Church Road East	2518902320172000	Y	Pole Barn	Y	Assumed retired, uncapped silo Grain bin	N		N	N		N		N	N	N (retired)
10	8360 English Church Road East	2518902320172000	Y	Bank Barn	Y	With extension Assumed retired	N		N	N	Poor condition, missing boards	N		N	N	N (retired)
11	8250 English Church Road East	2518902320618000	Y	Remnant Pole Barn	Y	Roof collapsed and boards missing. Assumed retired	N		N	N		N		N	N	N (retired)
12	2907 Highway 6	2518902320506000	N	Commercial	N	Green Horizons Farm Fresh Sod and More! Big Yellow Bag	N		N	N		N		N	N	N
13	8229 English Church Road	2519902320523500	N	Tension Fabric Structure	Y	Willow Valley Golf Course	N		N	N		N		N	N	N
14	2907 Highway 6	2518902320506000	N	Commercial	N	Green Horizons Farm Fresh Sod and More! Big Yellow Bag	N		N	N		N		N	N	N

2025 – 08 Property Information			Online Imagery Survey								Roadside Reconnaissance Survey (Date)					
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15	8378 Airport Road	251890232062400	Y	Garage	Y		N		N	N		N		N	N	N
16	8214 Airport Road	251890232059100	Y	Shed	Y		N		N	N		N		N	N	N
17	8010 Airport Road	251890232056400	Y	Machine Shed	N	2 capped silos, 3 grain bins Assumed retired	N		N	N		N		N	N	N (retired)
18	8010 Airport Road	251890232056400	Y	Pole Barn	N	With extensions Assumed retired	N		N	N		N		N	N	N (retired)
19	8010 Airport Road	251890232056400	Y	Bank Barn	N	With extensions Assumed retired	N		N	N		N		N	N	N (retired)
20	Airport Road	251890232055900	N	Bank Barn	N	Assumed retired	N		N	N		N		N	N	N (retired)
21	Airport Road	251890232055900	N	Pole Barn	N	Assumed retired	N		N	N		N		N	N	N (retired)
22	9370 White Church Road	251890251021400	Y	Machine Shed	N	Century Farm Uncapped silo, grain bin Assumed retired	N		N	N		N		N	N	N (retired)
23	9370 White Church Road	251890251021400	Y	Pole Barn	N	With extensions Century Farm Assumed retired	N		N	N		N		N	N	N (retired)
24	9370 White Church Road	251890251001400	Y	Machine Shed	N	Assumed retired	N		N	N	Removed	N		N	N	N (retired)
25	9370 White Church Road	251890251001400	Y	Bank Barn	N	With extensions 2 grain bins Assumed retired	N		N	N	Removed	N		N	N	N (retired)
26	3738 Highway 6	251890231005600	Y	Machine Shed	Y		N		N	N		N		N	N	N
27	9485 White Church Road	251890261001200	Y	Pole Barn	Y	Pearce Farms Uncapped silo	Y	Beef	Y	Y	4 or more	N		Y	Y	N (4 or more)
28	9485 White Church Road	251890261001200	Y	Machine Shed	Y	Pearce Farms	Y	Beef	Y	Y	4 or more	N		N	N	N
29	7300 Airport Road	251890232055400	Y	Garage	Y		N		N	N		N		N	N	N
30	7220 Airport Road	189023205520000	Y	Pole Barn	N	Concordia Farms	Y		N	N		N		N	N	N
31*	7220 Airport Road	189023205520000	Y	Bank Barn	N	Concordia Farms With riding arena extension, fencing designed for livestock					Assumed hobby horse operation	N	Horses	Y	N	Y (MDS on bank barn portion only)
32*	7060 Airport Road East	25189023205480		Pole Barn	Y	Several paddocks, run-in shed, outdoor riding ring	Y	Horses	N	Y		N		N	N	Y

2025 – 08 Property Information			Online Imagery Survey								Roadside Reconnaissance Survey (Date)					
Agricultural Building Number	Address	Roll Number	Residential Unit	Type of Building	"Line of Sight" Restriction	Additional Details	Evidence of Livestock	Type of Livestock	Evidence of Feed Storage	Evidence of Manure Storage	Findings	Visual Evidence of Livestock	Type of Livestock	Visual Evidence of Feed Storage	Visual Evidence of Manure Storage	MDS Y/N
33	7098 Airport Road	251890232054600	N	Machine Shed	N	Hamilton Public Works Department Operations and Maintenance Road District East Satellite Yard 905-546-2424 ext 2038	N		N	N		N		N	N	N
34	7030 Airport Road	No roll number	Y	Garage	N		N		N	N		N		N	N	N
35	1839 Miles Road	251890233000200	Y	Pole Barn	N		N		N	N	Small rural residential lot, assumed retired from livestock, appears to be used for storage	N		N	N	DBH to review
36	6430 Airport Road	251890233009600	Y	Machine Shed	N	Uncapped silo, grain silo	N		N	N		N		N	N	N
37	6380 Airport Road	251890233009400	Y	Machine Shed	Y	Carluke Automotive Repair Service	N		N	N		N		N	N	N
38	6360 Airport Road East	25189023300900	Y	Tension Fabric Structure	N		N		N	N		N		N	N	N
39*	6360 Airport Road East	25189023300900	Y	Pole Barn	N	With extension, concrete manure storage tank is being used for solid manure storage	Y	Beef	N	Y		Y	beef	N	N	Y (solid manure)
40*	6280 Airport Road East	251890233008800	Y	Pole Barn	N	Several paddocks	Y	Assumed horses	N	N		N		N	N	Y
41	6180 Airport Road	251890233008400	Y	Machine Shed	Y	Grain bin	N		N	Y		N		N	N	N
42*	6180 Airport Road	251890233008400	Y	Bank Barn	N	With extension	N	Assumed horses	N	Y		N		N	N	Y
43	6100 Airport Road	251890233008200	Y	Shed	Y		N		N	N	Line of sight restriction	N		N	N	N
44	6331 English Church Road	251890233000800	Y	Machine Shed	N		N		N	N	Line of sight restriction	N		N	N	N
45	8149 English Church Road East	251890232052600	Y	Machine Shed	N	3 capped silos, several grain bins, liquid manure storage	N	Assumed dairy operation	N	Y		N		N	N	N
46	9090 Chippewa Road	2518902610074 00	Y	Pole Barn	Y		N		N	N		N		N	N	N
47	9090 Chippewa Road	2518902610074 00	Y	Machine Shed	Y		N		N	N		N		N	N	N

2025 – 08 Property Information			Online Imagery Survey								Roadside Reconnaissance Survey (Date)					
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48	8149 English Church Road East	251890232052600	Y	Machine Shed	N		N	Assumed dairy operation	N	Y		N		N	N	N
49	8500 Chippewa Road	251890261021600		Pole Barn	N	Run-in shed, outdoor riding ring	Y	horses	N	Y		N		N	N	N
50*	8149 English Church Road East	251890232052600	Y	Pole Barn	N		N	Assumed dairy operation	N	Y		N		N	N	Y (MDS liquid uncovered, combined design capacity)
51*	8149 English Church Road East	251890232052600	Y	Pole Barn	N	With extensions	N	Assumed dairy operation	N	Y		N		N	N	Y (MDS liquid uncovered, combined design capacity)
52	8453 Airport Road	251890251042600	N	Machine Shed	Y	Southern Pine Golf and Country Club	N		N	N		N		N	N	N
53	3417 Highway 6	251890251041400	Y	Possible second residence	Y		N		N	N		N		N	N	N
54	3431 Highway 6	251890251041000	Y	Shed	Y		N		N	N		N		N	N	N
55	8392 White Church Road	251890251050200	Y	Shed	Y		Y		N	N		N		N	N	N
56	8064 White Church Road	251890251047800	Y	Quonset	Y		N		N	N	Assumed storage, lots of equipment piled around it	N		N	N	N
57	7340 White Church Road	251890251047600	Y	Pole Barn	Y	With extension	N		N	N		N		N	N	N
58	7156 White Church Road	251890231047200	Y	Bank Barn	Y	With extension. Used as tree farm and cash crop as per: https://www.zolo.ca/hamilton-real-estate/7156-white-church-road	N		N	N		N		N	N	N
59	2450 Miles Road	251890251047000	Y	Garage	N		N		N	N	Removed, house boarded up	N		N	N	N
60	7055 Airport Road	251890251046000	Y	Commercial	N	Vanderwoude Sod Farm	N		N	N		N		N	N	N
61	7055 Airport Road	251890251046000	Y	Commercial	N	Vanderwoude Sod Farm	N		N	N		N		N	N	N

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62	8113 Airport Road	2518902510440000	N	Feed Storage	N	Assumed retired	N		N	N		N		N	N	N
63	8113 Airport Road	2518902510440000	N	Machine Shed	N	Assumed retired, end wall collapsed	N		N	N		N		N	N	N
64	2119 Miles Road	2518902510602000	Y	Machine Shed	N		N		N	N		N		N	N	N
65	2119 Miles Road	2518902510602000	Y	Machine Shed	N		N		N	N		N		N	N	N
66	2119 Miles Road	2518902510602000	Y	Machine Shed	N		N		N	N		N		N	N	N
67	2211 Miles Road	2518902510600000	Y	Pole Barn	N		N		N	N		N		N	N	N
68	6500 White Church Road	2518902510642000	Y	Machine Shed	Y		N		N	N		N		N	N	N
69	6146 White Church Road	2518902510634000	Y(2)	Garage	N	Feed storage (tension fabric)	N		N	N		N		N	N	N
70*	6146 White Church Road	2518902510634000	Y(2)	Bank Barn	N		Y	beef	Y	Y		Y	beef	Y	N	Y (combined design capacity)
71*	6146 White Church Road	2518902510634000	Y(2)	Pole Barn	N		Y	beef	Y	Y		Y	beef	Y	N	Y (combined design capacity)
72*	6146 White Church Road	2518902510634000	Y(2)	Pole Barn	N		Y	beef	Y	Y		Y	beef	Y	N	Y (combined design capacity)
73*	6146 White Church Road	2518902510634000	Y(2)	Pole Barn	N		Y	beef	Y	Y		Y	beef	Y	N	Y (combined design capacity)
74	6169 Airport Road	2518902510620000	Y	Pole Barn	Y		N		N	N		N		N	N	N
75*	6305 Airport Road East	2518902510616000	Y	Bank Barn	N	With extensions, liquid manure storage Don Mair Farms, The Smith Family, several grain bins, capped silo	N	Assumed dairy	Y	Y	Milk truck on premises	N	dairy	Y	N	Y (MDS on whole building except office, liquid storage uncovered, combined design capacity)
76*	6305 Airport Road East	2518902510616000	Y	Pole Barn	N							N	dairy	Y	N	Y (MDS on whole building except office, liquid

2025 – 08 Property Information			Online Imagery Survey								Roadside Reconnaissance Survey (Date)					
Agricultural Building Number	Address	Roll Number	Residential Unit	Type of Building	"Line of Sight" Restriction	Additional Details	Evidence of Livestock	Type of Livestock	Evidence of Feed Storage	Evidence of Manure Storage	Findings	Visual Evidence of Livestock	Type of Livestock	Visual Evidence of Feed Storage	Visual Evidence of Manure Storage	MDS Y/N
																storage uncovered, combined design capacity
77*	6395 Airport Road East	251890251061200	Y	Pole Barn	N	Several run-in sheds, paddocks	N	Assumed horses/ ponies	N	N		N		N	N	Y
78	6225 White Church Road	251890261061400	Y	Machine Shed	N		N		N	N		N		N	N	N
79*	6225 White Church Road	251890261061400	Y	Bank Barn	N		N		N	N		N		Y	N	Y (assumed horses)
80	6355 White Church Road	251890261061200	Y	Studio?	N		N		N	N		N		N	N	N
81	6520 Chippewa Road	251890261060200	Y	Pole Barn	N	Schaefer's Auto Care	Y	Possible sheep	N	N	4 or more	Y		N	N	N (4 or more)
82	6520 Chippewa Road	251890261060200	Y	Pole Barn	N	Schaefer's Auto Care	Y	Possible sheep	N	N		Y		N	N	N (4 or more)
83	6575 Chippewa Road	251890271060400	Y	Garage	N		N		N	N		N		N	N	N
84*	7049 Chippewa Road	25189027103260	Y	Pole Barn	N	2 grain bins	Y	Beef	Y	Y		N		Y	N	Y (combined design capacity)
85	7049 Chippewa Road	25189027103260	Y	Pole Barn	N		Y		Y	Y		N		N	N	N
86*	7049 Chippewa Road	25189027103260	Y	Pole Barn	N		Y	Beef	Y	Y		N		Y	N	Y (combined design capacity)
87*	7049 Chippewa Road	25189027103260	Y	Pole Barn	N	With extension	Y	Beef	Y	Y		N		Y	N	Y (combined design capacity)
88	7049 Chippewa Road	25189027103260	Y	Machine Shed	N		N		N	N		N		N	N	N
89	7111 Chippewa Road	251890271032200	Y	Pole Barn	Y		N		N	N		N		N	N	N
90*	4030 Ferris Road	25189027103020	Y	Pole Barn	N	With extensions Assumed hobby farm	Y	Chickens, goats(8)	N	N		N		N	N	Y (8 goats)

2025 – 08 Property Information			Online Imagery Survey								Roadside Reconnaissance Survey (Date)					
Agricultural Building Number	Address	Roll Number	Residential Unit	Type of Building	"Line of Sight" Restriction	Additional Details	Evidence of Livestock	Type of Livestock	Evidence of Feed Storage	Evidence of Manure Storage	Findings	Visual Evidence of Livestock	Type of Livestock	Visual Evidence of Feed Storage	Visual Evidence of Manure Storage	MDS Y/N
						Grain bin										
91	8211 Chippewa Road	2518902710298 00	Y	Pole Barn	N	Assumed retired	N		N	N		N		N	N	N (retired)
92	8211 Chippewa Road	2518902710298 00	Y	Pole Barn	N	Assumed retired	N		N	N		N		N	N	N (retired)
93	8211 Chippewa Road	2518902710298 00	Y	Garage	N	Assumed retired	N		N	N		N		N	N	N (retired)
94	7134 Chippewa Road	2518902610352 00	Y	Garage	N	With extensions	N		N	N		N		N	N	N
95	Chippewa Road	2518902610350 00	N	Pole Barn	Y		N		N	N	Line of sight restriction	N		N	N	N
96	7170 Chippewa Road	2518902510352 30	Y	Garage	N		N		N	N		N		N	N	N
97	7196 Chippewa Road	2518902610352 50	Y	Garage	Y		N		N	N	Assumed removed	N		N	N	N
98*	7242 Chippewa Road	2518902610354 00	Y	Pole Barn	N		Y	sheep	N	Y		Y	sheep	N	N	Y
99	7284 Chippewa Road	2518902610358 00	Y	Machine Shed	Y		N		N	N		N		N	N	N
100	7242 Chippewa Road	2518902610354 00	Y	Quonset	N		Y	sheep	N	Y		N		N	N	N
101	3400 Ferris Road	2518902610290 00	Y	Pole Barn	Y		N		N	N		N		N	N	N
102	3400 Ferris Road	2518902610290 00	Y	Pole Barn	Y		N		N	N		N		N	N	N
103	3298 Ferris Road	2518902610284 00	Y	Pole Barn	N		N		N	N	Missing wall boards, can see right through building, assumed retired	N		N	N	N
104	3180 Ferris Road	2518902610278 00	Y	Machine Shed	Y		N		N	N		N		N	N	N

2025 – 08 Property Information			Online Imagery Survey								Roadside Reconnaissance Survey (Date)					
Agricultural Building Number	Address	Roll Number	Residential Unit	Type of Building	"Line of Sight" Restriction	Additional Details	Evidence of Livestock	Type of Livestock	Evidence of Feed Storage	Evidence of Manure Storage	Findings	Visual Evidence of Livestock	Type of Livestock	Visual Evidence of Feed Storage	Visual Evidence of Manure Storage	MDS Y/N
105	3180 Ferris Road	2518902610278000	Y	Machine Shed	Y		N		N	N		N		N	N	N
106*	8211 White Church Road	2518902610272000	Y	Pole Barn	N	Run-in shed, horse trailer	Y	horse	Y	Y		Y	Horses	Y	Y	Y
107	8211 White Church Road	2518902610272000	Y	Pole Barn	N		Y	horse	Y	Y		N		N	N	N (less than 10m^2)
108	8489 White Church Road	2518902610250000	Y	Machine Shed	N		N		N	N		N		N	N	N
109	8489 White Church Road	2518902610250000	Y	Garage	N		N		N	N		N		N	N	N
110	8295 White Church Road	2518902610270000	Y	Garage	N		N		N	N		N		N	N	N
111	8299 White Church Road	2518902610268000	Y	Garage	N		N		N	N		N		N	N	N
112	8341 White Church Road	2518902610260000	Y	Unknown	Y		N		N	N	Line of sight restriction	N		N	N	N
113	8395 White Church Road	2518902610254000	Y	Quonset	N	Used as garage	N		N	N		N		N	N	N
114	3659 Highway 6	2518902610242000	Y	Pole Barn	Y	Assumed hobby farm	N		N	N	4 or more	N		N	N	N (4 or more)
115	3659 Highway 6	2518902610242000	Y	Pole Barn	Y	Assumed hobby farm	N		N	N		N		N	N	N
116	3751 Hwy 6	2518902610228000	Y	Bank Barn	Y		N		N	N		N		N	N	N
117	8500 Chippewa Road	2518902610216000		Machine Shed	N		N		N	N		N		N	N	N
118	8110 Chippewa Road	2518902610300000	Y	Machine Shed	N		N		N	N		N		N	N	N
119	8366 Chippewa Road	2518902610316000	Y	Garage	Y		N		N	N		N		N	N	N
120	8310 Chippewa Road	2518902610308000	Y	Machine Shed	Y		N		N	N		N		N	N	N
121*	8149 English Church Road East	2518902320526000	Y	Pole Barn	N		N	Assumed dairy operation	N	Y						Y (MDS liquid uncovered,

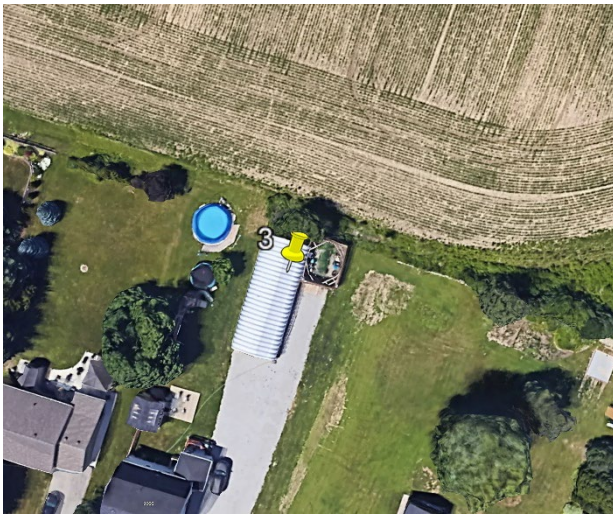
2025 – 08 Property Information			Online Imagery Survey								Roadside Reconnaissance Survey (Date)					
Agricultural Building Number	Address	Roll Number	Residential Unit	Type of Building	"Line of Sight" Restriction	Additional Details	Evidence of Livestock	Type of Livestock	Evidence of Feed Storage	Evidence of Manure Storage	Findings	Visual Evidence of Livestock	Type of Livestock	Visual Evidence of Feed Storage	Visual Evidence of Manure Storage	MDS Y/N
																combined design capacity) with buildings 50 and 51
122	6305 Airport Road East	2518902510616 00	Y	Machine Shed	N	Don Mair Farms, The Smith Family	N		Y	Y		N		N	N	N
123	9845 White Church Road	2518902610012 00	Y	Pole Barn	Y	Pearce Farms	Y	Beef	Y	Y	4 or more	N		Y	Y	N (4 or more)
124	7196 Chippewa Road	2518902610352 50	Y	Garage	Y		N		N	N		N		N	N	N
125	7374 English Church Road	2518902320166 00	Y	Bank Barn	Y	Kammerer Heritage Farm https://www.kammererheritagefarms.com/about	Y	Chickens for personal use (as per website)	N	N	Flower Farm and Wedding venue	N		N	N	N (assumed barn repurposed for wedding venue)
127*	7166 English Church Road	2518902320158 00	Y	Pole Barn	N	roof missing on building 128, 2 capped silos, several grain bins	N		N	N	Hillandale Farm Holstein, Polled Dorset, Percheron Horses	Y	Horses	N	N	Y (horses, combined design capacity)
128*	7166 English Church Road	2518902320158 00	Y	Pole Barn	N	With extensions	N		N	N		Y	Sheep	N	N	Y (sheep, combined design capacity, measurement of half the building - east side due to missing roof boards on west side of building)
129	7166 English Church Road	2518902320158 00	Y	Machine Shed	N	SOF Paintball	N		N	N		N		N	N	N
142	9090 Chippewa	2518902610074 00	Y	Machine Shed	Y		N		N	N		N		N	N	N
143	8410 White Church Road	2518902510504 00	Y	Run-In Shed	N	Goats for personal use	Y	goats	N	N		Y	goats	N	N	N (less than 10m^2)

APPENDIX B

AGRICULTURAL BUILDING PHOTOGRAPHS

Agricultural Building 1

Agricultural Building 2



Agricultural Building 3

Agricultural Building 4

Agricultural Building 5

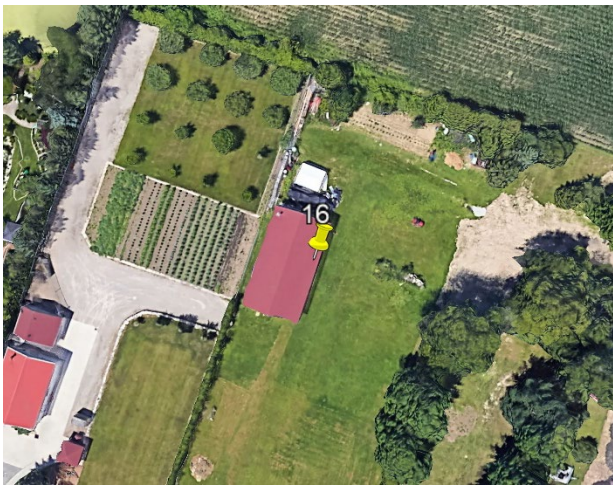
Agricultural Buildings 6 and 7

Agricultural Building 8

Agricultural Buildings 9, 10 and 11

Agricultural Buildings 12, 13 and 14

Agricultural Building 15



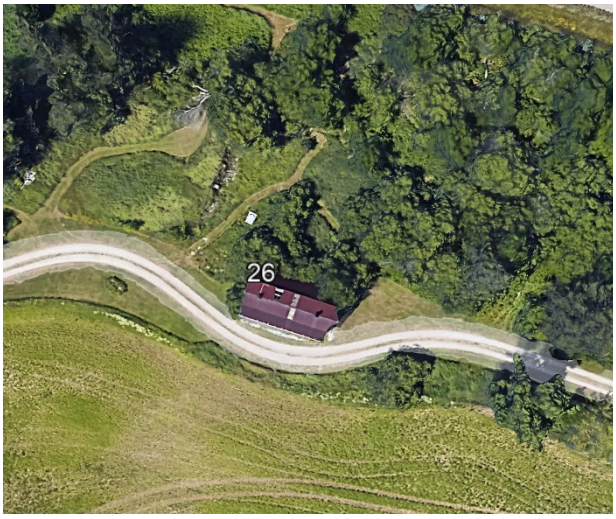
Agricultural Building 16

Agricultural Buildings 17, 18 and 19

Agricultural Buildings 20 and 21

Agricultural Buildings 22 and 23

Agricultural Buildings 24 and 25



Agricultural Building 26

Agricultural Buildings 27, 28 and 123

Agricultural Building 29

Agricultural Buildings 30 and 31

Agricultural Buildings 32 and 33

Agricultural Building 34

Agricultural Building 35

Agricultural Building 36

Agricultural Buildings 37, 38 and 39

Agricultural Building 40

Agricultural Buildings 41 and 42

Agricultural Building 43

Agricultural Buildings 44 and 132

Agricultural Buildings 45, 48, 50, 51 and 121

Agricultural Buildings 46, 47 and 142

Agricultural Building 52

Agricultural Building 53

Agricultural Building 54

Agricultural Building 55

Agricultural Building 56

Agricultural Building 57

Agricultural Building 58

Agricultural Building 59

Agricultural Buildings 60 and 61

Agricultural Buildings 62 and 63

Agricultural Building 64, 65 and 66

Agricultural Building 67

Agricultural Building 68

Agricultural Buildings 69, 70, 71, 72 and 73

Agricultural Building 74

Agricultural Buildings 75, 76 and 122

Agricultural Building 77

Agricultural Buildings 78 and 79

Agricultural Building 80

Agricultural Buildings 81 and 82

Agricultural Building 83

Agricultural Buildings 84, 85, 86, 87 and 88

Agricultural Building 89

Agricultural Building 90

Agricultural Buildings 91, 92 and 93

Agricultural Buildings 94 and 95

Agricultural Building 96

Agricultural Buildings 97 and 124

Agricultural Buildings 98, 99 and 100

Agricultural Buildings 101 and 102

Agricultural Building 103

Agricultural Buildings 104 and 105

Agricultural Buildings 106 and 107

Agricultural Buildings 108 and 109

Agricultural Buildings 110 and 111

Agricultural Building 112

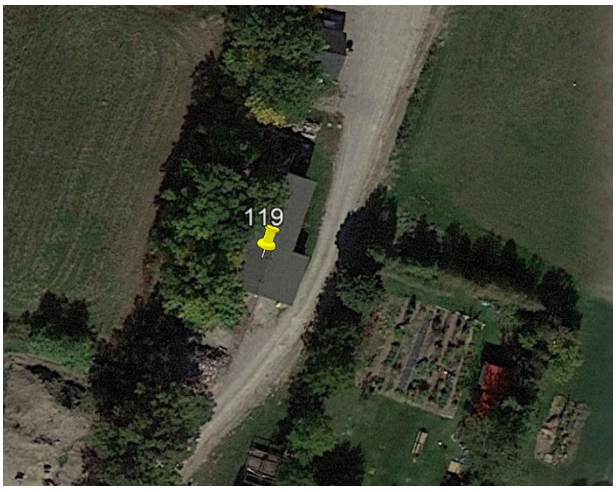
Agricultural Building 113

Agricultural Buildings 114 and 115

Agricultural Building 116

Agricultural Building 117

Agricultural Building 118



Agricultural Building 119

Agricultural Building 120

Agricultural Building 125

Agricultural Building 126

Agricultural Buildings 127, 128 and 129

Agricultural Building 130 and 131

Agricultural Building 132

Agricultural Building 133

Agricultural Buildings 134, 135 and 136

Agricultural Building 137

Agricultural Buildings 138 and 139

Agricultural Building 140

Agricultural Building 141

Agricultural Building 143

APPENDIX C

MINIMUM DISTANCE SEPARATION (MDS1) Agrisuite Sheets

Ontario

AgriSuite

2025 - 08 Whitechurch AIA

General information

Application date
Nov 26, 2024

Municipal file number

Proposed application
New or expanding settlement area boundary

Applicant contact information

Urban Solutions Planning and Land Development
3 Studebaker Place
Unit 1
Hamilton, ON
L8L 0C8

Location of subject lands
City of Hamilton
City of Hamilton
GLANFORD
Concession 5 , Lot 6, 7, 8, 9, 10

Calculations

Building 31

Farm contact information

7220 Airport Road
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor

City of Hamilton
City of Hamilton
GLANFORD
Concession 4 , Lot 9
Roll number: 25189023205480

Total lot size

27.03 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Horses, Large-framed, mature; > 680 kg (including unweaned offspring)	15	21.4 NU	453 m²

Confirm Livestock/Manure Information (Building 31)

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	**21.4 NU**
Potential design capacity	**21.4 NU**

Factor A (odour potential) **0.7**
Factor B (design capacity) **202.86**
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)	**219 m (718 ft)**
Actual distance from livestock barn	**NA**
Storage base distance 'S' (minimum distance from manure storage)	**219 m (718 ft)**
Actual distance from manure storage	**NA**

Building 32

Farm contact information

7060 Airport Road
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor
City of Hamilton
City of Hamilton
GLANFORD
Concession 4 , Lot 10
Roll number: 25189023205480

Total lot size
32.76 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Horses, Large-framed, mature; > 680 kg (including unweaned offspring)	23	32.9 NU	694 m²

Confirm Livestock/Manure Information (Building 32)
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	**32.9 NU**
Potential design capacity	**32.9 NU**

Factor A (odour potential) **0.7**
Factor D (manure type) **0.7**
Factor B (design capacity) **225.72**
Factor E (encroaching land use) **2.2**

Building base distance 'F' (A x B x D x E) (minimum distance from livestock barn)	**244 m (801 ft)**
Actual distance from livestock barn	**NA**
Storage base distance 'S' (minimum distance from manure storage)	**244 m (801 ft)**
Actual distance from manure storage	**NA**

Building 39

Farm contact information

6360 Airport Road East
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor
City of Hamilton
City of Hamilton
GLANFORD
Concession 4 , Lot 12
Roll number: 25189023300900

Total lot size
24.22 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Beef, Cows, including calves to weaning (all breeds), Yard/Barn	230	230 NU	1068 m²

Confirm Livestock/Manure Information (Building 39)
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 **230 NU**

Potential design capacity **230 NU**

Factor A (odour potential) **0.7**
Factor D (manure type) **0.7**
Factor B (design capacity) **422.62**
Factor E (encroaching land use) **2.2**

Building base distance 'F' (A x B x D x E)
(minimum distance from livestock barn) **456 m (1496 ft)**

Actual distance from livestock barn **NA**

Storage base distance 'S'
(minimum distance from manure storage) **456 m (1496 ft)**

Actual distance from manure storage **NA**

Building 40

Farm contact information

6280 Airport Road East
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor

City of Hamilton
City of Hamilton
GLANFORD
Concession 4 , Lot 12
Roll number: 251890233008800

Total lot size

0.9 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Horses, Large-framed, mature; > 680 kg (including unweaned offspring)	5	7.1 NU	151 m²

Confirm Livestock/Manure Information (Building 40)

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	**7.1 NU**
Potential design capacity	**7.1 NU**

Factor A (odour potential) **0.7**
Factor B (design capacity) **157.13**
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)	**170 m (558 ft)**
Actual distance from livestock barn	**NA**
Storage base distance 'S' (minimum distance from manure storage)	**170 m (558 ft)**
Actual distance from manure storage	**NA**

Building 42

Farm contact information

6180 Airport Road
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor
City of Hamilton
City of Hamilton
GLANFORD
Concession 4 , Lot 12
Roll number: 251890233008400

Total lot size
33.29 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Horses, Large-framed, mature; > 680 kg (including unweaned offspring)	12	17.1 NU	362 m²

Confirm Livestock/Manure Information (Building 42)
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	**17.1 NU**
Potential design capacity	**17.1 NU**

Factor A (odour potential) **0.7**
Factor D (manure type) **0.7**
Factor B (design capacity) **190.46**
Factor E (encroaching land use) **2.2**

Building base distance 'F' (A x B x D x E) (minimum distance from livestock barn)	**206 m (676 ft)**
Actual distance from livestock barn	**NA**
Storage base distance 'S' (minimum distance from manure storage)	**206 m (676 ft)**
Actual distance from manure storage	**NA**

Buildings 50, 51 and 121

Farm contact information
Rick Vandenbos
Applecreek Farms
8149 English Church Road
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor
City of Hamilton
City of Hamilton
GLANFORD
Concession 4 , Lot 8
Roll number: 251890232052600

Total lot size
57.4 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Liquid	Dairy, Milking-age Cows (dry or milking) Large Frame (545 - 658 kg) (eg. Holsteins), 4 Row Free Stall Head To Head	68	97.1 NU	790 m²
Liquid	Dairy, Milking-age Cows (dry or milking) Large Frame (545 - 658 kg) (eg. Holsteins), 4 Row Free Stall Head To Head	50	71.4 NU	581 m²
Liquid	Dairy, Milking-age Cows (dry or milking) Large Frame (545 - 658 kg) (eg. Holsteins), 4 Row Free Stall Head To Head	108	154.3 NU	1254 m²

Confirm Livestock/Manure Information (Buildings 50, 51 and 121)
The livestock/manure information has not been confirmed with the property owner and/or farm operator.

Setback summary

Existing manure storage **M1. Liquid, outside, no cover, straight-walled storage**

Design capacity **322.9 NU**

Potential design capacity **322.9 NU**

Factor A (odour potential) **0.7**
Factor B (design capacity) **475.88**
Factor D (manure type) **0.8**
Factor E (encroaching land use) **2.2**

Building base distance 'F' (A x B x D x E)
(minimum distance from livestock barn) **587 m (1926 ft)**

Actual distance from livestock barn **NA**

Storage base distance 'S'
(minimum distance from manure storage) **629 m (2064 ft)**

Actual distance from manure storage **NA**

Buildings 70, 71, 72 and 73

Farm contact information

6146 White Church Road
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor
City of Hamilton
City of Hamilton
GLANFORD
Concession 5 , Lot 13
Roll number: 251890251063400

Total lot size
11.98 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Beef, Cows, including calves to weaning (all breeds), Yard/Barn	90	90 NU	418 m²
Solid	Beef, Cows, including calves to weaning (all breeds), Yard/Barn	59	59 NU	274 m²
Solid	Beef, Cows, including calves to weaning (all breeds), Yard/Barn	14	14 NU	65 m²
Solid	Beef, Cows, including calves to weaning (all breeds), Yard/Barn	41	41 NU	190 m²

Confirm Livestock/Manure Information (Buildings 70, 71, 72 and 73)
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 **204 NU**

Potential design capacity **204 NU**

Factor A (odour potential) **0.7**
Factor B (design capacity) **405.24**
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) **437 m (1434 ft)**

Actual distance from livestock barn **NA**

Storage base distance 'S'
(minimum distance from manure storage) **437 m (1434 ft)**

Actual distance from manure storage **NA**

Buildings 75 and 76

Farm contact information

Smith
Don Mair Farms
6305 Airport Road East
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor

City of Hamilton
City of Hamilton
GLANFORD
Concession 5 , Lot 12
Roll number: 251890251061600

Total lot size

58.23 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Liquid	Dairy, Milking-age Cows (dry or milking) Large Frame (545 - 658 kg) (eg. Holsteins), 4 Row Free Stall Head To Head	389	555.7 NU	4518 m²
Liquid	Dairy, Milking-age Cows (dry or milking) Large Frame (545 - 658 kg) (eg. Holsteins), 4 Row Free Stall Head To Head	40	57.1 NU	465 m²

Confirm Livestock/Manure Information (Buildings 75 and 76)

The livestock/manure information has not been confirmed with the property owner and/or farm operator.

Setback summary

Existing manure storage	**M1. Liquid, outside, no cover, straight-walled storage**
Design capacity	**612.9 NU**
Potential design capacity	**612.9 NU**

Factor A (odour potential) **0.7**
Factor B (design capacity) **595.55**
Factor D (manure type) **0.8**
Factor E (encroaching land use) **2.2**

Building base distance 'F' (A x B x D x E) (minimum distance from livestock barn)	**734 m (2408 ft)**
Actual distance from livestock barn	**NA**
Storage base distance 'S' (minimum distance from manure storage)	**761 m (2497 ft)**
Actual distance from manure storage	**NA**

Building 77

Farm contact information

6395 Airport Road East
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor
City of Hamilton
City of Hamilton
GLANFORD
Concession 5 , Lot 11
Roll number: 251890251061600

Total lot size
2.6 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Horses, Large-framed, mature; > 680 kg (including unweaned offspring)	4	5.7 NU	121 m²

Confirm Livestock/Manure Information (Building 77)
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	**5.7 NU**
Potential design capacity	**5.7 NU**

Factor A (odour potential) **0.7**
Factor D (manure type) **0.7**
Factor B (design capacity) **152.36**
Factor E (encroaching land use) **2.2**

Building base distance 'F' (A x B x D x E) (minimum distance from livestock barn)	**165 m (541 ft)**
Actual distance from livestock barn	**NA**
Storage base distance 'S' (minimum distance from manure storage)	**165 m (541 ft)**
Actual distance from manure storage	**NA**

Building 79

Farm contact information

6225 White Church Road
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor
City of Hamilton
City of Hamilton
GLANFORD
Concession 6 , Lot 12
Roll number: 251890261061400

Total lot size
19.19 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Horses, Large-framed, mature; > 680 kg (including unweaned offspring)	10	14.3 NU	302 m²

Confirm Livestock/Manure Information (Building 79)
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	**14.3 NU**
Potential design capacity	**14.3 NU**

Factor A (odour potential) **0.7**
Factor D (manure type) **0.7**
Factor B (design capacity) **180.96**
Factor E (encroaching land use) **2.2**

Building base distance 'F' (A x B x D x E) (minimum distance from livestock barn)	**196 m (643 ft)**
Actual distance from livestock barn	**NA**
Storage base distance 'S' (minimum distance from manure storage)	**196 m (643 ft)**
Actual distance from manure storage	**NA**

Building 84, 86 and 87

Farm contact information

7049 Chippewa Road
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor
City of Hamilton
City of Hamilton
GLANFORD
Concession 7 , Lot 10
Roll number: 25189027103260

Total lot size
38.14 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Beef, Cows, including calves to weaning (all breeds), Yard/Barn	19	19 NU	88 m²
Solid	Beef, Cows, including calves to weaning (all breeds), Yard/Barn	37	37 NU	172 m²
Solid	Beef, Cows, including calves to weaning (all breeds), Yard/Barn	163	163 NU	757 m²

Confirm Livestock/Manure Information (Building 84, 86 and 87)
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	**219 NU**
Potential design capacity	**219 NU**

Factor A (odour potential) **0.7**
Factor D (manure type) **0.7**
Factor B (design capacity) **415.43**
Factor E (encroaching land use) **2.2**

Building base distance 'F' (A x B x D x E) (minimum distance from livestock barn)	**448 m (1470 ft)**
Actual distance from livestock barn	**NA**
Storage base distance 'S' (minimum distance from manure storage)	**448 m (1470 ft)**
Actual distance from manure storage	**NA**

Building 90

Farm contact information

4030 Ferris Road
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor
City of Hamilton
City of Hamilton
GLANFORD
Concession 7 , Lot 8
Roll number: 25189027103020

Total lot size
13.85 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Goats, Does & bucks (for meat; includes unweaned offspring)	250	31.3 NU	348 m²

Confirm Livestock/Manure Information (Building 90)
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	**31.3 NU**
Potential design capacity	**31.3 NU**

Factor A (odour potential) **0.7**
Factor D (manure type) **0.7**
Factor B (design capacity) **222.5**
Factor E (encroaching land use) **2.2**

Building base distance 'F' (A x B x D x E) (minimum distance from livestock barn)	**240 m (787 ft)**
Actual distance from livestock barn	**NA**
Storage base distance 'S' (minimum distance from manure storage)	**240 m (787 ft)**
Actual distance from manure storage	**NA**

Building 98

Farm contact information

7242 Chippewa Road
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor
City of Hamilton
City of Hamilton
GLANFORD
Concession 6 , Lot 9
Roll number: 251890261035400

Total lot size
19.23 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Sheep, Ewes & rams (for meat lambs; includes unweaned offspring & replacements), Outside Access	87	10.9 NU	121 m²

Confirm Livestock/Manure Information (Building 98)
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	**10.9 NU**
Potential design capacity	**10.9 NU**

Factor A (odour potential) **0.7**
Factor D (manure type) **0.7**
Factor B (design capacity) **169.6**
Factor E (encroaching land use) **2.2**

Building base distance 'F' (A x B x D x E) (minimum distance from livestock barn)	**183 m (600 ft)**
Actual distance from livestock barn	**NA**
Storage base distance 'S' (minimum distance from manure storage)	**183 m (600 ft)**
Actual distance from manure storage	**NA**

Building 106

Farm contact information

8211 White Church Road
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor
City of Hamilton
City of Hamilton
GLANFORD
Concession 6 , Lot 8
Roll number: 251890261027200

Total lot size
2.44 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Horses, Large-framed, mature; > 680 kg (including unweaned offspring)	5	7.1 NU	151 m²

Confirm Livestock/Manure Information (Building 106)
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	**7.1 NU**
Potential design capacity	**7.1 NU**

Factor A (odour potential) **0.7**
Factor D (manure type) **0.7**
Factor B (design capacity) **157.13**
Factor E (encroaching land use) **2.2**

Building base distance 'F' (A x B x D x E) (minimum distance from livestock barn)	**170 m (558 ft)**
Actual distance from livestock barn	**NA**
Storage base distance 'S' (minimum distance from manure storage)	**170 m (558 ft)**
Actual distance from manure storage	**NA**

Building 127 and 128

Farm contact information

7166 English Church Road
Hamilton, ON
L0R 1W0

Location of existing livestock facility or anaerobic digestor
City of Hamilton
City of Hamilton
GLANFORD
Concession 3 , Lot 10
Roll number: 251890232015800

Total lot size
36.76 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Horses, Large-framed, mature; > 680 kg (including unweaned offspring)	27	38.6 NU	815 m²
Solid	Sheep, Ewes & rams (for meat lambs; includes unweaned offspring & replacements), Outside Access	534	66.8 NU	744 m²

Confirm Livestock/Manure Information (Building 127 and 128)
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	**105.3 NU**
Potential design capacity	**105.3 NU**

Factor A (odour potential) **0.7**
Factor D (manure type) **0.7**
Factor B (design capacity) **321.53**
Factor E (encroaching land use) **2.2**

Building base distance 'F' (A x B x D x E) (minimum distance from livestock barn)	**347 m (1138 ft)**
Actual distance from livestock barn	**NA**
Storage base distance 'S' (minimum distance from manure storage)	**347 m (1138 ft)**
Actual distance from manure storage	**NA**

Preparer signoff & disclaimer

Preparer contact information
David Hodgson
DBH Soil Services Inc.
ON
dhodgson@dbhsoilservices.ca

Signature of preparer

David Hodgson , President

Date (mmm-dd-yyyy)

Note to the user

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APPENDIX D

Unique Soil Symbols and Canada Land Inventory (CLI) List

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
ABO	A	0 - 0.5	0	2	W
ABO	A	0 - 0.5	0	7	I
ABO	b	0.5 - 2	0	1	
ABO	b	0.5 - 2	0	2	W
ABO	b	0.5 - 2	0	2	F
ABO	B	0.5 - 2	0	3	I
ABO	b	0.5 - 2	0	3	R
ABO	B	0.5 - 2	0	3	F
ABO	b	0.5 - 2	1	3	R
ABO	b	0.5 - 2	1	4	R
ABO	b	0.5 - 2	1	4	F
ABO	c	2 - 5	0	1	
ABO	c	2 - 5	0	2	F
ABO	c	2 - 5	0	2	D
ABO	c	2 - 5	0	6	R
ABO	c	2 - 5	1	1	
ABO	c	2 - 5	1	2	F
ABO	c	2 - 5	1	4	R
ABO	c	2 - 5	3	1	
ABO	c	2 - 5	3	3	R
ABO	C	2 - 5	4	7	P
ABO	d	5 - 9	0	3	T
ABO	d	5 - 9	0	3	E
ABO	d	5 - 9	1	3	S
ABO	d	5 - 9	4	6	P
ABO	e	9 - 15	0	4	T
ABO	E	9 - 15	1	4	E
ABO	f	15 - 30	0	5	T
ABO	F	15 - 30	1	5	T
ABO	f	15 - 30	3	6	S
ABO	N	N	N	0	
ACE	A	0 - 0.5	0	2	W
ACE	B	0.5 - 2	0	2	W
ACE	B	0.5 - 2	0	3	D
ACE	b	0.5 - 2	0	3	F
ACE	b	0.5 - 2	1	3	R
ACE	b	0.5 - 2	1	4	F
ACE	b	0.5 - 2	2	3	R
ACE	c	2 - 5	0	1	
ACE	c	2 - 5	0	2	D
ACE	c	2 - 5	0	2	F

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
ACE	c	2 - 5	1	1	
ACE	c	2 - 5	1	2	F
ACE	c	2 - 5	1	6	R
ACE	c	2 - 5	3	3	F
ACE	d	5 - 9	0	3	S
ACE	d	5 - 9	0	3	T
ACE	d	5 - 9	1	3	R
ACE	d	5 - 9	2	4	S
ACE	e	9 - 15	0	4	S
ACE	e	9 - 15	0	4	T
ACE	e	9 - 15	2	5	E
ACE	g	30 - 45	1	6	T
ACE	N	N	0	5	I
BFO	A	0 - 0.5	0	2	W
BFO	A	0 - 0.5	0	3	F
BFO	A	0 - 0.5	0	O	
BFO	A	0 - 0.5	1	4	D
BFO	b	0.5 - 2	0	1	
BFO	B	0.5 - 2	0	2	W
BFO	b	0.5 - 2	0	2	D
BFO	B	0.5 - 2	0	2	F
BFO	B	0.5 - 2	0	3	F
BFO	B	0.5 - 2	0	3	D
BFO	B	0.5 - 2	0	3	I
BFO	b	0.5 - 2	0	3	R
BFO	B	0.5 - 2	0	4	R
BFO	b	0.5 - 2	1	1	
BFO	B	0.5 - 2	1	2	W
BFO	b	0.5 - 2	1	3	R
BFO	B	0.5 - 2	1	3	D
BFO	B	0.5 - 2	1	4	R
BFO	B	0.5 - 2	2	2	W
BFO	b	0.5 - 2	2	3	R
BFO	B	0.5 - 2	3	5	P
BFO	c	2 - 5	0	1	
BFO	c	2 - 5	0	2	F
BFO	c	2 - 5	0	2	D
BFO	C	2 - 5	0	4	D
BFO	c	2 - 5	0	6	R
BFO	c	2 - 5	1	1	
BFO	C	2 - 5	1	2	F

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
BFO	c	2 - 5	1	3	R
BFO	c	2 - 5	2	2	F
BFO	c	2 - 5	2	3	R
BFO	c	2 - 5	2	3	P
BFO	c	2 - 5	2	3	F
BFO	c	2 - 5	2	6	R
BFO	c	2 - 5	3	3	F
BFO	c	2 - 5	3	7	P
BFO	C	2 - 5	4	7	P
BFO	d	5 - 9	0	3	T
BFO	d	5 - 9	0	3	E
BFO	d	5 - 9	0	3	S
BFO	d	5 - 9	1	1	
BFO	d	5 - 9	1	2	F
BFO	d	5 - 9	1	2	E
BFO	d	5 - 9	1	3	E
BFO	d	5 - 9	1	3	S
BFO	d	5 - 9	1	3	T
BFO	d	5 - 9	2	2	E
BFO	d	5 - 9	2	6	R
BFO	d	5 - 9	3	3	R
BFO	d	5 - 9	3	4	S
BFO	d	5 - 9	3	7	P
BFO	d	5 - 9	4	6	P
BFO	e	9 - 15	0	4	T
BFO	e	9 - 15	0	4	S
BFO	e	9 - 15	0	4	E
BFO	e	9 - 15	1	4	E
BFO	e	9 - 15	1	4	T
BFO	e	9 - 15	1	5	E
BFO	E	9 - 15	2	4	E
BFO	E	9 - 15	2	4	T
BFO	e	9 - 15	2	5	E
BFO	e	9 - 15	3	4	T
BFO	e	9 - 15	3	5	E
BFO	e	9 - 15	3	7	P
BFO	f	15 - 30	0	5	T
BFO	f	15 - 30	0	7	R
BFO	f	15 - 30	2	6	S
BFO	f	15 - 30	3	5	T
BFO	g	30 - 45	1	6	T

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
BFO	N	N	0	5	I
BFO	N	N	0	7	E
BFO	N	N	N	0	
BFO	N	N	N	W	
BNO	A	0 - 0.5	0	3	F
BNO	A	0 - 0.5	0	O	
BNO	b	0.5 - 2	0	2	F
BNO	b	0.5 - 2	0	2	D
BNO	B	0.5 - 2	0	2	W
BNO	B	0.5 - 2	0	3	D
BNO	B	0.5 - 2	0	3	F
BNO	B	0.5 - 2	0	4	D
BNO	B	0.5 - 2	0	4	R
BNO	B	0.5 - 2	1	2	W
BNO	B	0.5 - 2	2	2	W
BNO	b	0.5 - 2	2	3	R
BNO	B	0.5 - 2	2	4	R
BNO	c	2 - 5	0	1	
BNO	c	2 - 5	0	2	F
BNO	c	2 - 5	1	1	
BNO	c	2 - 5	1	3	R
BNO	c	2 - 5	1	4	R
BNO	c	2 - 5	2	1	
BNO	c	2 - 5	2	3	R
BNO	C	2 - 5	2	6	R
BNO	c	2 - 5	3	1	
BNO	c	2 - 5	3	3	F
BNO	c	2 - 5	3	7	P
BNO	d	5 - 9	0	3	T
BNO	d	5 - 9	0	3	S
BNO	d	5 - 9	0	3	E
BNO	d	5 - 9	1	2	F
BNO	d	5 - 9	1	2	E
BNO	d	5 - 9	1	3	S
BNO	d	5 - 9	2	4	S
BNO	d	5 - 9	2	6	R
BNO	e	9 - 15	0	4	E
BNO	e	9 - 15	0	4	T
BNO	e	9 - 15	0	4	S
BNO	e	9 - 15	3	5	E
BNO	f	15 - 30	0	5	T

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
BNO	f	15 - 30	0	7	R
BNO	f	15 - 30	1	5	E
BNO	N	N	0	5	I
BNO	N	N	0	7	E
BNO	N	N	N	0	
BRT	a	0 - 0.5	0	3	D
BRT	A	0 - 0.5	1	4	D
BRT	b	0.5 - 2	0	4	D
BRT	b	0.5 - 2	3	5	P
BRT	C	2 - 5	0	1	
BRT	c	2 - 5	0	2	F
BRT	C	2 - 5	1	1	
BRT	c	2 - 5	1	3	R
BRT	c	2 - 5	2	1	
BRT	d	5 - 9	0	3	T
BRT	D	5 - 9	0	3	D
BRT	d	5 - 9	1	2	F
BRT	d	5 - 9	1	6	R
BRT	d	5 - 9	3	7	P
BRT	e	9 - 15	0	4	T
BRT	e	9 - 15	1	4	T
BRT	e	9 - 15	2	4	E
BUF	A	0 - 0.5	0	3	D
BUF	B	0.5 - 2	0	2	W
BUF	b	0.5 - 2	0	2	F
BUF	B	0.5 - 2	0	3	D
BUF	b	0.5 - 2	2	1	
BUF	B	0.5 - 2	2	5	P
BUF	B	0.5 - 2	3	5	P
BUF	c	2 - 5	0	1	
BUF	c	2 - 5	1	1	
BUF	c	2 - 5	1	2	F
BUF	c	2 - 5	3	3	F
BUF	D	5 - 9	0	3	E
BUF	d	5 - 9	0	3	S
BUF	d	5 - 9	0	3	T
BUF	d	5 - 9	1	2	E
BUF	d	5 - 9	1	4	R
BUF	d	5 - 9	2	4	S
BUF	d	5 - 9	2	6	R
BUF	e	9 - 15	0	4	T

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
BUF	e	9 - 15	1	4	T
BUF	f	15 - 30	0	5	T
BUF	F	15 - 30	1	5	E
BUF	f	15 - 30	3	6	S
BVY	A	0 - 0.5	0	2	W
BVY	A	0 - 0.5	0	3	D
BVY	A	0 - 0.5	0	O	
BVY	B	0.5 - 2	0	2	W
BVY	B	0.5 - 2	0	2	F
BVY	B	0.5 - 2	0	3	I
BVY	B	0.5 - 2	0	3	D
BVY	b	0.5 - 2	0	3	F
BVY	b	0.5 - 2	0	3	R
BVY	b	0.5 - 2	0	4	R
BVY	b	0.5 - 2	1	1	
BVY	B	0.5 - 2	1	2	F
BVY	b	0.5 - 2	1	3	R
BVY	b	0.5 - 2	1	4	R
BVY	b	0.5 - 2	1	4	F
BVY	b	0.5 - 2	2	1	
BVY	B	0.5 - 2	2	2	W
BVY	b	0.5 - 2	2	3	R
BVY	B	0.5 - 2	2	5	P
BVY	b	0.5 - 2	3	4	R
BVY	B	0.5 - 2	3	5	P
BVY	c	2 - 5	0	1	
BVY	C	2 - 5	0	2	F
BVY	c	2 - 5	0	2	D
BVY	C	2 - 5	0	4	D
BVY	c	2 - 5	0	4	R
BVY	c	2 - 5	1	1	
BVY	c	2 - 5	1	2	F
BVY	c	2 - 5	1	3	R
BVY	c	2 - 5	1	3	F
BVY	c	2 - 5	1	4	R
BVY	c	2 - 5	2	1	
BVY	c	2 - 5	2	3	R
BVY	c	2 - 5	2	3	F
BVY	c	2 - 5	2	6	R
BVY	c	2 - 5	3	3	R
BVY	c	2 - 5	3	7	P

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
BVY	d	5 - 9	0	3	E
BVY	d	5 - 9	0	3	T
BVY	d	5 - 9	0	3	S
BVY	d	5 - 9	1	1	
BVY	d	5 - 9	1	3	S
BVY	d	5 - 9	2	2	E
BVY	d	5 - 9	2	2	F
BVY	d	5 - 9	2	3	T
BVY	d	5 - 9	2	4	S
BVY	d	5 - 9	2	6	R
BVY	d	5 - 9	3	3	R
BVY	d	5 - 9	3	4	S
BVY	d	5 - 9	3	5	R
BVY	d	5 - 9	3	7	P
BVY	d	5 - 9	4	6	P
BVY	e	9 - 15	0	4	T
BVY	e	9 - 15	0	4	E
BVY	e	9 - 15	0	4	S
BVY	e	9 - 15	1	4	T
BVY	e	9 - 15	1	4	E
BVY	e	9 - 15	1	5	E
BVY	e	9 - 15	2	4	E
BVY	e	9 - 15	2	5	E
BVY	e	9 - 15	2	6	S
BVY	E	9 - 15	2	6	R
BVY	e	9 - 15	3	4	T
BVY	e	9 - 15	3	5	E
BVY	f	15 - 30	0	5	T
BVY	f	15 - 30	1	5	T
BVY	f	15 - 30	3	5	T
BVY	g	30 - 45	1	6	T
BVY	g	30 - 45	1	6	S
BVY	N	N	0	5	I
BVY	N	N	0	7	E
BVY	N	N	N	0	
CGU	A	0 - 0.5	0	3	D
CGU	A	0 - 0.5	0	O	
CGU	B	0.5 - 2	0	2	W
CGU	b	0.5 - 2	0	3	R
CGU	B	0.5 - 2	0	3	I
CGU	B	0.5 - 2	1	3	D

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
CGU	b	0.5 - 2	1	6	R
CGU	b	0.5 - 2	2	4	R
CGU	b	0.5 - 2	2	6	R
CGU	c	2 - 5	0	1	
CGU	c	2 - 5	0	2	D
CGU	c	2 - 5	0	2	F
CGU	c	2 - 5	1	4	R
CGU	c	2 - 5	2	3	F
CGU	d	5 - 9	0	3	T
CGU	d	5 - 9	0	3	S
CGU	d	5 - 9	0	3	E
CGU	d	5 - 9	1	3	T
CGU	d	5 - 9	1	3	E
CGU	d	5 - 9	2	3	R
CGU	d	5 - 9	3	3	R
CGU	e	9 - 15	0	4	T
CGU	f	15 - 30	0	5	T
CGU	g	30 - 45	1	6	T
CGU	N	N	0	5	1
CWO	A	0 - 0.5	0	O	
CWO	B	0.5 - 2	0	1	
CWO	B	0.5 - 2	0	2	W
CWO	b	0.5 - 2	0	2	F
CWO	b	0.5 - 2	0	3	R
CWO	B	0.5 - 2	0	3	F
CWO	b	0.5 - 2	1	3	R
CWO	B	0.5 - 2	3	5	P
CWO	c	2 - 5	0	1	
CWO	c	2 - 5	0	2	F
CWO	c	2 - 5	1	1	
CWO	c	2 - 5	1	2	F
CWO	c	2 - 5	1	3	R
CWO	c	2 - 5	2	1	
CWO	c	2 - 5	3	7	P
CWO	d	5 - 9	0	3	S
CWO	d	5 - 9	0	3	T
CWO	d	5 - 9	0	3	E
CWO	d	5 - 9	1	3	S
CWO	e	9 - 15	0	4	T
CWO	e	9 - 15	0	5	E
CWO	e	9 - 15	1	5	E

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
CWO	f	15 - 30	0	7	R
CWO	f	15 - 30	1	5	T
DUF	A	0 - 0.5	0	2	W
DUF	A	0 - 0.5	0	3	D
DUF	A	0 - 0.5	0	O	
DUF	A	0 - 0.5	3	5	P
DUF	B	0.5 - 2	0	2	W
DUF	b	0.5 - 2	0	2	F
DUF	B	0.5 - 2	0	3	D
DUF	B	0.5 - 2	0	3	I
DUF	b	0.5 - 2	0	3	F
DUF	b	0.5 - 2	1	3	R
DUF	b	0.5 - 2	1	4	R
DUF	b	0.5 - 2	3	4	R
DUF	c	2 - 5	0	1	
DUF	c	2 - 5	0	2	D
DUF	c	2 - 5	0	2	F
DUF	C	2 - 5	0	3	R
DUF	c	2 - 5	1	2	F
DUF	c	2 - 5	1	3	R
DUF	c	2 - 5	1	4	D
DUF	c	2 - 5	2	3	R
DUF	c	2 - 5	2	6	R
DUF	d	5 - 9	0	3	T
DUF	d	5 - 9	0	3	E
DUF	d	5 - 9	0	3	S
DUF	d	5 - 9	1	1	
DUF	d	5 - 9	1	2	E
DUF	d	5 - 9	1	3	S
DUF	d	5 - 9	2	6	R
DUF	d	5 - 9	3	3	R
DUF	e	9 - 15	0	4	S
DUF	e	9 - 15	0	4	T
DUF	e	9 - 15	1	5	E
DUF	e	9 - 15	3	4	T
DUF	f	15 - 30	0	5	T
DUF	f	15 - 30	1	5	T
DUF	f	15 - 30	3	5	T
DUF	N	N	0	5	I
DUF	N	N	0	7	E
DYK	A	0 - 0.5	0	O	

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI I
DYK	b	0.5 - 2	0	I	
DYK	b	0.5 - 2	0	2	F
DYK	B	0.5 - 2	0	3	I
DYK	b	0.5 - 2	0	3	F
DYK	b	0.5 - 2	I	I	
DYK	c	2 - 5	0	I	
DYK	c	2 - 5	0	2	F
DYK	c	2 - 5	I	4	R
DYK	d	5 - 9	0	3	E
DYK	d	5 - 9	0	3	T
DYK	d	5 - 9	0	3	S
DYK	d	5 - 9	I	2	F
DYK	d	5 - 9	2	2	E
DYK	g	30 - 45	I	6	T
DYK	N	N	N	0	
FMB	A	0 - 0.5	0	2	W
FMB	A	0 - 0.5	0	3	D
FMB	A	0 - 0.5	0	O	
FMB	b	0.5 - 2	0	I	
FMB	B	0.5 - 2	0	3	I
FMB	b	0.5 - 2	0	3	D
FMB	b	0.5 - 2	I	I	
FMB	b	0.5 - 2	I	3	R
FMB	b	0.5 - 2	I	4	F
FMB	B	0.5 - 2	I	4	R
FMB	B	0.5 - 2	2	2	W
FMB	B	0.5 - 2	3	4	R
FMB	c	2 - 5	0	I	
FMB	c	2 - 5	0	2	F
FMB	c	2 - 5	0	3	R
FMB	c	2 - 5	I	I	
FMB	C	2 - 5	I	3	R
FMB	c	2 - 5	2	I	
FMB	c	2 - 5	2	6	R
FMB	d	5 - 9	0	I	
FMB	d	5 - 9	0	3	S
FMB	d	5 - 9	0	3	T
FMB	d	5 - 9	0	3	E
FMB	d	5 - 9	I	3	S
FMB	d	5 - 9	2	2	E
FMB	d	5 - 9	2	4	S

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
FMB	d	5 - 9	3	4	S
FMB	d	5 - 9	3	5	R
FMB	d	5 - 9	3	7	P
FMB	e	9 - 15	0	4	S
FMB	e	9 - 15	0	4	E
FMB	e	9 - 15	0	4	T
FMB	E	9 - 15	2	6	R
FMB	e	9 - 15	3	5	E
FMB	f	15 - 30	0	5	T
FMB	f	15 - 30	1	6	S
FMB	f	15 - 30	2	6	S
FMB	N	N	0	5	I
FMB	N	N	0	7	E
FRM	A	0 - 0.5	0	2	W
FRM	A	0 - 0.5	0	3	D
FRM	A	0 - 0.5	0	3	F
FRM	A	0 - 0.5	0	O	
FRM	A	0 - 0.5	1	4	R
FRM	b	0.5 - 2	0	1	
FRM	b	0.5 - 2	0	2	F
FRM	B	0.5 - 2	0	2	W
FRM	b	0.5 - 2	0	2	D
FRM	B	0.5 - 2	0	3	D
FRM	B	0.5 - 2	0	3	F
FRM	B	0.5 - 2	0	3	I
FRM	B	0.5 - 2	0	4	R
FRM	B	0.5 - 2	1	2	W
FRM	b	0.5 - 2	1	4	F
FRM	B	0.5 - 2	2	2	W
FRM	b	0.5 - 2	2	3	R
FRM	b	0.5 - 2	2	4	F
FRM	b	0.5 - 2	2	5	P
FRM	c	2 - 5	0	1	
FRM	c	2 - 5	0	2	F
FRM	c	2 - 5	1	1	
FRM	c	2 - 5	1	2	F
FRM	c	2 - 5	1	3	R
FRM	c	2 - 5	1	4	R
FRM	c	2 - 5	2	1	
FRM	c	2 - 5	2	2	F
FRM	c	2 - 5	2	3	F

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
FRM	c	2 - 5	3	7	P
FRM	d	5 - 9	0	3	T
FRM	d	5 - 9	0	3	E
FRM	d	5 - 9	0	3	S
FRM	d	5 - 9	1	2	F
FRM	d	5 - 9	1	4	R
FRM	d	5 - 9	1	6	R
FRM	d	5 - 9	2	2	E
FRM	d	5 - 9	2	4	S
FRM	d	5 - 9	3	5	R
FRM	d	5 - 9	3	7	P
FRM	e	9 - 15	0	4	T
FRM	e	9 - 15	0	4	S
FRM	e	9 - 15	2	4	E
FRM	f	15 - 30	0	5	T
FRM	f	15 - 30	1	5	T
FRM	f	15 - 30	1	5	E
FRM	f	15 - 30	2	5	T
FRM	f	15 - 30	2	6	S
FRM	f	15 - 30	3	5	T
FRM	N	N	0	5	I
GMY	A	0 - 0.5	0	2	W
GMY	A	0 - 0.5	0	3	F
GMY	A	0 - 0.5	0	3	D
GMY	A	0 - 0.5	0	7	I
GMY	A	0 - 0.5	0	O	
GMY	b	0.5 - 2	0	1	
GMY	b	0.5 - 2	0	2	F
GMY	B	0.5 - 2	0	2	W
GMY	B	0.5 - 2	0	3	D
GMY	B	0.5 - 2	0	3	I
GMY	B	0.5 - 2	0	3	F
GMY	B	0.5 - 2	1	2	W
GMY	b	0.5 - 2	1	3	R
GMY	B	0.5 - 2	1	4	R
GMY	B	0.5 - 2	1	6	R
GMY	b	0.5 - 2	2	2	W
GMY	b	0.5 - 2	2	3	R
GMY	B	0.5 - 2	3	4	R
GMY	B	0.5 - 2	3	5	P
GMY	c	2 - 5	0	1	

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLII
GMY	c	2 - 5	0	2	F
GMY	c	2 - 5	0	2	D
GMY	c	2 - 5	0	3	R
GMY	c	2 - 5	1	1	
GMY	c	2 - 5	1	2	F
GMY	c	2 - 5	1	3	R
GMY	c	2 - 5	1	4	R
GMY	c	2 - 5	1	4	F
GMY	c	2 - 5	1	6	R
GMY	c	2 - 5	2	1	
GMY	c	2 - 5	2	3	R
GMY	c	2 - 5	2	3	F
GMY	c	2 - 5	2	6	R
GMY	C	2 - 5	3	1	
GMY	c	2 - 5	3	3	F
GMY	c	2 - 5	3	7	P
GMY	C	2 - 5	4	7	P
GMY	d	5 - 9	0	3	T
GMY	d	5 - 9	0	3	S
GMY	d	5 - 9	0	3	E
GMY	d	5 - 9	0	3	R
GMY	d	5 - 9	1	1	
GMY	d	5 - 9	1	2	F
GMY	d	5 - 9	1	3	S
GMY	d	5 - 9	1	3	T
GMY	d	5 - 9	1	4	R
GMY	d	5 - 9	2	2	F
GMY	d	5 - 9	2	2	E
GMY	d	5 - 9	2	3	R
GMY	d	5 - 9	2	4	S
GMY	d	5 - 9	2	4	R
GMY	d	5 - 9	2	5	R
GMY	d	5 - 9	2	6	R
GMY	d	5 - 9	3	4	S
GMY	d	5 - 9	3	5	R
GMY	d	5 - 9	3	7	P
GMY	e	9 - 15	0	4	T
GMY	e	9 - 15	0	4	E
GMY	e	9 - 15	0	4	S
GMY	E	9 - 15	1	4	E
GMY	e	9 - 15	1	5	E

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
GMY	e	9 - 15	2	4	E
GMY	e	9 - 15	2	5	E
GMY	E	9 - 15	2	6	R
GMY	e	9 - 15	3	5	E
GMY	f	15 - 30	0	5	T
GMY	f	15 - 30	1	5	T
GMY	f	15 - 30	3	5	T
GMY	g	30 - 45	1	6	T
GMY	N	N	0	5	I
GMY	N	N	0	7	E
GMY	N	N	N	0	
GNY	c	2 - 5	1	1	
GUP	A	0 - 0.5	0	2	W
GUP	A	0 - 0.5	0	3	D
GUP	A	0 - 0.5	0	7	I
GUP	A	0 - 0.5	0	O	
GUP	b	0.5 - 2	0	1	
GUP	b	0.5 - 2	0	2	D
GUP	b	0.5 - 2	0	2	F
GUP	B	0.5 - 2	0	2	W
GUP	B	0.5 - 2	0	3	I
GUP	B	0.5 - 2	0	3	F
GUP	B	0.5 - 2	0	3	D
GUP	b	0.5 - 2	0	4	D
GUP	b	0.5 - 2	1	3	R
GUP	B	0.5 - 2	2	2	W
GUP	B	0.5 - 2	3	5	P
GUP	c	2 - 5	0	1	
GUP	c	2 - 5	0	2	F
GUP	c	2 - 5	0	2	D
GUP	c	2 - 5	0	6	R
GUP	c	2 - 5	1	1	
GUP	c	2 - 5	1	2	F
GUP	c	2 - 5	1	3	R
GUP	c	2 - 5	2	1	
GUP	c	2 - 5	2	3	F
GUP	c	2 - 5	2	3	R
GUP	c	2 - 5	2	6	R
GUP	c	2 - 5	3	7	P
GUP	d	5 - 9	0	3	T
GUP	d	5 - 9	0	3	S

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
GUP	d	5 - 9	0	3	E
GUP	d	5 - 9	1	2	E
GUP	d	5 - 9	1	3	T
GUP	d	5 - 9	1	3	S
GUP	d	5 - 9	2	2	E
GUP	d	5 - 9	2	2	F
GUP	d	5 - 9	2	4	S
GUP	d	5 - 9	2	6	R
GUP	d	5 - 9	3	4	S
GUP	e	9 - 15	0	4	T
GUP	e	9 - 15	0	4	S
GUP	e	9 - 15	0	4	E
GUP	e	9 - 15	1	4	S
GUP	e	9 - 15	1	4	E
GUP	e	9 - 15	1	5	E
GUP	e	9 - 15	3	4	T
GUP	f	15 - 30	0	5	T
GUP	f	15 - 30	1	5	T
GUP	f	15 - 30	2	5	T
GUP	f	15 - 30	3	5	T
GUP	N	N	0	5	I
HIM	A	0 - 0.5	0	3	D
HIM	A	0 - 0.5	0	O	
HIM	B	0.5 - 2	0	2	W
HIM	B	0.5 - 2	0	3	I
HIM	b	0.5 - 2	0	4	F
HIM	b	0.5 - 2	1	4	F
HIM	B	0.5 - 2	1	4	R
HIM	b	0.5 - 2	2	6	R
HIM	B	0.5 - 2	3	5	P
HIM	c	2 - 5	0	1	
HIM	c	2 - 5	0	2	F
HIM	c	2 - 5	0	2	D
HIM	c	2 - 5	1	1	
HIM	c	2 - 5	1	2	F
HIM	c	2 - 5	1	3	R
HIM	c	2 - 5	3	7	P
HIM	d	5 - 9	0	3	S
HIM	d	5 - 9	0	3	T
HIM	d	5 - 9	2	2	E
HIM	d	5 - 9	2	4	S

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
HIM	d	5 - 9	2	6	R
HIM	e	9 - 15	0	4	T
HIM	e	9 - 15	1	4	T
HIM	e	9 - 15	2	4	T
HIM	f	15 - 30	0	5	T
JDD	A	0 - 0.5	0	O	
JDD	b	0.5 - 2	0	2	F
JDD	B	0.5 - 2	0	3	F
JDD	b	0.5 - 2	1	3	R
JDD	b	0.5 - 2	1	4	R
JDD	c	2 - 5	0	1	
JDD	c	2 - 5	0	2	F
JDD	c	2 - 5	1	1	
JDD	c	2 - 5	1	3	F
JDD	c	2 - 5	2	1	
JDD	c	2 - 5	2	3	F
JDD	c	2 - 5	3	7	P
JDD	d	5 - 9	0	2	F
JDD	d	5 - 9	0	3	T
JDD	e	9 - 15	0	4	T
JDD	f	15 - 30	0	7	R
JDD	f	15 - 30	2	5	T
KIL	a	0 - 0.5	0	3	D
KIL	A	0 - 0.5	0	3	F
KIL	A	0 - 0.5	0	O	
KIL	A	0 - 0.5	1	4	D
KIL	b	0.5 - 2	0	2	F
KIL	b	0.5 - 2	1	2	F
KIL	B	0.5 - 2	1	4	R
KIL	c	2 - 5	0	1	
KIL	C	2 - 5	0	2	F
KIL	c	2 - 5	0	2	D
KIL	c	2 - 5	1	2	F
KIL	c	2 - 5	1	3	R
KIL	c	2 - 5	2	3	R
KIL	c	2 - 5	2	4	R
KIL	d	5 - 9	0	3	E
KIL	e	9 - 15	0	4	S
KIL	e	9 - 15	2	6	S
KIL	f	15 - 30	1	5	T
LIC	a	0 - 0.5	0	3	D

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
LIC	A	0 - 0.5	0	7	I
LIC	A	0 - 0.5	0	O	
LIC	B	0.5 - 2	0	2	W
LIC	B	0.5 - 2	0	3	I
LIC	B	0.5 - 2	0	4	R
LIC	B	0.5 - 2	I	I	
LIC	b	0.5 - 2	2	3	R
LIC	B	0.5 - 2	2	5	P
LIC	B	0.5 - 2	3	5	P
LIC	b	0.5 - 2	3	7	P
LIC	c	2 - 5	0	I	
LIC	c	2 - 5	0	2	F
LIC	C	2 - 5	I	I	
LIC	c	2 - 5	2	I	
LIC	c	2 - 5	2	3	R
LIC	C	2 - 5	2	6	R
LIC	d	5 - 9	0	3	E
LIC	d	5 - 9	0	3	T
LIC	d	5 - 9	I	2	F
LIC	d	5 - 9	I	3	S
LIC	d	5 - 9	3	5	R
LIC	e	9 - 15	0	4	T
LIC	e	9 - 15	I	5	E
LIC	f	15 - 30	0	5	T
LIC	f	15 - 30	I	5	T
LIY	A	0 - 0.5	0	2	W
LIY	A	0 - 0.5	0	O	
LIY	b	0.5 - 2	0	2	F
LIY	B	0.5 - 2	0	2	W
LIY	B	0.5 - 2	I	2	W
LIY	B	0.5 - 2	I	4	R
LIY	c	2 - 5	0	I	
LIY	c	2 - 5	0	2	F
LIY	c	2 - 5	I	I	
LIY	c	2 - 5	2	I	
LIY	c	2 - 5	3	3	F
LIY	d	5 - 9	0	3	S
LIY	d	5 - 9	I	3	S
LIY	d	5 - 9	I	6	R
LIY	d	5 - 9	3	4	S
LIY	d	5 - 9	3	5	R

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
LIY	e	9 - 15	0	4	T
LIY	e	9 - 15	2	6	S
LIY	f	15 - 30	0	5	T
LIY	f	15 - 30	3	6	S
LOD	A	0 - 0.5	0	3	D
LOD	A	0 - 0.5	0	3	F
LOD	A	0 - 0.5	0	O	
LOD	b	0.5 - 2	0	I	
LOD	B	0.5 - 2	0	2	W
LOD	b	0.5 - 2	0	2	F
LOD	B	0.5 - 2	0	3	F
LOD	B	0.5 - 2	0	3	D
LOD	b	0.5 - 2	1	3	R
LOD	B	0.5 - 2	1	4	R
LOD	B	0.5 - 2	1	6	R
LOD	b	0.5 - 2	2	3	R
LOD	c	2 - 5	0	1	
LOD	c	2 - 5	0	2	F
LOD	c	2 - 5	0	3	R
LOD	c	2 - 5	1	1	
LOD	c	2 - 5	1	2	F
LOD	c	2 - 5	1	3	R
LOD	c	2 - 5	1	4	R
LOD	c	2 - 5	2	1	
LOD	C	2 - 5	2	6	R
LOD	c	2 - 5	3	7	P
LOD	d	5 - 9	0	3	T
LOD	d	5 - 9	0	3	S
LOD	d	5 - 9	0	3	E
LOD	d	5 - 9	1	1	
LOD	d	5 - 9	1	2	F
LOD	d	5 - 9	1	2	E
LOD	d	5 - 9	2	2	E
LOD	d	5 - 9	2	2	F
LOD	d	5 - 9	3	4	S
LOD	d	5 - 9	3	7	P
LOD	d	5 - 9	4	6	P
LOD	e	9 - 15	0	4	T
LOD	e	9 - 15	0	4	S
LOD	e	9 - 15	1	4	S
LOD	e	9 - 15	1	4	E

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
LOD	e	9 - 15	1	5	E
LOD	e	9 - 15	2	4	E
LOD	e	9 - 15	2	5	E
LOD	f	15 - 30	1	5	E
LOD	f	15 - 30	1	5	T
LOD	F	15 - 30	3	1	
LOD	N	N	0	5	1
LOD	N	N	N	0	
MOY	B	0.5 - 2	3	5	P
MOY	C	2 - 5	0	1	
MOY	c	2 - 5	0	2	F
MOY	c	2 - 5	1	4	R
MOY	e	9 - 15	0	4	T
OID	A	0 - 0.5	0	2	W
OID	A	0 - 0.5	0	3	F
OID	b	0.5 - 2	0	2	F
OID	B	0.5 - 2	0	3	F
OID	B	0.5 - 2	0	3	I
OID	b	0.5 - 2	0	4	R
OID	b	0.5 - 2	1	1	
OID	b	0.5 - 2	2	3	R
OID	b	0.5 - 2	2	6	R
OID	c	2 - 5	0	1	
OID	c	2 - 5	0	2	F
OID	C	2 - 5	1	1	
OID	C	2 - 5	1	3	R
OID	c	2 - 5	1	4	R
OID	C	2 - 5	1	4	F
OID	c	2 - 5	2	6	R
OID	c	2 - 5	3	3	R
OID	c	2 - 5	3	7	P
OID	d	5 - 9	0	1	
OID	d	5 - 9	0	3	T
OID	d	5 - 9	0	3	E
OID	d	5 - 9	0	3	S
OID	D	5 - 9	1	3	T
OID	d	5 - 9	2	2	E
OID	d	5 - 9	2	6	R
OID	d	5 - 9	3	4	S
OID	e	9 - 15	0	4	T
OID	e	9 - 15	1	4	T

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLII
OID	e	9 - 15	3	7	P
OID	f	15 - 30	0	5	T
OID	N	N	0	5	I
PLL	A	0 - 0.5	0	3	D
PLL	A	0 - 0.5	0	O	
PLL	b	0.5 - 2	0	2	D
PLL	b	0.5 - 2	0	2	F
PLL	B	0.5 - 2	0	3	I
PLL	B	0.5 - 2	0	3	F
PLL	b	0.5 - 2	1	1	
PLL	B	0.5 - 2	1	2	W
PLL	b	0.5 - 2	1	3	R
PLL	b	0.5 - 2	1	4	F
PLL	b	0.5 - 2	3	4	R
PLL	c	2 - 5	0	1	
PLL	c	2 - 5	0	2	F
PLL	c	2 - 5	1	2	F
PLL	c	2 - 5	2	6	R
PLL	c	2 - 5	3	7	P
PLL	d	5 - 9	0	3	T
PLL	d	5 - 9	0	3	E
PLL	d	5 - 9	1	2	F
PLL	d	5 - 9	2	3	R
PLL	d	5 - 9	3	4	S
PLL	e	9 - 15	0	4	T
PLL	e	9 - 15	1	5	E
PLL	e	9 - 15	2	6	S
PLL	e	9 - 15	3	4	T
SHV	A	0 - 0.5	0	2	W
SHV	A	0 - 0.5	0	O	
SHV	b	0.5 - 2	0	1	
SHV	B	0.5 - 2	0	2	W
SHV	b	0.5 - 2	0	2	F
SHV	B	0.5 - 2	0	3	I
SHV	b	0.5 - 2	0	3	F
SHV	B	0.5 - 2	0	3	D
SHV	B	0.5 - 2	0	4	R
SHV	B	0.5 - 2	1	2	W
SHV	B	0.5 - 2	1	3	D
SHV	B	0.5 - 2	1	3	R
SHV	B	0.5 - 2	1	4	R

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
SHV	B	0.5 - 2	1	5	P
SHV	B	0.5 - 2	1	6	R
SHV	b	0.5 - 2	2	4	F
SHV	b	0.5 - 2	2	6	R
SHV	B	0.5 - 2	3	4	R
SHV	c	2 - 5	0	1	
SHV	c	2 - 5	0	2	F
SHV	c	2 - 5	0	2	D
SHV	c	2 - 5	1	2	F
SHV	c	2 - 5	1	3	R
SHV	C	2 - 5	1	4	F
SHV	c	2 - 5	2	1	
SHV	c	2 - 5	2	6	R
SHV	d	5 - 9	0	3	T
SHV	d	5 - 9	0	3	S
SHV	d	5 - 9	0	3	E
SHV	d	5 - 9	1	3	S
SHV	d	5 - 9	2	2	E
SHV	d	5 - 9	2	6	R
SHV	d	5 - 9	3	5	R
SHV	d	5 - 9	4	6	P
SHV	e	9 - 15	0	4	T
SHV	e	9 - 15	0	4	S
SHV	e	9 - 15	0	4	E
SHV	e	9 - 15	1	4	T
SHV	e	9 - 15	1	5	E
SHV	e	9 - 15	2	4	E
SHV	e	9 - 15	2	4	T
SHV	e	9 - 15	2	5	E
SHV	e	9 - 15	2	6	S
SHV	e	9 - 15	3	4	T
SHV	e	9 - 15	3	5	E
SHV	f	15 - 30	0	5	T
SHV	f	15 - 30	1	5	T
SHV	g	30 - 45	1	6	T
SHV	N	N	0	5	I
SHV	N	N	N	0	
SRI	A	0 - 0.5	0	4	D
SRI	b	0.5 - 2	0	2	W
SRI	B	0.5 - 2	0	3	F
SRI	B	0.5 - 2	1	2	W

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
SRI	B	0.5 - 2	1	4	R
SRI	b	0.5 - 2	2	1	
SRI	B	0.5 - 2	2	5	P
SRI	c	2 - 5	0	1	
SRI	c	2 - 5	1	3	R
SRI	c	2 - 5	2	3	F
SRI	c	2 - 5	3	7	P
SRI	C	2 - 5	4	7	P
SRI	d	5 - 9	0	3	T
SRI	d	5 - 9	0	3	E
SRI	d	5 - 9	1	1	
SRI	d	5 - 9	2	2	E
SRI	d	5 - 9	2	3	R
SRI	d	5 - 9	3	3	F
SRI	d	5 - 9	3	7	P
SRI	e	9 - 15	0	4	S
SRI	e	9 - 15	0	4	T
SRI	f	15 - 30	0	5	T
SRI	N	N	0	5	I
SRI	N	N	0	7	E
TFG	B	0.5 - 2	0	4	R
TFG	c	2 - 5	0	1	
TFG	d	5 - 9	0	3	T
TFG	d	5 - 9	0	4	R
TFG	d	5 - 9	1	1	
TFG	d	5 - 9	1	3	S
TFG	d	5 - 9	3	2	E
TFG	N	N	0	7	E
TLD	a	0 - 0.5	0	3	D
TLD	A	0 - 0.5	0	O	
TLD	A	0 - 0.5	2	5	P
TLD	b	0.5 - 2	0	1	
TLD	b	0.5 - 2	0	2	F
TLD	B	0.5 - 2	0	2	W
TLD	B	0.5 - 2	0	3	D
TLD	B	0.5 - 2	0	3	F
TLD	b	0.5 - 2	1	1	
TLD	b	0.5 - 2	1	2	F
TLD	B	0.5 - 2	1	2	W
TLD	b	0.5 - 2	2	2	F
TLD	B	0.5 - 2	2	5	P

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
TLD	B	0.5 - 2	3	5	P
TLD	c	2 - 5	0	1	
TLD	c	2 - 5	0	2	F
TLD	c	2 - 5	0	2	D
TLD	c	2 - 5	1	1	
TLD	c	2 - 5	1	3	R
TLD	c	2 - 5	1	6	R
TLD	C	2 - 5	2	1	
TLD	c	2 - 5	2	3	R
TLD	c	2 - 5	2	4	R
TLD	c	2 - 5	4	7	P
TLD	d	5 - 9	0	3	T
TLD	d	5 - 9	0	3	E
TLD	d	5 - 9	0	3	S
TLD	d	5 - 9	1	1	
TLD	d	5 - 9	1	2	F
TLD	d	5 - 9	1	3	S
TLD	d	5 - 9	1	3	R
TLD	d	5 - 9	3	5	R
TLD	d	5 - 9	3	7	P
TLD	D	5 - 9	4	5	P
TLD	d	5 - 9	4	6	P
TLD	e	9 - 15	0	4	T
TLD	e	9 - 15	0	4	S
TLD	e	9 - 15	0	4	E
TLD	E	9 - 15	2	4	E
TLD	e	9 - 15	3	4	T
TLD	e	9 - 15	4	6	P
TLD	f	15 - 30	0	5	T
TLD	f	15 - 30	2	5	T
TLD	N	N	0	5	I
TLD	N	N	0	7	E
TLD	N	N	N	0	
TUC	A	0 - 0.5	0	2	W
TUC	A	0 - 0.5	0	3	F
TUC	a	0 - 0.5	0	3	D
TUC	A	0 - 0.5	0	7	I
TUC	A	0 - 0.5	0	O	
TUC	b	0.5 - 2	0	1	
TUC	b	0.5 - 2	0	2	F
TUC	B	0.5 - 2	0	2	W

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
TUC	B	0.5 - 2	0	3	I
TUC	B	0.5 - 2	0	3	F
TUC	b	0.5 - 2	0	4	D
TUC	b	0.5 - 2	I	I	
TUC	b	0.5 - 2	I	4	R
TUC	B	0.5 - 2	3	4	R
TUC	C	2 - 5	0	I	
TUC	c	2 - 5	0	2	F
TUC	c	2 - 5	I	2	F
TUC	c	2 - 5	2	3	R
TUC	c	2 - 5	3	3	R
TUC	c	2 - 5	3	3	F
TUC	c	2 - 5	3	7	P
TUC	D	5 - 9	0	I	
TUC	d	5 - 9	0	3	T
TUC	d	5 - 9	0	3	S
TUC	d	5 - 9	I	2	F
TUC	d	5 - 9	I	2	E
TUC	d	5 - 9	I	3	R
TUC	d	5 - 9	I	3	T
TUC	d	5 - 9	2	3	R
TUC	d	5 - 9	4	7	P
TUC	e	9 - 15	0	4	E
TUC	e	9 - 15	0	4	T
TUC	e	9 - 15	I	4	E
TUC	f	15 - 30	I	5	T
VLD	A	0 - 0.5	0	2	W
VLD	A	0 - 0.5	0	O	
VLD	b	0.5 - 2	0	I	
VLD	b	0.5 - 2	0	2	F
VLD	B	0.5 - 2	0	2	W
VLD	B	0.5 - 2	0	3	F
VLD	B	0.5 - 2	0	3	I
VLD	B	0.5 - 2	0	3	D
VLD	b	0.5 - 2	0	4	D
VLD	B	0.5 - 2	I	2	W
VLD	b	0.5 - 2	I	2	F
VLD	B	0.5 - 2	I	3	R
VLD	B	0.5 - 2	I	4	R
VLD	B	0.5 - 2	I	6	R
VLD	B	0.5 - 2	2	2	W

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
VLD	b	0.5 - 2	2	3	R
VLD	b	0.5 - 2	2	4	R
VLD	B	0.5 - 2	3	5	P
VLD	c	2 - 5	0	1	
VLD	c	2 - 5	0	2	F
VLD	c	2 - 5	0	2	D
VLD	c	2 - 5	1	1	
VLD	c	2 - 5	1	2	F
VLD	c	2 - 5	2	1	
VLD	c	2 - 5	2	3	F
VLD	c	2 - 5	2	3	R
VLD	c	2 - 5	2	6	R
VLD	c	2 - 5	3	3	F
VLD	c	2 - 5	3	7	P
VLD	d	5 - 9	0	3	T
VLD	d	5 - 9	0	3	E
VLD	d	5 - 9	0	3	S
VLD	d	5 - 9	1	1	
VLD	d	5 - 9	1	3	S
VLD	d	5 - 9	2	2	E
VLD	d	5 - 9	2	3	R
VLD	d	5 - 9	2	4	R
VLD	d	5 - 9	2	4	S
VLD	d	5 - 9	2	6	R
VLD	d	5 - 9	3	2	E
VLD	d	5 - 9	3	3	R
VLD	d	5 - 9	3	7	P
VLD	e	9 - 15	0	4	S
VLD	e	9 - 15	0	4	T
VLD	e	9 - 15	0	4	E
VLD	e	9 - 15	1	4	S
VLD	e	9 - 15	1	5	E
VLD	e	9 - 15	2	4	E
VLD	e	9 - 15	2	6	S
VLD	e	9 - 15	3	5	E
VLD	f	15 - 30	0	5	T
VLD	f	15 - 30	0	7	R
VLD	f	15 - 30	1	5	T
VLD	f	15 - 30	2	6	S
VLD	N	N	0	5	I
VLD	N	N	0	7	E

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
WIO	A	0 - 0.5	0	O	
WIO	B	0.5 - 2	0	4	R
WIO	B	0.5 - 2	1	3	D
WIO	B	0.5 - 2	1	5	P
WIO	c	2 - 5	0	1	
WIO	C	2 - 5	0	2	F
WIO	c	2 - 5	0	3	R
WIO	c	2 - 5	1	2	F
WIO	c	2 - 5	1	4	R
WIO	d	5 - 9	0	3	T
WIO	e	9 - 15	2	6	R
WIO	f	15 - 30	2	6	S
WIO	F	15 - 30	3	6	P
ZES	B	0.5 - 2	0	3	F
ZES	c	2 - 5	0	1	
ZES	c	2 - 5	3	7	P
ZES	d	5 - 9	0	3	T
ZES	d	5 - 9	1	1	
ZES	d	5 - 9	3	4	S
ZES	N	N	0	5	I
ZMH	A	0 - 0.5	0	3	F
ZMH	b	0.5 - 2	0	2	F
ZMH	B	0.5 - 2	0	2	W
ZMH	B	0.5 - 2	0	3	I
ZMH	c	2 - 5	0	1	
ZMH	c	2 - 5	0	2	F
ZMH	d	5 - 9	1	3	E
ZMH	e	9 - 15	0	4	E
ZMK	A	0 - 0.5	0	3	F
ZMK	A	0 - 0.5	0	3	D
ZMK	A	0 - 0.5	0	O	
ZMK	b	0.5 - 2	0	2	F
ZMK	B	0.5 - 2	0	2	W
ZMK	B	0.5 - 2	0	3	I
ZMK	B	0.5 - 2	0	3	F
ZMK	b	0.5 - 2	1	2	F
ZMK	b	0.5 - 2	1	2	W
ZMK	b	0.5 - 2	1	3	R
ZMK	b	0.5 - 2	1	4	F
ZMK	c	2 - 5	0	1	
ZMK	c	2 - 5	0	2	F

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
ZMK	c	2 - 5	0	2	D
ZMK	c	2 - 5	1	1	
ZMK	c	2 - 5	1	3	R
ZMK	c	2 - 5	2	1	
ZMK	c	2 - 5	2	3	R
ZMK	c	2 - 5	2	6	R
ZMK	d	5 - 9	0	3	E
ZMK	d	5 - 9	0	3	S
ZMK	d	5 - 9	0	3	T
ZMK	d	5 - 9	1	1	
ZMK	d	5 - 9	1	2	F
ZMK	d	5 - 9	1	3	T
ZMK	d	5 - 9	1	3	E
ZMK	d	5 - 9	2	2	E
ZMK	d	5 - 9	2	4	S
ZMK	d	5 - 9	2	6	R
ZMK	d	5 - 9	3	4	S
ZMK	d	5 - 9	3	7	P
ZMK	e	9 - 15	0	4	T
ZMK	e	9 - 15	0	4	E
ZMK	e	9 - 15	0	4	S
ZMK	e	9 - 15	1	4	E
ZMK	e	9 - 15	3	5	E
ZMK	f	15 - 30	0	5	T
ZMK	f	15 - 30	2	5	T
ZMK	N	N	0	7	E
ZMK	N	N	N	0	
ZQY	C	2 - 5	0	1	
ZQY	d	5 - 9	0	3	E
ZQY	f	15 - 30	0	5	T
ZRV	A	0 - 0.5	0	3	D
ZRV	A	0 - 0.5	0	O	
ZRV	A	0 - 0.5	1	4	R
ZRV	b	0.5 - 2	0	2	F
ZRV	b	0.5 - 2	0	2	W
ZRV	B	0.5 - 2	0	3	F
ZRV	B	0.5 - 2	0	3	I
ZRV	B	0.5 - 2	2	2	W
ZRV	b	0.5 - 2	2	3	R
ZRV	c	2 - 5	0	1	
ZRV	c	2 - 5	0	2	F

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
ZRV	c	2 - 5	1	2	D
ZRV	c	2 - 5	1	4	F
ZRV	d	5 - 9	0	4	R
ZRV	e	9 - 15	0	4	T
ZRV	E	9 - 15	2	6	R
ZRV	e	9 - 15	3	5	E
ZST	A	0 - 0.5	0	2	W
ZST	A	0 - 0.5	0	O	
ZST	b	0.5 - 2	0	1	
ZST	b	0.5 - 2	0	2	F
ZST	B	0.5 - 2	0	2	W
ZST	b	0.5 - 2	1	1	
ZST	b	0.5 - 2	1	4	F
ZST	b	0.5 - 2	3	5	P
ZST	c	2 - 5	0	1	
ZST	c	2 - 5	0	2	F
ZST	c	2 - 5	1	1	
ZST	c	2 - 5	2	3	R
ZST	c	2 - 5	3	3	R
ZST	c	2 - 5	3	7	P
ZST	d	5 - 9	0	3	T
ZST	d	5 - 9	0	3	E
ZST	d	5 - 9	1	3	S
ZST	d	5 - 9	2	2	E
ZST	d	5 - 9	2	6	R
ZST	d	5 - 9	3	5	R
ZST	e	9 - 15	0	4	T
ZST	e	9 - 15	0	4	S
ZST	e	9 - 15	3	4	T
ZST	e	9 - 15	3	5	E
ZST	e	9 - 15	4	6	P
ZST	f	15 - 30	0	5	T
ZST	N	N	0	7	E
ZUR	A	0 - 0.5	0	4	D
ZUR	A	0 - 0.5	0	5	W
ZUR	A	0 - 0.5	0	7	I
ZUR	B	0.5 - 2	0	3	I
ZUR	B	0.5 - 2	3	2	W
ZUR	c	2 - 5	0	1	
ZUR	c	2 - 5	1	2	F
ZUR	d	5 - 9	0	3	S

Soil Code	Slope Code	Slope Range	Stoniness	CLI	CLI1
ZUR	f	15 - 30	0	7	R
ZZZ	c	2 - 5	0	2	F

APPENDIX E

DAVE HODGSON CURRICULUM VITAE

DBH Soil Services Inc
217 Highgate Court
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email: dhodgson@dbhsoilservices.ca

DAVID B. HODGSON, B.Sc., P. Ag.
PRESIDENT – Senior Pedologist/Agrologist

EDUCATION

- B.Sc. (Agriculture), 1983-1987; University of Guelph, Major in Soil Science
- Agricultural Engineering, 1982-1983; University of Guelph.
- Materials Science Technology, 1981-1982; Northern Alberta Institute of Technology (NAIT), Edmonton, Alberta.

AREAS OF PROFESSIONAL EXPERIENCE

2000 to Present — **Senior Pedologist/President. DBH Soil Services Inc., Kitchener, Ontario.**
Mr. Hodgson provides expertise in the investigation, assessment and resource evaluation of agricultural operations/facilities and soil materials. Dave is directly responsible for the field and office operations of DBH Soil Services and for providing advanced problem solving skills as required on an individual client/project basis. Dave is skilled at assessing soil and agricultural resources, determining potential impacts and is responsible for providing the analysis of and recommendations for the remediation of impacts to soil/agricultural/environmental systems in both rural and urban environments.

1992 to 2000 — **Pedologist/Project Scientist. Ecologistics Limited, Waterloo, Ontario.**
As pedologist (soil scientist), Mr. Hodgson provided expertise in the morphological, chemical and physical characterization of insitu soils. As such, Mr. Hodgson was involved in a variety of environmental assessment, waste management, agricultural research and site/route selection studies.
Dave was directly responsible for compiling, analysis and management of the environmental resource information. Dave is skilled at evaluating the resource information utilizing Geographic Information System (GIS) applications.

Dave was also involved the firms Environmental Audit and Remediation Division in the capacity of: asbestos identification; an inspector for the remediation of a pesticide contaminated site; and an investigator for Phase I and Phase II Audits.

SELECT PROJECT EXPERIENCE

Environmental Assessment Studies

- Agricultural Component of the Highway 401 Widening Milton to Wellington County Boundary, 2023 – ongoing.
- Agricultural Component of the Highway 6 Widening Hamilton 2022 – ongoing.
- Agricultural Component of the Bradford Bypass (Highway 400 to 404 link) 2021 – ongoing.
- Agricultural Component of the Green for Life (GFL) Environmental, Moose Creek, Eastern Ontario Waste Handling Facility (EOWHF) Expansion, 2020 – 2023.
- Agricultural Component of the Greater Toronto Area West (GTAW) Highway 413 Corridor Assessment, 2019 – ongoing.
- Peer Review of the Walker Environmental Group (WEG) Inc. Southwestern Landfill Proposal, Ingersoll, 2013 – 2021.
- Agricultural Component for the High-Speed Rail Kitchener to London –Terms of Reference, 2018,
- Agricultural Component of the Mount Nemo Heritage District Conservation Study – City of Burlington, 2014 – 2015.
- Agricultural Component of the Greater Toronto Area West (GTAW) Highway Corridor Assessment – Phase 2, 2014 – 2016.

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- Peer Review of the Agricultural Component of the Walker Group Landfill – Ingersoll, 2013 – 2015.
- Agricultural Component of the Highway 407 East Extension Design and Build Phase, 2012 – 2013.
- Agricultural Component of the Beechwood Road Environmental Centre (Landfill/Recycling) – Napanee, 2012 – 2013.
- Agricultural Component of the Clean Harbors Hazardous Waste Landfill Lambton County 2009 – 2015.
- Agricultural Component of the Highway 401 widening Cambridge to Halton Region 2009 – 2012.
- Agricultural Component of the Upper York Sanitary Sewer Study, York Region, 2009 – 2013.
- Agricultural Component of the Greater Toronto Area West Corridor Environmental Assessment Study 2007 – 2013 (Phase 1).
- Agricultural Component of the Niagara to GTA Planning and Environmental Assessment Study, 2007 – 2013.
- Agricultural Component of the Highway 401 widening, Chatham, 2006 - 2007.
- Agricultural Component of the Trafalgar Road study, Halton Region, 2005.
- Agricultural Component of the Highway 404 Extension North, 2004.
- Agricultural Component of the Highway 404 – 400 Bradford Bypass, 2004.
- Agricultural Component of the Highway 407 East Extension, 2002 – 2010.

Agricultural Impact Assessment/Minimum Distance Separation Studies

- Cambridge South AIA, 2024.
- AECOM Peel Sewer AIA, 2024.
- Port Hope North Settlement Area Boundary Expansion AIA, 2024
- Fergus Oaks, Fergus Settlement Area Boundary Expansion AIA, 2024.
- Jordan Settlement Area Boundary Expansion AIA, 2024.
- Town of New Tecumseth AIA Assistance, 2024
- Whistle Bare Road, North Dumfries Minimum Distance Separation (MDS1 Assessment), 2024.
- Balsam Road, Pickering Minimum Distances Separation (MDS1) Assessment, 2024.
- Port Hope West Urban Boundary Expansion Scoped Agricultural Impact Assessment (including MDS1), 2023.
- Port Hope East Urban Boundary Expansion Scoped Agricultural Impact Assessment (including MDS1), 2023.
- Town of King Battery Energy Storage System (BESS) Agricultural Impact Assessment, 2023.
- City of London Agricultural Impact Assessment (including MDS1), 2023.
- Caledonia Secondary Plan Scoped Agricultural Impact Assessment (including MDS), 2023.
- Inglewood Well Agricultural Impact Assessment, 2023.
- Orangeville Battery Energy Storage System (BESS) Agricultural Impact Assessment, 2023.
- County Road 109 Realignment Agricultural Impact Assessment, 2023.
- Thornbury Acres Agricultural Impact Assessment (including MDS1), 2022 – 2023.
- Highway 6 Widening Hamilton Agricultural Impact Assessment, 2022 – ongoing.
- Whistle Bare Pit Agricultural Impact Assessment, 2022.
- Middletown Road Agricultural Impact Assessment (including MDS1), 2022.
- Claremont, Durham Region Minimum Distance Separation (MDS1), 2022.
- Grand Valley Settlement Area Boundary Expansion 2022 - ongoing.
- Hagersville Minimum Distance Separation (MDS1), 2022.
- East River Road Minimum Distance Separation (MDS1), County of Brant, 2022.
- Brampton Brick Norval Quarry, Agricultural Impact Assessment, 2022 – ongoing.
- Northfield Drive Minimum Distance Separation (MDS1), Waterloo Region, 2021
- Bradford Bypass Highway 400- 404 Link, Agricultural Impact Assessment, 2021 – ongoing.
- Wilfrid Laurier Milton Campus, Agricultural Impact Assessment (including MDS1), 2021 – 2023.
- Town of Lincoln Road Realignment, Agricultural Impact Assessment, 2021 – 2023.
- Britannia Secondary Plan, Agricultural Impact Assessment (including MDS1), Milton, 2021 – 2023.
- Reesor Road Minimum Distance Separation (MDS1), Markham, 2021.
- Maclean School Road Minimum Distance Separation (MDS1), County of Brant, 2021.
- Petersburgh Sand Pit, Agricultural Impact Assessment, 2021 – 2022.

- Milton, CRH Quarry Expansion, Agricultural Impact Assessment, 2020 – 2022.
- Grimsby, Specialty Crop Area Redesignation, Agricultural Impact Assessment, 2020 - 2022.
- Halton Hills, Premier Gateway Phase 2 Employment Lands Secondary Plan, Agricultural Impact Assessment (including MDS1), 2020 - 2021.
- Milton Education Village Secondary Plan, Agricultural Impact Assessment (including MDS1), 2020 - 2021.
- Woodstock, Pattullo Avenue Realignment, Agricultural Impact Assessment, 2020 - 2021.
- Smithville, West Lincoln Master Community Plan, Agricultural Impact Assessment (including MDS1), AECOM, 2019 – 2022.
- Kirby Road Agricultural Impact Assessment, HDR, Vaughan, 2019 – 2021.
- Elfrida Lands, City of Hamilton, Agricultural Impact Assessment Update, WSP, 2019 – 2021.
- Dorsay Development – Durham Region High Level Agricultural Assessment, 2019.
- Stoney Creek Landfill AIA Update – GHD, 2019.
- Town of Wilmot, Agricultural Impact Assessment (AIA) Aggregate Pit Study (Hallman Pit), 2018, on-going.
- Courtice Area Southeast Secondary Plan (Clarington) Agricultural Impact Assessment (AIA) (including MDS1), 2019,
- Town of Halton Hills, Minimum Distance Separation (MDS 1), August 2018,
- Cedar Creek Pit/Alps Pit (North Dumfries), Agricultural Impact Assessment (AIA), 2018 – 2021,
- Belle Aire Road (Simcoe County) Agricultural Impact Assessment (AIA) Study (including MDS1), 2019,
- Vinemount Quarry Extension (Niagara) Agricultural Impact Assessment (AIA) Study, December 2017.
- Grimsby – Agricultural Impact Assessment Opinion, November 2017.
- City of Hamilton, Urban Core Developments – Agricultural Capability Assessment, February 2017.
- Township of North Dumfries – Minimum Distance Separation (MDS 1), February 2017.
- Township of Erin, County of Wellington – Minimum Distance Separation 1(MDS1 Study), 2016.
- Halton Hills Employment Area Secondary Plan, Halton, 2015 - 2016.
- Peer Review of Agricultural Impact Assessment, Oro-Medonte Township, 2015.
- Greenwood Construction Aggregate Pit, Mono Township, 2014 - 2015.
- Innisfil Mapleview Developments, Town of Innisfil – Minimum Distance Separation (MDS 1), 2014.
- Loyalist Township – Minimum Distance Separation (MDS 1 & 2), 2014.
- Rivera Fine Homes, Caledon – Minimum Distance Separation (MDS 1), 2014.
- Town of Milton PanAm Velodrome – Minimum Distance Separation (MDS) 2012 – 2013.

Soil Surveys/Soil Evaluations

- Soil Survey and Canada Land Inventory Evaluation, Peterborough, 2024.
- Soil Survey and Canada Land Inventory Evaluation, Essex, 2024.
- Mississippi Mills Soil Survey Peer Reviews (4 parcels), 2024.
- Ontario Stone, Sand & Gravel Association Case Study Rehabilitated Pits, 2023 – ongoing.
- Soil Survey and Canada Land Inventory Evaluation, Neubauer Pit, 2023.
- Soil Survey and Canada Land Inventory Evaluation, David Pit, 2023.
- Soil Survey and Canada Land Inventory Evaluation, Pinehurst Road, 2023.
- Soil Survey and Canada Land Inventory Evaluation, Paris Plains Church Road Site, 2022.
- Soil Survey and Canada Land Inventory Evaluation, Mulmur Site, 2022.
- Soil Survey and Canada Land Inventory Evaluation, Port Colborne Site, 2022.
- Soil Survey and Canada Land Inventory Evaluation, Pike Site, 2022.
- Soil Survey and Canada Land Inventory Evaluation, New Dundee Road Site, 2022.
- Soil Survey and Canada Land Inventory Evaluation, Gehl Farm, 2022
- Soil Sampling, City of Kitchener, 2021 – 2022.
- Soybean Cyst Nematode Soil Sampling, Enbridge, 2021.
- Soil Survey and Canada Land Inventory Evaluation, Max Becker Enterprises, City of Kitchener, 2021
- Soil Survey and Canada Land Inventory Evaluation, Max Beck Enterprises, City of Kitchener, 2021 – 2022.
- Soil Survey and Canada Land Inventory Evaluation, Burlington, Nelson Quarry, 2020-2021.

- City of Kitchener, City Wide Soil Studies, 2020-ongoing.
- Soil Survey, Fallowfield Drive, City of Kitchener Development Manual Study, 2020 - ongoing.
- Soil Survey, Williamsburg Estates, City of Kitchener Development Manual Study, 2020 - 2021.
- Soil Survey, South Estates, City of Kitchener Development Manual Study, 2020 - 2021.
- Soil Survey and Canada Land Inventory Evaluation, Burlington, Nelson Quarry, 2019.
- Soil Survey and Canada Land Inventory Evaluation, Maryhill Pit, 2019.
- Soil Survey and Canada Land Inventory Evaluation, Glen Morris Pit, Lafarge Canada, 2018,
- Soil Survey and Canada Land Inventory Evaluation, Brantford Pit Extension, Lafarge Canada, 2018,
- Soil Survey and Canada Land Inventory Evaluation, Pinkney Pit Extension, Lafarge Canada, May 2018,
- Soil evaluation and opinion, King-Vaughan Road, March 2018,
- Soil Sampling, Upper Medway Watershed, Agriculture and Agri-Food Canada. December 2017 – June 2018.
- Soil Survey and Canada Land Inventory Evaluation, Hillsburgh Pit Extension, SBM St Marys, December 2017.
- Soil Survey and Canada Land Inventory Evaluation, Erin South Pit Extension, Halton Crushed Stone, December 2017.
- City of Kitchener, City Wide Urban Soil Assessments, 2016 – On-going.
- Soil Survey and Canada Land Inventory Evaluation, Solar Feed-In Tariff (FIT) Program Study, 2016.
    - Bruce County (15 sites)
    - Grey County (4 sites)
- Soil Survey and Canada Land Inventory Evaluation, Wasaga Beach area, County of Simcoe, 2016.
- Soil Survey and Canada Land Inventory Evaluation Study, MHBC Bradford, Simcoe County, 2016.
- Soil Survey and Canada Land Inventory Evaluation, Solar Feed-In Tariff (FIT Program Study), Carbon Foot Print Offsetters, Durham Region, 2015.
- Soil Survey and Canada Land Inventory Evaluation, Solar Feed-In Tariff (FIT Program Study), Abundant Solar Energy (12 Sites – Peterborough, Madoc, Havelock, Belleville), 2015.
- Soil Survey and Canada Land Inventory Evaluation, Solar Feed-In Tariff (FIT Program Study), City of Hamilton, 2015.

Municipal Comprehensive Review and Mapping Studies (MCR)

- Bruce County 2022 – 2023.
- Simcoe County, 2020 - ongoing.
- Northumberland County, 2020 - ongoing.
- Halton Region, 2019 - 2022.

Land Evaluation and Area Review Studies (LEAR)

- Land Evaluation and Area Review (LEAR) presentation for Lanark County Council, 2024.
- Land Evaluation and Area Review (LEAR) Town of Amaranth, 2023 – ongoing.
- Mapping Audit Bruce County. Assessment of Prime and Non-Prime Agricultural Lands, 2022.
- Mapping Audit Northumberland County. Comparison of Regional and Provincial Prime Agricultural Area Mapping – 2021 - ongoing.
- Mapping Audit Simcoe County. Comparison of Regional and Provincial Prime Agricultural Area Mapping – 2021 - ongoing.
- Mapping Audit Halton Region. Comparison of Regional and Provincial Prime Agricultural Area Mapping – 2019 - 2022.
- Land Evaluation and Area Review (LEAR) – Soils Component, in Association with AgPlan Ltd, Kanata/Munster. December 2017 – July 2018.
- Land Evaluation and Area Review (LEAR) – Soils Component, Prince Edward County, 2016 – 2017.
- Land Evaluation and Area Review (LEAR) – Soils Component, Peel Region, 2013 - 2014.
- Land Evaluation and Area Review (LEAR), Minto Communities, Ottawa, 2012 – 2013.
- GIS and LE component of Land Evaluation and Area Review (LEAR), York Region 2008 – 2009.
- Land Evaluation and Area Review (LEAR), Mattamy Homes, City of Ottawa – Orleans, 2008 – 2009.
- GIS for Manitoba Environmental Goods and Services (EG&S) Study. 2007 – 2008.
- GIS and LE component of Land Evaluation and Area Review (LEAR), Halton Region 2007 - 2008.

- GIS and LE component of Land Evaluation and Area Review (LEAR), City of Hamilton, 2003 – 2005.

Expert Witness

- Ontario Land Tribunal (OLT) Hearing/mediation, Thornbury Estates, 2024.
- Ontario Land Tribunal (OLT) Hearing, Haldimand County, 2024.
- Ontario Land Tribunal (OLT) Hearing preparation, Burlington Quarry, 2024.
- Ontario Land Tribunal (OLT) Hearing preparation, Cemetery Lands Bradford, 2024.
- Local Planning Appeal Tribunal (LPAT) Hearing, Greenwood Aggregates Limited, Violet Hill Pit Application, 2020.
- Ontario Municipal Board (OMB) Hearing, Burl's Creek Event Grounds 2018-2019.
- Town of Mono Council Meeting, Greenwood Aggregates Violet Hill Pit, January 2018.
- Ontario Municipal Board (OMB) Hearing, Burl's Creek Event Grounds, Simcoe County, 2015 – 2016.
- Ontario Municipal Board (OMB) Hearing, Town of Woolwich, Gravel Pit, 2012 – 2013.
- Ontario Municipal Board (OMB) Hearing, Mattamy Homes – City of Ottawa, 2011 – 2012.
- Ontario Municipal Board (OMB) Hearing, Town of Colgan, Simcoe County, 2010.
- Presentation to Planning Staff on behalf of Mr. MacLaren, City of Ottawa, 2005.
- Ontario Municipal Board (OMB) Hearing, Flamborough Severance, 2002.
- Preparation for an Ontario Municipal Board Hearing, Flamborough Golf Course, 2001.
- Ontario Municipal Board (OMB) Hearing, Stratford RV Resort and Campground – Wetland Delineation Assessment, 2000.
- Ontario Municipal Board (OMB) Hearing, Watcha Farms, Grey County, Agricultural Impact Assessment – Land Use Zoning Change, 1999-2000.
- Ontario Municipal Board (OMB) Hearing, Town of St. Vincent Agricultural Impact Assessment – Land Use Zoning Change, 1999 – 2000.
- Halton Agricultural Advisory Committee (HAAC), Halton Joint Venture Golf Course Proposal - Agricultural Impact Assessment for Zoning Change, 1999-2000
- Halton Agricultural Advisory Committee (HAAC), Sixteen Mile Creek Golf Course Proposal – Agricultural Impact Assessment for Zoning Change, 1999.
- Ontario Municipal Board (OMB) Hearing, Town of Flamborough, Environs Agricultural Impact Assessment for Zoning Change – Golf Course Proposal, 1999.
- Ontario Municipal Board (OMB) Hearing, Stratford RV Resort and Campground – Agricultural Impact Assessment, 1998.

Monitoring Studies

- Ontario Stone, Sand, and Gravel Association (OSSGA) Rehabilitation Study, 2023 – ongoing.
- Enbridge Soil Sampling for Soybean Cyst Nematode, various sites Lambton County, 2022
- Union Gas/Enbridge Gas 20" Gas Pipeline Construction Monitoring – Kingsville – 2019 - 2020.
- Union Gas/Enbridge Gas – Gas Pipeline Construction Monitoring for Tree Clearing. Kingsville Project. February/March 2019.
- CAEPLA – Union Gas 36" Gas Pipeline Construction Monitoring and Post Construction Clean Up – Agricultural Monitoring Panhandle Project. 2017 – 2018.
- CAEPLA – Union Gas 36" Gas Pipeline Construction Clearing Panhandle Project (Dawn Station to Dover Station) – Agricultural Monitoring, 2017 (Feb-March).
- City of Kitchener, Soil Sampling and data set analysis, 2017 – On-going.
- GAPLO – Union Gas 48" Gas Pipeline (Hamilton Station to Milton) Construction Soil and Agricultural Monitoring, 2016 – 2017.
- GAPLO – Union Gas 48" Gas Pipeline (Hamilton –Milton) Clearing – Agricultural Monitoring, 2016.

Publications

D.E. Stephenson and D.B. Hodgson, 1996. Root Zone Moisture Gradients Adjacent to a Cedar Swamp in Southern Ontario. In Malamoottil, G., B.G. Warner and E.A. McBean., *Wetlands Environmental Gradients, Boundaries, and Buffers*, Wetlands Research Centre, University of Waterloo. Pp. 298.