

DOCUMENT TRANSMITTAL

Document: **PREMIER GATEWAY PHASE 2B EMPLOYMENT AREA
HALTON HILLS
AGRICULTURAL IMPACT ASSESSMENT**

Prepared for: Ms. Lorelei Jones
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Date February 22, 2021
Our Ref. No. 2021-02
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Attention: Ms. Jones

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DBH Soil Services Inc.



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I BACKGROUND

DBH Soil Services Inc was retained to complete an Agricultural Impact Assessment (AIA) for the Halton Hills Premier Gateway area. The Halton Hills Premier Gateway area is roughly bounded by Winston Churchill Boulevard on the east, Steeles Avenue on the south, Eighth Line on the west, and property boundaries (lot lines) running parallel to and approximately 0.6 kilometers north of Steeles Avenue.

The proposed future development of these lands requires the completion of an Agricultural Impact Assessment. The purpose of this AIA is to document the existing agricultural character, identify potential existing (or future) agricultural impacts, and to provide avoidance or mitigative measures as necessary to offset any impacts.

For this study, the Halton Hills Premier Gateway Phase 2B lands will be referred to as the Study Area. The Study Area is part of the urban area of Halton Hills. Figure I illustrates the location, size and shape of the Study Area.

Figure I Premier Gateway Lands



In the Regional context, the Study Area is located approximately 600 m northwest of Highway 401, approximately 700 m from the urban areas of the City of Mississauga (near Winston Churchill Boulevard), approximately 600 m northwest of the Town of Milton (near Eighth Line) and abuts the City of Brampton on the east, at Winston Churchill Boulevard.

For the purpose of an Agricultural Impact Assessment (AIA) report, agricultural operations and activities are evaluated in a larger area, the Secondary Study Area, described as a potential zone of impact extending a minimum of 1500 m (1.5 km) beyond the boundary of the Study Area.

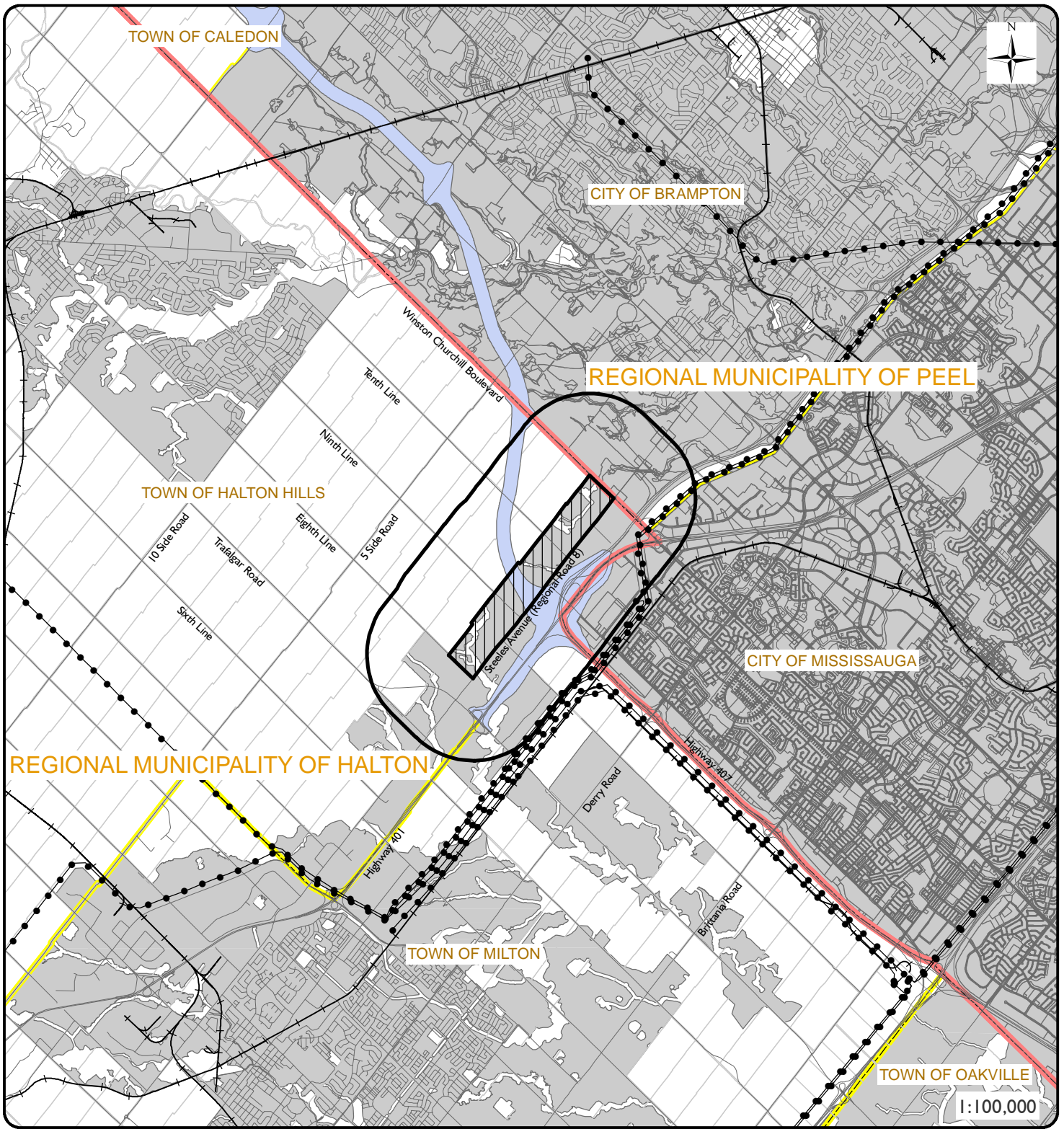
This minimum 1500 m (1.5 km) area of potential impact outside the Study Area is used to allow for characterization of the agricultural community and the assessment of impacts adjacent both on and in the immediate vicinity of the Study Area.

The Study Area and the Secondary Study Areas comprise a mix of land uses including urban uses, rural uses, agricultural lands, transportation corridors, and woodlands. A large portion of the Secondary Study Area (south, west and east of the Study Area) rests within the urban boundary areas of Halton Hills, the City of Mississauga and the City of Brampton. Portions of those areas are presently used for agriculture; however due to their location within the urban boundaries, those lands have diminished or limited long term agricultural potential.

Further, the Study Area and the Secondary Study Area are roughly bisected by the proposed Greater Toronto Area West Technically Preferred Highway Corridor (GTA West), that extends north from the existing Highway 407 and Highway 401 interchange. This corridor extends across the Study Area roughly halfway between Ninth Line and Tenth Line.

Figure 2 illustrates the relative location and shape of the Study Area and the Secondary Study Area with respect to the above-mentioned community features.

This report documents the methodology, findings, conclusions, and mapping completed for this study.



Legend

●—● Hydro Line	□ Lot Lines (MNR)
—+— Railway (MNR)	▭ Municipal Boundary - Lower (MNR)
— Roads (MNR)	▭ Municipal Boundary - Upper (MNR)
■ City of Brampton Urban Areas	■ Region of Halton Urban Areas (2009)
■ City of Mississauga Urban Areas (2017)	▭ Secondary Study Area (1.5 km)
■ GTA West Technically Preferred Corridor	▨ Study Area

Figure 2
Location

DBH Soil Services Inc.
February 2021

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 Study Area and the surrounding Secondary Study Area that may occur as a result of the proposed future development of the Premier Gateway Phase 2B lands.

A review of the Halton Region Official Plan (Official Plan for the Halton Planning Area, Regional Municipality of Halton, Office Consolidation July 19, 2018) was completed to determine if there are specific local guidelines and/or requirements for the completion of an Agricultural Impact Assessment study. It was noted that the Halton Region Official Plan requires that an Agricultural Impact Assessment study be completed to determine the *potential impact of urban development on existing agricultural operations, including the requirement for compliance with the Minimum Distance Separation formulae where an agricultural operation is outside the Urban area.*

The review also determined that the Region of Halton has created a document titled “*Agricultural Impact Assessment Guidelines, October 1985*”, and had updated those guidelines with a newer version from June 2014. The Region of Halton has specific standards and guidelines for completing Agricultural Impact Assessments (AIA) within the boundaries of the Region of Halton. The Halton Region guidelines are comprehensive and require considerable detail to complete.

A further review was completed to determine the existence and use of Agricultural Impact Assessment Guidelines in Ontario.

The review on the existence and use of Agricultural Impact Assessment Guidelines revealed that the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) had released draft Agricultural Impact Assessment guidelines in a document titled “*Draft Agricultural Impact Assessment (AIA) Guidance Document, March 2018*”. This document is considered as “Draft for Discussion Purposes” and does not have status. Recent discussions with staff from OMAFRA have indicated that the release of the final version of their Agricultural Impact Assessment Guidelines document is imminent, with the document to be available to the public in early 2021.

Prior to the release of the OMAFRA draft AIA guidelines, the standard for completing Agricultural Impact Assessments in Southern Ontario, were the Halton Region Agricultural Impact Assessment Guidelines.

As a result of the review on the existence and use of Agricultural Impact Assessment guidelines in Ontario, this Agricultural Impact Assessment report has been completed with regard to the *Region of Halton Agricultural Impact Assessment Guidelines (2014)*, a review/reference to the OMAFRA “*Draft Agricultural Impact Assessment (AIA) Guidance Document, March 2018*” and through discussion with staff from the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA).

The Region of Halton Agricultural Impact Assessment Guidelines states that an AIA should include the following:

- Description of the proposal
- Purpose
- Applicable Planning Policies
- Onsite and Surrounding Area Physical Resource Inventory (including: soils; climate; slope; topography; drainage)
- Minimum Distance Separation (MDS) calculations
- On-site features (including: past farming practices; type and intensity of existing agricultural production; nonagricultural land use; parcel size, shape and accessibility; existing farm management; capital investment related to agriculture)
- Offsite Land Use Features (including: surrounding land use types; existing and potential constraints to onsite agriculture; regional land use, lot and tenure patterns)
- Agricultural Viability
- Assessment of Impact on Agriculture
- Mitigative Measures/Avoidance/Minimizing impact
- Conclusions

It should be noted that the use of Land Tenure is specific to the Halton Region AIA guidelines and is not a characteristic that is defined within the policies of the PPS (2020) or the Growth Plan (2019). Further, the term land tenure is not described or discussed in the OMAFRA draft AIA guidelines. As such, the use of Land Tenure has no policy direction and was not included as part of this study.

Many of these general tasks, listed above, are also identified and presented in the OMAFRA “Draft Agricultural Impact Assessment (AIA) Guidance Document, March 2018”. As a result, this AIA will follow the above referenced task list.

2.1 DATA SOURCES

The following data sources were used (as a minimum) to carry out the AIA for the Study Area and Secondary Study Area:

- 1:10000 scale Ministry of Natural Resources and Forestry (MNRF) Aerial Photography, 1978,
- 1:10000 scale Ontario Base Map (1983) Ministry of Natural Resources and Forestry (MNRF):
 - 10 17 5900 48300
 - 10 17 5900 48250
 - 10 17 5900 48200
 - 10 17 5950 48300
 - 10 17 5950 48250
 - 10 17 5950 48200
- 1:50000 scale NTS Map No 30 M/12. 1984. Ministry of Energy Mines and Resources, Canada,

- 1:50000 scale NTS Map No 30 M/12. Canada Land Inventory (CLI) Capability Mapping (date unknown),
- *Agricultural Impact Assessment (AIA) Guidelines. Regional Official Plan Guidelines.* Halton Region. June 18, 2014,
- *Agricultural Information Atlas* online resource (OMAFRA, September 2020),
- *Agricultural Resource Inventory*, Ontario Ministry of Agriculture and Food, 1988,
- *Agricultural System Portal* online resource (OMAFRA, September 2020),
- *Birdseye Online Imagery* (September 2020),
- *Google Earth Pro Online Imagery* (September 2020),
- *Greenbelt Plan* (2017),
- *Growth Plan for the Greater Golden Horseshoe* (2019),
- *Guide to Agricultural Land Use*, Ontario Ministry of Agriculture, Food and Rural Affairs, March 1995,
- *Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas, 2016 (Publication 851)*,
- *Halton-Peel Boundary Area Transportation Study Amended Final Report (May 2010)*,
- *Halton Region Land Use Compatibility Guidelines, Regional Official Plan Guidelines*,
- *Halton Region Livestock Facility Guidelines, Regional Official Plan Guidelines*,
- *Halton Region Official Plan. Official Plan of the Halton Region Planning Area. Regional Municipality of Halton. Office Consolidation June 19, 2018*,
- *Implementation Procedures for the Agricultural System in Ontario's Greater Golden Horseshoe – Supplementary Direction to a Place to Grow: Growth Plan for the Greater Golden Horseshoe, Publication 856 (March 2020)*,
- Ontario Ministry of Agriculture and Food - Land Use Systems Mapping Online (December 2019),
- Ontario Ministry of Agriculture and Food - Artificial Drainage Mapping Online (December 2019),
- *Provincial Policy Statement, 2020*,
- *Soils of Halton County, Report No. 43 of the Ontario Soil Survey (Gillespie, J. E., R. E. Wicklund and M. H. Miller, 1971)*,
- *The Canadian System of Soil Classification. 3rd ed. Agric. Can. Publ. 1646. Agriculture Canada Expert Committee on Soil Survey. 1998*,
- *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 (OMAFRA). 2016*,
- *The Physiography of Southern Ontario 3rd Edition*, Ontario Geological Survey Special Volume 2, Ministry of Natural Resources, 1984,
- *The Regional Municipality of Halton Region Official Plan Review Phase I, Directions Report Final Revised, October 2016*,
- *Town of Halton Hills Official Plan (May 1, 2019 Consolidation)*,
- Windshield and field surveys by DBH Soil Services staff October, November and December 2020.

2.2 DATA COLLECTION

2.2.1 POLICY

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

The review included an examination of Provincial and Municipal policy as is presented in the *Provincial Policy Statement (2020)*, the *Greenbelt Plan (2017)*, the *Growth Plan for the Greater Golden Horseshoe (2019)*, the *Oak Ridges Moraine Conservation Plan (2017)*, the *Halton Region Official Plan Office Consolidation June 19, 2018*, and the *Town of Halton Hills Official Plan (May 1, 2019 Consolidation)*.

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 (OMAFRA, 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 the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), the Ministry of Natural Resources and Forestry (MNRF) Land Information Warehouse (Land Information Ontario (LIO)), the Region of Halton website, the Town of Halton Hills website, the City of Brampton website, the City of Mississauga website, combined with telephone, email and in person communication was used 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.

2.2.2 PHYSIOGRAPHY

A review of the *Physiography of Southern Ontario 3rd Edition, Ontario Geological Survey Special Volume 2, Ministry of Natural Resources (1984)* 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 OMAFRA document titled *Agronomy Guide for Field Crops – Publication 811 (June 2009)*.

2.2.4 AGRICULTURAL LAND USE

Agricultural land use data was collected through observations made during roadside

reconnaissance (windshield) surveys and field surveys conducted in October, November and December 2020. Data collected included the identification of land use (both agricultural and non-agricultural), the documentation of the location and type of agricultural facilities, 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)* (Ontario Ministry of Agriculture and Food report and maps) and the information provided in the Agricultural System Portal (OMAFRA) for the purpose of updating the Ontario Ministry of Agriculture and Food Land Use Systems mapping for both the Study Area and Secondary Study Area.

2.2.5 MINIMUM DISTANCE SEPARATION

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

Guideline #1 states “In accordance with the Provincial Policy Statement, 2014, this MDS Document shall apply in *prime agricultural areas* and on *rural lands*. Consequently, the appropriate parts of this MDS Document shall be referenced in municipal official plans, and detailed provisions included in municipal comprehensive zoning by-laws such that, at the very least, MDS setbacks are required in all designations and zones where *livestock facilities* and *anaerobic digesters* are permitted.”

Therefore, MDS I calculations are **NOT** required for this study in accordance with Guideline #1 (as the Study Area lands are neither Prime Agricultural Areas nor Rural Lands).

Minimum Distance Separation (MDSI) is however, a requirement of the Request for Proposal for this Agricultural Impact Assessment study. Therefore, MDSI calculations have been made for the agricultural facilities in the surrounding area (Secondary Study Area only) that either have livestock or are considered capable of housing livestock (Guideline #20).

2.2.6 LAND FRAGMENTATION

Land fragmentation data was collected through a review of online interactive mapping on the Agricultural Information Atlas (OMAFRA) website, the Agricultural System Portal (OMAFRA), the Town of Halton Hills Website and assessment data, the Region of Halton website and assessment data, and the Cities of Brampton and Mississauga website data. This data was used to determine the extent, location, relative shape of each parcel/property within both the Study Area and the Secondary Study Area.

2.2.7 SOIL SURVEY

Soil survey data and Canada Land Inventory (CLI) data was provided by the Ontario Ministry of

Agriculture, Food and Rural Affairs (OMAFRA) in digital format through the Land Information Ontario website warehouse. The soils/CLI data is considered the most recent iteration of the soil information from OMAFRA.

The digital soil survey data was also correlated to the printed soil survey report and map (*The Soil Survey of Halton* (Report No. 43 of the Ontario Soil Survey. Gillespie, J. E., R. E. Wicklund and M. H. Miller, 1971) to determine if the digital soils data has been modified from the original soil survey data.

2.2.8 AGRICULTURAL SYSTEM

The Ontario Ministry of Agriculture, Food and Rural Affairs online Agricultural Systems mapping were reviewed to determine the extent of agriculture on the Study Area, in the Secondary Study Area, within the Town of Halton Hills, the Region of Halton, the City of Brampton and the City of Mississauga.

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.

A review of online mapping and the OMAFRA Document *Implementation Procedures for the Agricultural System in Ontario's Greater Golden Horseshoe – Supplementary Direction to a Place to Grow: Growth Plan for the Greater Golden Horseshoe, Publication 856*, was reviewed as part of this study.

2.2.9 AGRICULTURAL STATISTICS

Agricultural statistics were provided by and downloaded from the OMAFRA website. The statistics were provided in Excel format for Southern Ontario, Halton, the Greater Golden Horseshoe, and the Greater Toronto Area. The Halton data included census information for the Town of Halton Hills and the Region of Halton. The data sets provide information from the 2006 Census up to (and including) the 2016 Census. Three data sets were reviewed as part of this AIA (2006, 2011 and 2016).

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 Policy Statement (2020)*. Further, in an effort to protect agricultural lands, the Province of Ontario has adopted policy and guidelines to provide a framework for managing growth. The framework is provided in four provincial land use plans. These four provincial land use plans: *Greenbelt Plan (2017)*; *the Oak Ridges Moraine Conservation Plan (2017)*; *the Niagara Escarpment Plan (2017)*; and *the Growth Plan for the Greater Golden Horseshoe (GGH) (2019)* support the long-term protection of farmland. The four provincial land use plans have policy plans that require the completion of Agricultural Impact Assessment (AIA) studies for changes in agricultural land use.

Municipal Governments 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.

With this in mind, the: *Provincial Policy Statement (2020)*; *Greenbelt Plan (2017)*; *the Oak Ridges Moraine Conservation Plan (2017)*; *the Niagara Escarpment Plan (2017)*; and *the Growth Plan for the Greater Golden Horseshoe (GGH) (2019)* were reviewed for this study.

With respect to this AIA and the four provincial land use plans, a review of the boundaries of the Greenbelt Plan Area, the Oak Ridges Moraine Area, the Niagara Escarpment Plan Area, and the Growth Plan for the Greater Golden Horseshoe Area was completed. It was determined that the Study Area (and Secondary Study Area) were located within the Growth Plan for the Greater Golden Horseshoe Area.

A review of the agricultural policies in the *Halton Region Official Plan (Office Consolidation June 19, 2018)*, and the *Town of Halton Hills Official Plan (May 1, 2019 Consolidation)* was completed.

It was determined through these reviews, that neither the Study Area nor the Secondary Study Area are 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 Policy Statement (2020)* was enacted to document the Ontario Provincial Governments development and land use planning strategies. The *Provincial Policy Statement* provides the policy foundation for regulating the development and use of land. With respect to the potential future development of the Study Area, the following policies may apply. Agricultural policies are addressed within Section 2.3 of the *Provincial Policy Statement (2020)*.

2.3.1 *Prime agricultural areas shall be protected for long-term use for agriculture.*

Prime agricultural areas are areas where prime agricultural lands predominate. 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.

2.3.2 Planning authorities shall designate prime agricultural areas and specialty crop areas in accordance with guidelines developed by the Province, as amended from time to time. Planning authorities are encouraged to use an agricultural system approach to maintain and enhance the geographic continuity of the agricultural land base and the functional and economic connections to the agri-food network.

2.3.3 Permitted Uses

2.3.3.1 In prime agricultural areas, permitted uses and activities are: agricultural uses, agriculture-related uses and on-farm diversified uses. 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 guidelines developed by the Province or municipal approaches, as set out in municipal planning documents, which achieve the same objectives.

2.3.3.2 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.

2.3.3.3 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.

2.3.4 Lot Creation and Lot Adjustments

2.3.4.1 Lot creation in prime agricultural areas is discouraged and may only be permitted for:

- a) agricultural uses, provided that the lots are of a size appropriate for the type of agricultural use(s) common in the area and are sufficiently large to maintain flexibility for future changes in the type or size of agricultural operations;
- b) agriculture-related uses, provided that any new lot will be limited to a minimum size needed to accommodate the use and appropriate sewage and water services;
- c) a residence surplus to a farming operation as a result of farm consolidation, provided that:
 1. the new lot will be limited to a minimum size needed to accommodate the use and appropriate sewage and water services; and
 2. the planning authority ensures that new residential dwellings are prohibited on any remnant parcel of farmland created by the severance. The approach used to ensure that no new residential dwellings are permitted on the remnant parcel may be recommended by the Province, or based on municipal approaches which achieve the same objective; and
- d) infrastructure, where the facility or corridor cannot be accommodated through the use of easements or rights-of-way.

2.3.4.2 Lot adjustments in prime agricultural areas may be permitted for legal or technical reasons.

2.3.4.3 The creation of new residential lots in prime agricultural areas shall not be permitted, except in accordance with policy 2.3.4.1(c).

2.3.5 Removal of Land from Prime Agricultural Areas

2.3.5.1 Planning authorities may only exclude land from prime agricultural areas for expansions of or identification of settlement areas in accordance with policy 1.1.3.8.

2.3.6 Non-Agricultural Uses in Prime Agricultural Areas

2.3.6.1 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 provided for in policy 1.1.2 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.*

2.3.6.2 *Impacts from any new or expanding non-agricultural uses on surrounding agricultural operations and lands are to be mitigated to the extent feasible.*

3.2 THE GROWTH PLAN FOR THE GREATER GOLDEN HORSESHOE

A review of the boundaries of the Growth Plan for the Greater Golden Horseshoe (GPGGH) area was completed. It was determined that the Study Area lands are located within the Growth Plan for the Greater Golden Horseshoe mapped area. The Study Area is located within 'Settlement Boundary', while portions of the Secondary Study Area are located within the 'Settlement Boundary' and the remainder as 'Prime Agricultural Lands'. There are no Specialty Crop Lands within either the Study Area lands or the Secondary Study Area.

Section 4.2.6 of the GPGGH provides policy for the Agricultural System. The respective policies for the Agricultural System are as follows:

4.2.6 Agricultural System

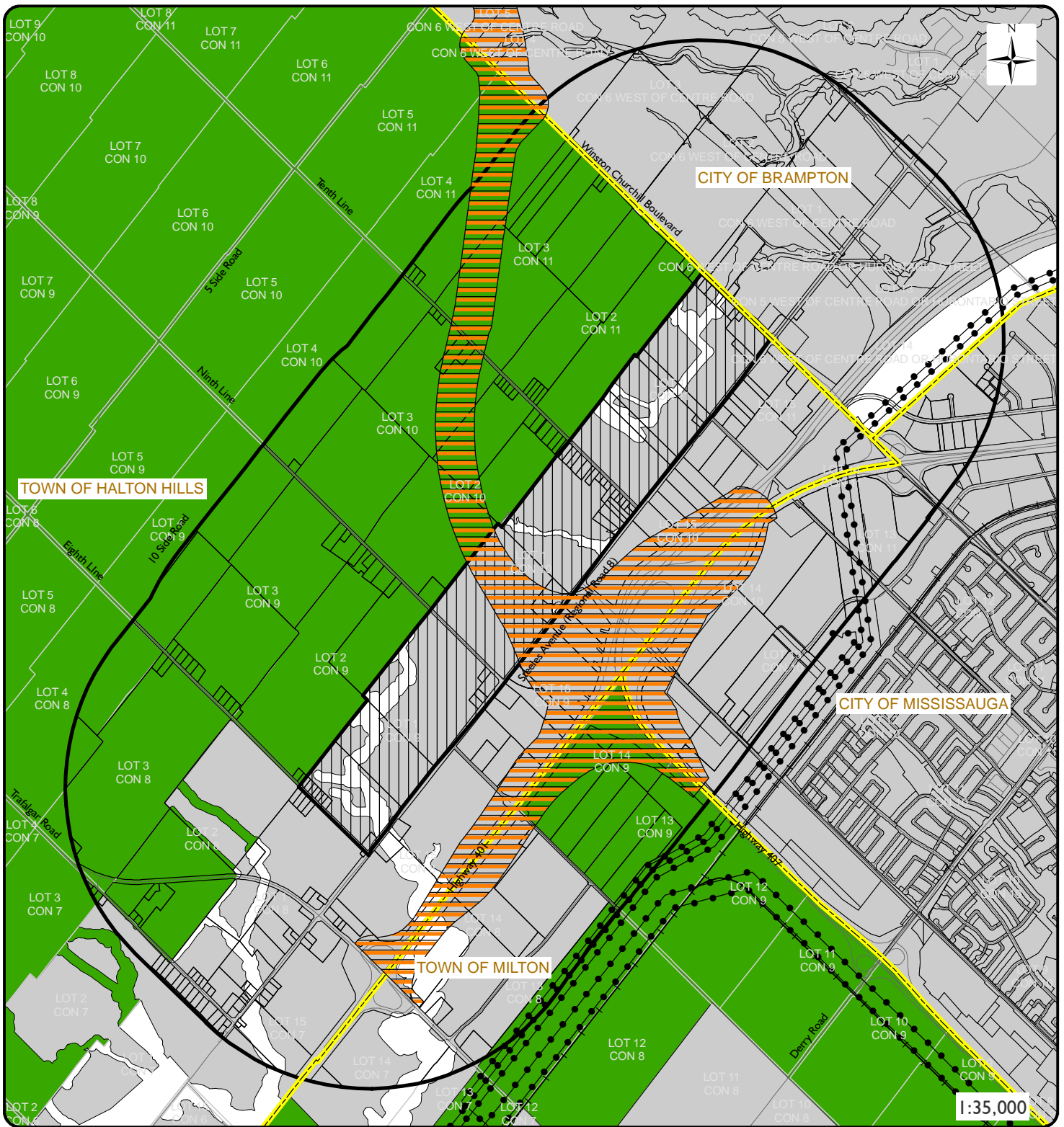
1. *An Agricultural System for the GGH has been identified by the Province.*
2. *Prime agricultural areas, including specialty crop areas, will be designated in accordance with mapping identified by the Province and these areas will be protected for long-term use for agriculture.*
3. *Where agricultural uses and non-agricultural uses interface outside of settlement areas, land use compatibility will be achieved by avoiding or where avoidance is not possible, minimizing and mitigating adverse impacts on the Agricultural System. Where mitigation is required, measures should be incorporated as part of the non-agricultural uses, as appropriate, within the area being developed. Where appropriate, this should be based on an agricultural impact assessment.*
4. *The geographic continuity of the agricultural land base and the functional and economic connections to the agri-food network will be maintained and enhanced.*
5. *The retention of existing lots of record for agricultural uses is encouraged, and the use of these lots for non-agricultural uses is discouraged.*
6. *Integrated planning for growth management, including goods movement and transportation planning, will consider opportunities to support and enhance the Agricultural System.*
7. *Municipalities are encouraged to implement regional agri-food strategies and other approaches to sustain and enhance the Agricultural System and the long-term economic prosperity and viability of the agri-food sector, including the maintenance and improvement of the agri-food network by:*
 - a) *providing opportunities to support access to healthy, local, and affordable food, urban and near-urban agriculture, food system planning and promoting the sustainability of agricultural, agri-food, and agri-product businesses while protecting agricultural resources and minimizing land use conflicts;*
 - b) *protecting, enhancing, or supporting opportunities for infrastructure, services, and assets. Where negative impacts on the agri-food network are unavoidable, they will be assessed, minimized, and mitigated to the extent feasible; and*
 - c) *establishing or consulting with agricultural advisory committees or liaison officers.*
8. *Outside of the Greenbelt Area, provincial mapping of the agricultural land base does not apply until it has been implemented in the applicable upper- or single-tier official plan. Until that time, prime agricultural areas*

identified in upper- and single-tier official plans that were approved and in effect as of July 1, 2017 will be considered the agricultural land base for the purposes of this Plan.

9. Upper- and single-tier municipalities may refine provincial mapping of the agricultural land base at the time of initial implementation in their official plans, based on implementation procedures issued by the Province. For upper-tier municipalities, the initial implementation of provincial mapping may be done separately for each lower-tier municipality. After provincial mapping of the agricultural land base has been implemented in official plans, further refinements may only occur through a municipal comprehensive review.

Figure 3 illustrates the relative location of the Study Area and the Secondary Study Area in the Growth Plan for the Greater Golden Horseshoe and the Agricultural System with respect to the Agricultural Land Base Mapping.

As illustrated in Figure 3, the Study Area is shown as Urban Area, which is consistent with the location of the 'Settlement Boundary' on the Agricultural Land Base Mapping. The Secondary Study Area comprises portions of the Agricultural System as identified by the Prime Agricultural Areas.



Legend

●—● Hydro Line	▭ Parcel Boundary
—+— Railway (MNRF)	▭ Region of Halton Urban Areas (2009)
— Roads (MNRF)	▭ Secondary Study Area (1.5 km)
▭ City of Brampton Urban Areas	▭ Study Area
▭ City of Mississauga Urban Areas (2017)	Agricultural Land Base Mapping
▭ GTA West Technically Preferred Corridor	▭ Candidate Area
▭ Lot Lines (MNRF)	▭ Prime Agricultural Area
▭ Municipal Boundary - Lower (MNRF)	▭ Specialty Crop Area

Figure 3
**Provincial
 Land Base Mapping**

DBH Soil Services Inc.
 February 2021

3.3 OFFICIAL PLAN AND ZONING BY-LAW POLICY

Official Plan policies are prepared under the Planning Act, as amended, of the Province of Ontario. Official Plans generally provide policy comment for land use planning while taking into consideration the economic, social and environmental impacts of land use and development concerns. For the purpose of this AIA study, a review of the agricultural policies in the *Halton Region Official Plan (Office Consolidation June 19, 2018)*, and the *Town of Halton Hills Official Plan (May 1, 2019 Consolidation)* was completed.

It should be noted that the Halton Region Official Plan is undergoing a review, and the Agricultural Impact Assessment Guidelines may change as part of the review.

3.3.1 HALTON REGION OFFICIAL PLAN (OFFICE CONSOLIDATION)

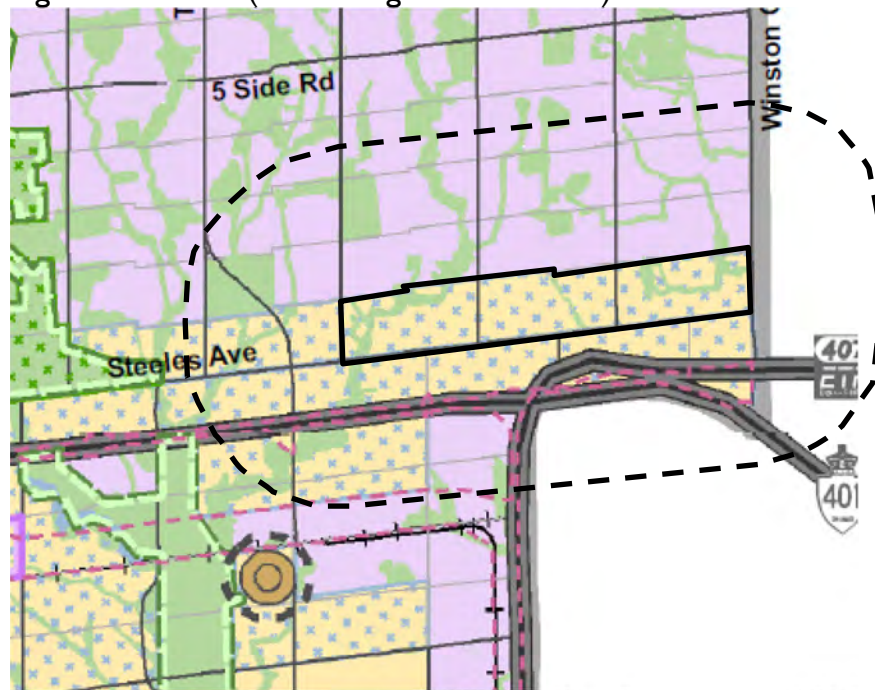
A review of the *Halton Region Official Plan (Office Consolidation June 19, 2018)* Map 1 – Regional Structure revealed that the Subject Lands are identified as Urban Area and the Secondary Study Area as Agricultural Area, Urban Area and Regional Natural Heritage System. Portions of the Secondary Study Area are also identified as Greenbelt Natural Heritage System.

Figure 4 illustrates a select portion of the Regional Structure Map (Halton Region Official Plan). The approximate location of the Study Area is illustrated as a solid line, while the approximate location of the Secondary Study Area is illustrated as a dashed line.

Figure 4 illustrates that the Study Area is comprised of Urban Area, Regional Natural Heritage System and Employment Areas. The predominant designation for the Study Area is Urban.

A review of Figure 4 also illustrates that the Secondary Study Area comprises Urban Areas, Agricultural Areas, Regional Natural Heritage System and has an Employment Area overlay. Figure 4 illustrates that the Study Area abuts Urban areas to the west and the south (both designated with Employment Areas). Agricultural Areas were located immediately to the north of the Study Area lands.

Figure 4 Regional Structure (Halton Region Official Plan)



Source: Map I Regional Structure – Halton Region Official Plan (Office Consolidation June 19, 2018)



Section 139.9 of the Halton Region Official Plan (Office Consolidation June 19, 2018) provides policy on the Prime Agricultural Areas in the Region of Halton. Select policies are presented as follows.

139.9 The purpose of the Prime Agricultural Areas, as shown on Map 1E, is to assist in interpreting policies of this Plan and to assist the City of Burlington and the Towns of Milton and Halton Hills in developing detailed implementation policies for their respective Official Plans.

139.9.1 The Prime Agricultural Areas shown on Map 1E include lands in the Agricultural Area and Regional Natural Heritage System designations. Together these lands support and advance the goal to maintain a permanently secure, economically viable agricultural industry and to preserve the open space character and landscape of Halton's non-urbanized area.

139.9.2 It is the policy of the Region to:

(1) Require Local Municipalities to designate Prime Agricultural Areas in accordance with Map 1E, within their Official Plans and include detailed supporting policies which implement the related goals, objectives and policies of this Plan.

(2) Within the Greenbelt Plan Area, prohibit the redesignation of land within Prime Agricultural Areas to permit non-agricultural uses, except where permitted by the Greenbelt Plan.

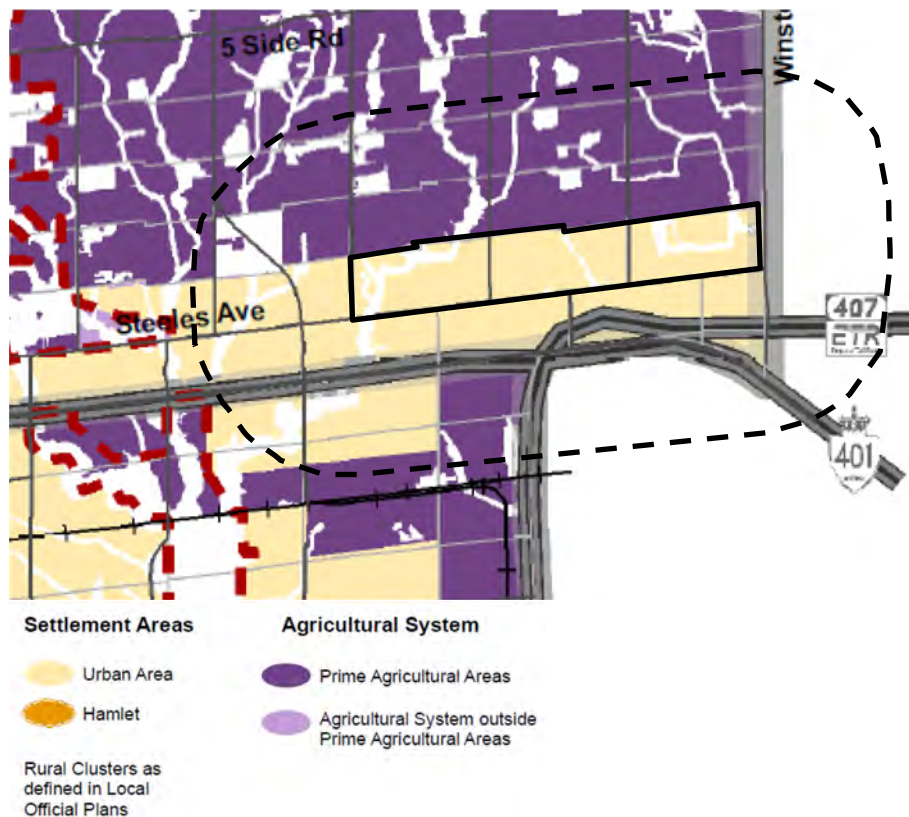
(3) Outside the Greenbelt Plan Area, permit the removal of land from Prime Agricultural Areas only where the following have been demonstrated through appropriate studies to the satisfaction of the Region:

- a) necessity for such uses within the planning horizon for additional land to be designated to accommodate the proposed uses;
- b) amount of land area needed for such uses;
- c) reasons for the choice of location;
- d) justification that there are no reasonable alternate locations of lower capability agricultural lands;
- e) no negative impact to adjacent agricultural operations and the natural environment;
- f) there are no reasonable alternatives that avoid Prime Agricultural Areas as shown on Map 1E, and
- g) the land does not comprise a specialty crop area.

Extraction of mineral aggregate resources is permitted in Prime Agricultural Areas in accordance with Section 110(6.1).

A review of the Halton Region Official Plan (Office Consolidation June 19, 2018) Map 1E illustrates the Agricultural System and Settlement Areas. Figure 5 illustrates select portions of the Map 1E. As illustrated in Figure 5, the Study Area is an Urban Area. The Secondary Study Area includes portions of Urban Areas and Prime Agricultural Areas. There are no specialty crop areas defined within the Region of Halton. The Study Area and Secondary Study Areas do not comprise any lands designated as specialty crop lands/areas. The Study Area is illustrated as a solid black line, while the Secondary Study Area is illustrated as a dashed red line.

Figure 5 Agricultural System and Settlement Areas (Halton Region Official Plan)



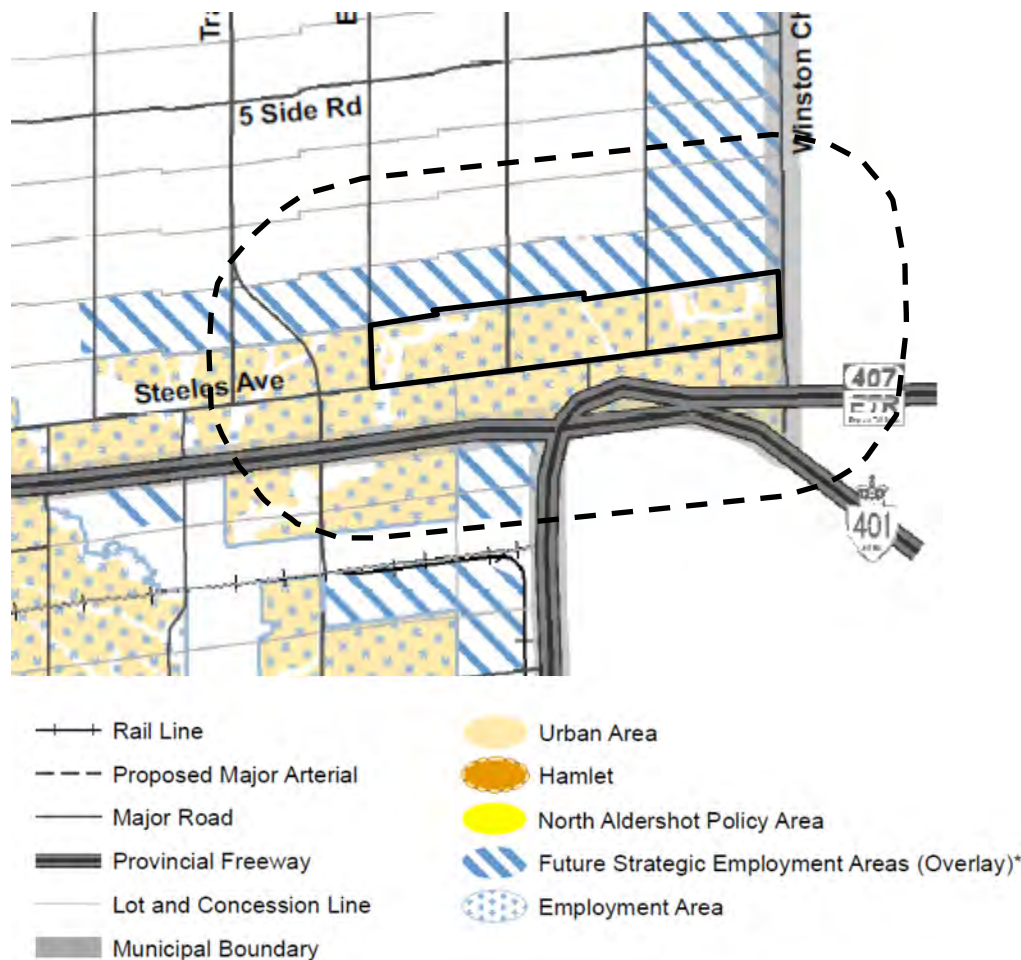
Source: Map 1E Agricultural System and Settlement Areas – Halton Region Official Plan (Office Consolidation June 19, 2018)

A review of the Halton Region Official Plan (Office Consolidation June 19, 2018) Map 1C illustrated the Future Strategic Employment Areas. As illustrated on Figure 6, the land immediately to the north of the Study Area are included in the Future Strategic Employment Area. Further, the land north of the Study Area between Tenth Line and Winston Churchill Boulevard, extending north past 5 Side Road are also identified as being included in the Future Strategic Employment Area.

It is clear from this mapping within the Halton Region Official Plan (Office Consolidation June 19, 2018) that the future focus of the lands immediately north of the Study Area will be for Employment Lands and not for agricultural uses.

The Study Area is illustrated as a solid black line, while the Secondary Study Area is illustrated as a dashed black line.

Figure 6 Future Strategic Employment Areas (Halton Region Official Plan)



Source: Map 1C Agricultural System and Settlement Areas – Halton Region Official Plan (Office Consolidation June 19, 2018)

3.3.2 TOWN OF HALTON HILLS OFFICIAL PLAN

The *Town of Halton Hills Official Plan (May 1, 2019 Consolidation)* was reviewed to determine the designated land uses within the Study Area and Secondary Study Area. The following section provides policy, select mapping from the Official Plan and comment on how the Official Plan relates to the Study Area and Secondary Study Area.

Figure 7 provides a select portion of the *Town of Halton Hills Official Plan (May 1, 2019 Consolidation) Schedule 1A – Land Use Plan*. As illustrated in Figure 7, the Study Area is contained completely within the Premier Gateway Employment Area. The Secondary Study Area (to the north) comprises portions of the Agricultural Area, Greenlands A, Greenlands B, and Special Policy Area. Further, portions of the Secondary Study Area (to the north and east of Eighth Line) are within the HPBATS/GTA West Corridor Protection Area. The Halton-Peel Boundary Area Transportation Study (HPBATS) was a joint study between the Region of Peel, Halton Region, the City of Brampton, the Town of Caledon and the Town of Halton Hills that had objectives of an interconnected roadway network near the Halton-Peel Boundary, easier use of public transit, carpooling and High Occupancy Vehicle (HOV) lanes, and improving the flow of inter-regional traffic.

There are no specialty crop areas defined in the *Town of Halton Hills Official Plan (May 1, 2019 Consolidation) Schedule 1A – Land Use Plan*. No portions of the Study Area or Secondary Study Area are located within a Municipality designated Specialty Crop Area.

General Agricultural Area policies are presented in Part E (Section E1.4) of the *Town of Halton Hills Official Plan (May 1, 2019 Consolidation)*. Select policies are provided below.

E1.4 LAND USE POLICIES

E1.4.1 The Creation of New Lots

In accordance with the intent of this Plan to maintain and protect the agricultural resources and rural character of the Town, lot creation is prohibited unless specifically provided for in Section F1.2 of this Plan.

E1.4.2 Accessory Residential Uses on Farm Properties

The establishment of additional dwelling unit(s) on a commercial farm for bona fide farm help is permitted, provided the lands are appropriately zoned. Prior to considering an application for re-zoning, and/or site plan approval in accordance with Section G5 of this Plan, Council shall be satisfied that the second dwelling unit:

- a) *is required for farm help as set out in a detailed submission addressing matters such as labour requirements related to the size and nature of the farm operation, and an assessment of the available residential accommodation on the farm;*
- b) *will be located within the existing farm-building cluster;*
- c) *can be serviced by appropriate sewage and water services; and,*
- d) *will be designed and/or located to be compatible or otherwise blend in with the farm operation.*

E1.4.6 Commercial Uses on Farm Properties

Secondary commercial uses on farm properties are permitted subject to Site Plan Control in accordance with Section GB of this Plan. Prior to approving such an application, Council shall be satisfied that:

- a) the use is clearly associated with and located on a commercial farm;
- b) the retail component has a gross floor area of no more than 500 square metres; and,
- c) the majority of the products offered for sale, in terms of monetary value, are produced or manufactured on the farm property.

The implementing Zoning By-law shall further detail appropriate performance standards for secondary commercial uses on farm properties.

E1.4.7 Farm Related Tourism Establishments

Given the proximity of the Town to growing urban areas, the Town supports the development of uses that highlight the importance and value of the agricultural economy. On this basis, uses such as farm machinery and equipment exhibitions, farm tours, petting zoos, hay rides and sleigh rides, processing demonstrations, pick your own produce, small-scale farm theme playgrounds for children and small-scale educational establishments that focus on farming instruction are permitted in the Agricultural Area designation as an accessory use on a commercial farm subject to Site Plan Control in accordance with Section GB of this Plan. Prior to approving such an application, Council shall be satisfied that:

- a) the proposed use shall not have a negative impact on the enjoyment and privacy of neighbouring properties;
- b) adequate on-site parking facilities are provided for the use, in addition to the parking required for the principal use on the property, and such parking is provided in locations compatible with surrounding land uses;
- c) the proposed access to the site will not cause a traffic hazard;
- d) the proposed use can be serviced with an appropriate water supply and an appropriate means of sewage disposal;
- e) the proposed use enhances the rural and open space character of the Town through the preservation of older barns and/or the establishment of a built form that is compatible with the rural surroundings;
- f) the building housing the proposed use is located within the existing farm-building cluster where possible and shall utilize a common driveway with the principal use of the property, and,
- g) the signage advertising the use is to be designed and located in accordance with the Town's sign by-law and where applicable the development criteria contained in the Niagara Escarpment Plan.

Farm related tourism uses shall not exceed 250 square metres of gross floor area. The implementing Zoning By-law shall further detail appropriate performance standards for the farm-related tourism establishments.

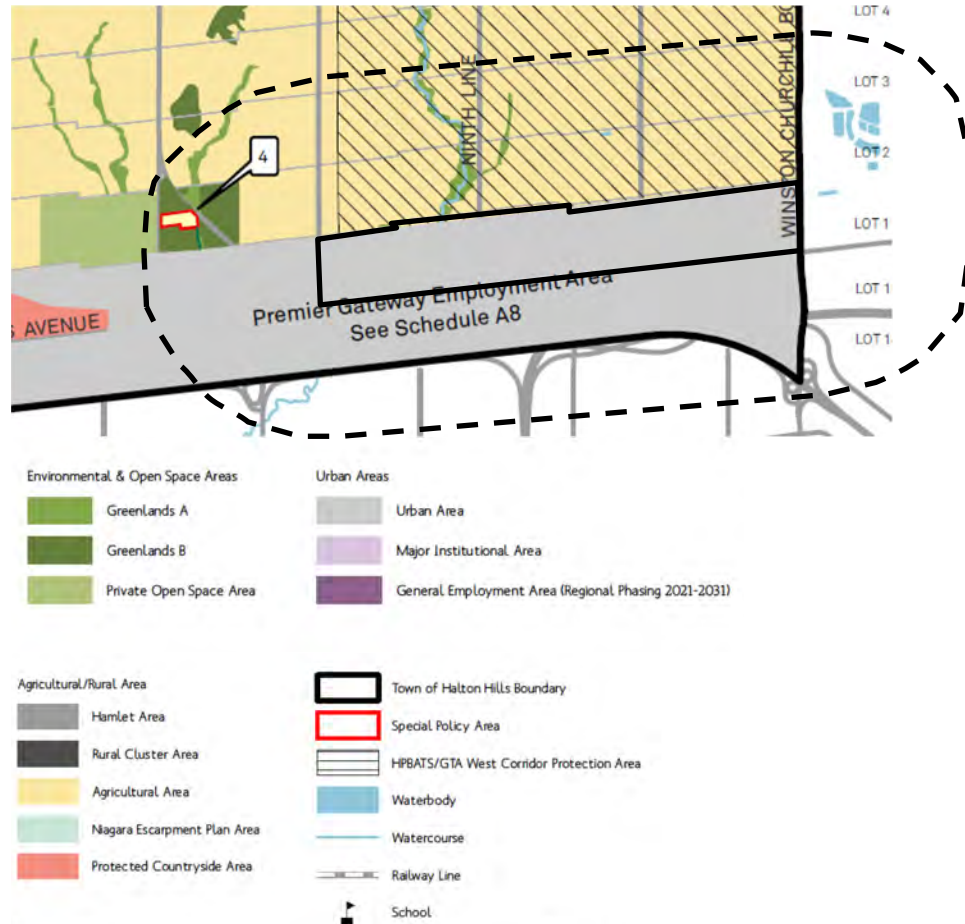
E1 4.9 Recreational and Other Non-Agricultural Uses

The development of new recreational uses and expansions to existing recreational uses, such as golf courses and driving ranges, and cemeteries is not permitted on lands designated Agricultural Area by this Plan since it is the intent of this Plan to protect lands which are suitable for agricultural uses for as long as possible. However, Official Plan and Zoning By-law applications to develop such uses may be considered subject to the submission of appropriate studies, including an Agricultural Impact Assessment, that demonstrates to the satisfaction of the Town and the Region of Halton that:

- a) there is a need within the planning horizon of this Plan for the proposed use;
- d) the proposed use can be serviced with an appropriate water supply and an appropriate means of sewage disposal;
- e) the proposed use enhances the rural and open space character of the Town through the preservation of older barns and/or the establishment of a built form that is compatible with the rural surroundings;
- f) the building housing the proposed use is located within the existing farm-building cluster where possible and shall utilize a common driveway with the principal use of the property, and,
- g) the signage advertising the use is to be designed and located in accordance with the Town's sign by-law and where applicable the development criteria contained in the Niagara Escarpment Plan.

Farm related tourism uses shall not exceed 250 square metres of gross floor area. The implementing Zoning By-law shall further detail appropriate performance standards for the farm-related tourism establishments.

Figure 7 Schedule A1 – Land Use Plan (Town of Halton Hills Official Plan)



Source: Schedule A1 – Land Use Plan - Town of Halton Hills Official Plan

The *Town of Halton Hills Official Plan (May 1, 2019 Consolidation) Schedule A8 – Premier Gateway Employment Area Land Use Plan* was reviewed to determine the extent of agricultural designations within those lands. Figure 8 illustrates a section of the *Town of Halton Hills Official Plan (May 1, 2019 Consolidation) Schedule A8 – Premier Gateway Employment Area Land Use Plan*. There are no agricultural designations within the Premier Gateway Employment Area lands.

Figure 8 The Town of Halton Hills Official Plan Schedule A8



Source: Schedule A8 – Premier Gateway Employment Area Land Use Plan - Town of Halton Hills Official Plan

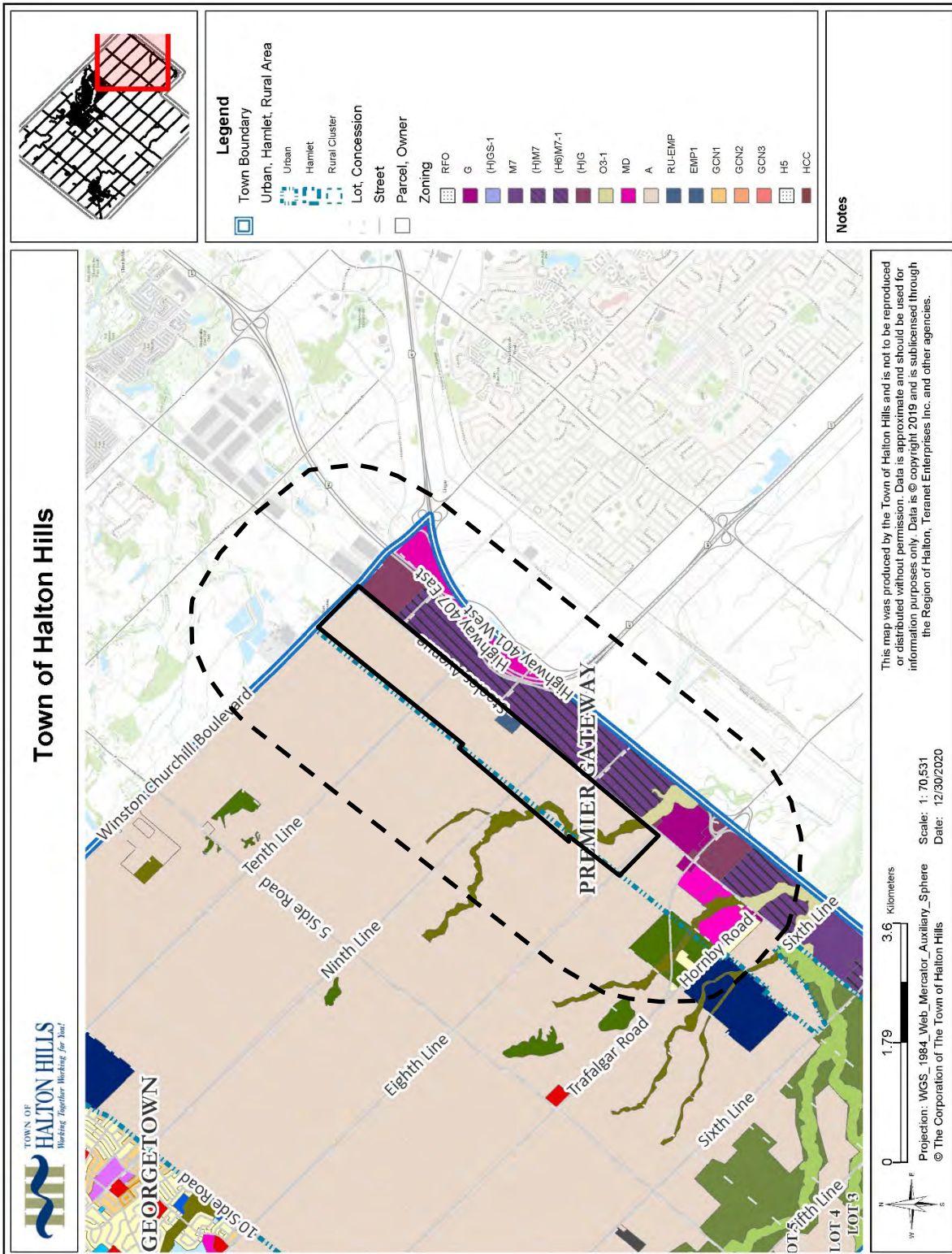
3.3.3 TOWN OF HALTON HILLS ZONING BY-LAW 2010-0050

The *Town of Halton Hills Zoning By-Law 2010-0050 (Consolidated December 2019)* was reviewed to determine the designated zoning on the lands within the Study Area and Secondary Study Area.

Figure 9 illustrates a portion of the online interactive zoning designations for the Study Area and portions of the Secondary Study Area. As illustrated on Figure 9, portions of the Study Area include areas zoned as A – Agricultural Zone, EPI – Environmental Protection One, and RU-EMP(14) – Rural Employment Zone. The Secondary Study Area includes portions of A – Agricultural Zone, EPI - Environmental Protection One, EP2 - Environmental Protection Two, D - Development, RCRI – Rural Cluster Residential, OS4 – Open Space, RCC – Rural Cluster Commercial, (H)C – Hamlet Commercial, D(24) - Development, O3-1 -. The following symbols were illustrated on the online interactive Zoning map, but no reference to the symbol was found in the *Town of Halton Hills Zoning By-Law 2010-0050 (Consolidated December 2019)*, (H)M7, C, (H)G, and O3-1.

Part 9 of the *Town of Halton Hills Zoning By-Law 2010-0050 (Consolidated December 2019)* provides comment on the permitted uses in the Non-Urban Zones. Agricultural uses are listed under the Non-Urban Zones. Zone standards for Agriculture indicate a minimum lot area of 4.0 ha.

Figure 9 Town of Halton Hills Zoning By-Law 2010-0050



3.3.4 TOWN OF HALTON HILLS ZONING BY-LAW 2019-0036/2000-138

It should also be noted that the lands within the south portion of the Secondary Study Area are governed by By-Law No. 2019-0036 – A By-law to amend the 401 Corridor By-Law (2000-138).

4 AGRICULTURAL RESOURCE POTENTIAL

4.1 PHYSICAL CHARACTERISTICS

The physiographic resources within the Study Area and the Secondary Study Area 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.

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 Study Area and the Secondary Study Area are located within the Peel Plain Physiographic unit.

The Peel Plain Physiographic unit is described as a level to undulating tract of clay soil material covering the central portions of Halton, Peel and York Regions. This area has a gradual slope toward Lake Ontario. Drainage from this area is through the Credit, Humber, Rouge and Don Rivers, each of which have cut deep valley systems.

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, aerial photo interpretation and windshield surveys.

The topography of the Subject Lands is comprised of gentle to moderate sloping lands primarily used for agricultural production of common field crops. Steep sloping lands were noted in areas adjacent to stream courses.

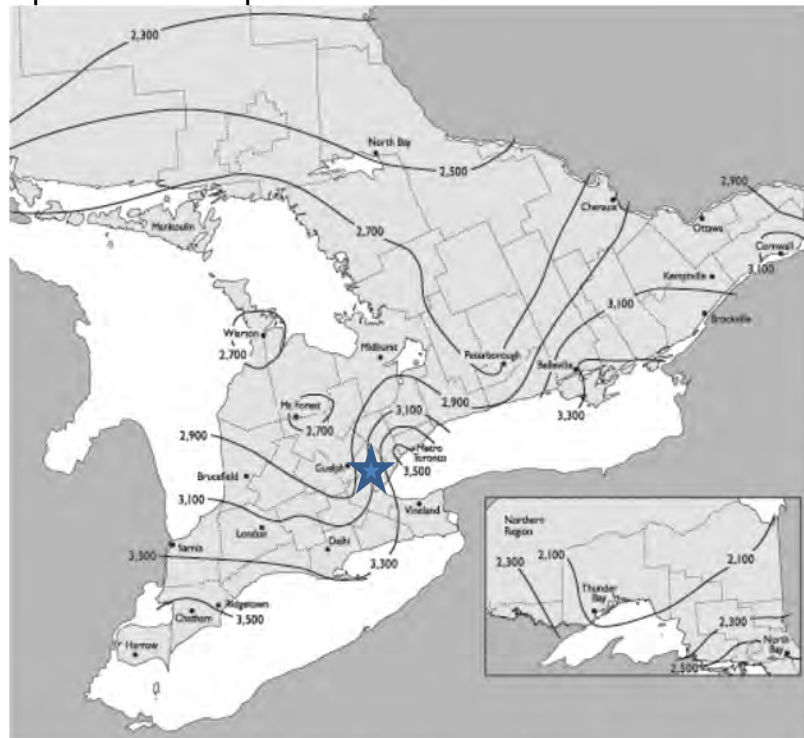
Climate data was taken from the OMAFRA document titled 'Agronomy Guide for Field Crops – Publication 811 (June 2009)' and the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) Factsheet – Crop Heat Units for Corn and Other Warm Season Crops in Ontario, 1993.

The Study Area and Secondary Study Area are located near the 3100 Crop Heat Units (CHU-MI) available for corn production in Ontario. The Crop Heat Units (CHU) index was originally developed for field corn and has been in use in Ontario for 30 years. The CHU ratings are based on the total accumulated crop heat units for the frost-free growing season in each area of the province. CHU averages range between 2500 near North Bay to over 3500 near Windsor. The

higher the CHU value, the longer the growing season and greater are the opportunities for growing value crops.

Crop Heat Units for corn (based on 1971-2000 observed daily minimum and maximum temperature (OMAFRA, 2009)) map is illustrated on Figure 10. The approximate location of the Study Area and Secondary Study Area is marked with a blue star.

Figure 10 Crop Heat Units Map



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

4.2 LAND USE

The land use for both the Study Area and the Secondary Study Area was completed through windshield surveys (completed in October – December 2020), a review of recent aerial photography, Google Earth Imagery, Bing Imagery, Birdseye Imagery, the Region of Halton online Imagery, the Town of Halton Hills online imagery, and correlation to the OMAFRA Land Use Systems mapping. Agricultural and non-agricultural land uses are illustrated on Figure 11.

The terms used in the Agricultural Land Use assessment were derived from the OMAFRA 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
- 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 windshield survey identified the types of land uses including farm and non-farm uses (built up areas, commercial, and roads). Farms were identified as livestock, cash crop, retired, or remnant. Livestock operations were further differentiated to the type of livestock based on the livestock seen at the time of the survey, 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. This type of assessment may indicate that a farm or barn has the capability of a certain type of livestock but does not actually have livestock at that location. The data is collected in this fashion to aid in the Minimum Distance Separation (MDSI) calculations that are provided later in this study.

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

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 grasses, clovers and alfalfa. Other areas used for pasture, haylage or hay were mapped as 'forage/pasture'.

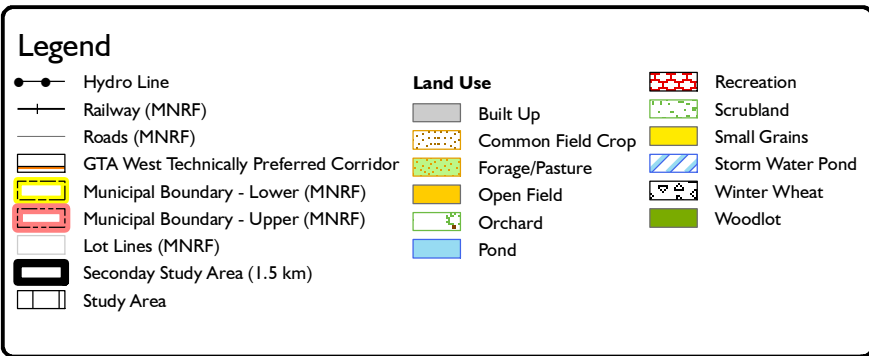
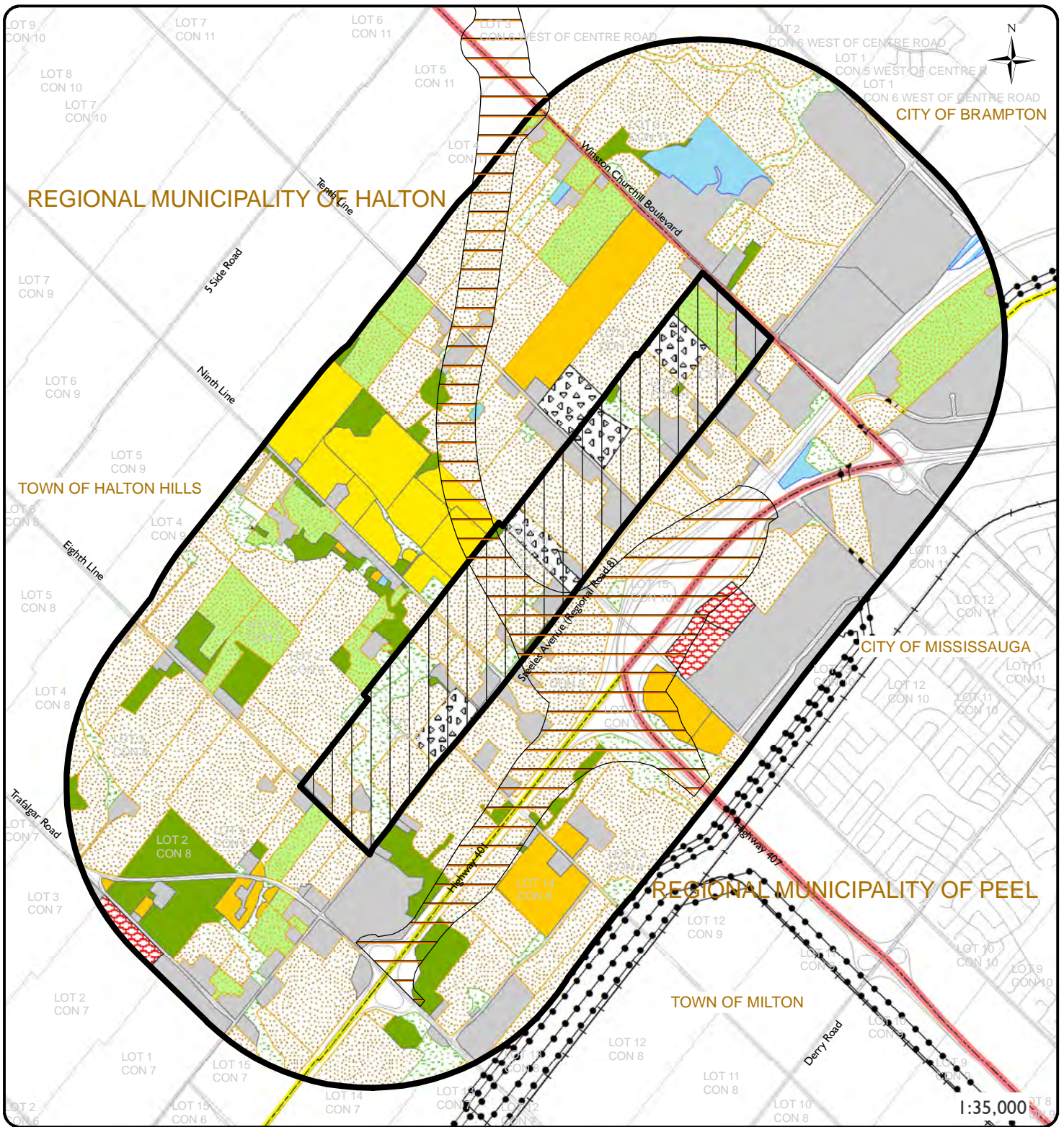


Figure 11
Land Use

DBH Soil Services Inc.
December 2020

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).

Land Use information was digitized in Geographic Information System (GIS - Arcmap) to illustrate the character and extent of Land Use in both the Study Area and the Secondary Study Area. Area calculations for each land use polygon (area) were calculated within the GIS software and exported as tabular data. The data is presented as follows. Land use designations and land use definitions are provided in Table I.

Table I Typical Land Use Designations

Land Use Designation	Land Use Definitions
Built Up/Disturbed Areas	Residential, commercial, industrial, man modified, existing road system
Common Field Crop	Corn, Soybean, Cultivated
Forage/Pasture	Forage/Pasture
Ponds	Ponds
Scrublands	Unused field (>5 years)
Small Grains	Wheat, Oats, Barley
Woodlands	Forested Areas

It was noted in both the Study Area and the Secondary Study Area, that many of the barns had been used for the production of various types of livestock in the past, and that many of those operations have retired, with a few of the barns having been demolished. A number of large horse operations were noted in the Secondary Study Area. This type of livestock operation can be well suited to areas that are in close proximity to urban or non-agricultural land uses, as these types of facilities provide board for the horses and a place for local/urban residents to ride.

4.2.1 LAND USE – STUDY AREA

Even though the Study Area is designated as Urban, large portions of the Study Area are still used for the production of agricultural crops. As such, the Study Area land use comprises built up/disturbed areas, scrublands, small grains, small woodlands, and common field crop areas. The predominant land use is common field crop, with large areas of soybean and corn crops.

The Study Area comprises land uses of approximately 17.1 percent as built up areas (includes road network), 51.2 percent as common field crop, 4.6 percent as forage/pasture, 0.92 percent as woodlands, 13.6 percent as small grains, and 12.6 percent as scrubland. The existing road system (Township, Regional and Provincial) areas are included in the built-up area, unless they can be pulled out as a separate item such as transportation corridors (Highway 401/407 and interchanges). This is more noticeable within the Secondary Study Area, where large wide areas of land are used for highway corridors.

4.2.2 LAND USE – SECONDARY STUDY AREA

The Secondary Study Area consists of a variety of land uses including, but not limited to built-up/disturbed areas, common field crops, forage/pasture lands, small grains, open field, orchard, road/rail corridors, open field, pond, recreation, and woodlands areas.

The Secondary Study Area comprises land use of approximately 18.6 percent as built up (includes road network), 11.1 percent as transportation corridors (Highways), 43.2 percent as common field crop, 6.5 percent as forage/pasture, 4.7 percent as small grains, 0.1 percent as orchard lands, 4.1 percent as open field, 1.2 percent as ponded areas, 1.0 percent as recreational lands (golf course, driving range, miniputt), 3.9 percent as scrubland, and 5.7 percent as woodlands.

On review of the Land Use data it was observed that the predominant land uses in the Secondary Study Area include built-up areas, transportation corridors and areas for the production of common field crops. The next greatest percent of land use is derived from forage/pasture lands, small grains, and woodlands.

Table 2 illustrates the percent occurrence of the land uses for both the Study Area and Secondary Study Area.

Table 2 Land Use – Study Area and Secondary Study Area

Land Use Designation	Study Area Percent Occurrence	Secondary Study Area Percent Occurrence
Built Up/Disturbed Areas	17.1	18.6
Transportation Corridors	-	11.1
Common Field Crop	51.2	43.2
Forage/Pasture	4.6	6.5
Small Grains	13.6	4.7
Orchard	-	0.1
Open Field	-	4.1
Pond	-	1.2
Recreational	-	1.0
Scrubland	12.6	3.9
Stormwater Pond	-	0.1
Woodlands	0.9	5.7
Totals	100.0	100.0

4.3 AGRICULTURAL INVESTMENT

Agricultural investment is directly associated with the increase in capital investment to agricultural lands and facilities. 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 (barns, silos, manure storage, sheds).

As a result, the lands and facilities that have increased capital investment are often considered as having greater tendency for preservation than similar capability lands and facilities that are undergoing degradation and decline (no or limited upkeep). The investment in agriculture is often readily identifiable through observations of the condition and type of the facilities, field observations and a review of OMAFRA artificial tile drainage mapping.

Investment in agricultural is illustrated in Figure 12 – Agricultural Investment.

Agricultural Investment also looks at the investment in facilities that the local farmers might require (grain elevators, abattoirs, cold storage facilities). It was noted that a large poultry processing facility was located on the east side of Winston Churchill Boulevard north of Steeles Avenue. It was also noted that a large cold storage facility (Conestoga Cold Storage) was located within the urban area of the City of Mississauga, east of Winston Churchill Boulevard, between Highways 407 and 401.

4.3.1 AGRICULTURAL FACILITIES

Agricultural facilities (facilities that may be capable of housing livestock) and barns were identified through a combination of aerial photographic interpretation, a review of online digital imagery (Google Earth Pro, Bing Mapping, and Birds Eye Imagery), a review of Ontario Base Mapping and roadside evaluations. The agricultural facilities or potential livestock facilities that were identified on mapping and imagery prior to conducting field investigations 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. Field investigations revealed that some of the buildings identified from the preliminary mapping and imagery no longer existed (demolished or torn down), or were not agricultural, but used for activities (commercial, storage, etc).

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 value 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. Figure 12 illustrates the

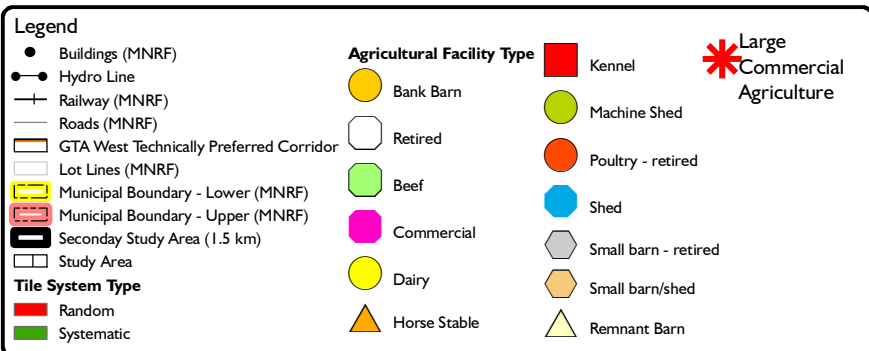
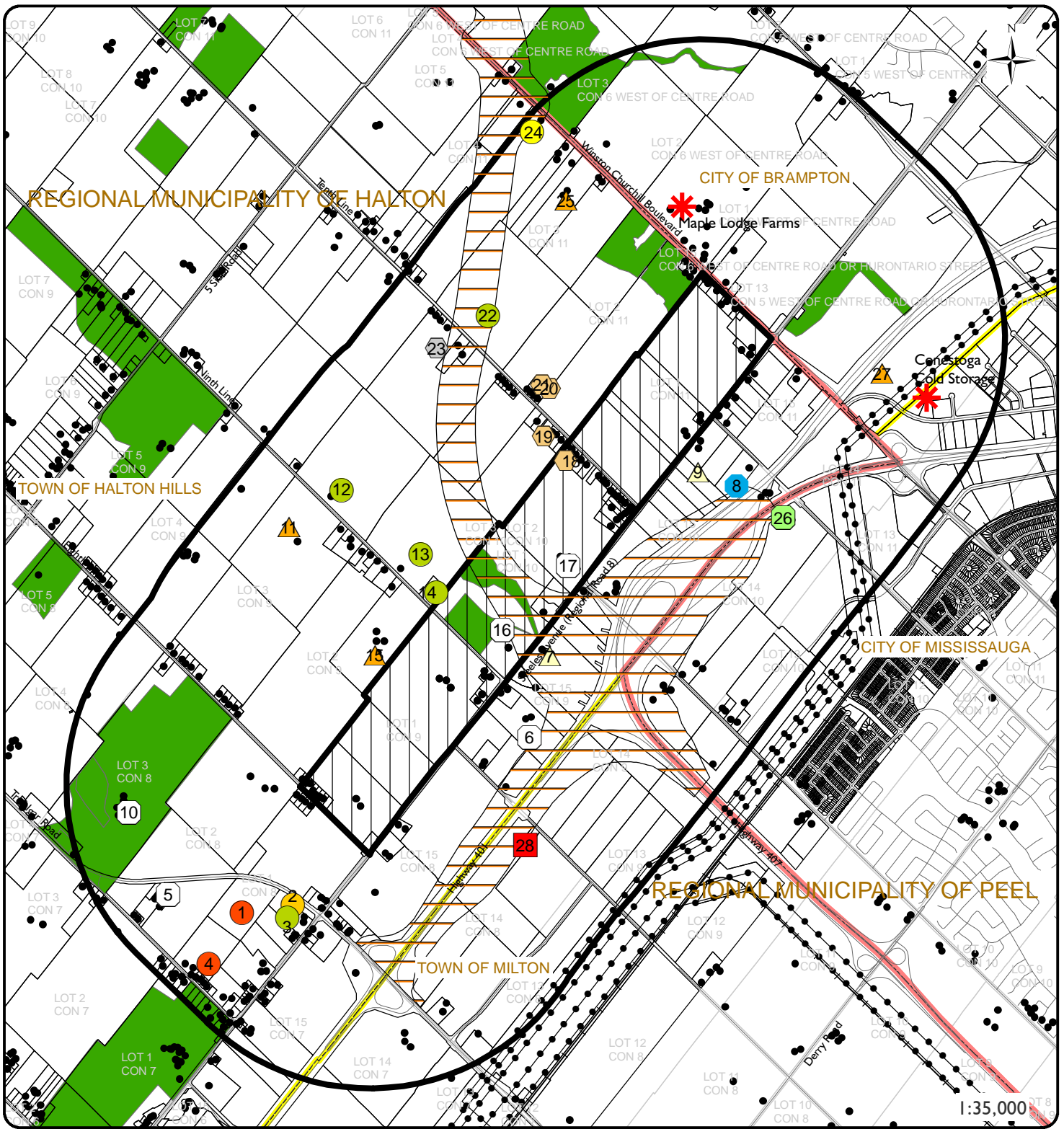


Figure 12
Agricultural Investment

DBH Soil Services Inc.
 February 2021

location of buildings, agricultural facilities and tile drainage for both the Study Area and the Secondary Study Area.

A total of 28 agricultural facilities or areas where facilities are located were identified within the Study Area and Secondary Study Area. Three (3) agricultural facilities were observed in the Study Area. The remaining 25 agricultural facilities were observed in the Secondary Study Area, with one of the facilities being located within the urban up areas of the City of Mississauga.

4.3.1.1 Study Area

Three agricultural facilities were observed in the Study Area, relating to facilities numbered 16, 17, and 18. Two of the facilities were retired, and one was a small barn/shed. No livestock was observed at any of the locations.

Agricultural facility number 16 was located at 15145 Steeles Avenue. This facility comprises a residential unit, a bank barn with open topped concrete silo and two sheds. The area around the barn has grown in and there is no evidence of well used laneway toward the barn.

Agricultural facility number 17 was located at 15625 Steeles Avenue. This facility comprises a bank barn with extensions, and four machine type sheds. There is evidence of the area being used for storage purposes (trailers and boats were noted on the aerial photography). There are no pasture or paddock areas around this facility.

Agricultural facility number 18 was located at 8182 Tenth Line. This is a small shed/barn building in the backyard of a residence, that is among other residences. There was no visible sign of livestock at this location.

There are no active livestock facilities within the Study Area.

4.3.1.2 Secondary Study Area

A total of 25 agricultural facility sites (active, remnant, vestige) were identified in the Secondary Study Area.

Agricultural facility number 1 was located at 8150 Trafalgar Road. This complex consisted of a residential unit and a two-story pole barn that appears to be set up for poultry. There is no evidence of livestock at this location.

Agricultural facility number 2 and number 3 were located at 13571 Steeles Avenue. This complex consisted of a bank barn, residential unit, garage, machine shed, two sheds, one open topped concrete silo. Horses were observed in the field at this location. Facility number 3 was a large machine shed.

Agricultural facility number 4 was located at 8141 Hornby Road. This complex included a residential unit and two single story pole barns that appear to have been used for poultry. These buildings are in disrepair and this facility appears to be retired.

Agricultural facility number 5 was located at 8285 Hornby Road. This complex included a residential unit, machine shed, bank barn with extensions, concrete yard, capped concrete silo and a shed. No livestock were noted at this location. A review online for this address revealed a newspaper article that indicated an application for a Group Home type I for residents with disabilities. This facility appears to be retired.

Agricultural facility number 6 was located at 14920 Steeles Avenue, south of the Study Area. This complex included a residential unit, garage, run in sheds, a pole barn with extension, a second pole barn with extensions. A small metal grain bin was noted along side one of the pole barns. This facility was a large horse operation and appears abandoned. There are no livestock at this location.

Agricultural facility number 7 was located at 15216 Steeles Avenue. This complex is considered as a remnant facility and appears to be abandoned.

Agricultural facility number 8 was located at 7876 Tenth Line. This complex included a residential unit and a small barn/shed. No livestock were noted at this location. For the purposes of this AIA, this facility is considered as a shed.

Agricultural facility number 9 was located at 16316 Steeles Avenue. This complex is considered as a remnant facility and appears to be abandoned.

Agricultural facility number 10 was located at 8459 Trafalgar Road. This complex included three residential units, a Quonset hut/machine shed, machine shed, pole barn with extensions, two concrete capped silos, a metal silo and two grain bins. It appears that this complex may have been set up for a dairy operation. There is no evidence of livestock or that the facility is being used for livestock or has been used recently. It is assumed that this operation is a retired dairy operation.

Agricultural facility number 11 was located at 8524 Ninth Line. This complex comprised a residential unit, large machine shed, pole barn (stables), indoor riding arena, pole barn, numerous run in sheds. This complex appears to be an active horse operation.

Agricultural facility number 12 was located at 8519 Ninth Line. This complex comprised a residential unit and an older machine shed. No livestock were noted at this location and it appears that this location is retired.

Agricultural facility number 13 was located at 8309 Ninth Line. This complex included a small barn or machine shed. For the purposes of this AIA, this facility is considered as a machine shed. There is no evidence of livestock, nor is the area around the facility set up for livestock.

Agricultural facility number 14 was located at 8229 Ninth Line. This building is a machine shed.

There is no evidence of livestock.

Agricultural facility number 15 was located at 8278 Ninth Line. This complex included a residential unit, a large indoor riding arena with attached stables. A metal grain bin was noted on the aerial photography. The area behind the stables is used for storage purposes. Although this facility cannot be seen from the road, the online imagery appears to show a large manure pile to the south. For the purposes of this AIA, it is assumed that the facility is an active horse operation.

Agricultural facility number 19 was located at 8238 Tenth Line. This complex included a residential unit, with large shed/small barn behind the residential unit. This facility was not visible from the road. No livestock were noted on the aerial photography.

Agricultural facility number 20 was located at 8313 Tenth Line. This complex included a residential unit, garage, machine shed, and shed/small barn. For the purposes of this AIA, the shed/small barn is considered as a shed. There is no visible evidence of the presence of livestock at this location.

Agricultural facility number 21 was located at 5323 Tenth Line. This complex included a residential unit and a shed/small barn behind the house. The shed/small barn was not visible from the roadside. No livestock were noted in the aerial photography. For the purposes of this AIA, this facility is considered as a shed.

Agricultural facility number 22 was located at 8509 Tenth Line. This complex included a residential unit, and three metal machine sheds (similar to a Quonset style). This facility is not agricultural but appears to be associated with a construction company.

Agricultural facility number 23 was located at 8552 Tenth Line. This complex included a small pole barn with extension, out in a field. The aerial photography indicates that roof panels are missing. This facility is considered as retired and possibly a remnant.

Agricultural facility number 24 was located at 8656-8688 Winston Churchill Boulevard. This facility is an active dairy operation (Laidlaw Holsteins) comprising a bank barn with extension, a pole barn, a large metal clad feed storage building, machine shed, an open topped concrete silo, three concrete capped silos and a metal silo (capped). A grain bin was noted near the silos.

Agricultural facility number 25 was located at 8504 Winston Churchill Boulevard. This complex included a residential unit, garage, machine shed, bank barn with extension to an indoor riding arena. This facility is a horse operation and appears active.

Agricultural facility number 26 was located at 7564 Tenth Line West. This facility comprised a residential unit (Ebenezer Hall - <https://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=14983>), a bank barn, and 4 large machine sheds. Numerous smaller sheds were noted on the aerial photography and imagery. Livestock was noted on the aerial photography and imagery and appears to be beef. Livestock were not observed from the roadside.

Agricultural facility number 27 was located at 2800 Meadowpine Boulevard, Mississauga, Ontario (<http://meadowlarkestables.com>). This facility is an active horse stable and comprises large stable areas and outdoor riding areas.

Agricultural facility number 28 was located at 7594 Auburn Road. This facility is a kennel (Redwood Pet Resort - <https://www.redwoodpetresort.com/>).

Photographs and/or aerial photography/satellite imagery of the respective barns are located in Appendix A.

4.3.2 ARTIFICIAL DRAINAGE

An evaluation of artificial drainage in the Study Area and within the Secondary Study Area was completed through a correlation of observations noted during the reconnaissance roadside survey, 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 would have 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.

OMAFRA Artificial Drainage System Maps were downloaded from Land Information Ontario (LIO) in September 2020 and were reviewed to determine if an agricultural tile drainage system had been registered anywhere in the Study Area, or in the Secondary Study Area. The OMAFRA 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 have a greater cost, or investment in agriculture when compared to a random tile drainage system.

Figure 12 illustrates the OMAFRA Artificial Drainage Systems Mapping for the Study Area and Secondary Study Area. As observed in Figure 12, there are two small areas of systematic tile drainage located within the Study Area, north of Steeles Avenue and east of Ninth Line.

A review of Figure 12 illustrates that there are a few areas of systematic tile drainage within the Secondary Study Area. A large area of tile drainage was noted east of the intersection of Trafalgar Road and Hornby Road, on the east side of Trafalgar Road. A smaller area of systematic tile drainage was noted along the west side of Hornby Road, associated with the linear development. It is assumed that the tile drainage map is incorrect at this location, as agricultural tile drainage would not be used in a residential setting. Smaller areas of systematic tile drainage were observed on Figure 12, farther to the east, along the west side of Winston Churchill Boulevard, with one additional area noted east of Winston Churchill Boulevard and south of Steeles Avenue.

4.3.3 IRRIGATION

Observations noted during the reconnaissance survey indicated that farms within the Study Area and the Secondary Study Area lands are not irrigated. It was noted that none of these lands are not set up for the use of irrigation equipment. 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).

There appears to be no capital investment related to irrigation systems the Study Area or the Secondary Study Area.

4.3.4 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 volumes of soils moved.

No landforming for the purposes of enhancing an agricultural operation was noted within the Study Area or the Secondary Study Area.

4.4 MINIMUM DISTANCE SEPARATION (MDSI)

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

A review 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 (OMAFRA). 2016) revealed that MDS guideline #6 indicates that all livestock facilities within a 750 m distance of a Type A land use and a 1500 m distance of a Type B land use shall be investigated.

MDS guideline #10 indicates that MDS I setbacks are “required for all proposed amendments to rezone or redesignate land to permit development in prime agricultural areas and rural lands present zoned or designated for agricultural use.”

As required in the MDS 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 facilities that have the potential to house livestock within the 1500 m buffer. However, during these times of Covid-19, the ability to approach a landowner directly at their house, or in their farmyard, has been reduced. As a result, attempts were made to identify and contact each landowner by telephone. In the instances where the landowner was not available during by telephone, data was collected through alternate means including the use of online imagery (Google Earth, Bing Imagery, Birdseye Imagery), Agricultural Information Atlas (Ontario Ministry of Agriculture, Food and Rural Affairs, (OMAFRA)), Region of Halton and Halton Hills online interactive mapping, and internet searches.

Further, in instances where landowners could not be contacted, the livestock potential was based on the most appropriate livestock for that particular livestock facility (ie: based on observed signage, manure piles, feed storage, barn type/style, discussions with adjacent neighbours/landowners). The respective size of the farm property was determined from Township Assessment data. The relative physical size (area in m²) of the agricultural facility was measured from online sources such as Google Earth. The use of these data sources will provide a potentially greater MDS I distance than if the data is collected from the landowner, due to the measurement of the entire barn roof area (including eaves/overhang) and that the entire area measured is used as potential livestock space, thereby assuming that no portions of the barn are used for storage or feed (ie. No feed rooms, offices, tack rooms, etc).

MDS guideline #34 Type B land uses (more sensitive) are typically characterized by a high density of human occupancy, habitation or activity including an Official Plan amendment to permit development on land outside a settlement area, or a zoning by-law amendment to permit development on land outside a settlement area. The proposed use for the Study Area lands (Employment) requires that the MDS study will be completed to a Type B assessment.

Therefore, with respect to the above-mentioned guidelines, MDS I calculations are NOT required for this study. MDS I calculations were completed as part of the requirement of this study, and were completed for the Secondary Study Area only.

Minimum Distance Separation data was collected through observations made during the reconnaissance surveys completed between October and December 2020.

Data collected for this study included the identification of land use, identification and visual assessment of barns or any building capable of housing livestock, identification of animal types (if observed on the property or noted on signage on the property) and number of animals (if observed) and barn location with respect to other land uses.

It should be noted that reconnaissance surveys are often limited by 'line of sight' restrictions. Therefore, topography and vegetation (density and/or height) may preclude an accurate assessment of individual agricultural facilities. With this in mind, recent aerial photography and online digital imagery was used to assist in the identification and assessment of any partially or totally concealed agricultural facility.

Further, the field data and aerial photographic interpretation was supplemented with Assessment Roll, Assessment Mapping and Geographic Information System (GIS) data for the purposes of determining the area and location of property boundaries.

MDS I calculations were completed on the following assumptions:

- completed with regard to Minimum Distance Separation (MDS) Document – Formulae and Guidelines for Livestock Facility and Anaerobic Digester Odour Setbacks. Publication 853, OMAFRA, 2016 and the OMAFRA MDS Minimum Distance Separation Computer Program (Version 1.0.2)
- completed on 'existing Nutrient Unit housing capacity' based on barn dimensions measured in GIS (when interviews could not be completed)
- livestock type was based on the type of livestock seen during reconnaissance surveys, or signs indicating the farm type (horse boarding, dairy, etc), or in cases where no animals or signs were noted, on the most appropriate type of livestock for the type of facility observed; and
- Type 'B' Land Use was used - Implementation Guideline 34 states:
 - "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.

A listing of the agricultural facilities and their respective uses has been provided in the agricultural investment section above. Based on the assessment listed above, MDS I calculations were completed for barns located in agricultural or rural designation areas and barns that either housed livestock or were capable of housing livestock. MDS I calculation sheets are provided in Appendix B.

Table 3 provides a listing of the agricultural facility number, the type of facility, the use, the type of livestock and the Minimum Distance Separation (MDS I) value from the barn and from the

manure storage area. A description of each facility is provided above in Section 4.3.1.

Figure 13 illustrates the location of the respective agricultural facilities and the calculated MDS 1 arc.

As illustrated in Figure 13, there are four facilities that were capable of housing livestock and that were located in agricultural or rural areas. The four facilities are numbers 11, 15, 24 and 25, representing a horse operation, a second horse operation, a dairy operation, and a third horse operation respectively.

On Figure 13, only the MDS 1 arc as measured from the barn is illustrated. The MDS 1 arcs from the manure storage areas were not illustrated to avoid confusion. It is noted in Table 3, that the calculated MDS 1 value from the manure storage is the same as for the calculated value from the barn. Therefore, the MDS 1 arcs from manure storage would be similar in location at this mapping scale and would not extend onto the Study Area lands.

It should also be noted that when completing calculations for agricultural facilities where the type of livestock could not be determined, it was assumed that the operation was beef (cow and calf), with access to a yard, and an open manure storage. This assumes a worse case (greater potential for odours than if it was assumed that horses were used as the livestock). Further, that any MDS calculation made that was based on a measurement from aerial imagery, was measured from the roof line. This measurement is generally a little larger than the size of the building due to the roof overhang. Additionally, this measurement assumes that the whole building is used to house livestock (no area removed for feed storage, tack rooms, etc). The MDS value calculated in this fashion, will produce an exaggerated or overestimated MDS distance.

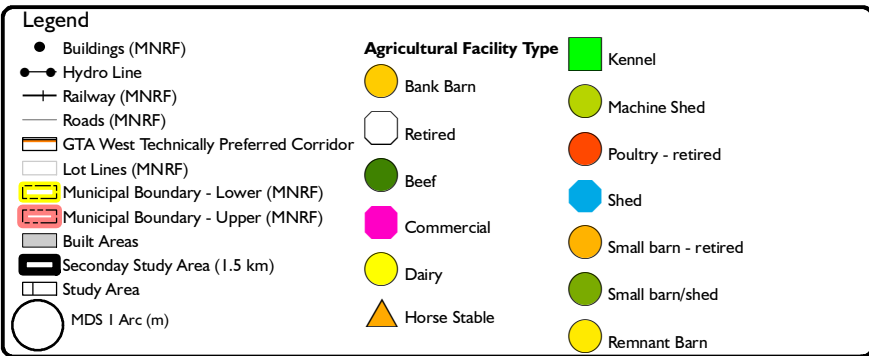
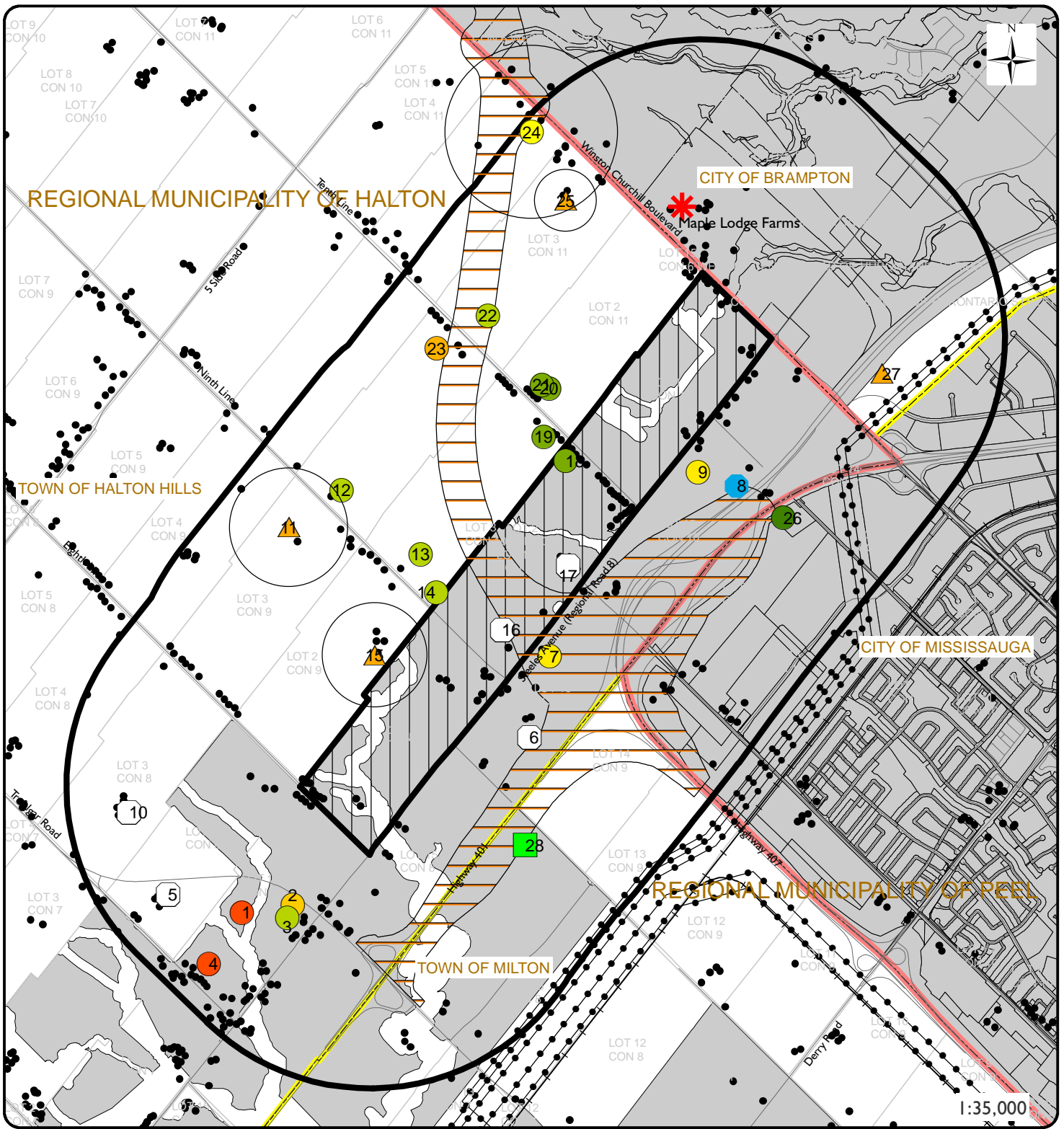


Figure 13
Minimum Distance Separation
(MDS I)

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Table 3 MDS Calculations

Agricultural Facility	Type of Facility	Use	Type of Livestock	Distance from Barn (m)	Distance from Manure Storage (m)
1	Poultry - retired	Unused	None	-	-
2	Horse – in Built Up Area of Halton Region - no MDS	-	-	-	-
3	Machine Shed	-	-	-	-
4	Poultry - retired	-	-	-	-
5	Retired	-	-	-	-
6	Retired	-	-	-	-
7	Remnant	-	-	-	-
8	Shed	-	-	-	-
9	Remnant	-	-	-	-
10	Retired	-	-	-	-
11	Horse	Stables	Horses	381	381
12	Machine Shed	-	-	-	-
13	Machine Shed	-	-	-	-
14	Machine Shed	-	-	-	-
15	Horse	Stables	Horses	337	337
16	Retired	-	-	-	-
17	Retired	-	-	-	-
18	Shed	-	-	-	-
19	Shed	-	-	-	-
20	Shed	-	-	-	-
21	Shed	-	-	-	-
22	Machine Shed	-	-	-	-
23	Retired	-	-	-	-
24	Dairy	Dairy	Holsteins	556	556
25	Horse	Stables	Horses	201	201
26	Beef – In Built Up Area of Mississauga – No MDS	-	-	-	-
27	Horse – In Utility Area of Brampton (Official Plan Schedule I – City Concept) – No MDS	-	-	-	-
28	Kennel	-	-	-	-

On review of the MDS I information, the arc from agricultural facility number 15 extends onto the Study Area. Any development in that area should take the MDS arc into consideration (ie. Develop that area last or place lower intensity land uses in that area).

4.5 FRAGMENTATION

Assessment data was evaluated to determine the characteristics and the degree of land fragmentation. The assessment of land fragmentation was completed for areas that were outside the Built areas of the City of Brampton, the City of Mississauga, and the Regional Municipality of Halton. It should be noted that portions of the Secondary Study Area are located within the urban boundaries of the City of Brampton and the City of Mississauga. For the purposes of this AIA, the assessment data was not collected as there are no agricultural lands, and there are large numbers of smaller properties/parcels.

In order to evaluate land fragmentation, the most recent Assessment Roll mapping and Assessment Roll information from the Town of Halton Hills and the Region of Halton were referenced on a property-by-property basis (for the Study Area and the Secondary Study Area) to determine the approximate location, shape and size of each parcel. The assessment of fragmentation looks at the numbers of and proximity of properties within the Secondary Study Area.

While a minimum size for an agricultural property is not specified in the *Provincial Policy Statement* (PPS, 2020), the PPS does state in Section 2.3.3.2 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 *Town of Halton Hills Official Plan (May 1, 2019 Consolidation)* revealed that there is no minimum lot size for an agricultural property.

A review of *Town of Halton Hills Zoning By-Law 2010-0050 (Consolidated December 2019)* indicates a minimum lot size of 4.0 hectares.

Statistics Canada Census of Agriculture (2011) indicates 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 Census data average farm size is based on farmland holdings, which may include more than one parcel (property).

Census of Agriculture (2016) data indicates that the average farm size in Ontario (for Census

farms) was 100.8 ha (249) acres. This value is an increase in farm size from the 2011 Census data. Again, the Census of Agriculture (2016) average farm size is based on farmland holdings, which may include more than one parcel (property).

Figure 14 illustrates the complexity of the land fragmentation within the Study Area and the Secondary Study Area. GIS was utilized to calculate the area (in acres) of each parcel within the Study Area and the Secondary Study Area from which MPAC (Municipal Property Assessment Corporation) data was not available. Acre calculations were completed to allow an assessment or comparison of the parcels in the Study Area and the Secondary Study Area. The Census data provides detailed information on Census farms (farms which provided census data), while the data within the Study Area and the Secondary Study Area refers to all parcel data (agricultural areas and non-agricultural areas. 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.

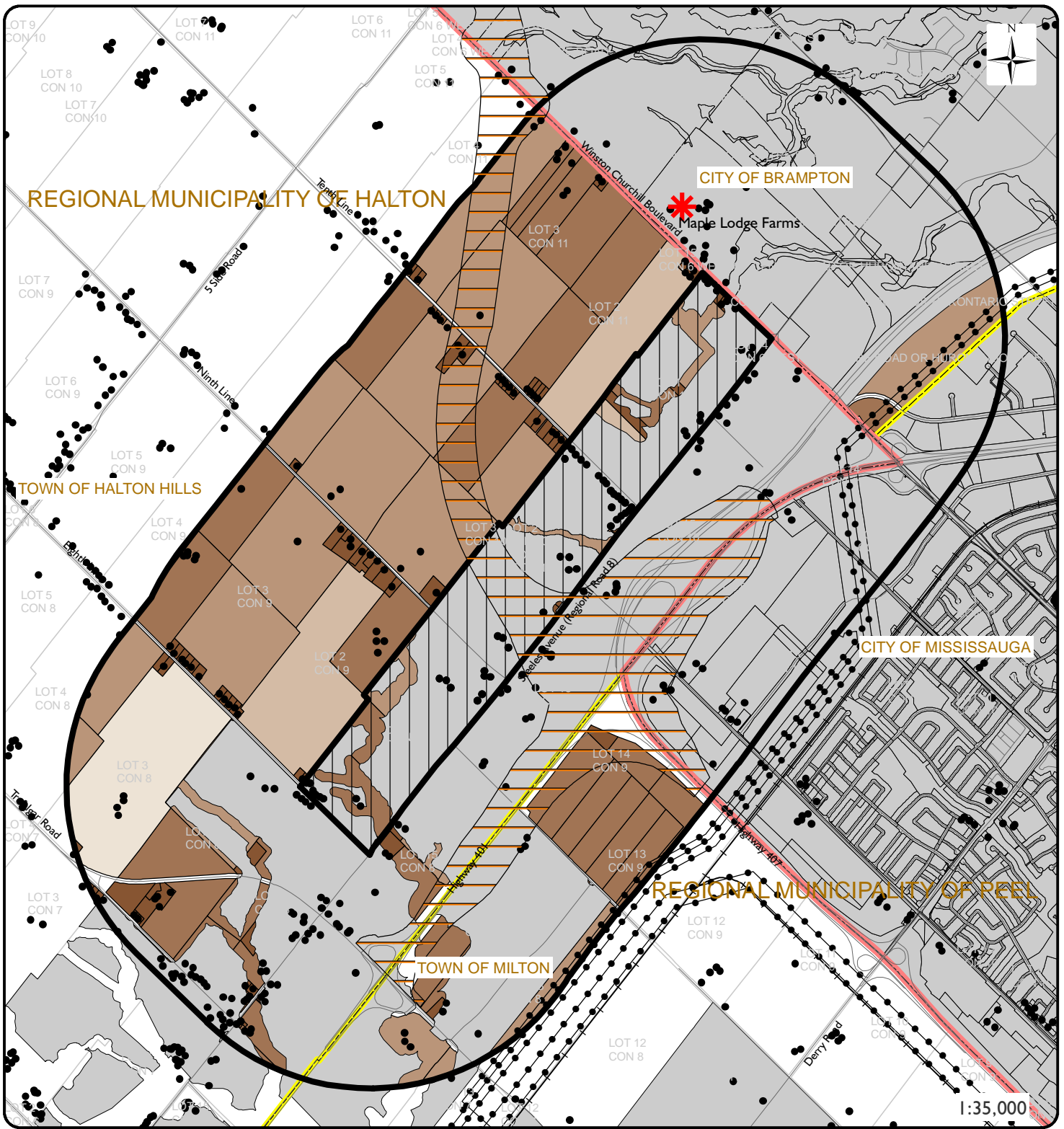
As illustrated in Figure 14, the majority of the Study Area is located within the Built area of Halton Region. Smaller areas of non-agricultural designation (still considered as Urban in the Halton Region Official Plan) were revealed to be part of larger parcels ranging from 0.0 – 129.9 acres. Due to the Built designation and Halton Region Official Plan designation of Urban, the review of fragmentation for the Study Area indicates that this area is already impacted from an agricultural perspective.

A review of the Secondary Study Area revealed that the majority of the non-urban and non-built areas are located to the north. Large areas of the Secondary Study Area are located within designated urban and built areas. The review of fragmentation indicates that the lands in the Secondary Study Area north of the Study Area reveal fragmentation that is often found in close proximity to urban settings. Numerous smaller parcels (severances) were noted along Eighth Line, Ninth Line and Tenth Line. Similarly, numerous parcels in the 10.0 to 69.9 acre range were noted in the lands north of the Study Area.

Table 4 provides a comparison between the parcel count of the Secondary Study area and the Census farm data. The parcel count for the Town of Halton Hills reflects only the Census Farms in the 2016 census. The 2016 Census data for the Town of Halton Hills recognizes a total of 180 census farms.

As illustrated in Table 4, the parcel count for the Secondary Study Area indicates the presence of numerous small parcels. This type of fragmentation pattern is common in areas near urban boundaries and within the Greater Toronto Area (GTA).

The location of residential units is also illustrated on Figure 14. A review of Figure 14 illustrates a greater number of residential units associated with those smaller parcels.



Legend

- Hydro Line
- +— Railway (MNRF)
- Roads (MNRF)
- Built Areas
- GTA West Technically Preferred Corridor
- Lot Lines (MNRF)
- ▭ Municipal Boundary - Lower (MNRF)
- ▭ Municipal Boundary - Upper (MNRF)
- ▭ Secondary Study Area (1.5 km)
- ▭ Study Area

Range in Acres

- 0.0 - 9.9
- 10.0 - 69.9
- 70.0 - 129.9
- 130.0 - 179.9
- > 180.0

Figure 14
Fragmentation

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Table 4 Parcel Size

Parcel Size Range (Acre)	Parcel Count Secondary Study Area	Parcel Count Town of Halton Hills (2016 Census)
0.0 – 9.9	70	22
10.0 – 69.9	28	72
70.0 – 129.9	12	30
130.0 – 179.9	2	15
> 180*	1	41

Note * = includes farm areas from 180 acres to over 3520 acres

Although a direct comparison of the parcel size count cannot be made, as the census data only refers to census farms, there are similarities in the proportion of the numbers. Generally, Table 4 illustrates a greater number of smaller parcels, with the number counts decreasing with the increase in parcel size.

4.6 SOILS AND CANADA LAND INVENTORY (CLI)

A review was completed of the soils and Canada Land Inventory (CLI) data base for the portions of the Secondary Study Area that were not defined as being within the built area of the Town of Halton Hills, the Town of Milton, the City of Brampton and the City of Mississauga (see Figure 2 for areas). The review was completed to determine the extent and location of the high capability soils.

The review included a download of the latest version of the soils data from the Land Information Ontario website and discussions with OMAFRA 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 Canada Land Inventory (CLI) information within the datasets is accurate across the Region of Halton. In an effort to confirm the correctness of the soils and the Canada Land Inventory data on a soil series basis, the dbase data file that is associated with the Region of Halton soil survey complex file was exported to Microsoft Excel to run a unique symbols list based on Soil Series, topography (slope), CLI class and CLI subclass.

The unique symbols list (based on the SYMBOL1 column) provided 146 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 C. A review of this list indicated that there were some issues with a few symbols of the soils and the respective CLI class and/or subclass. The soils with issues are highlighted in yellow. A review of these soil polygon issues indicated that none of the affected soil polygons were located within the Secondary Study Area.

As noted in the list in Appendix C, a few symbols for a particular soil series would have two or more CLI classes listed for a mineral soil. Similar conditions were associated with the CLI

subclass, where two or more CLI and CLI subclass combinations were associated with the soil series symbol. In many cases the difference between the CLI classification was related only to the subclass. Therefore, in those instances, the Canada Land Inventory (CLI) rating or classification for a particular soil did not change, only the subclass did which relates to a different limitation in the soil, but not a change in CLI class.

In other instances, the CLI Class changed. In those instances, the change in some CLI Class were related to topography. The greater the slope results in the lower the capability of the land. In those instances, the CLI Class change was appropriate.

For the purposes of this AIA, the soil and CLI data presented on Figure 15 is considered appropriate in soil code and CLI rating.

4.6.1 SOIL CAPABILITY FOR AGRICULTURE

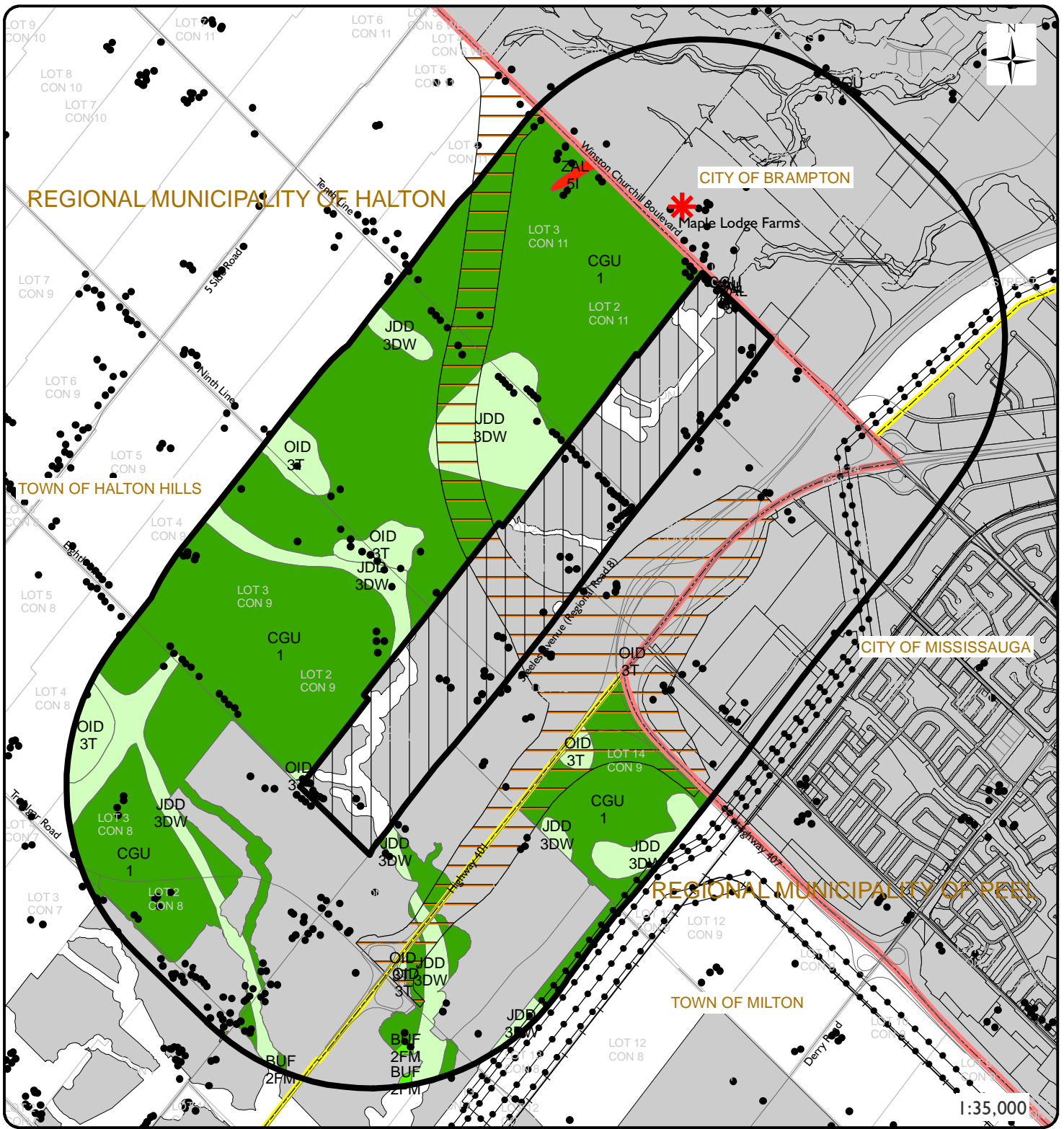
Basic information about the soils of Ontario is made more useful by providing an interpretation of the agricultural capability of the soil for various crops. The Canada Land Inventory (CLI) system combines attributes of the soil to place the soils into a seven-class system of land use capabilities. The 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 or Muck soils are not classified under this system. Disturbed Soil Areas are not rated under this system.

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 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.



Legend

- Buildings (MNR)
- +— Railway (MNR)
- Roads (MNR)
- Hydro Line
- Built Areas
- ▭ GTA West Technically Preferred Corridor
- ▭ Lot Lines (MNR)
- ▭ Municipal Boundary - Lower (MNR)
- ▭ Municipal Boundary - Upper (MNR)
- ▭ Study Area
- ▭ Secondary Study Area (1.5 km)

Canada Land Inventory

- Class 1
- Class 2
- Class 3
- Class 5

BUF = Burford Loam
 CGU = Chinguacousy Clay Loam
 JDD = Jeddo Clay Loam
 OID = Oneida Clay Loam
 ZAL = Bottom Land

Figure 15
 Canada Land Inventory
 (CLI)

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 December 2020

- 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.”*

With respect to the soils and Canada Land Inventory (CLI) identified in the Study Area and Secondary Study Area, 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 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 M – Moisture Deficiency

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

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 15 – Canada Land Inventory (CLI) illustrates the OMAFRA digital soils data for the portions of the Secondary Study Area that were not within the Built Areas the Town of Halton Hills, the Town of Milton, the City of Brampton and the City of Mississauga. The OMAFRA soils data base has not removed or discounted soils from roads, rails, urban or developed areas, therefore, those areas with their disturbed soils are included within the soil polygon that covers the area. This study attempts to remove the soils from roads and highway corridors in an attempt to provide a more accurate data set. As a result, the areas that comprise roads and highway corridors will be identified as 'Not Rated'.

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 Secondary Study Area.

Table 5 Canada Land Inventory – Secondary Study Area

Canada Land Inventory Class (CLI)	Secondary Study Area Percent Occurrence
Class 1	34.8
Class 2	0.1
Class 3	9.0
Class 4	-
Class 5	0.1
Class 6	-
Class 7	-
Not Rated	56.1
Totals	100.0

The Secondary Study Area comprises approximately 34.8 percent Canada Land Inventory (CLI) capability of Class 1, approximately 0.1 percent Class 2, approximately 9.0 percent Class 3, approximately 0.1 percent Class 5 and approximately 56.1 percent as Not Rated lands. Approximately 43.8 percent of the Secondary Study Area is Class 1 - 3 lands, and the remaining 56.1 percent as Not Rated including built up areas, roads and rail lines.

4.7 AGRICULTURAL SYSTEMS PORTAL

A review of the OMAFRA Agricultural System Portal online resource for agricultural services/agricultural network (markets, abattoirs, renderers, livestock auctions, investment, warehousing and storage, wineries and breweries) noted that none of the Study Area, but much of the Secondary Study Area were located in the Prime Agricultural Area of the Agricultural Land Base of the Greater Golden Horseshoe.

A review of the online Agricultural System Portal (OMAFRA) indicated that there were no farmers markets, pick your own operations, nurseries, specialty farms (crop or livestock), frozen food manufacturing, refrigerated warehousing/storage, livestock assets or abattoirs in the Study Area.

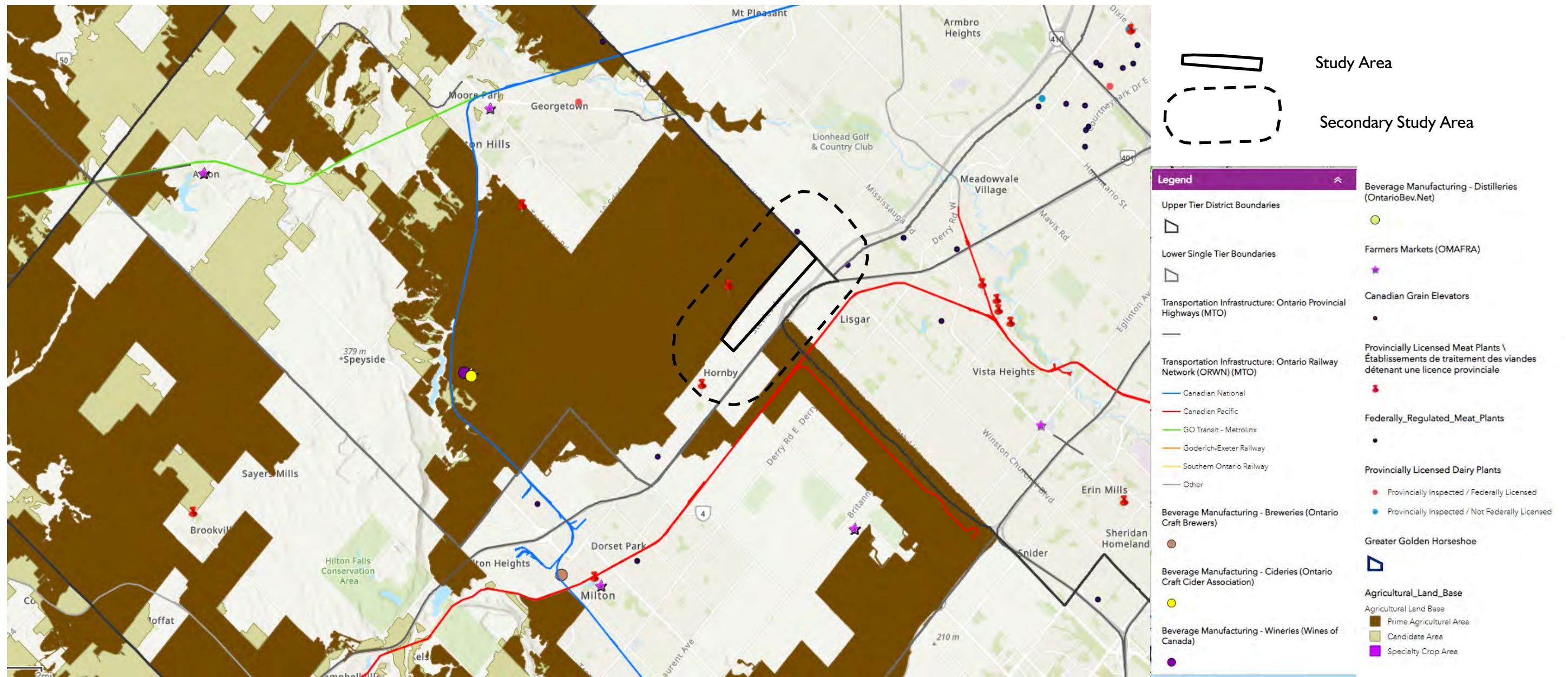
Two Provincially licensed meat plants were noted in the Secondary Study Area. One plant was noted to the west near Hornby Road and Steeles Avenue. The second plant was noted on Ninth Line, between Steeles Avenue and Five Side Road. Two Federally licensed meat plants were noted in the Secondary Study Area. One plant was located along the east side of Winston Churchill Boulevard (Maple Lodge Farms Limited), while the second plant was noted east of Winston Churchill Boulevard (within the City of Mississauga) and appears to be associated with the Conestoga Cold Storage facility on Meadowpine Boulevard.

A copy of the online image has been provided in Figure 16 – Agricultural Systems Portal Mapping. This figure includes a large area (Township scale coverage) around the Study Area and the Secondary Study Area, for the purposes of identifying agricultural services and networks in the local community.

As illustrated in this image there are no agricultural services within the Study Area. There are two Provincially licensed meat plants in the Secondary Study Area and two Federally licensed meat plants in the Secondary Study Area. Each of these plants is located within the urban areas of the Cities of Brampton or Mississauga. A cold storage facility (Conestoga Cold Storage) was noted in the Secondary Study Area, possibly associated with a Federally licensed meat plant.

The closest transportation networks (major roadway) are the Highway 407 and the Highway 401 which are both located just south of the Study Area.

Figure 16 Agricultural Systems Mapping (OMAFRA)



4.8 AGRICULTURAL CENSUS DATA

A review of the Census of Agricultural data (Census 2016, including 2006 and 2011 data) was completed to determine the agricultural characteristics of the Region of Halton and the Town of Halton Hills, and to allow comparison to the agricultural characteristics on the Study Area and Secondary Study Area.

4.8.1 REGION OF HALTON

Table 6 provides Census 2016 data for agricultural land use in the Region of Halton and provides a comparison to the Provincial Census 2011 agricultural data. As indicated in the census data, the Region of Halton comprise approximately 0.56 percent of the total area of farms in Ontario (Census 2016).

Table 6 Region of Halton Census 2016 Data – Land Use

Item	Halton	Province	Percent of province	Percent from 2011
Land Use, 2016 Census (acres)				
Land in crops	52,602	9,021,298	0.58	-14.71
Summerfallow land	243	15,885	1.53	-66.11
Tame or seeded pasture	1,850	514,168	0.36	-21.84
Natural land for pasture	3,414	783,566	0.44	-11.67
Christmas trees, woodland & wetland	5,789	1,542,637	0.38	-24.78
All other land	4,778	470,909	1.01	47.06
Total area of farms	68,676	12,348,463	0.56	-13.69

Table 7 provides a more detailed inventory of agricultural lands and it is evident from this data that the Region of Halton comprises a large land base for common field crops (corn and soybean) and forage/hay crops (as based on Census farm data). Winter wheat is also a major crop within Region of Halton. A further review indicates that Region of Halton is a significant producer of raspberries, accounting for over 4.12 percent of the Provincial acreage in production.

Table 7 Region of Halton Census 2016 Data - Crops

Item	Halton	Province	Percent of province	Percent from 2011
Major Field Crops, 2016 Census (acres)				
Winter wheat	7,643	1,080,378	0.71	-16.00
Oats for grain	193	82,206	0.23	12.21
Barley for grain	229	103,717	0.22	-56.38
Mixed grains	243	92,837	0.26	-35.03
Corn for grain	12,272	2,162,004	0.57	-5.09
Corn for silage	625	295,660	0.21	16.17
Hay	10,642	1,721,214	0.62	-27.81
Soybeans	17,409	2,783,443	0.63	-11.15

Major Fruit Crops, 2016 Census (acres)

Total fruit crops	424	51,192	0.83	-18.93
Apples	127	15,893	0.80	-32.09
Sour Cherries	x	2,121	-	-
Peaches	13	5,232	0.25	-
Grapes	77	18,718	0.41	4.05
Strawberries	63	2,915	2.16	-33.68
Raspberries	28	680	4.12	12.00

Table 7 also illustrates the change in production (on a Regional basis in percent) from 2011. The Census data indicates a significant reduction in grain production (winter wheat, barley and mixed grains), and a reduction in hay and soybeans, while there has been an increase in the production of corn for silage and oats for grain.

Table 8 illustrates the 2016 livestock census data on a Regional basis. As shown in Table 8, the Region of Halton provides a limited portion of the total cattle and calves, beef cows, dairy cows, total pigs and total sheep and lambs for the Province. When compared to the 2011 Census data, there have been decrease in all livestock inventories, with the exception of total sheep and lambs. There has been an increase in total hens and chicken production since 2011.

Table 8 Region of Halton Census 2016 Data - Livestock

Item	Halton	Province	Percent of province	Percent from 2011
Livestock Inventories, 2016 Census (number)				
Total cattle and calves	3,209	1,623,710	0.20	-34.60
Steers	385	305,514	0.13	-41.93
Beef cows	826	236,253	0.35	-30.65
Dairy cows	379	311,960	0.12	-32.80
Total pigs	139	3,534,104	-	-
Total sheep and lambs	1,583	321,495	0.49	24.94
Poultry Inventories, 2016 Census (number)				
Total hens and chickens	162,456	50,759,994	0.32	16.11
Total turkeys	x	3,772,146	-	-

4.8.2 TOWN OF HALTON HILLS

A review of Census 2016 data for the Town of Halton Hills reveals that the total area in farms is 37,154 acres, as based on Census Farms, with 180 farms reporting. The majority of the farmed land is in crops with a total of 30,614 acres. The remaining lands are listed as summerfallow land, tame or seed pasture, natural land for pasture, and Christmas trees, woodlands and wetlands.

Table 9 provides Census 2016 data for agricultural land use in the Town of Halton Hills and provides a comparison to the Provincial Census 2006 agricultural data. As indicated in the

census data, the Town of Halton Hills comprises approximately 0.30 percent of the total area of farms in Ontario (Census 2016).

Table 9 Town of Halton Hills Census Data (2016)

Item	Halton Hills	Province	Percent of Province (2016)
Land Use, 2016 Census (acres)			
Land in crops	30614	9,021,298	0.34
Summerfallow land	144	15,885	0.91
Tame or seeded pasture	731	514,168	0.14
Natural land for pasture	1243	783,566	0.16
Christmas trees, woodland & wetland	2495	1,542,637	0.16
All other land	1927	470,909	0.41
Total area of farms	37154	12,348,463	0.30

Table 10 provides a breakdown of the major field crops in the Town of Halton Hills and provides a comparison of the Town of Halton Hills contribution to the Provincial totals.

The 2016 Census data illustrates that wheat, corn for grain, alfalfa and alfalfa mixtures, and soybeans are the major field crops grown in Town of Halton Hills. In comparison to the 2006 Census data there has been a decrease in barley for grain and corn for silage. There has been a significant increase in the production of soybeans since 2006. The Town of Halton Hills has limited production in major fruit crops and major vegetable crops as an area and as a component of the Provincial total.

Table 10 Town of Halton Hills Census 2016 - Crops

Item	Halton Hills	Province	Percent of Province (2016)	Percent Change in Township from 2006
Major Field Crops, 2016 Census (acres)				
Winter wheat	x	1,080,378	x	-
Wheat	5220	1202309	0.43	1.52
Oats for grain	x	82,206	x	-
Barley for grain	148	103,717	0.14	-85.56
Mixed grains	x	92,837	x	-
Corn for grain	8504	2,162,004	0.39	5.88
Corn for silage	381	295,660	0.13	-19.11
Alfalfa and Alfalfa mixtures	3337	1119194	0.30	-38.09
Soybeans	9438	2,783,443	0.34	17.65
Total fruit crops	121	51,192	0.24	-42.86
Apples	70	15,893	0.44	-70.34
Sour Cherries	-	2,121	x	-

Peaches	x	5,232	x	-
Grapes	x	18,718	x	-
Strawberries	x	2,915	x	-
Raspberries	x	680	x	-
Major Vegetable Crops, 2016 Census (acres)				
Total vegetables	442	135,420	0.33	42.58
Sweet corn	x	22,910	x	-
Tomatoes	11	15,744	0.07	-
Green peas	1	16,268	0.01	-
Green or wax beans	5	9,732	0.05	66.67

Table 11 illustrates the census data (2016) for livestock for the Town of Halton Hills. As indicated below, the Town of Halton Hills has limited input to the Provincial totals for livestock inventories. Further, that the production of livestock has been decreasing since the 2006 Census.

Table 11 Town of Halton Hills Census 2016 - Livestock

Item	Halton Hills	Province	Percent of Province	Percent Change in Township from 2006
Livestock Inventories, 2016 Census (number)				
Total cattle and calves	1505	1,623,710		-57.85
Steers	211	305,514		-63.43
Beef cows	417	236,253		-56.79
Dairy cows	208	311,960		-43.63
Total pigs	70	3,534,104		-
Total sheep and lambs	548	321,495		-1.08

Table 12 provides a side-by-side comparison of the Region of Halton and the Town of Halton Hills 2016 Census data. Table 12 also provides a calculation of the percent occurrence of the Town of Halton Hills agricultural census data as a comparison to the Region of Halton agricultural census data.

As illustrated in Table 12, the Town of Halton Hills provides significant contribution to the major field crops in the Region of Halton, as evidenced by values of 68.30 percent for wheat, 64.63 percent for barley, 69.3 percent for corn for grain, 60.96 percent for corn for silage, and 54.21 percent for soybeans.

The Town of Halton Hills contribution to the major fruit crops production in Region of Halton illustrates input of 28.54 percent of total fruit crops, with 55.12 percent in apples.

The Town of Halton Hills contribution to the major vegetable crops grown in the Region of Halton illustrates inputs of 68.85 percent for total vegetables, 25.0 percent of the tomato crop.

Table 12 Comparison of Township and Region Census Data 2016 - Crops

Item	Halton Hills	Halton	Percent of Halton Region
Major Field Crops, 2016 Census (acres)			
Winter wheat	x	x	x
Wheat	5220	7643	68.30
Oats for grain	x	193	x
Barley for grain	148	229	64.63
Mixed grains	x	243	x
Corn for grain	8504	12,272	69.3
Corn for silage	381	625	60.96
Hay	3337	10,642	31.36
Soybeans	9438	17,409	54.21
Major Fruit Crops, 2016 Census (acres)			
Total fruit crops	121	424	28.54
Apples	70	127	55.12
Sour Cherries	-	x	-
Peaches	x	13	-
Grapes	x	77	-
Strawberries	x	63	-
Raspberries	x	28	-
Major Vegetable Crops, 2016 Census (acres)			
Total vegetables	442	642	68.85
Sweet corn	x	83	-
Tomatoes	11	44	25.0
Green peas	1	x	-
Green or wax beans	5	x	-

Table 13 provides a comparison of the Town of Halton Hills and the Region of Halton census data (2016) for livestock inventories. As illustrated in Table 13, the Town of Halton Hills is a significant contributor to the overall livestock inventories of the Region of Halton. The Town of Halton Hills contributes approximately 46.90 percent of the total cattle and calves, with 54.81 percent of the steers, 50.48 percent of beef cows, 54.88 percent of the dairy cows, 50.36 percent of the total pigs and 34.62 percent of the total sheep and lambs.

A comparison of poultry numbers indicates that the Town of Halton Hills has limited input to the Regional totals for hens and chickens at 0.90 percent, and no input to turkey totals.

Table 13 Comparison of Township and Region Census Data 2016 – Livestock

Item	Halton Hills	Halton	Percent of Halton Region
Livestock Inventories, 2016 Census (number)			
Total cattle and calves	1505	3,209	46.90
Steers	211	385	54.81
Beef cows	417	826	50.48
Dairy cows	208	379	54.88
Total pigs	70	139	50.36
Total sheep and lambs	548	1,583	34.62
Poultry Inventories, 2016 Census (number)			
Total hens and chickens	1454	162,456	0.90
Total turkeys	14	x	x

When comparing the Census data for livestock to the Study Area, the Study Area has no active livestock operations.

When compare the Census data for livestock to the Secondary Study Area, there are numerous hobby horse, and horse farms. One dairy operation was noted on the west side of Winston Churchill Boulevard at approximately 1.5 km from the edge of the Study Area.

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. A review of the OMAFRA draft Agricultural Impact Assessment guidance document identified numerous potential impacts to agriculture which may include:

- Interim or permanent loss of agricultural lands
- Fragmentation, severing or land locking 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 compatibility concerns
- Traffic concerns
- Changes to adjacent cropping due to light pollution

It should be noted that this Agricultural Impact Assessment (AIA) report should be read in conjunction with all other discipline reports in an effort to provide an adequate evaluation of the above-mentioned potential impacts that are beyond the scope of agriculture.

It has been documented within this report, the agricultural character of both the Study Area and the Secondary Study Area. It has been determined that the Study Area is located within a

designated Urban Area (Halton Region) and a Built area, while the Secondary Study Area comprise portions of active agricultural land uses (including livestock and cash crop operations), built areas (urban land uses), commercial enterprises, and rural residential use.

It has been documented that the Study Area is completely within the Urban designation of Halton Region and within the Employment area of the Town of Halton Hills. Large portions of the Secondary Study Area (to the west, south and east) are also within the Built area of the Town of Milton, the City of Mississauga and the City of Brampton.

The Secondary Study Area comprise a mix of land fragmentation, with large parcels of agricultural lands to the north. Areas of smaller parcels with residential uses were noted as linear development along Eighth Line, Ninth Line and Tenth Line.

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 intentions for agriculture in those portions of the Secondary Study Area.

With respect to the potential impacts as listed on the previous page of this report, and the proposed future development of the Premier Gateway Phase 2B lands, the following provides some context as to the extent of the potential impacts.

- Interim or permanent loss of agricultural lands – there will be a permanent loss of the use of agricultural lands within the Study Area. It should be noted that the use of these ‘designated urban lands’ for agriculture would be considered an interim use for lands that are no longer designated as agriculture.
- There will be no fragmentation, severing or landlocking of agricultural lands as a result of the proposed future development of the Premier Gateway Phase 2B lands these lands are ‘designated urban lands’.
- The loss of existing and future farming opportunities – there will be a loss of existing and future farming opportunities on the Premier Gateway Phase 2B lands, however, these lands are ‘designated urban lands’.
- The loss of infrastructure, services or assets – there is no loss of infrastructure, services or assets as a result of the future development of the Premier Gateway Phase 2B lands.
- The loss of investments in structures and land improvements – there is no net loss of investment in agriculture as a result of the proposed future development of the ‘designated urban’ Premier Gateway Phase 2B lands.
- Disruption or loss of functional drainage systems – there is no net loss of artificial tile drainage on the Study Area, and there is no net loss or disruption to artificial tile drainage systems in the Secondary Study Area.
- Disruption or loss of irrigation systems – there is no loss of investment in irrigation systems.
- Changes to soil drainage – there will be no net change in soil drainage in the

Secondary Study Area as a result of future development of the Premier Gateway Phase 2B lands.

- Changes to surface drainage – there will be no net change in surface drainage within the Secondary Study Area as a result of future development of the Premier Gateway Phase 2B lands.
- Changes to landforms – there will be no changes to landforms (with respect to agriculture) in the Secondary Study Area as a result of future development of the Premier Gateway Phase 2B lands.
- Changes to hydrogeological conditions – would need to be addressed under separate cover by the hydrogeological consultant.
- Effects of noise, vibration, dust - there should be limited potential for additional noise, vibration and dust during the operations of the future development of the Premier Gateway Phase 2B lands. There is a potential for noise, vibration and dust during the initial construction phase. It should be noted that the specific uses in the Employment Area have not been assigned and that there may be development (unknown at this time), which may produce dust, manufacturing noise and vibration throughout the life of their operation.
- Potential compatibility concerns – there should be limited potential for compatibility concerns with the future development of the Premier Gateway Phase 2B lands and the adjacent agricultural lands as this area is an extension of the built area of Halton Hills.
- Traffic concerns - Traffic issues should be limited in scope as this is a proposed extension of the urban area of Halton Hills that will make use of an existing and extensive road network.
- Changes to adjacent cropping due to light pollution – there is potential for changes in cropping due to light pollution, as the proposed future development of the Premier Gateway Phase 2B lands will include urban uses. Any use of lighting should take into consideration the impact on adjacent agricultural lands.
- Disruption to surrounding farm operations – there should be no to limited disruption for surrounding/adjacent farms as the proposed future development would be an extension of the built area of Halton Hills.

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.

Trespassing and vandalism impacts are generally related to development within agricultural areas predominated by specialty crop operations or large livestock operations, and in areas of close proximity to urban environments.

Traffic patterns for the proposed future development of the Premier Gateway Phase 2B lands will remain consistent with the existing traffic pattern. Vehicle traffic will use the existing and

extensive road network.

Trespassing and vandalism are more often a concern with specialty crop operations and livestock operations. The location of the Premier Gateway Phase 2B lands, woodlot areas and stream courses help to separate any potential interactions with neighbouring lands to the north. Further, there are limited opportunities to interact with livestock operations due to the low number (1) of livestock operations on the lands adjacent to the Premier Gateway Phase 2B lands.

5.3 AGRICULTURAL INFRASTRUCTURE

The reconnaissance level land use survey did not identify any agricultural equipment dealers, seed dealers/cleaning/drying services or farm equipment maintenance service businesses within the Study Area or Secondary Study Area.

A review of the OMAFRA Agricultural System Portal was completed to identify the presence of any livestock assets and services (renderers, meat plants, abattoirs), refrigerated warehousing and storage, frozen food manufacturing, farm markets, wineries, or cideries within the Study Area. None of these features was identified within the agricultural areas of the Study Area. A large poultry processing plant (Maple Lodge Farms) and a cold storage facility (Conestoga Cold Storage) were noted in the Secondary Study Area.

The lack of local agricultural business and infrastructure is also indicative of areas in limited or marginal agriculture activities, as these services rely on the business supplied by the local farm operators.

5.4 MITIGATION MEASURES

Mitigation measures are designed and integrated to offset any potential negative impact that may occur as the result of a development. The following provides comment and context on mitigation measures.

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. In this study, the proposed future development of the Premier Gateway Phase 2B lands will be a permanent use within the Halton Hills built area, adjacent to an agricultural area. There will be no designated agricultural lands lost due to a proposed future development, as a result, the loss of designated agricultural lands and direct impact to agricultural land, has been avoided.

5.4.2 MINIMIZING IMPACTS

When avoidance is not possible, the next priority would be to minimize impacts to the extent feasible. As a result, mitigation measures should be developed to lessen any potential impacts. The minimization of impacts may be achieved during the design process and through proactive planning measures that provide for the separation of land uses.

In this instance (proposed future development of the Premier Gateway Phase 2B lands), any potential impacts to agricultural lands, will be related to potential impacts on the adjacent, designated agricultural lands within the Secondary Study Area. Therefore, the potential methods of minimizing impacts will relate to directing activities away from the adjacent agricultural lands.

The first method of minimizing impacts deals with directing traffic away from the roads in the agricultural areas. The future development of the Premier Gateway Phase 2B lands could make use of designated road systems that would direct traffic to the existing road system that includes Steeles Avenue and Winston Churchill Boulevard.

5.4.3 MITIGATING IMPACTS

When avoidance techniques and minimizing potential impacts to agriculture have not achieved the desired effect the next priority is to mitigate any further impact.

Potential mitigation measures may include:

- The creation of berms or vegetated feature 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, vandalism and dogs running at large. Effective buffers between agriculture and urban uses may combine a separation of uses, vegetation/plantings and berms. Vegetated buffers should include the use of deciduous and coniferous plants, with foliage from base to crown. These types of plantings will be effective in the capture of dust and spray drift.
- The use of adequate fencing between the different types of land uses to reduce the potential for trespassing and potential vandalism.
- The use of signage between the different types and intensities of land uses to indicate No Trespassing or Private Property.
- The use of plantings/vegetation as screens and buffers to reduce visual impacts and sounds.
- The use of reduced speed limits in the agricultural areas.
- Implementation of surface and/or groundwater monitoring in areas where agricultural operations make use of surface or groundwater as part of their normal farm practices.
- Limit the use of tall streetlights or use lighting that is directed down and away from agricultural lands. Limit the use of any type of lighting (high

pressure sodium (HPS) lights, and LED lights are known to interfere with soybean production) that has a negative effect on agricultural lands, livestock or crops.

- The use of design elements to direct traffic away from farming areas.

It should be noted that the use of fencing, signage, berms, vegetation screening, etc as part of a mitigation effect, will require that these types of mitigation are used/created on the lands that are to be developed and not on the adjacent agricultural lands. The adjacent landowners should not incur any expense to themselves as a result of the future development of the Premier Gateway Phase 2B lands.

It should also be noted that there are opportunities to local agricultural operations in the Secondary Study Area with the future development of the Premier Gateway Phase 2B lands. The future development of the Premier Gateway Phase 2B lands will bring people/employees closer to the agricultural areas which will result in increased potential for expanding sales of local fruit/vegetable crops from farm markets. Further, the local horse farms may encounter an increase in boarding of horses and riders at their respective facilities.

This AIA has provided comment on the avoidance (if possible), minimizing potential impacts and mitigation measures in the instances where avoidance is not possible.

6 SUMMARY AND CONCLUSIONS

DBH Soil Services Inc was retained to complete an Agricultural Impact Assessment (AIA) for the Halton Hills Premier Gateway area. The Halton Hills Premier Gateway area is roughly bounded by Winston Churchill Boulevard on the east, Steeles Avenue on the south, Eighth Line on the west, and property boundaries (lot lines) running parallel to and approximately 0.6 kilometers north of Steeles Avenue.

In the Regional context, the Study Area is located approximately 600 m northwest of Highway 401, approximately 700 m from the built areas of the City of Mississauga (near Winston Churchill Boulevard), approximately 600 m northwest of the Town of Milton (near Eighth Line) and abuts the City of Brampton on the east, at Winston Churchill Boulevard.

The Study Area and the Secondary Study Areas comprise a mix of land uses including urban uses, rural uses, agricultural lands, transportation corridors, and woodlands. A large portion of the Secondary Study Area (south, west and east of the Study Area) rests within the built boundary areas of Halton Hills, the City of Mississauga and the City of Brampton. Portions of those areas are presently used for agriculture, however those lands have diminished or limited long term agricultural potential.

Further, the Study Area and the Secondary Study Area are roughly bisected by the proposed Greater Toronto Area West Technically Preferred Highway Corridor (GTA West), that extends north west from the existing Highway 407 and Highway 401 interchange. This corridor extends across the Study Area roughly half way between Ninth Line and Tenth Line.

The proposed future development of the Premier Gateway Phase 2B lands necessitated this study.

The results of this Agricultural Impact Assessment are presented below:

- **Geographical Limits**

The Study Area and the Secondary Study Area are located within the Peel Plain Physiographic unit.

The Peel Plain Physiographic unit is described as a level to undulating tract of clay soil material covering the central portions of Halton, Peel and York Regions. This area has a gradual slope toward Lake Ontario.

The Study Area and the Secondary Study Area are a relatively simple mix of topography. The Study Area and the Secondary Study Area topography is gently undulating.

The Study Area and Secondary Study Area are located near the 3100 Crop Heat Units (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.

A review of the OMAFRA soils and Canada Land Inventory (CLI) digital data indicated that the Secondary Study Area comprises approximately 43.8 percent Canada Land Inventory (CLI) capability of Class 1 - 3. Approximately 0.1 percent of the Secondary Study Area is Class 5 lands, and the remaining 56.1 percent as Not Rated including built up areas, roads and rail lines.

- **Agricultural Policy**

The Study Area (Premier Gateway Phase 2B lands) are located within the Urban area of the Town of Halton Hills. The Study Area lands are predominantly used for agricultural production, particularly the production of common field crops (corn, soybean). Therefore, no portions of the Study Area are located in any of the four provincial land use plans: *Greenbelt Plan (2017)*; *the Oak Ridges Moraine Conservation Plan (2017)*; *the Niagara Escarpment Plan (2017)*; and *the Growth Plan for the Greater Golden Horseshoe (GGH) (2019)*. The Premier Gateway Phase 2B lands are considered to be designated as non-agricultural.

A review of the boundaries of the Growth Plan for the Greater Golden Horseshoe area determined that portions of the Secondary Study Area are considered as Prime Agricultural Lands.

A review of the *Halton Region Official Plan (Office Consolidation June 19, 2018) Map 1 – Regional Structure* revealed that the Subject Lands are identified as Urban Area and Natural Heritage Systems, while portions of the Secondary Study Area as Agricultural Area, Urban Area and Regional Natural Heritage System. Portions of the Secondary Study Area are also identified as Future Strategic Employment Areas.

The *Town of Halton Hills Official Plan (May 1, 2019 Consolidation)* was reviewed, and it was determined that the Study Area is considered as Urban Area. Portions of the Secondary Study Area have been defined as Urban Areas (Halton Hills), Agricultural Area, and Greenlands A Area.

No lands within the Study Area or Secondary Study Area are located within any Provincially designated Specialty Crop areas or in any municipally zoned specialty crop area.

- **Agricultural Land Use**

The Study Area land use comprises approximately 17.1 percent as built up areas, 51.2

percent as common field crop, 4.6 percent as forage/pasture, 0.92 percent as woodlands, 13.6 percent as small grains, and 12.6 percent as scrubland. The existing road system (Township, Regional and Provincial) areas are included in the built-up area, unless they can be pulled out as a separate item.

The Secondary Study Area comprises land use of approximately 18.6 percent as built up, 11.1 percent as transportation corridors (Highways, Regional, Township Roads and Municipal roads), 43.2 percent as common field crop, 6.5 percent as forage/pasture, 4.7 percent as small grains, 0.1 percent as orchard lands, 4.1 percent as open field, 1.2 percent as ponded areas, 1.0 percent as recreational lands (golf course, driving range, miniputt), 3.9 percent as scrubland, and 5.7 percent as woodlands.

On review of the Land Use data it was observed that the predominant land uses in the Secondary Study Area include built-up areas and areas for the production of common field crops. The next greatest percent of land use is derived from forage/pasture lands, and woodlands.

- **Agricultural Investment**

A total of 25 agricultural facilities or areas where facilities are located were identified within the Study Area and Secondary Study Area. Three (3) agricultural facilities were observed in the Study Area. The remaining 25 agricultural facilities were observed in the Secondary Study Area.

Numerous horse farms and hobby horse farms were scattered throughout the Secondary Study Area.

There is no investment in artificial tile drainage or irrigation on the Study Area.

Within the Secondary Study Area, systematic and random tile drainage was noted on various lands to the north and to the west of the Study Area.

There is no investment in irrigation in either the Study Area or the Secondary Study Area.

There is no investment in landforming for agricultural purposes in either the Study Area or the Secondary Study Area.

Minimum Distance Separation I (MDS I) calculations were completed for any agricultural facility that was capable of housing livestock. A review of the calculated MDS I arcs indicates that there is the potential for one MDS I impact from the future development of the Premier Gateway Phase 2B lands.

A review of the online Agricultural System Portal (OMAFRA) indicated that there were no nurseries, specialty farms (crop or livestock), frozen food manufacturing in the Study Area or Secondary Study Area.

There are no agricultural services within the Study Area or Secondary Study Area.

The closest transportation network (major roadway) is Highway 401 which is located immediately south of the Premier Gateway Phase 2B lands.

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

The Secondary Study Area comprises numerous parcels of varying size. The parcel count for the Secondary Study Area 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).

Rural residential uses were noted as linear development along Eighth Line, Ninth Line and Tenth Line.

Large parcels of land were noted north and west of the Study Area.

The foregoing represents a comprehensive Agricultural Impact Assessment with the purpose of evaluating the Study Area and Secondary Study Area to document the existing agricultural character and to determine any potential impacts to agriculture as a result of the proposed future development of the Premier Gateway Phase 2B lands.

Given the geographical location of these lands, it is the conclusion of this study that the proposed future development of the Premier Gateway Phase 2B lands would have minimal impact on the surrounding agricultural activities within the Secondary Study Area.

7 REFERENCES

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 - 10 17 5900 48300
 - 10 17 5900 48250
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- *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 (OMAFRA). 2016,*
- *The Physiography of Southern Ontario 3rd Edition, Ontario Geological Survey Special Volume 2, Ministry of Natural Resources, 1984,*
- *The Regional Municipality of Halton Region Official Plan Review Phase I, Directions Report Final Revised, October 2016,*
- *Town of Halton Hills Official Plan (May 1, 2019 Consolidation),*
- *Windshield and field surveys by DBH Soil Services staff October, November and December 2020.*

APPENDIX A

AGRICULTURAL FACILITIES PHOTOGRAPHS

Agricultural Facility #1



Agricultural Facility #2 and #3



Agricultural Facility #4



Agricultural Facility #5



Agricultural Facility #6



Agricultural Facility #7



Agricultural Facility #8



Agricultural Facility #9



Agricultural Facility #10



Agricultural Facility #11



Agricultural Facility #12



Agricultural Facility #13



Agricultural Facility #14



Agricultural Facility #15



Agricultural Facility #16



Agricultural Facility #17



Agricultural Facility #18



Agricultural Facility #19



Agricultural Facility #20 and #21



Agricultural Facility #22



Agricultural Facility #23



Agricultural Facility #24



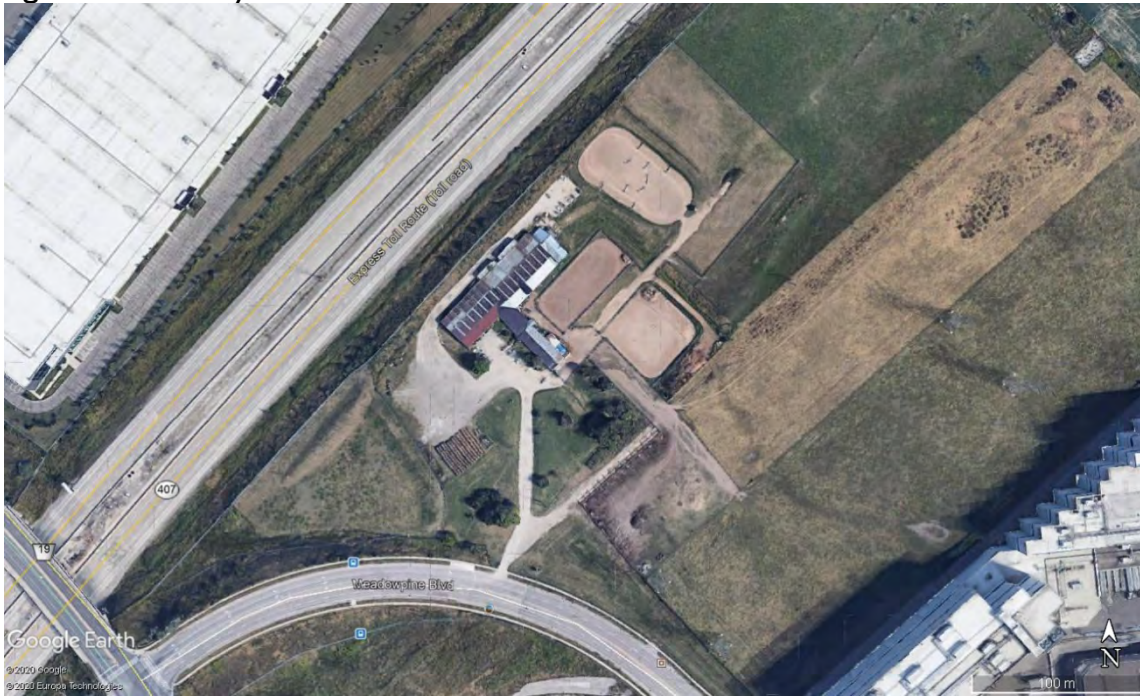
Agricultural Facility #25



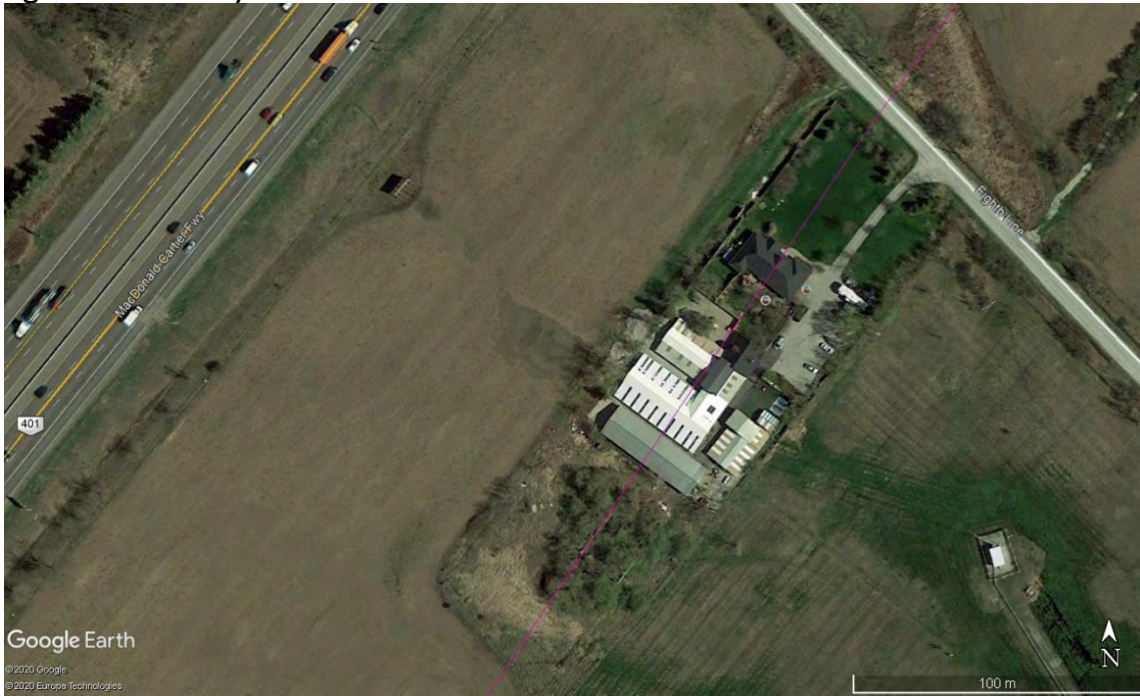
Agricultural Facility #26



Agricultural Facility #27



Agricultural Facility #28



APPENDIX B

MINIMUM DISTANCE SEPARATION (MDS I) SHEETS

Minimum Distance Separation I



Worksheet 1

Prepared By: Dave Hodgson, President, DBH Soil Services Inc

Description: Barn 11
Application Date: Wednesday, December 30, 2020
Municipal File Number:
Proposed Application: Other Type B land use
 Type B Land Use

Applicant Contact Information
 Town of Halton Hills Region of Halton

Location of Subject Lands
 Regional Municipality of Halton, Town of Halton Hills
 ESQUESING, Lot: 3

Roll Number:  


Calculation Name: *Barn 11*
Description:

Farm Contact Information
 8524 Ninth Line
 Halton Hills, ON, Canada

Location of existing livestock facility or anaerobic digester
 Regional Municipality of Halton, Town of Halton Hills
 ESQUESING, Concession: 9, Lot: 3
 Roll Number: 241507000114000
 Total Lot Size: 38.6 ha

The barn area is an estimate only and is intended to provide users with an indication of whether the number of livestock entered is reasonable.

Manure Type	Type of Livestock/Manure	Existing Maximum Number	Existing Maximum Number (NU)	Estimated Livestock Barn Area
Solid	Horses, Medium-framed, mature; 227 - 680 kg (including unweaned offspring)	46	46.0	1,068 m ²

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

Existing Manure Storage: V3. Solid, outside, no cover, >= 30% DM

Design Capacity (NU): 46.0

Potential Design Capacity (NU): 138.0

Factor A (Odour Potential)	Factor B (Size)	Factor D (Manure Type)	Factor E (Encroaching Land Use)	=	Building Base Distance 'F' (minimum distance from livestock barn)	(actual distance from livestock barn)
0.7	X 353.43	X 0.7	X 2.2		381 m (1250 ft)	TBD
Storage Base Distance 'S'						(actual distance from manure storage)
381 m (1250 ft)						TBD

Calculation Name: *Barn 15*
Description:

Farm Contact Information
 8278 Ninth Line
 Halton Hills, ON, Canada

Location of existing livestock facility or anaerobic digester
 Regional Municipality of Halton, Town of Halton Hills
 ESQUESING, Concession: 9, Lot: 2
 Roll Number: 241507000114700
 Total Lot Size: 20.5 ha


The barn area is an estimate only and is intended to provide users with an indication of whether the number of livestock entered is reasonable.

Minimum Distance Separation I

Worksheet 1

Prepared By: Dave Hodgson, President, DBH Soil Services Inc

Manure Type	Type of Livestock/Manure	Existing Maximum Number	Existing Maximum Number (NU)	Estimated Livestock Barn Area
Solid	Horses, Medium-framed, mature; 227 - 680 kg (including unweaned offspring)	48	48.0	1,115 m ²

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

Existing Manure Storage: V3. Solid, outside, no cover, >= 30% DM

Design Capacity (NU): 48.0

Potential Design Capacity (NU): 96.0

Factor A (Odour Potential)	Factor B (Size)	Factor D (Manure Type)	Factor E (Encroaching Land Use)	Building Base Distance 'F' (minimum distance from livestock barn)	(actual distance from livestock barn)
0.7	X	312.17	X	0.7	X
				2.2	=
				337 m (1104 ft)	TBD

Storage Base Distance 'S' (minimum distance from manure storage)	(actual distance from manure storage)
337 m (1104 ft)	TBD

Calculation Name: *Barn 24*

Description:

Farm Contact Information

Laidlaw Holsteins
8656 Winston Churchill Boulevard
Halton Hills, ON, Canada

Location of existing livestock facility or anaerobic digester


Regional Municipality of Halton, Town of Halton Hills
ESQUESING, Concession: 11, Lot: 4

Roll Number: 241507000104900

Total Lot Size: 40 ha

The barn area is an estimate only and is intended to provide users with an indication of whether the number of livestock entered is reasonable.

Manure Type	Type of Livestock/Manure	Existing Maximum Number	Existing Maximum Number (NU)	Estimated Livestock Barn Area
Solid	Dairy, Milking-age Cows (dry or milking) Large Frame (545 - 658 kg) (eg. Holsteins), 3 Row Free Stall	95	135.7	927 m ²

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

Existing Manure Storage: V3. Solid, outside, no cover, >= 30% DM

Design Capacity (NU): 135.7

Potential Design Capacity (NU): 407.1

Factor A (Odour Potential)	Factor B (Size)	Factor D (Manure Type)	Factor E (Encroaching Land Use)	Building Base Distance 'F' (minimum distance from livestock barn)	(actual distance from livestock barn)
0.7	X	516.12	X	0.7	X
				2.2	=
				556 m (1825 ft)	TBD

Storage Base Distance 'S' (minimum distance from manure storage)	(actual distance from manure storage)
556 m (1825 ft)	TBD

Minimum Distance Separation I

Worksheet 1

Prepared By: Dave Hodgson, President, DBH Soil Services Inc

Calculation Name: *Barn 25*

Description:

Farm Contact Information

85.4 Winston Churchill Boulevard
Halton Hills, ON, Canada

Location of existing livestock facility or anaerobic digester

Regional Municipality of Halton, Town of Halton Hills
ESQUESING, Concession: 11, Lot: 3

Roll Number: 241507000105200

Total Lot Size: 11.2 ha

The barn area is an estimate only and is intended to provide users with an indication of whether the number of livestock entered is reasonable.

Manure Type	Type of Livestock/Manure	Existing Maximum Number	Existing Maximum Number (NU)	Estimated Livestock Barn Area
Solid	Horses, Medium-framed, mature; 227 - 680 kg (including unweaned offspring)	8	8.0	186 m ²



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

Existing Manure Storage: V3. Solid, outside, no cover, >= 30% DM

Design Capacity (NU): 8.0

Potential Design Capacity (NU): 16.0

Factor A (Odour Potential)	Factor B (Size)	Factor D (Manure Type)	Factor E (Encroaching Land Use)	Building Base Distance 'F' (minimum distance from livestock barn)	Storage Base Distance 'S' (minimum distance from manure storage)
0.7	X	186.66	X	0.7	X
		2.2	=	201 m (660 ft)	TBD
				201 m (660 ft)	TBD

Preparer Information

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President
DBH Soil Services Inc
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Kitchener, ON, Canada N2N 3N9
Phone #1: 519-578-9226
Email: dhodgson@dbhsoilservices.ca

Signature of Preparer: _____ Date: _____
Dave Hodgson, President

NOTE TO THE USER:

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

APPENDIX C

Unique Soil Symbols and Canada Land Inventory (CLI) List

soilcode	slope	cli	clisub1	clisub2
10	N	5	I	
11	N	7	T	
12	15 - 30	7	R	T
13	N	7	R	
B.L.	N	5	I	
Ba	2 - 5	2	F	
Ba	0 - 0.5	2	F	
Ba	0.5 - 2	2	F	
Be	2 - 5	2	F	
Be	0.5 - 2	2	F	
Bl	2 - 5	2	F	
Bl	0.5 - 2	2	F	
Br	5 - 9	5	R	
Bs	2 - 5	4	F	R
Bu	2 - 5	2	F	M
Bu	5 - 9	3	T	
Bu	9 - 15	4	T	
Cd	0 - 0.5	2	W	
Cd	0.5 - 2	2	W	
Ch	2 - 5	1		
Ch	5 - 9	1		
Ch	0 - 0.5	1		
Ch	0.5 - 2	1		
Ch	15 - 30	1		
Ci	2 - 5	1		
Ck	2 - 5	2	F	
Cl	2 - 5	1		
Co	2 - 5	2	W	
Co	0 - 0.5	2	W	
Co	0.5 - 2	2	W	
Cs	0 - 0.5	4	R	W
Cs	0.5 - 2	4	R	W
Dk	2 - 5	4	F	M
Dk	5 - 9	4	S	T
Dk	9 - 15	4	S	T
Dk	0 - 0.5	4	F	M
Dk	0.5 - 2	4	F	M
Dk	15 - 30	6	T	S
Dk	30 - 45	6	T	S
DI	2 - 5	3	S	P

soilcode	slope	cli	clisub1	clisub2
Dl	5 - 9	3	S	P
Dl	5 - 9	3	M	F
Dl	9 - 15	4	S	T
Dl	9 - 15	5	P	I
Dl	0 - 0.5	3	S	P
Dl	15 - 30	5	T	
Dr	5 - 9	6	R	P
Ds	5 - 9	6	R	P
Du	9 - 15	4	S	T
Fl	2 - 5	6	R	
Fl	5 - 9	6	R	
Fl	9 - 15	6	R	
Fl	0 - 0.5	6	R	
Fl	0.5 - 2	6	R	
Fn	2 - 5	2	F	M
Fn	5 - 9	2	S	T
Fn	5 - 9	3	T	I
Fn	9 - 15	4	T	
Fn	0 - 0.5	2	F	M
Fo	2 - 5	2	F	M
Fo	5 - 9	3	S	T
Fo	9 - 15	4	S	T
Fo	0.5 - 2	2	F	M
Fo	15 - 30	5	T	
Fo	30 - 45	6	T	
Fp	9 - 15	4	R	T
Fr	5 - 9	7	R	
Fs	0.5 - 2	5	R	
Gf	9 - 15	4	W	
Gf	0.5 - 2	4	W	
Gi	2 - 5	2	F	M
Gi	5 - 9	2	S	T
Gi	5 - 9	3	T	I
Gi	9 - 15	4	T	
Gi	0.5 - 2	2	F	M
Gi	15 - 30	5	T	
Gl	2 - 5	1		
Gl	5 - 9	3	T	
Gl	9 - 15	4	T	
Gl	15 - 30	5	T	

soilcode	slope	cli	clisub1	clisub2
Gp	2 - 5	5	R	
Gr	0 - 0.5	5	W	
Gr	0.5 - 2	5	W	
Gs	2 - 5	3	R	
Gs	5 - 9	3	R	T
Gu	2 - 5	1		
Gu	5 - 9	3	T	
Gu	9 - 15	4	T	
Jc	2 - 5	3	D	W
Jc	0.5 - 2	3	D	W
Kl	2 - 5	4	P	W
Kl	5 - 9	4	P	W
Kl	0.5 - 2	4	P	W
Lc	5 - 9	3	E	T
Lc	9 - 15	4	T	
Lc	0 - 0.5	2	D	
Lc	15 - 30	5	T	
Lc	30 - 45	5	D	
Li	2 - 5	5	P	W
Li	5 - 9	5	P	W
Li	0.5 - 2	5	P	W
Ll	2 - 5	1		
Ll	0.5 - 2	1		
Lo	2 - 5	1		
M	0 - 0.5	0		
Ma	0 - 0.5	7	I	
Ml	2 - 5	4	D	W
Ml	0 - 0.5	4	D	W
Ms	0 - 0.5	0		
Oi	5 - 9	3	T	
Oi	9 - 15	4	T	
Oi	15 - 30	5	T	
Ol	2 - 5	1		
Ol	5 - 9	3	T	
Ol	9 - 15	4	T	
Ol	15 - 30	5	T	
On	2 - 5	1		
On	5 - 9	3	T	
On	9 - 15	1	I	
On	9 - 15	4	T	

soilcode	slope	cli	clisub1	clisub2
On	0 - 0.5	1		
On	0.5 - 2	1		
On	15 - 30	5	T	
On	30 - 45	6	T	
Or	0 - 0.5	5	P	
P	0 - 0.5	0		
Pl	2 - 5	2	W	
Pl	0 - 0.5	2	W	
Pl	0.5 - 2	2	W	
PT	N	0		
QY	N	0		
Sp	2 - 5	2	F	M
Sp	5 - 9	2	T	
Sp	9 - 15	3	T	
Tc	2 - 5	3	D	
Tc	5 - 9	3	D	T
Tc	0 - 0.5	3	D	
Tr	9 - 15	4	T	
Tr	15 - 30	5	T	
Tu	2 - 5	1		
Tu	0 - 0.5	1		
Tu	0.5 - 2	1		
UL	N	0		
Vi	2 - 5	2	F	
Wi	0.5 - 2	2	F	
ZZ	N	W		

APPENDIX D

DAVE HODGSON CURRICULUM VITAE



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.
- 1988 to 1992 **Project Manager/Soils Specialist. Ecological Services for Planning Limited, Guelph, Ontario.**
As project manager/soils specialist, Mr. Hodgson provided expertise in the management and technical aspects of pedological studies. As well, Dave was involved with the technical inputs to a variety of planning, environmental assessment, agricultural research, waste management, linear transmission and various site selection studies. These studies involved co-ordination of resources, logistics concerns and the management of multidisciplinary teams.



SELECT PROJECT EXPERIENCE

Environmental Assessment Studies

- Agricultural Component of the Preliminary Design Services Highway 400 – Highway 404 Link (The Bradford Bypass), 2020 – On-going.
- Agricultural Component of the Greater Toronto Area West (GTAW) Highway Corridor Assessment, 2019 – On-going.
- 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.
- 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 I).
- Agricultural Component of the Niagara to GTA Planning and Environmental Assessment Study, 2007 – 2013.
- Agricultural Component of the Highway 401 widening, Chatham, 2006 - 2007.
- Peer Review Agricultural Component of the Union Gas Dawn Corridor Expansion, 2006.
- 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 Studies

- Premier Gateway Phase 2B Employment Area Agricultural Impact Assessment, MSH, 2020 – On-going.
- Milton Education Village Agricultural Impact Assessment, MSH, 2020 – On-going.
- Pattullo Road (Woodstock) Realignment Agricultural Impact Assessment, AECOM, 2020 – On-going.
- Moose Creek Landfill Expansion Agricultural Impact Assessment, HDR, 2020 – On-going.
- North Village Secondary Plan Agricultural Impact Assessment, AECOM, 2019 – On-going.
- Smithville, West Lincoln Master Community Plan, Agricultural Impact Assessment, AECOM, 2019 – On-going.
- Kirby Road Agricultural Impact Assessment, HDR, Vaughan, 2019 – On-going.
- Elfrida Lands, City of Hamilton, Agricultural Impact Assessment Update, WSP, 2019 – 2020.
- 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 South East Secondary Plan (Clarington) Agricultural Impact Assessment (AIA), 2019,
- Town of Halton Hills, Minimum Distance Separation (MDS I), August 2018,
- Cedar Creek Pit/Alps Pit (North Dumfries), Agricultural Impact Assessment (AIA), 2018 – On-going,
- Belle Aire Road (Simcoe County) Agricultural Impact Assessment (AIA) Study, 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 I), February 2017.
- Township of Erin, County of Wellington – Minimum Distance Separation I (MDS I Study), 2016.



- Halton Hills Employment Area Secondary Plan Agricultural Impact Assessment, Halton, 2015 - 2016.
- Peer Review of Agricultural Impact Assessment, Oro-Medonte Township, 2015.
- Greenwood Construction Aggregate Pit Agricultural Impact Assessment, 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, City of Kitchener – South Estates, 2020 – On-going.
- Soil Survey and Canada Land Inventory Evaluation, City of Kitchener – Williamsburg, 2020 – On-going.
- Soil Survey and Canada Land Inventory Evaluation, City of Kitchener – Jeffrey Place, 2020 – On-going.
- Soil Survey and Canada Land Inventory Evaluation, Edworthy Pits (East and West), 2020 – On-going.
- Soil Survey and Canada Land Inventory Evaluation, Hillsburgh RV, 2020.
- 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)

Land Evaluation and Area Review Studies (LEAR)

- Mapping Audit Halton Region. Comparison of Regional and Provincial Prime Agricultural Area Mapping – 2019 - ongoing.
- Land Evaluation and Area Review – Soils Component, in Association with AgPlan Ltd, Kanata/Munster. December 2017 – July 2018.
- Land Evaluation and Area Review – Soils Component, Prince Edward County, 2016 – 2017.
- Land Evaluation and Area Review – Soils Component, Peel Region, 2013 - 2014.
- Land Evaluation and Area Review, Minto Communities, Ottawa, 2012 – 2013.
- GIS and LE component of Land Evaluation and Area Review, York Region 2008 – 2009.
- Land Evaluation and Area Review, 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, Halton Region 2007 - 2008.
- GIS and LE component of Land Evaluation and Area Review, City of Hamilton, 2003 – 2005.
- Evaluation of Soil Resources - Land Evaluation and Area Review, City of Sudbury, 2003 - 2004.

Prime Agricultural Land Comparison Studies (Provincial-Municipal)

- Northumberland County, Meridian Planning, 2020 – On-going.
- Region of Halton, Meridian Planning, 2019 – On-going.

Official Plan Review Studies

- City of Vaughan, WSP, 2020 – On-going.



Expert Witness

- Local Planning Appeal Tribunal (LPAT) Hearing, Greenwood Construction, 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

- Union Gas/Enbridge Gas – Gas Pipeline Construction Monitoring – Mainline Construction (20”) – Kingsville – 2019 - ongoing.
- 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.
- City of Kitchener, Soil Sampling and Laboratory Analysis, Urban Silviculture, 2009 – 2012.
- Soils Resource Group Inc. – City of London Water Supply Aqueduct soil monitoring program, 2011.

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.