DOCUMENT TRANSMITTAL

Document: **AGRICULTURAL IMPACT ASSESSMENT (AIA) STUDY**
PART LOT 19, BROKEN FRONT CONCESSION
TOWN OF GRIMSBY
REGIONAL MUNICIPALITY OF NIAGARA

Prepared for:
502 Winston Road Inc.
200-3170 Harvester Road
Burlington, Ontario
L7N 3W8
Canada

Date March 25, 2022
Our Ref. No. 2021-04
Your Ref. No.

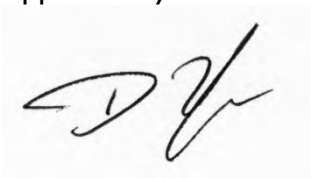
Attention:

DRAFT FINAL ☑

DISTRIBUTION

COPIES	TO
1 pdf file via email	502 Winston Road Inc.

Approved by:



President

DBH Soil Services Inc.

AGRICULTURAL IMPACT ASSESSMENT (AIA) STUDY
PART LOT 19, BROKEN FRONT CONCESSION
TOWN OF GRIMSBY
REGIONAL MUNICIPALITY OF NIAGARA

DBH Soil Services Inc.

March 25, 2022

AGRICULTURAL IMPACT ASSESSMENT (AIA) STUDY
PART LOT 19, BROKEN FRONT CONCESSION
TOWN OF GRIMSBY
REGIONAL MUNICIPALITY OF NIAGARA

Prepared for:

502 Winston Road Inc.
200-3170 Harvester Road
Burlington, Ontario
L7N 3W8
Canada

March 25, 2022

Prepared by:

DBH Soil Services Inc.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICIES

1 BACKGROUND

DBH Soil Services Inc was retained to complete a description of the existing agricultural conditions and an Agricultural Impact Assessment (AIA) for the lands identified as:

502 Winston Road/321 Hunter Road
Part Lot 19, Broken Front Concession
Town of Grimsby
Regional Municipality of Niagara

The purpose of this AIA is to document the existing agricultural character, identify potential existing (or future) impacts (potential or real) to agriculture, and to provide avoidance or mitigative measures as necessary to offset any impacts. Specifically, this AIA will also provide comment with regard to the potential change in land use designation of the Study Area from Specialty Crop to Rural.

This AIA is also being submitted in support of planning applications for a Region of Niagara Official Plan Amendment and a Town of Grimsby Official Plan Amendment and is a required component of a complete application in each case. The Study Area lands are currently designated as Unique Agricultural Area in the Region of Niagara Official Plan and Specialty Crop – Tender Fruit and Grape Lands in the Town of Grimsby Official Plan. The purpose of the planning applications is to seek approval for a Regional Official Plan Amendment and a Town Official Plan Amendment to re-designate the Study Area lands from the Unique Agricultural Area to the Rural designation in the Region of Niagara Official Plan, and from the Specialty Crop Area – Tender Fruit and Grape Lands to the Rural Area designation in the Town of Grimsby Official Plan.

These lands are roughly bounded by Lake Ontario to the north, Winston Road to the south, Hunter Road to the east, and open field areas containing 8 large communication antennae. These lands comprise approximately 5.7 ha.

In the greater County wide or Regional context, the Study Area is located wholly within the Town of Grimsby, in the Regional Municipality of Niagara. The Study Area abuts urban and developed lands on the south and east. A major highway corridor (Queen Elizabeth Way (QEW)) is located approximately 200 m to the south, with a major rail corridor and electric transmission line located approximately 300 m farther south of the QEW. The Niagara Escarpment is located approximately 2.0 km to the south of the Study Area.

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. A 1500 m (1.5 km) zone of potential impact

was chosen for this study due to the complexities and interactions of urban and agricultural lands in the area. The Secondary Study Area comprises approximately 859 ha and includes areas within the Region of Niagara, and portions of Lake Ontario.

The Study Area comprises a mix of land uses including open field and urban uses (banquet hall). The Secondary Study Area comprises a mix of land uses including predominantly urban, rural residential uses, transportation corridors, electric transmission corridors, conservation authority lands, lagoons/wetland areas, open field and woodlots.

This report documents the methodology, findings, conclusions, and mapping completed for this study. Figure 1 illustrates the relative location and shape of the Study Area and the Secondary Study Area with respect to the above-mentioned community and physical features.

This AIA report also refers to and builds on the *AgPlan Limited – Specialty Crop Greenbelt Study Report for the Town of Grimsby (October 28, 2016)*.

Legend

- Antenna Mast
- Hydro Line (MNRF)
- Railway (MNRF)
- Roads (MNRF)
- Buildings (City of Hamilton and Region of Niagara)
- Lot Line (MNRF)
- Municipal Boundary Line (MNRF)
- Secondary Study Area (1.5 km)
- Study Area
- Urban Area (City of Hamilton and Region of Niagara)
- Water Body (MNRF)

Figure 1

Location

DBH Soil Services Inc.

February 2022

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 (potential or real) to agriculture within the Study Area and the surrounding Secondary Study Area that may occur as a result of the proposed land use designation change. As stated previously, this AIA is also being submitted in support of planning applications for a Region of Niagara Official Plan Amendment and a Town of Grimsby Official Plan Amendment and is a required component of a complete application in each case. The Study Area lands are currently designated as Unique Agricultural Area in the Region of Niagara Official Plan and Specialty Crop – Tender Fruit and Grape Lands in the Town of Grimsby Official Plan. The purpose of the planning applications is to seek approval for a Regional Official Plan Amendment and a Town Official Plan Amendment to re-designate the Study Area lands from the Unique Agricultural Area to the Rural designation in the Region of Niagara Official Plan, and from the Specialty Crop Area – Tender Fruit and Grape Lands to the Rural Area designation in the Town of Grimsby Official Plan.

A review of the Region of Niagara, and the Town of Grimsby policies and guidelines was completed to determine if there are specific local guidelines and/or requirements for direction on how to complete an Agricultural Impact Assessment study. It was noted that neither the Region of Niagara, nor the Town of Grimsby have specific guidelines for completing an Agricultural Impact Assessment (AIA). Therefore, a 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. Prior to the release of the OMAFRA AIA guidelines, the standard for completing Agricultural Impact Assessments in Southern Ontario, were the Region of Halton *Agricultural Impact Assessment Guidelines, October 1985*, and the updated 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.

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). Further, prior to initiating this AIA, consultation with the Region of Niagara was completed. A Terms of Reference was provided to the Region of Niagara and was followed by a virtual meeting to discuss the components of this AIA.

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 (fragmentation) and tenure (ownership) patterns)
- Agricultural Viability
- Assessment of Impact on Agriculture
- Mitigative Measures/Avoidance/Minimizing impact
- Conclusions

These tasks 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 COLLECTION

2.1.1 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 (GGH 2019), the Oak Ridges Moraine Conservation Plan (2017), and the Regional Official Plan, Niagara Region (2014) and the Town of Grimsby Official Plan, May 12, 2012 (Office Consolidation 2018).*

The review also included a review of the *Corporation of the By-law No. 14-45, Town of Grimsby Zoning By-Law (Consolidated August 2019).*

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, 2020)), the Town of Grimsby website, the Region of Niagara website, combined with telephone, email and in person (virtual) 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.

2.1.2 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.

2.1.3 TOPOGRAPHY AND CLIMATE

Topographic information was reviewed from the 1:10000 scale Ontario Base Mapping, Land Information Ontario (LIO, 2020) digital contour mapping and windshield surveys.

Climate data was taken from the OMAFRA document titled *Agronomy Guide for Field Crops – Publication 811 (2017)*.

2.1.4 AGRICULTURAL LAND USE

Agricultural land use data was collected through observations made during roadside reconnaissance surveys and field surveys conducted on November 13, 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.

2.1.5 MINIMUM DISTANCE SEPARATION

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) was completed. 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."*

The Study Area is considered as a Prime Agricultural Area, therefore, MDS 1 will apply.

MDS Guideline #2 states:

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

MDS Guideline #10 states:

> *An MDS I setback is required for all proposed amendments to rezone or redesignate land to permit development in prime agricultural areas and rural lands presently zoned or designated for agricultural use. This shall include amendments to allow site-specific exceptions which add nonagricultural uses or residential uses to the list of agricultural uses already permitted on a lot, but shall exclude applications to rezone a lot for a residence surplus to a farming operation (e.g., to a rural residential zone) in accordance with Implementation Guideline #9 above.*

While the proposed redesignation does not indicate a plan for development, it is considered prudent to speak to MDS 1 concerns. This study relates to the proposed redesignation of a Specialty Crop Area to Rural, as identified previously in this AIA.

Therefore, MDS 1 calculations will be addressed for this study.

2.1.6 LAND FRAGMENTATION AND LAND TENURE

Land fragmentation data was collected through a review of online interactive mapping on the Agricultural Information Atlas (OMAFRA, December 2020) website, the Agricultural System Portal (OMAFRA, December 2020), the Town of Grimsby website and the Region of Niagara website. This data was used to determine the extent, location and relative shape of each parcel/property within the Study Area and Secondary Study Area.

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

The assessment of fragmentation will look at the size, shape and number of parcels within a given area, and provide comment on the potential effect on agriculture.

It should be noted that although the Halton Region AIA guidelines require a Land Tenure study, there are no Provincial or Municipal policies that discuss or provide authority over land ownership trends. Further, the standard that has been used to determine land ownership has been by conducting a review of recent assessment data. In the past, this was a reasonable approach in that most farm operations were family run, therefore, the information on the assessment data would illustrate a person's name and address. In a similar fashion, speculative owners (developers), would be determined by a property owned by a numbered company. However, farm operations are now often identified as a business (for tax purposes), and as such, the assessment data will show those farms as a numbered business as well. The result is that the standard approach to assess and document the land ownership will no longer provide the distinct separation between farm operation and speculative landowner.

2.1.7 VIABILITY

It should also be noted that the Halton Region AIA Guidelines require an assessment of 'viability' for both onsite and on neighbouring operations. The term 'viability' has not been defined, nor has the term 'viability assessment', with the exception of indicating in Section 11 – Background Information to Accompany the AIA "*d) a description of the methodologies and survey techniques employed in the study, including a description of soil sampling techniques and method of viability assessment*".

As a result of the lack of detail in the requirements of a viability study, this AIA will comment on the potential use of the lands (Study Area) for agricultural uses.

2.1.8 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 (LIO, 2020) 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 Soils of the Regional Municipality of Niagara (Volumes 1 and 2), Report No. 60 of the Institute of Pedology* (Kingston, M.S. and E.W. Presant, 1989) to determine if the digital soils data has been modified from the original soil survey data.

2.1.9 AGRICULTURAL SYSTEM

The Ontario Ministry of Agriculture, Food and Rural Affairs online Agricultural Systems mapping were reviewed to determine the extent of agriculture in the Study Area, in the Secondary Study Area and within the Town of Grimsby, the Region of Niagara.

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.

2.1.10 AGRICULTURAL STATISTICS

Agricultural statistics were provided by and downloaded from the OMAFRA website. The statistics were provided in Excel format for Southern Ontario, and with the data for the Niagara Region. The data documents up to the 2016 Census (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, the Province of Ontario has adopted policy and guidelines to provide a framework for managing growth (including the protection of agriculture) with the creation and adoption of four 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)* manage/plan growth and 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 are required to conform to the Provincial plans while implementing local priorities and policies 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 boundaries of the Growth Plan for the Greater Golden Horseshoe Area and the Greenbelt Plan Area. Further, that portions of the Secondary Study Area (southwest) are located within the boundaries of the Niagara Escarpment Plan Area. It was determined through these reviews, that the Study Area, and portions of the Secondary Study Area are located in a Provincially designated Specialty Crop Area (Niagara Peninsula Tender Fruit and Grape Area (Greenbelt Plan Schedule 2, 2017)). Therefore, the respective policies associated with those plans will apply to the respective portions of the Study Area and Secondary Study Area for this study.

A review of the agricultural policies in the *Regional Official Plan, Niagara Region (2014) and the Town of Grimsby Official Plan, May 12, 2012 (Office Consolidation 2018)* were completed.

The review also included a review of t*he Corporation of the Town of Grimsby By-law No. 14-45, Town of Grimsby Zoning By-*Law *(Town of Grimsby Zoning By-Law*, *Consolidated August 2019)*.

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

3.1 PROVINCIAL POLICY STATEMENT

The *Provincial Policy Statement (2020)* provides the policy foundation for regulating the development and use of land. With respect to the proposed change in land use designation (Specialty Crop to Rural), the following policies apply.

The respective policies from the Provincial Policy Statement (2020) are provided as follows:

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.

2.3.5 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.

The Provincial Policy Statement (2020) also provides a definition for Specialty Crop Area as follows:

Specialty Crop Area

Means areas designated using guidelines developed by the Province, as amended from time to time. In these areas, specialty crops are predominantly grown such as tender fruits (peaches, cherries, plums), grapes, other fruit crops, vegetable crops, greenhouse crops, and crops from agriculturally developed organic soil usually resulting from:

- *a) soils that have suitability to produce specialty crops, or lands that are subject to special climatic conditions, or a combination of both;*
- *b) farmers skilled in the production of specialty crops; and*
- *c) a long-term investment of capital in areas such as crops, drainage, infrastructure and related facilities and services to produce, store, or process specialty crops.*

3.2 THE GROWTH PLAN FOR THE GREATER GOLDEN HORSESHOE

A review of the boundaries of the *Growth Plan for the Greater Golden Horseshoe (GGH, 2019)* area was completed. It was determined that the Study Area and Secondary Study Area lands are located within the boundaries of the Growth Plan for the Greater Golden Horseshoe mapped area. The whole of the Study Area is considered as Specialty Crop Area within the Agricultural Land Base Mapping, while portions of the Secondary Study Area are considered as Specialty Crop Area. The remainder of the Secondary Study Area is located within Urban Boundaries (Town of Grimsby, Region of Niagara).

Section 4.2.6 of the *Growth Plan Greater Golden Horseshow (GGH, 2019)* 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-tier 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.*

The Growth Plan for the Greater Golden Horseshoe (2019) also provides a definition for Specialty Crop Area designation as follows:

Specialty Crop Area

Areas designated using guidelines developed by the Province, as amended from time to time. In these areas, specialty crops are predominantly grown such as tender fruits (peaches, cherries, plums), grapes, other fruit crops, vegetable crops, greenhouse crops, and crops from agriculturally developed organic soil usually resulting from:

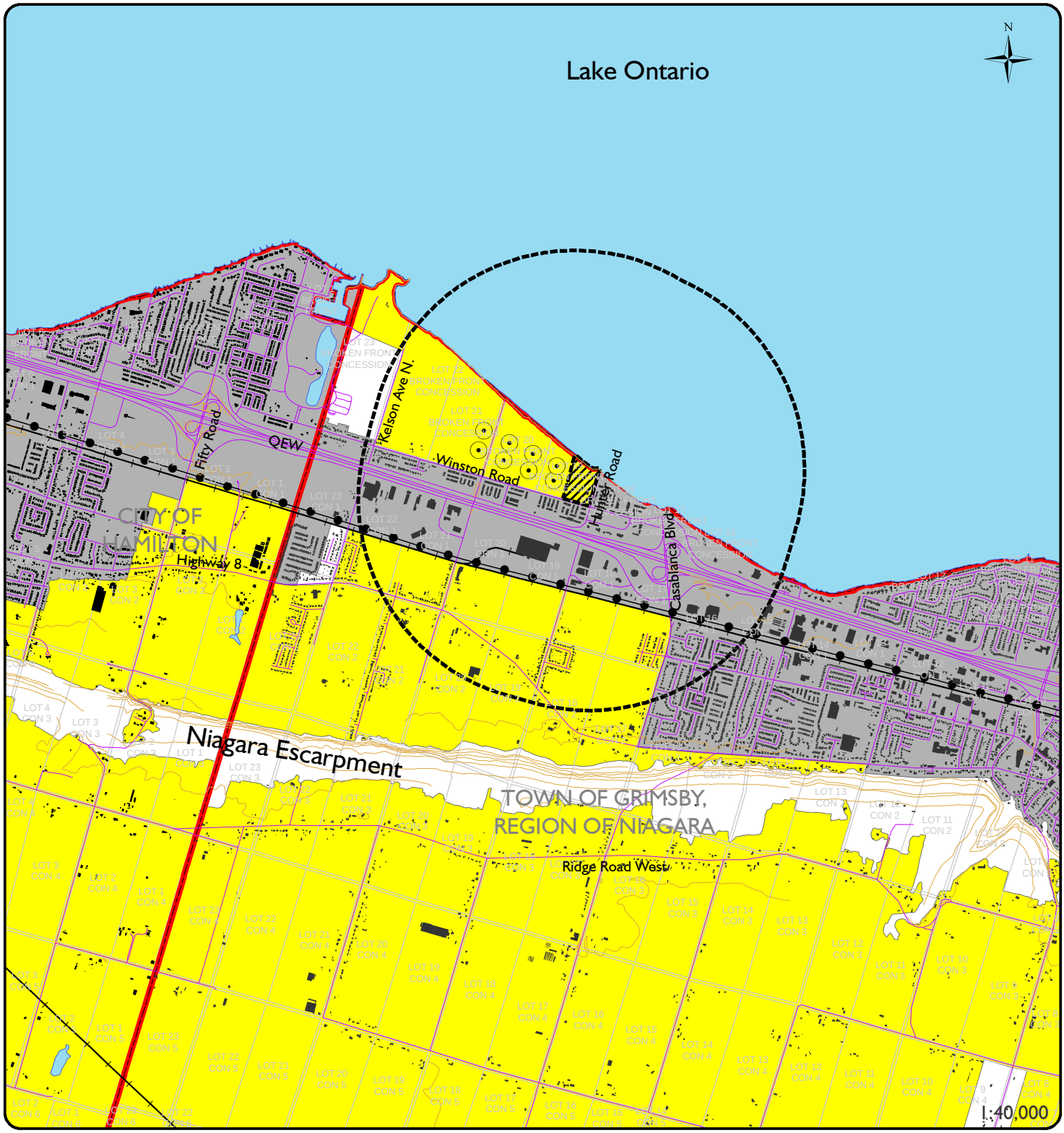
a) soils that have suitability to produce specialty crops, or lands that are subject to special climatic conditions, or a combination of both;

b) farmers skilled in the production of specialty crops; and

c) a long-term investment of capital in areas such as crops, drainage, infrastructure and related facilities and services to produce, store, or process specialty crops. (PPS, 2014)

Further, as part of the review of the Growth Plan for the Greater Golden Horseshoe, a review was completed of the *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)*. It was noted in the Implementation Procedures document that Prime Agricultural Areas (including Specialty Crop Areas) are generally considered as an area of a minimum of 250 ha. It has been identified within this AIA that the Study Area is within a larger area of isolated lands that, in total, comprise approximately 114 ha, which is significantly less than the 250 ha minimum.

Figure 2 illustrates the relative location of the Study Area and the Secondary Study Area with respect to the Growth Plan for the Greater Golden Horseshoe (GGH 2019), the Agricultural System with respect to the Provincial Land Base Mapping.



Legend

- Antenna Mast
- Contour Line (MNRF)
- Hydro Line (MNRF)
- Railway (MNRF)
- Roads (MNRF)
- Buildings (City of Hamilton and Region of Niagara)
- Lot Line (MNRF)
- Municipal Boundary Line (MNRF)
- Secondary Study Area (1.5 km)
- Study Area
- Urban Area (City of Hamilton and Region of Niagara)
- Water Body (MNRF)

Provincial Agricultural Land Base (OMAFRA)

- Prime Agricultural Area
- Specialty Crop Area

Figure 2

Provincial Land Base

DBH Soil Services Inc.

February 2022

3.3 GREENBELT PLAN

A review of the Greenbelt Plan (2017) mapping indicates that the Study Area is located within the Greenbelt Plan Area boundaries, and that portions of the Secondary Study Area are located within the Greenbelt Plan Area boundaries. The remaining portions of the Secondary Study Area are located within the Urban boundaries of the Town of Grimsby, Region of Niagara.

A review of Schedule 1, Map 110 of the Greenbelt Plan (2017) Schedules, revealed that the Study Area lands and the portions of the Secondary Study Area that are within the Greenbelt Plan Area are considered as Protected Countryside. Further, portions of the Secondary Study Area are located within the Niagara Escarpment Plan area.

A review of the Greenbelt Plan (2017) Schedule 2: Niagara Peninsula Tender Fruit and Grape Area revealed that the Study Area lands are considered as part of the Niagara Peninsular Tender Fruit and Grape Area.

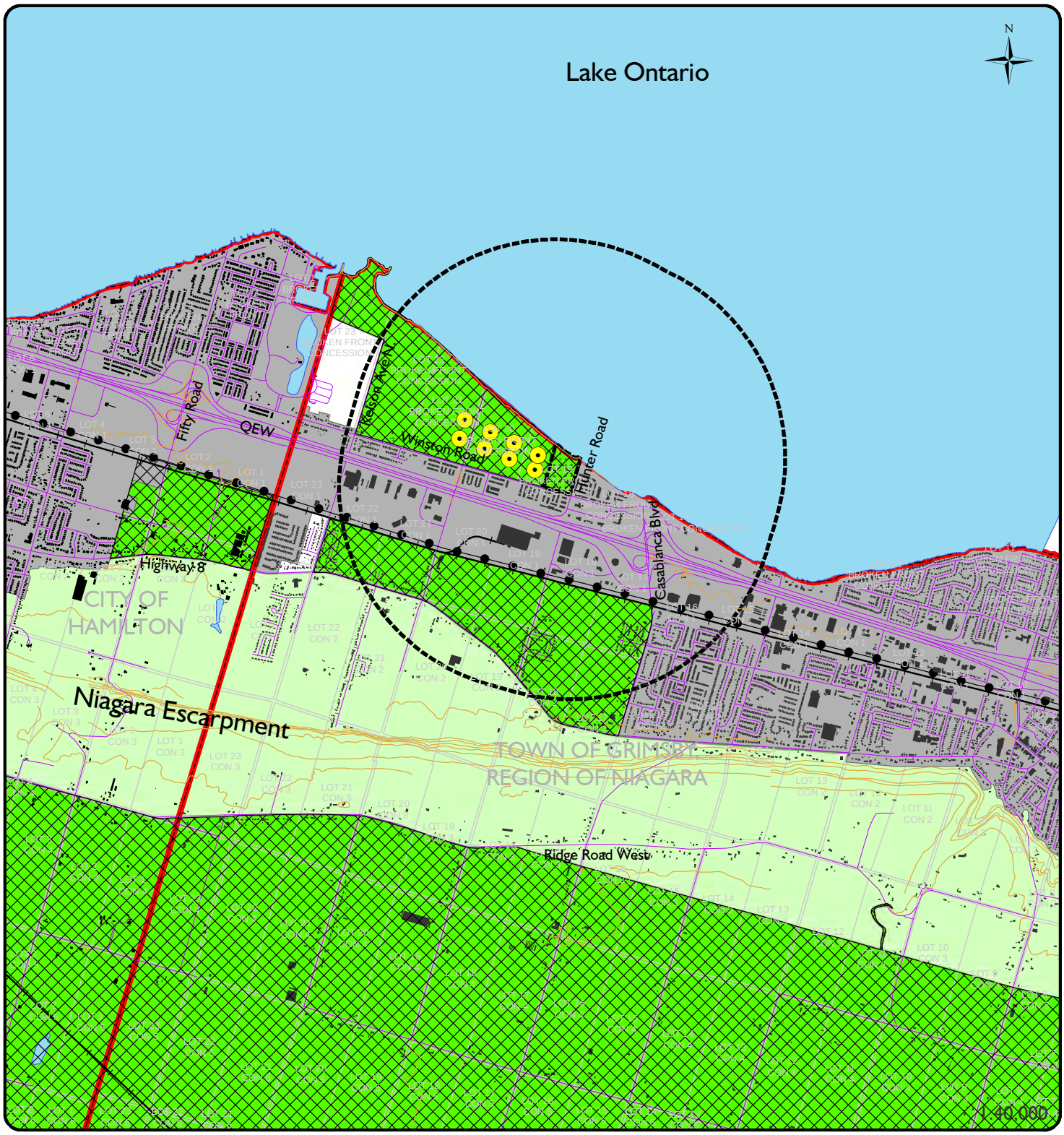
Figure 3 illustrates the relative location of the Greenbelt Plan Area with respect to the Study Area and the Secondary Study Area.

The Structure of the Greenbelt Plan (2017) is identified in Section 1.4.2 – Structure of the Plan. Section 1.4.2, under Section 3 – Geographic-Specific Policies in the Protected Countryside states:

> *The Agricultural System is comprised of the agricultural land base (prime agricultural areas, including specialty crop areas, and rural lands) and the agrifood network, which has components (infrastructure, services and assets) that support agricultural viability but is not a designation with a list of permitted uses. While the Greenbelt Plan identifies the boundaries of the specialty crop areas, it relies on official plans to further delineate prime agricultural areas and rural lands based on provincial mapping and guidance in accordance with section 5.3.*

Further, Section 3.1.1 – Description discusses the Agricultural System and provides that:

> *The delineation of the Agricultural System is guided by a variety of factors, including a land evaluation area review (LEAR), which assesses such matters as soils, climate, productivity and land fragmentation; the existing pattern of agriculturally protected lands set out in official plans; the availability of infrastructure, services and assets important to the viability of the agri-food sector and a consideration of projected future growth patterns.*
>
> *The Niagara Peninsula Tender Fruit and Grape Area and the Holland Marsh are specialty crop areas. The delineation of the Niagara Peninsula Tender Fruit and Grape Area (see Schedule 2) is based on provincial soil and climate analysis of current and potential tender fruit and grape production areas.*
>
> *When official plans are brought into conformity with this plan, the mapping of the Agricultural System may only be refined and augmented in a manner that is consistent with the policies of section 5.3.*



Legend

- Antenna Mast
- Contour Line (MNRF)
- Hydro Line (MNRF)
- Railway (MNRF)
- Roads (MNRF)
- Buildings (City of Hamilton and Region of Niagara)
- Greenbelt Plan Specialty Crop Area (MNRF) - Niagara Peninsula Tender Fruit and Grape Area
- Lot Line (MNRF)
- Municipal Boundary Line (MNRF)
- Secondary Study Area (1.5 km)
- Study Area
- Urban Area (City of Hamilton and Region of Niagara)
- Water Body (MNRF)

Greenbelt Plan Designations (MNRF)

- Niagara Escarpment Plan
- Protected Countryside

Figure 3

Greenbelt Plan

DBH Soil Services Inc.

February 2022

The Greenbelt Plan (2017) has specific policies for Specialty Crop Area and provides the policies in Section 3.1.2. Further, the Greenbelt Plan has specific policies for Prime Agricultural Lands and provides the policies in Section 3.13. The respective sections and policies are provided below.

Section 3.1.2 Specialty Crop Area Policies

For lands falling within specialty crop areas of the Protected Countryside, the following policies shall apply:

1. *All types, sizes and intensities of agricultural uses and normal farm practices shall be promoted and protected and a full range of agricultural uses, agriculture-related uses and on-farm diversified uses are permitted based on the provincial Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas. Proposed agriculture-related uses and on-farm diversified uses shall be compatible with and shall not hinder surrounding agricultural operations.*
2. *Lands shall not be redesignated in official plans for non-agricultural uses. Non-agricultural uses may be permitted subject to the policies of sections 4.2 to 4.6. These non-agricultural uses are generally discouraged in specialty crop areas and may only be permitted after the completion of an agricultural impact assessment.*
3. *Towns/Villages are not permitted to expand into specialty crop areas.*
4. *New land uses, including the creation of lots (as permitted by the policies of this Plan), and new or expanding livestock facilities, shall comply with the minimum distance separation formulae.*
5. *Where agricultural uses and non-agricultural uses interface, land use compatibility shall be achieved by avoiding or, where avoidance is not possible, minimizing and mitigating adverse impacts on the Agricultural System, based on provincial guidance. Where mitigation is required, measures should be incorporated as part of the non-agricultural uses, as appropriate, within the area being developed.*
6. *The geographic continuity of the agricultural land base and the functional and economic connections to the agri-food network shall be maintained and enhanced.*

Section 3.1.3 Prime Agricultural Area Policies

For lands falling within prime agricultural areas of the Protected Countryside, the following policies shall apply:

1. *All types, sizes and intensities of agricultural uses and normal farm practices shall be promoted and protected and a full range of agricultural uses, agriculture-related uses and on-farm diversified uses are permitted based on provincial Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas. Proposed agriculture-related uses and on-farm diversified uses shall be compatible with and shall not hinder surrounding agricultural operations.*
2. *Lands shall not be redesignated in official plans for non-agricultural uses except for:*
   a) *Refinements to the prime agricultural area and rural lands designations, subject to the policies of section 5.3; or*
   b) *Settlement area boundary expansions, subject to the policies of section 3.4.*
3. *Non-agricultural uses may be permitted subject to the policies of sections 4.2 to 4.6. These uses are generally discouraged in prime agricultural areas and may only be permitted after the completion of an agricultural impact assessment.*
4. *New land uses, including the creation of lots (as permitted by the policies of this Plan), and new or expanding livestock facilities, shall comply with the minimum distance separation formulae.*
5. *Where agricultural uses and non-agricultural uses interface, land use compatibility shall be achieved by avoiding or, where avoidance is not possible, minimizing and mitigating adverse impacts on the Agricultural System, based on provincial guidance. Where mitigation is required, measures should be incorporated as part of the non-agricultural uses, as appropriate, within the area being developed.*
6. *The geographic continuity of the agricultural land base and the functional and economic connections to the agri-food network shall be maintained and enhanced.*

3.4 THE NIAGARA ESCARPMENT PLAN

A review of the boundaries of the Niagara Escarpment Plan (2017) and associated digital mapping was completed. The review indicated that no portions of the Study Area are located within the Niagara Escarpment Plan (2017) area, however, portions of the Secondary Study Area (southwest) were identified within the Niagara Escarpment Plan (2017) area.

The portions of the Secondary Study Area that were located within the Niagara Escarpment Plan (2017) area were identified as the Escarpment Protection Area.

Figure 4 illustrates the location of the respective Niagara Escarpment Plan (2017) designations within the larger area and identifies that the southwestern portion of the Secondary Study Area is located in the Escarpment Protection Area. The respective policies for the Escarpment Protection Area are presented in section 1.4 of the Niagara Escarpment Plan (2017) and are presented below.

Section 1.4 Escarpment Protection Area

Escarpment Protection Areas are important because of their visual prominence and their environmental significance, including increased resilience to climate change through the provision of essential ecosystem services. They are often more visually prominent than Escarpment Natural Areas. Included in this designation are Escarpment Related Landforms and natural heritage and hydrologic features that have been significantly modified by land use activities, such as agriculture or residential development, as well as lands needed to buffer Escarpment Natural Areas and natural areas of regional significance.

The policies aim to protect and enhance natural and hydrologic features and the open landscape character of the Escarpment and lands in its vicinity.

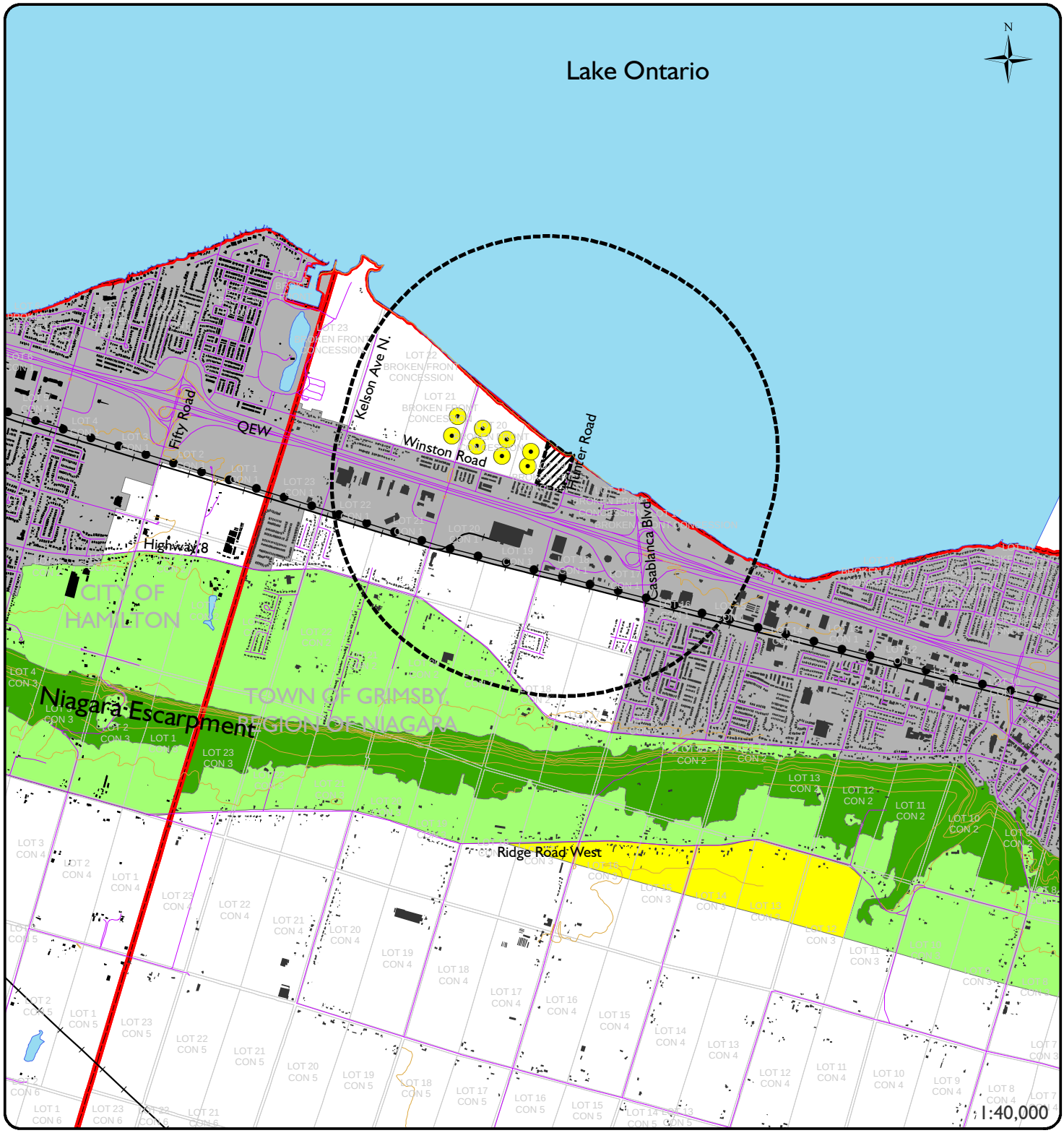
1.4.2 Criteria for Designation

1. *Escarpment slopes and Escarpment Related Landforms where existing land uses have significantly altered the natural environment (e.g., agricultural lands or residential development).*
2. *Areas in close proximity to Escarpment slopes that are visually part of the landscape unit.*
3. *Areas of Natural and Scientific Interest (Life Science), or environmentally sensitive or environmentally significant areas identified by municipalities or conservation authorities.*

1.4.3 Permitted Uses

Subject to Part 2, Development Criteria, the following uses may be permitted:

1. *Agricultural uses.*
2. *Agriculture-related uses and on-farm diversified uses, in prime agricultural areas.*
3. *Existing uses*
4. *Single dwellings*
5. *Mobile or portable dwelling unit(s) accessory to agriculture*
6. *Non-motorized trail activities and snowmobiling, outside of prime agricultural areas*
7. *Unserviced camping on public and institutional land, outside of prime agricultural areas*
8. *Forest, wildlife and fisheries management*
9. *Licensed archaeological fieldwork*
10. *Infrastructure*
11. *Accessory uses (e.g., a garage, swimming pool, tennis court, ponds or signs)*



Legend

- Antenna Mast
- Hydro Line (MNRF)
- Railway (MNRF)
- Roads (MNRF)
- Buildings (City of Hamilton and Region of Niagara)
- Lot Line (MNRF)
- Municipal Boundary Line (MNRF)
- Secondary Study Area (1.5 km)
- Study Area
- Urban Area (City of Hamilton and Region of Niagara)
- Water Body (MNRF)

Niagara Escarpment Plan Designation

- Escarpment Natural Area
- Escarpment Protection Area
- Escarpment Rural Area

Figure 4

Niagara Escarpment Plan Designations

DBH Soil Services Inc.

February 2022

12. *Institutional uses, outside of prime agricultural areas*
13. *Uses permitted in the Parks and Open Space System Master/Management Plans that are not in conflict with the Niagara Escarpment Plan*
14. *Home occupations and home industries*
15. *Watershed management and flood and erosion control projects carried out or supervised by a public body*
16. *The Bruce Trail corridor, including the pedestrian footpath and, where necessary, trail-related constructions (e.g., bridges, boardwalks), overnight rest areas and Bruce Trail access points*
17. *Recycling depots for paper, glass and cans etc., serving the local community*
18. *Bed and breakfast*
19. *Nature preserves owned and managed by an approved conservation organization*
20. *Agricultural Purposes Only lot (APO lot).*

3.5 OFFICIAL PLAN POLICY

Official Plan policies are prepared by municipalities, under the Planning Act (as amended, by the Province of Ontario). Official Plans generally provide policies 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, the *Regional Official Plan, Niagara Region (2014) and the Town of Grimsby Official Plan, May 12, 2012 (Office Consolidation 2018)* were reviewed.

3.5.1 REGIONAL OFFICIAL PLAN REGION OF NIAGARA

The *Regional Official Plan, Niagara Region (2014)* was reviewed for agricultural policy. A review of Schedule B – Agricultural Land Base indicates that the Study Area and portions of the Secondary Study Area are located within the Unique Agricultural Area. Portions of the Secondary Study Area are also located within the Urban Area with Smaller portions of the Secondary Study Area also comprising areas of the Niagara Escarpment Plan (NEP) Area.

Agricultural policies are provided in Section 5B (Policies for Agriculture), within Section 5 (Rural and Agriculture). The agricultural policies of this Plan give the unique agricultural lands (Good Grape and Good Tender Fruit Areas) the highest priority for preservation. The good general agricultural lands have the next priority for preservation.

The review of Chapter 5 revealed that the agricultural policies comprise an extensive listing of detailed policy. Policy relevant to this AIA have been provided below.

Policy 5.B.1 The highest priority will be given to preserving "good tender fruit lands" and "good grape lands" (Unique Agricultural Areas are shown on Schedule B).

Policy 5.B.2 The second highest priority will be given to preserving "good general agricultural lands" (Good General Agricultural Areas are shown on Schedule B).

Policy 5.B.3 The Region will attempt to ensure a viable agricultural industry through such means as:

a) the protection of unique and good general agricultural lands;

b) tariff and, or, quota protection from imports (a Federal Government responsibility);

c) adequate marketing procedures (a responsibility of the industry and the Provincial Government);

d) protection from unjustified taxes (a Provincial and local municipal government responsibility);

e) financial support to local agricultural groups, such as grants to the Niagara North and South Federations of Agriculture;
f) support of farmers seeking approval for loans from lending agencies for additional farm residences in order to eliminate the need for severances;
g) support for a wide range of farm diversification uses in appropriate locations and at a scale suitable to the farm and the agricultural area where they contribute to economically sustainable agriculture; and
h) recognition of opportunities for on-farm alternative and/or renewable energy systems.

The Region recognizes the urgent need to improve economic conditions for the farmer. While the Region has continuously supported the encouragement of a viable agricultural industry, the senior levels of government have major responsibilities in this area as generally indicated in Policy 5.B.3. In the event that the necessary economic measures for the protection and development of the agricultural industry are not forthcoming from the Federal and Provincial Governments, the Region will review and may revise its agricultural policies to reflect the lack of economic programs for agriculture.

Policy 5.B.5 Schedule B identifies agricultural areas in which the Region is committed to supporting the farmer and his/her opportunity to farm. These areas should have supportive government policies and programs, and attempt to prevent conflicting public and private uses which hinder the farmer's ability to farm. Changes to the Good General Agricultural Areas and Rural Areas on Schedule B will be made only after consultation with the local municipalities, agricultural representatives and interested local and Provincial agencies and organizations and will be done through a Regional Official Plan amendment. Revisions to the Greenbelt Plan and to the Niagara Escarpment Plan boundaries and the redesignation of Unique Agricultural Areas are prohibited.

Policy 5.B.6 In the Unique and Good General Agricultural Areas, the predominant use of land will be for agriculture of all types, including livestock operations as well as associated value retention uses. Compatible uses such as forestry and conservation of plant and wildlife are also permitted. In Unique Agricultural Areas, all existing uses lawfully used for such purpose prior to December 16, 2004, the date the Greenbelt Plan came into effect, are permitted. Also, in Unique Agricultural Areas single dwellings are permitted on existing lots of record, provided they were zoned for such as of December 16, 2004 or where an application for an amendment to a zoning by-law is required as a condition of a severance granted prior to December 14, 2003 but which did not proceed.

Policy 5.B.13 The removal of topsoil from unique and good general agricultural lands is generally discouraged. Local municipalities will be encouraged to enact by-laws under the provisions of the above Act to regulate the removal of topsoil and to require the rehabilitation of lands from which the topsoil has been removed.

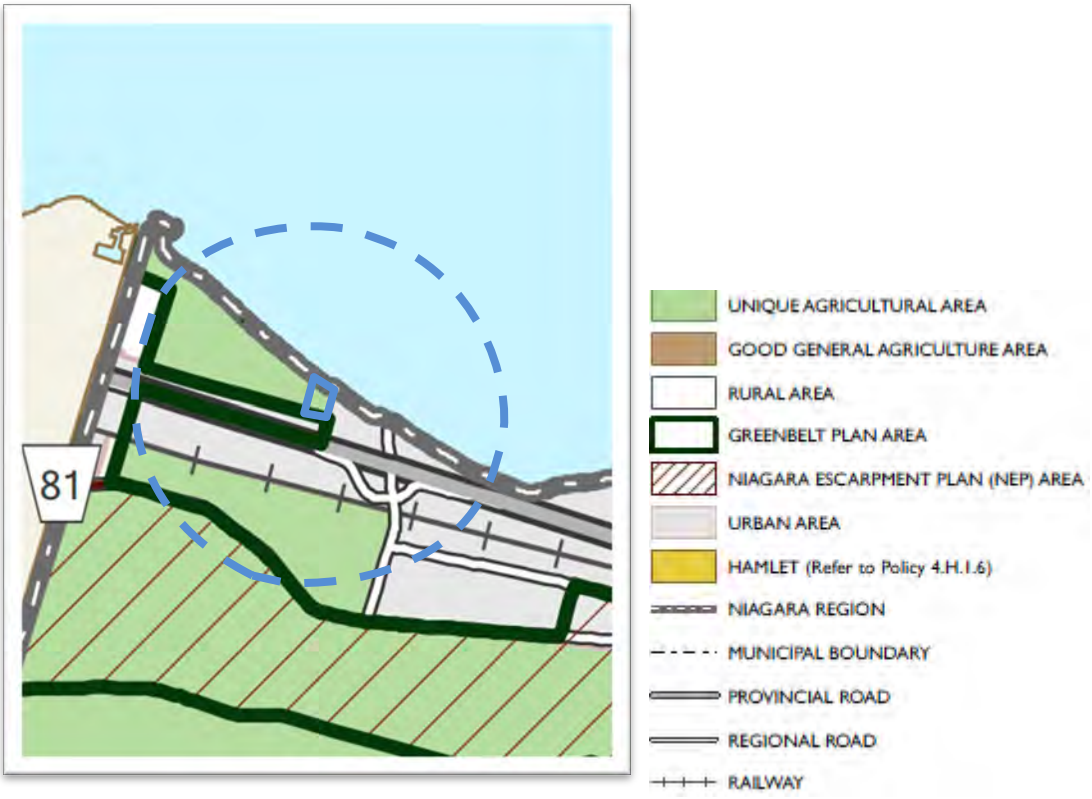
Figure 5 provides a select portion of the Niagara Region Official Plan Schedule B – Agricultural Land Base. The approximate location of the Study Area is presented as a solid blue line, while the approximate location of the Secondary Study Area is presented as a blue dashed line.

The proposed change in land use designations for the Study Area will result in the Unique Agricultural Area being redesignated as Rural.

3.1 Permitted Uses

Uses permitted within the Specialty Crop designation are limited to agricultural uses, agricultural-related uses, and secondary uses, subject to all policies of Section D.2.0, Agricultural Designation of this Plan.

Figure 5 Niagara Region Official Plan Schedule B – Agricultural Land Base



Source: Niagara Region Official Plan Schedule B – Agricultural Land Base (2015)

3.1.1 *Appropriate development standards shall be established in the Zoning By-law regarding the maximum floor area including floor area devoted to retailing access, parking, outside storage, and any other appropriate requirements.*

3.5.2 TOWN OF GRIMSBY OFFICIAL PLAN

The *Town of Grimsby Official Plan (Office Consolidation August 2018)* was reviewed to determine the designated land uses within the Study Area and Secondary Study Area.

The review of the *Town of Grimsby Official Plan (Office Consolidation 2018)* illustrated that the Study Area is located within a Specialty Crop Area (Tender Fruit and Grape Lands), with portions also included in the Hazard Land area. The review of the *Town of Grimsby Official Plan* (*Office Consolidation August 2018*) Schedule B – Land Use revealed that the Secondary Study Area comprised Specialty Crop Areas (Tender Fruit and Grape Lands), Hazard Lands, Employment Lands, Residential /Mixed Land Uses, Transit Station Uses, Parks and Open Space, Environmental Protection Area, Utility Uses, and streams.

Section 3.3 of the *Town of Grimsby Official Plan (Office Consolidation 2018)* provides the policy for Rural and Agricultural Areas, with General Rural and Agricultural Policies that are relevant to this AIA identified below.

3.3.1 General Rural and Agricultural Policies:

3.3.1.1 The following policies apply to the Specialty Crop Area – Tender Fruit and Grape Lands, Agricultural, Rural and Escarpment Rural designations.

Policies specific to Specialty Crop Area are presented in Section 3.3.2. Section 3.3.2 Specialty Crop Area – Tender Fruit and Grape Lands are presented below.

3.3.2 Specialty Crop Area – Tender Fruit and Grape Lands
Permitted Uses:

3.3.2.1 The following uses shall be permitted within the Specialty Crop Area designation, delineated on Schedule B:

a) Agricultural uses;

d) Agricultural related uses including farm-related commercial, farm-related industrial uses and farm markets subject to Sections 3.3.2.8 and 3.3.1.3.

3.3.2.2 The widest variety of farm operations and normal farm practices shall be encouraged, promoted and protected with the exception of new livestock operations which shall be prohibited north of the Escarpment.

General Policies:

3.3.2.3 Within the Specialty Crop Area designation, the minimum lot size for new farm lots is 16.2 hectares north of the escarpment and 40 hectares south of the escarpment. 3.3.2.4 Despite Section 3.3.2.1 b) and the minimum lot size of Section 3.3.2.3, a residential use may be permitted on any lot of record existing on June 1, 1978, unless otherwise prohibited by the zoning by-law, and except that no lots in Plan 30R-768 may be used for such purpose. 3.3.2.5 Lot creation in Specialty Crop Areas is discouraged and shall only be permitted for:

a) Agricultural uses provided that:

i) The severed and retained parcels shall each meet the minimum lot size requirement for farm parcels as per Section 3.3.2.3; and

ii) The primary income of the landowner is obtained from agricultural practices;

b) A residence surplus to a farming operation as a result of a farm consolidation where the dwelling existed prior to December 16, 2004 provided that:

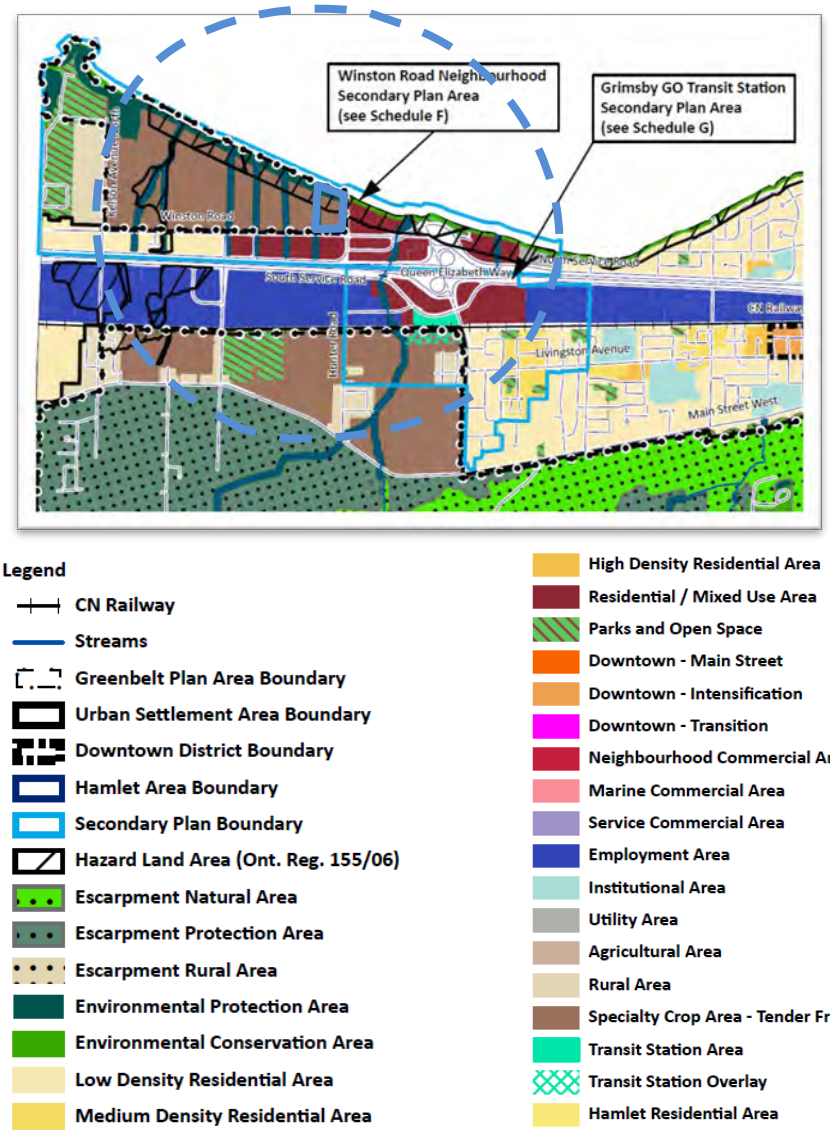
3.3.2.9 Specialty Crop Areas - Tender Fruit and Grape Lands shall not be redesignated for non-agricultural uses, with the exception of linear infrastructure; protection of key natural heritage features and key hydrological features; natural resource related activities subject to Section 3.11 of this Plan except for Mineral Aggregates north of the Escarpment, the protection of cultural heritage resources; and uses lawfully existing prior to the Greenbelt Plan.

3.3.2.10 The Urban Settlement Area and the Hamlet Settlements are not permitted to expand into the Specialty Crop Area - Tender Fruit and Grape Lands, as identified on Schedule B.

Additional policies specific to Agricultural Area were identified in Section 3.3.3 – Agricultural Area, but not provided as part of this AIA, as the Study Area is Specialty Crop Area.

Figure 6 illustrates a select portion of the *Town of Grimsby Official Plan (Office Consolidation August 2018)* Schedule B – Land Use and identifies the Study Area with a solid blue line. The Secondary Study Area is defined with a dashed blue line.

Figure 6 Town of Grimsby Official Plan Schedule B – Land Use



Source: Town of Grimsby Official Plan Schedule B – Land Use

The proposed change in land use designation for the Study Area will result in a change from Specialty Crop Area – Tender Fruit and Grape Lands to Rural.

3.6 ZONING BY-LAWS

Official Plan policies are prepared under the Planning Act, as amended, of the Province of Ontario. Zoning By-Laws put the Official Plan into effect and control the use of the lands in a community. A Zoning By-law contains specific requirements that are legally enforceable. Zoning By-laws specify the specific and permitted uses and the required standards in each zone.

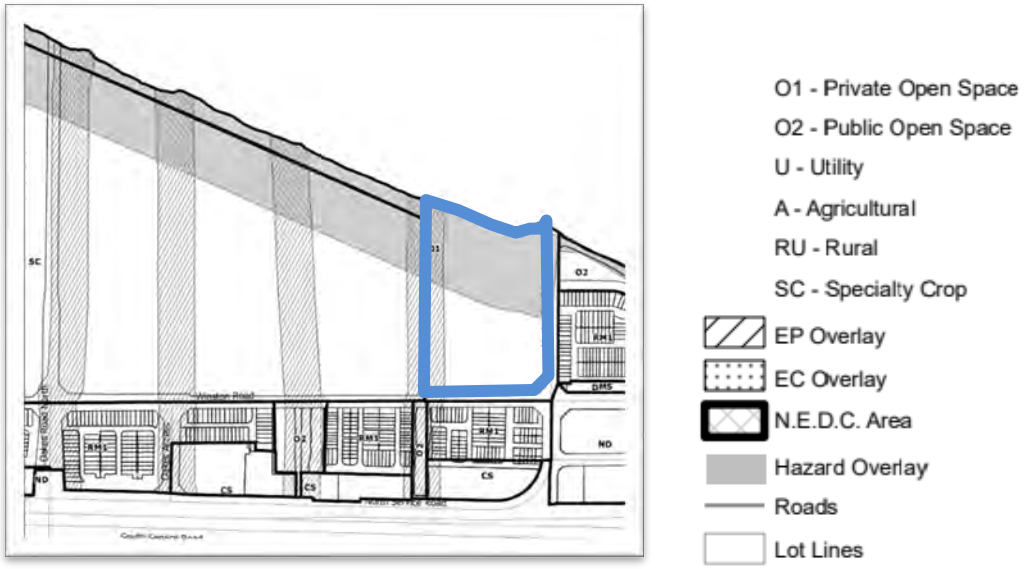
For the purpose of this AIA study, the *Corporation of the Town of Grimsby By-Law No. 14-45 (Town of Grimsby Zoning By-law, Consolidated August 2019)* was reviewed to determine the zoning requirements for agriculture/Specialty Crop in the Study Area and the Secondary Study Area in the Town of Grimsby, Region of Niagara.

3.6.1 THE CORPORATION OF THE TOWN OF GRIMSBY ZONING BY-LAW

The *Corporation of the Town of Grimsby By-Law No. 14-45 (Town of Grimsby Zoning By-law, Consolidated August 2019)* was reviewed to determine the extent of lands that were zoned as Agriculture/Specialty Crop within the Study Area and the Secondary Study Area.

The review of the Corporation of the Town of Grimsby By-law No. 14-45 Schedule 1 – Key Map identified that the Study Area is located on Zoning Schedule 3-A. A select portion of Zoning Schedule 3-A is presented in Figure 7 below. The approximate location of the Study Area is presented as a solid blue line.

Figure 7 Corporation of the Town of Grimsby Zoning By-Law (3-A)



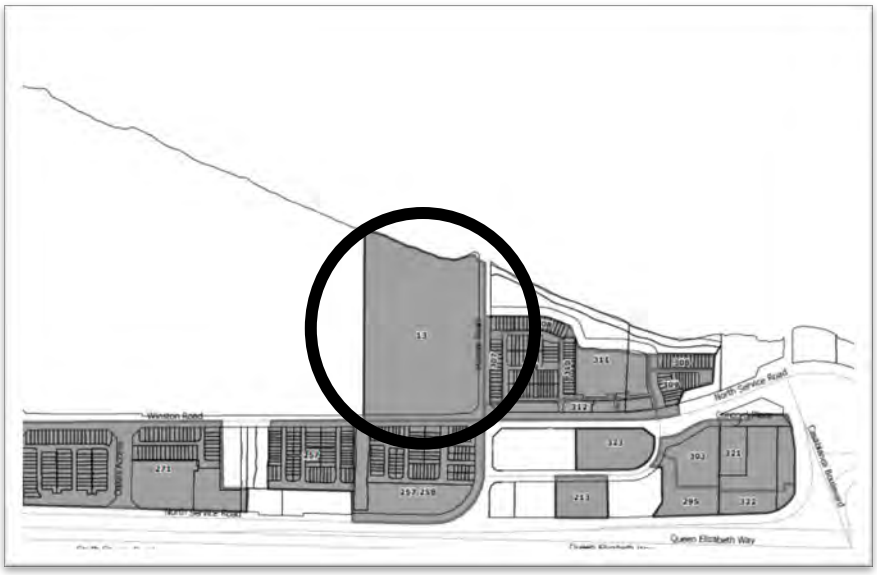
Source: *Corporation of the Town of Grimsby By-Law No. 14-45, Schedule 3-A (Town of Grimsby Zoning By-law, Consolidated August 2019)*

The review of the zoning schedules (pdf format from the Town of Grimsby website) for the Study Area illustrated that the Study Area is a mix of zoning that includes SC – Specialty Crop, and O1 – Private Open Space.

Further, the Study Area (as identified in Zoning Schedule 3-B) comprised an area identified as '13' (identified with a circle with black outline on Figure 8). This number refers to a Site-Specific Exemption for the Study Area. The Site-Specific Exemption was identified on Table 27: Permitted Use, Lot, Building and Structure Exceptions (*Corporation of the Town of Grimsby By-law No. 14-45)*, relates to By-Law 81-34 and is identified as having *Sole Permitted Uses of Accessory residential use, Existing Indoor and Outdoor Recreation Facility, and Trail.* It should be noted that it is this specific area for which the Regional Official Plan Amendment (ROPA) and the Local

Official Plan Amendment (LOPA) applications are being prepared. This specific area is an existing non-agricultural use within a Specialty Crop Area.

Figure 8 Corporation of the Town of Grimsby Zoning By-Law (3-B)



Source: *Corporation of the Town of Grimsby By-Law No. 14-45, Schedule 3-B (Town of Grimsby Zoning By-law, Consolidated August 2019)*

The Secondary Study Area was referenced in the Zoning By-law Schedules 2-A, 3-A, 4-A, 9-A, 10-A, 11-A, and 16-B. The review of the zoning schedules illustrated that the Secondary Study Area is a mix of zoning that includes SC – Specialty Crop, O1 – Private Open Space, ND – Neighbourhood Developed, U – Utility, various RD – Residential Detached, GE – General, Employment, O2 – Public Open Space, RU – Rural, CC – Convenience Commercial, I – Institutional, CS – Service Commercial, RM – Residential Multiple, TRM – Transitional Residential Multiple, PE – Prestige Employment, and MS – Main Street.

4 AGRICULTURAL RESOURCE POTENTIAL

4.1 PHYSICAL CHARACTERISTICS

The physiographic resources within the Study Area and the Secondary Study Area are described as follows. 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 agricultural potential of an area.

4.1.1 PHYSIOGRAPHY

On review of the Land Information Ontario (LIO, 2020) digital physiographic region data, and *The Physiography of Southern Ontario 3rd Edition*, (Ontario Geological Survey Special Volume 2, Ministry of Natural Resources, 1984), the Study Area and the Secondary Study Area are located within the Iroquois Plain physiographic unit.

The Iroquois Plain physiographic unit is described as the lowland area bordering Lake Ontario. This physiographic unit was part of a glacial lake when the last glaciers were receding and includes (around the periphery) old shoreline features (cliffs, bars, beaches, and boulder pavements) which are in strong contrast to the glacial lake bottom which was smoothed by waves and covered in lacustrine deposits. This lake bottom area is the Iroquois Plain. The Plain extends around the western end of Lake Ontario from the Niagara River to the Trent River.

The portion of the Iroquois Plain that is within the focus of this AIA is the Niagara Fruit Belt portion which extends from Hamilton to the Niagara River and includes the terraced areas (bench) near the Niagara Escarpment. East of Grimsby this area comprises sandy soils (often less than 50 – 100 cm deep) over clay materials. West of Grimsby the soils develop from the red clays derived from the Queenston Formation.

The Plain has no major streams but has numerous smaller ones that cross to Lake Ontario. Many of these smaller streams end in marsh areas that were cut off from Lake Ontario by barrier beaches or sand bars.

4.1.2 TOPOGRAPHY AND CLIMATE

Topographic information was reviewed and correlated to the 1:10000 scale Ontario Base Mapping, Land Information Ontario (LIO, 2020) digital contour mapping, aerial photo interpretation and windshield surveys.

The Study Area and the Secondary Study Area are a relatively simple mix of topography. The Study Area comprises large open areas that are gently sloping toward Lake Ontario. A portion of the Study Area comprises a marshy area that includes the Biggar Lagoons, plus additional marsh lands between Biggar Lagoons and Lake Ontario.

The topography in the Secondary Study Area is similar in that the agricultural and open land areas generally comprise gently sloping lands that drop to Lake Ontario. Much of the urban lands have been landformed to a degree and have controlled drainage (channelized streams, curbs, stormwater ponds, etc) consistent with an urban environment.

The highest point of topography within the Secondary Study Area is generally the lands to the south, southwest, with the overall slope down to Lake Ontario.

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 in the greater than 3300 Crop Heat Units (CHU-M1) available for corn production area 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, 2017)) map is illustrated on Figure 9. The approximate location of the Study Area and Secondary Study Area is marked with a blue star.

Figure 9 Crop Heat Units Map

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

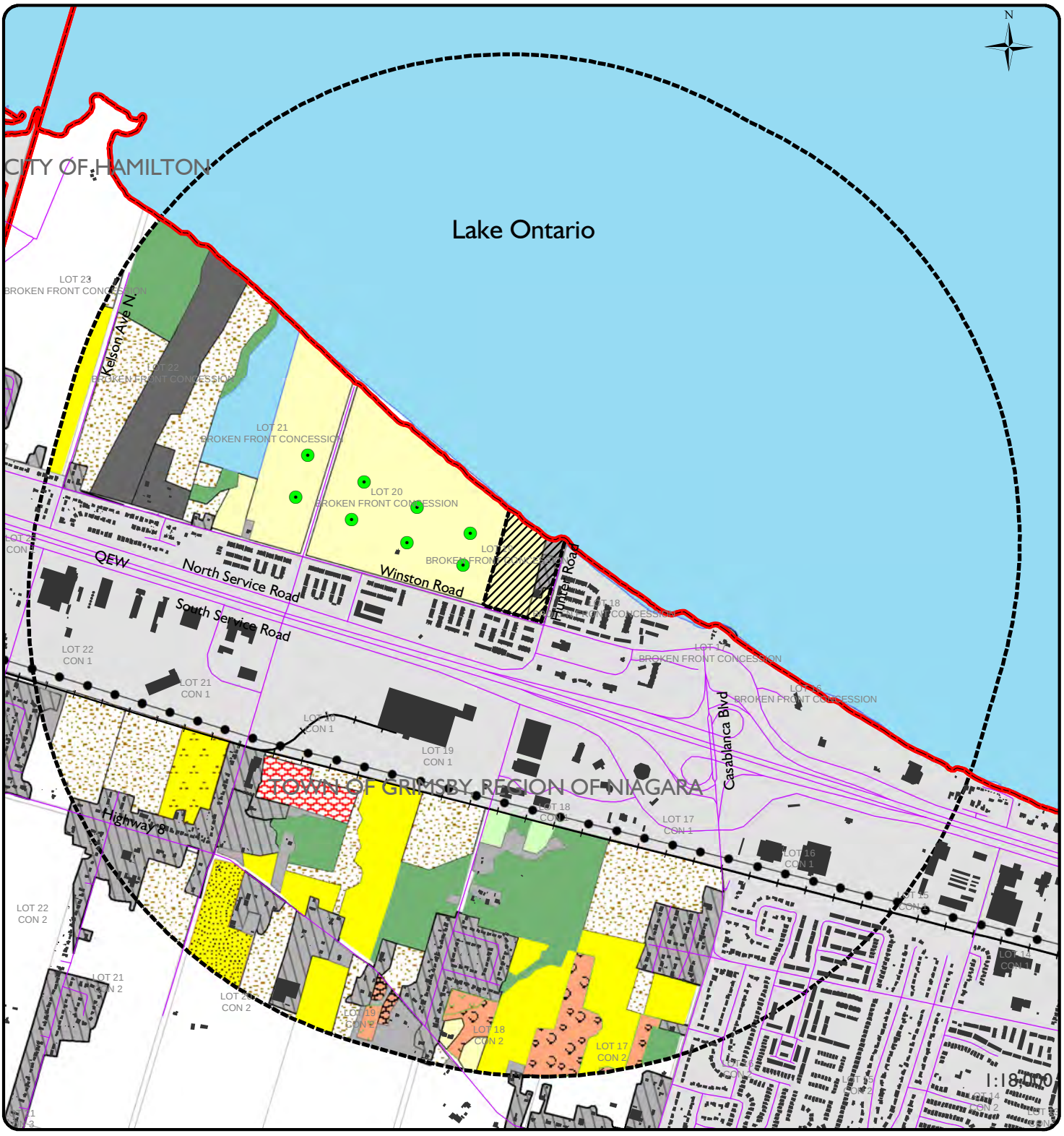
4.2 LAND USE

The land use for both the Study Area and the Secondary Study Area was completed through a windshield survey (completed in November 2020), a review of recent aerial photography, Google Earth Imagery, Bing Imagery, Birdseye Imagery, the Town of Grimsby online imagery, and the Region of Niagara online imagery, and correlation to the OMAFRA Land Use Systems mapping. Agricultural and non-agricultural land uses are illustrated on Figure 10.

The terms used in this Agricultural Land Use assessment were derived from the OMAFRA (ARI) 1988 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, industrial, commercial, and roads). Farms were identified as livestock or cash crop. Livestock operations were further differentiated to the type of livestock based on the livestock seen at the time of the survey, through a review of on farm infrastructure (type of buildings,



Legend

- Antenna
- Railway (MNRF)
- Roads (MNRF)
- Hydro Line (MNRF)
- Built Up Areas (MNRF)
- Lot Line (MNRF)
- Municipal Boundary Line (MNRF)
- Secondary Study Area (1.5 km)
- Study Area
- Urban Area (City of Hamilton and Region of Niagara)
- Water Body (MNRF)

Existing Land Use

- Common Field Crop
- Disturbed
- Forage
- Lagoon
- Old Orchard
- Open Field
- Orchard
- Pond
- Recreation
- Scrub
- Tree Farm
- Vineyard
- Winona Rifle Range (DND)
- Winter Wheat
- Woodlot

Figure 10

Land Use

DBH Soil Services Inc.

February 2022

manure system, feed (bins, bales), and types of equipment) or through any signage associated with the respective agricultural operation.

It should be noted that the roadside survey is based on a line-of-sight assessment process. Therefore, dense brush, woodlands, 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, but difficult in the Covid-19 environment) 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', if necessary.

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'.

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 1.

Table 1 Typical Land Use Designations

Land Use Designation	Land Use Definitions
Built Up/Disturbed Areas	Residential, Commercial, Industrial, Man Modified
Common Field Crop	Corn, Soybean, Cultivated
Forage/Pasture	Mixed Grasses, Clover, Alfalfa
Ponds	Ponds
Scrublands	Unused field (>5 years)
Small Grains	Winter Wheat, Barley, Spring Wheat, Oats, Rye
Woodlands	Forested Areas

It should be noted that there will be no change in agricultural land use on the Study Area due to the ROPA and LOPA applications, as the lands are presently not used for agriculture. Further, that there will be no change in agricultural land use on the Study Area as a result of a proposed change in land use designation from Specialty Crop to Rural.

4.2.1 LAND USE – STUDY AREA

The Study Area land use comprises land use of approximately 7.3 percent as built up/disturbed areas and 92.7 percent open field, grassed areas.

There are no buildings or structures related to agriculture on the Study Area lands. There is a building associated with the St. Vladimir's banquet hall and private club (321 Hunter Road). These are the lands associated with the ROPA and LOPA applications and are an established non-agricultural land use.

It is also evident from Figure 10 that the Study Area, and adjacent lands to the west, are an isolated pocket of land that is disconnected from the Prime Agricultural Areas (Specialty Crop) to the south, by a large designated urban land use, which includes a multilane highway and major rail corridor.

The proposed land use designation change for the ROPA and LOPA, and the change in land use designation for the Study Area will not result in the loss of lands used for agriculture.

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 (urban lands, built lands, rural residential, commercial, industrial, institutional, road corridors), common field crops, forage/pasture lands, grains, open field, pond, specialty crop and woodland areas.

The Secondary Study Area comprises land use of approximately 75.5 percent as built up/disturbed lands and Lake Ontario, 3.7 percent as common field crop, 1.7 percent as Department of National Defense lands, 0.5 percent as forage/pasture, 0.6 percent as grains, 5.1 percent as open field, 0.5 as recreational lands, 1.3 percent as specialty crop land use (includes old orchard, orchard, vineyard and tree farm), 1.0 percent as pond/lagoon, 6.5 percent as scrubland, and 3.6 percent as woodlands.

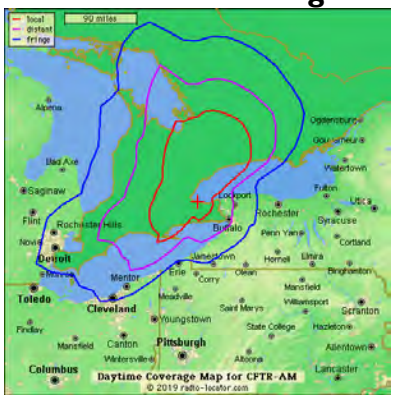
As indicated previously, a portion of the Secondary Study Area (located north of Winston Road) is part of an isolated pocket of lands, that are identified as Specialty Crop. These majority of these lands are not used for agriculture, but have other uses associated with them including 8 communication towers (guy wired), the Biggar Lagoons wetlands area, and the Government of Canada Winona Range Military area.

At the time of the roadside reconnaissance survey, there was no agricultural use of the lands to the west of the Study Area lands (north of Winston Road and east of Kelson Avenue North). Anecdotal evidence suggests that the portions of the Secondary Study Area (the area under the 8 communication antennae) had been used for forage cropping at some point in the past. No detailed information could be found that substantiates that evidence. A review of the AgPlan Limited *Specialty Crop Greenbelt Study Report for the Town of Grimsby (October 28, 2016)*, figure on page 17 (no figure number) illustrated agricultural data that had been provided by

Agriculture, Agri-Food Canada (AAFC). An online search was conducted to locate and review the data. The search revealed that AAFC conducts annual crop inventory using satellite imagery, having a final spatial resolution of 30 m. The online data indicates that there is some ground truthing provided by regional AAFC Research and Development Centres (Guelph). There is no indication if this area has been ground truthed, nor is there an indication of how the data is collected and analyzed. The figure in the AgPlan Limited report illustrates portions of the Secondary Study Area as 'Pasture/Forages' including the Department of National Defense lands (Winona Range). The reconnaissance roadside surveys completed for this AIA determined that there is no agricultural land use on those portions of the Secondary Study Area.

A further online review was completed to determine the type and use of the 8 antennae in the Secondary Study Area immediately west of the Study Area. It was determined that the antennae are used for radio communication as part of the Roger's Sports & Media, CFTR 680 AM News station (https://www.wikiwand.com/en/CFTR_(AM) and (https://radio-locator.com/cgi-bin/pat?call=CFTR&service=AM&s=F&h=D). The daytime signal coverage from these antennae is displayed below in Figure 11. The review of radio antenna and transmission indicated the need for grounding of the antenna. Grounding of antenna may require extensive use of wire around the base of and spreading out from the base of the antenna. An attempt to contact Rogers Communications/CFTR 680 to determine the type of antenna system was made, with no reply from Rogers Communication/CFTR 680. Any further discussion on the engineering/construction and/or functional life of these towers would need to include Rogers Communication/CFTR 680.

Figure 11 CFTR 680 Coverage



Source: www.radio-locator.com

A further online review was conducted to determine the extent and use of the Winona Range portion of the Secondary Study Area. The Government of Canada website (http://www.army-armee.forces.gc.ca/en/4-canadian-division/4-canadian-division-ranges/index.page) provides a brief history of the Winona Range. The range and training area was established in 1938. Attempts were made to contact the Canadian Armed Forces to determine the history of the range and what potential contaminants to agriculture (eg. lead shot) may be at this location. There was no response from the attempts.

On review of the Land Use data it was observed that the predominant land uses in the Secondary Study Area include built up/disturbed lands and Lake Ontario, which account for approximately 75.5 percent. The next greatest percent of land use is derived from scrublands and open field, followed by common field crop, woodlands and specialty crop. The remaining few percent comprise forage/pasture lands, small grains, and ponds. For the purposes of this AIA, the Secondary Study Area extends 1.5 km from the boundary of the Study Area and in this case, the 1.5 km area includes a portion of Lake Ontario. This portion of the Secondary Study Area has no 'land use' but is included in the area calculations as part of the characterization of agriculture in the surrounding area. Therefore, the combined non-agricultural 'land uses' (built up/disturbed and Lake Ontario) account for approximately 75.5 percent of the Secondary Study Area.

It is also evident from Figure 10 that the portions of the Secondary Study Area (north of Winston Road) are an isolated pocket of land that is disconnected from adjacent Prime Agricultural Areas (Specialty Crop) by a large designated urban land use, which includes a multilane highway and major rail corridor.

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/Lake Ontario	7.3	75.5
Common Field Crop	-	3.7
Department of Defense	-	1.7
Forage/Pasture	-	0.5
Small Grains	-	0.6
Open Field	92.7	5.1
Recreation	-	0.5
Specialty Crop	-	1.3
Pond/lagoon	-	1.0
Scrubland	-	6.5
Woodlands	-	3.6
Totals	100.0	100.0

On review of Table 2, it is evident that, even though the Study Area and portions of the Secondary Study Area are Provincially designated Specialty Crop lands, none of the Study Area lands are used for agricultural production or operations, and in addition, the majority of the Secondary Study Area land use includes non-agricultural uses. It was also noted that the portions of the Secondary Study Area that are employed for an agriculture use were located south of the major rail corridor, south of the QEW, approximately 0.65 km south of the Study Area, which further illustrates the isolated nature of the Study Area lands from adjacent

agricultural land designations and land uses. Further, the production of specialty crops in the Secondary Study Area is limited in nature with approximately 1.3 percent of the Secondary Study Area identified as actual specialty crop land use.

As illustrated by the occurrence of the land uses in Table 2, the proposed ROPA and LOPA applications will not result in the loss of agricultural land use, nor will the proposed land use designation change from Specialty Crop to Rural result in the reduction of agricultural land use in the Study Area.

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).

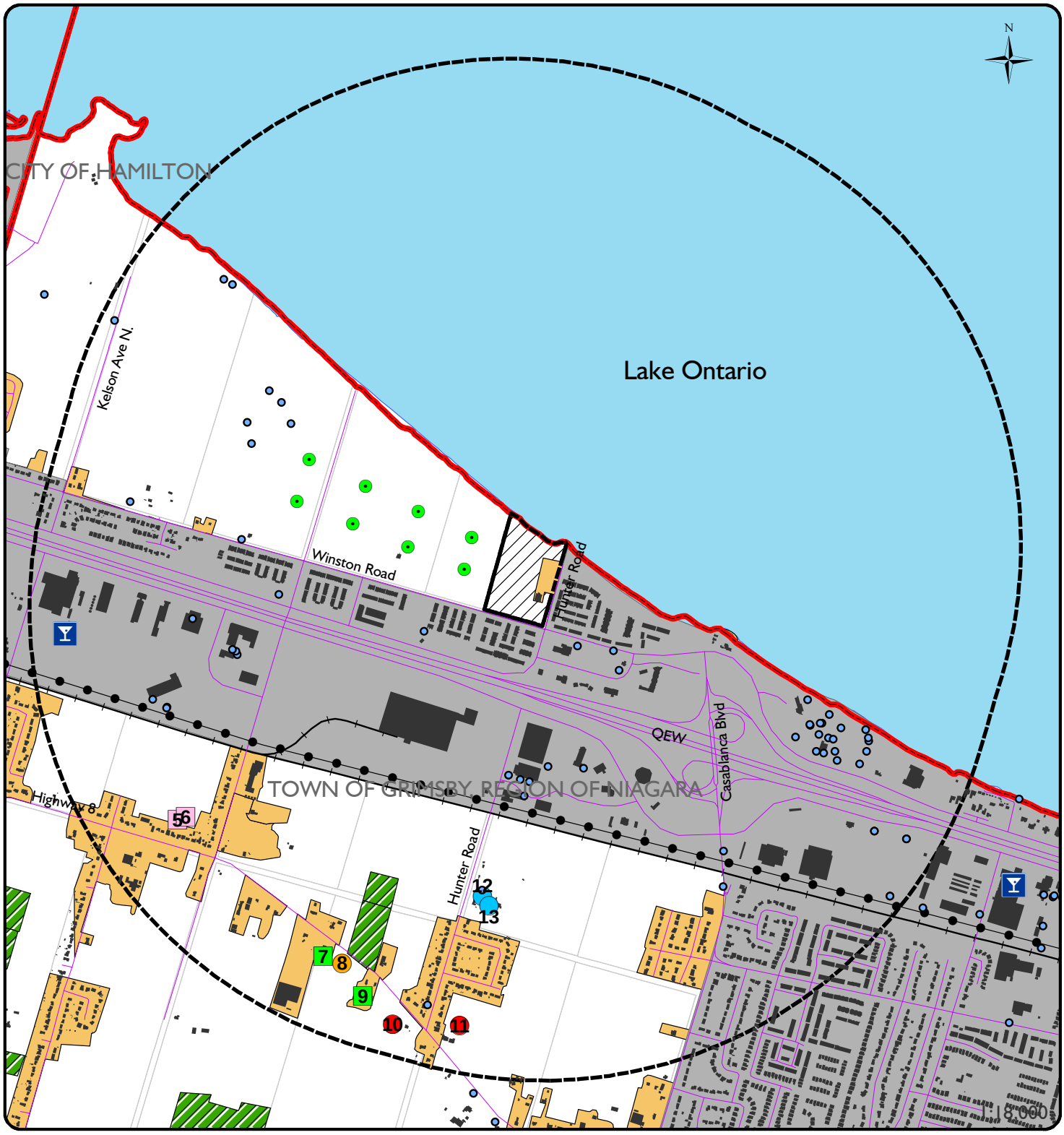
As a result, the lands and facilities that have increased capital investment are often considered as having greater tendency for preservation than similar capability lands and facilities that are undergoing degradation and decline. The investment in agriculture is often readily identifiable through observations 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.

4.3.1 AGRICULTURAL FACILITIES

Agricultural facilities (including facilities that may be capable of housing livestock), other agricultural buildings, 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 (torn down), or were not agricultural, but used for commercial activities.

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



Legend

- Antenna
- Water Wells (MOE)
- Hydro Line (MNRF)
- Railway (MNRF)
- Roads (MNRF)
- Buildings (City of Hamilton and Region of Niagara)
- Built Up Areas (MNRF)
- Lot Line (MNRF)
- Municipal Boundary Line (MNRF)
- Secondary Study Area (1.5 km)
- Study Area
- Urban Area (City of Hamilton and Region of Niagara)
- Water Body (MNRF)

Type of Agricultural Building

- Garage
- Machine Shed
- Old Market Building
- Pole Barn
- Shed

Tile Drainage System

- Systematic

Figure 12

Agricultural Investment

DBH Soil Services Inc.

February 2022

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

A total of 9 agricultural facilities or buildings related to agriculture were located and identified within the Secondary Study Area. It should be noted that all of the 9 agricultural facilities or buildings are located south of the designated urban areas (and south of the QEW and rail lines). No agricultural facilities or buildings related to agriculture were identified in the Study Area.

4.3.1.1 Study Area

There are no buildings on the Study Area lands that are used for agricultural purposes including the housing of or production of livestock.

There will be no loss of any agricultural building as a result of the ROPA and LOPA application, or from the proposed redesignation of the Study Area from Specialty Crop to rural.

4.3.1.2 Secondary Study Area

A total of 9 agricultural facility sites (active, remnant, vestige) were identified in the Secondary Study Area. These facility sites are identified on Figure 12.

Agricultural facilities 5 and 6 were located on the same parcel as 514 Main Street West. These buildings are located behind and in close proximity to the residential unit at 514 Main Street West. These buildings are also in close proximity to numerous other residential units along Main Street West and Oakes Road North. Barn number 5 was a small/medium sized pole barn. Barn number 4 was a small pole barn. No feed (hay bales) or manure systems were observed at either barn. Both barns are located in a larger open field area. No livestock was observed at these locations or in the field adjacent to the barns.

Agricultural facility number 7 and 8 were located at 469 Main Street West. This property included a residential unit, pole barn/garage and retired market building. Agricultural facility number 7 was identified as a small pole barn/garage. There are no livestock associated with this building. Agricultural facility number 8 was a retired Market. This building has not been used in a while, as noted by the lack of road to, or parking lot for the market. There are no livestock associated with this building.

Agricultural facility number 9 was located at 457 Main Street West. This property included a residential unit, and a pole barn/garage building. There are no livestock associated with this building.

Agricultural facility number 10 was located at 455 Main Street West. This property included a residential unit, a garage/shop with office space and a small pole barn/shop. The small pole

barn/shop building is located along the eastern edge of the property and appears to be set up as a shop or garage. There is no livestock, feed, or manure pile associated with this building.

Agricultural facility number 11 was located at 432 Main Street West. This property included a residential unit and small pole barn/shed with extensions. An accurate visual assessment was not possible for this building due to the location (behind residential units, trees, and poor line of sight). A review of recent aerial photography and online imagery suggested that this building is not used for livestock, as no feed, manure, or pens were noted. The building is in an area of old orchard. It is possible that this building and extensions served a function in that capacity.

Agricultural facility number 12 and 13 were located at 38 and 40 Hunter Road. It appears that both these buildings, although identified on separate parcels, are part of the same business. Google Maps indicates that IGF Landscape Supply – Landscaping supply store, and the Original Greenscapes Landscaping Inc. companies are located at these addresses. There is no agricultural use and no opportunity for livestock at these locations.

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

There is no net loss of agricultural buildings as a result of the ROPA and LOPA applications or from the proposed redesignation of the Study Area from Specialty Crop to Rural.

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). There was no observed evidence of artificial tile drainage in either the Study Area or the Secondary Study Area.

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, 2020) in December 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 be a greater cost, or investment in agriculture when compared to a random tile drainage system.

Figure 12 also illustrates the OMAFRA Artificial Drainage Systems Mapping for the Study Area and Secondary Study Area.

As noted in Figure 12, there is no tile drainage registered to the Study Area. The review of Figure 12 illustrates the location of registered systematic tile drainage in the Secondary Study Area. There is no random tile drainage registered within the Secondary Study Area. Systematic tile drainage is noted in small areas on various lands to the south of Main Street West, and one parcel north of Main Street West just to the west of Hunter Road.

There will be no net loss of investment related to tile drained lands as a result of the ROPA and LOPA applications, or from the proposed redesignation of the Study Area from Specialty Crop to Rural.

4.3.3 Water Wells

A review was completed of the MNRF Water Well records to determine the extent of water wells in the Study Area and the Secondary Study Area. The review of water well records involved a download of the latest version of the Water Well Records from the Land Information (LIO) data warehouse. The Water Well locations are identified on Figure 12. As illustrated on Figure 12, it appears that a single water well is located on the Study Area and numerous water wells are located within the Secondary Study Area.

The review of water well records was completed to determine the location and extent of water wells in the area, and to identify any potential concerns or impacts that may occur as a result of the ROPA and LOPA applications, or the proposed change in land use designation of the Study Area from Specialty Crop to Rural. Generally, many livestock operations use ground water for their livestock, and any disruption to the water in terms of quality and/or quantity could have a significant impact to the operation. No active livestock operations were observed in the Study Area or the Secondary Study Area.

The proposed change from Specialty Crop to Rural will not impact the single water well on the Study Area, nor will the proposed change result in any impacts to water wells in the Secondary Study Area.

4.3.4 IRRIGATION

Observations noted during the reconnaissance survey indicated that the Study Area and the Secondary Study Area lands are not irrigated. It was noted that 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) or water source 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 identified within the Study Area or the Secondary Study Area.

Therefore, there is no net loss of investment related to irrigation as a result of the ROPA and LOPA applications or the proposed redesignation of the Study Area from Specialty Crop to Rural.

4.3.5 LANDFORMING

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

There has been no landforming on the Study Area for the purposes of enhancing agriculture. There has been some landforming for the purposes of construction of the banquet hall and parking lot.

Anecdotal evidence indicated that there is significant wire in the ground surrounding the eight (8) antennae located lands in the Secondary Study Area to the west of the Study Area. An online review of radio antenna construction indicated the need for grounding wires as part of the normal construction. It may be possible that the anecdotal evidence of 'significant wire' in the ground is associated with the grounding of the antenna.

Further, a review of information related to the Secondary Study Area indicated that the area associated with the Biggar Lagoon was once part of the sewage treatment system (Biggar Lagoon Sewage Treatment Facility) for the Town of Grimsby. This area has been restored as wetlands, and a stopover for migratory birds. The Biggar Lagoons Wetlands Bird Viewing Platform (http://biggar-platform.edan.io/) is located in this area. Some landforming was completed as part of the decommissioning process. Regrading was completed to allow surface runoff to flow towards the middle of the site (from the east and west sides), then north and northwest into the natural creek located at the west end of the site.

4.4 MINIMUM DISTANCE SEPARATION (MDS1)

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. The MDS guidelines applicable to this AIA are identified in Section 2.2.5 of this AIA.

For the purposes of this AIA, the proposed redesignation of the Study Area from Specialty Crop to Rural will still allow for livestock facilities, and as the MDS guidelines apply to both agricultural areas and rural area, MDS may not be required, however, MDS was completed in an effort to provide a thorough characterization of agricultural in the area.

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 1 setbacks are "required for all proposed amendments to rezone or redesignate land to permit development in prime agricultural areas and rural lands presently 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 by telephone, data was collected through alternate means including the use of online imagery (Google Earth, Bing Imagery, Birdseye Imagery), Agricultural Information Atlas online resource (OMAFRA, December 2020), 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, while the amount of tillable land (in ha) was determined from measurements taken from online sources such as the Agricultural Information Atlas (OMAFRA, December 2020), further, that the relative size 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 1 distance then 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 areas measured is used as potential livestock space (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 change in land use for the Subject Lands requires that the MDS study will be completed to a Type A assessment, as the change in land use designation will not result in an increase in human occupation. For the purposes of this

AIA, MDS was reviewed out to 1.5 km, in an effort to determine the agricultural character of the area with respect to livestock.

Minimum Distance Separation data was collected through observations made during the reconnaissance surveys completed on November 13, 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.

On review of the roadside survey reconnaissance data for livestock facilities, it was determined that there were no livestock facilities, or facilities capable of housing livestock on the Study Area. There were 9 agricultural facilities in the Secondary Study Area that were investigated for the potential to house livestock.

Guideline # 12 indicates that a reduced MDS 1 setback may be permitted provided that there are four or more non-agricultural uses, residential uses and/or dwellings closer to the subject livestock facility than the proposed development/change in land use designation. With respect to this AIA, all the agricultural facilities that were identified (with livestock potential and without), were located in areas where there were four or more residential uses between the agricultural facility and the Study Area. Therefore, any MDS setback for the proposed change in land use designation would be reduced such that it would be located no closer than the farthest of the four non-agricultural uses. As a result, MDS 1 will not impact the ROPA and LOPA applications or the proposed land use designation change of the Study Area from Specialty Crop to Rural.

4.5 FRAGMENTATION

Assessment data was evaluated to determine the characteristics and the degree of land fragmentation in the Secondary Study Area. In order to evaluate land tenure, the most recent Assessment Roll mapping and Assessment Roll information from the Region of Niagara, and the Town of Grimsby were referenced to determine the approximate location, shape, and size of each parcel outside the urban area. The assessment of fragmentation looks at the numbers of and proximity of properties within the Study Area and 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."

The *Regional Official Plan, Niagara Region (2014)* states in Policy 5.B.8

> "In the Unique *Agricultural Areas*, consents to convey may be permitted only in accordance with the following provisions. Within the Niagara Escarpment Plan Area, the policies of the Niagara Escarpment Plan as amended from time to time shall prevail unless the following policies are more restrictive, then the more restrictive policies shall prevail. Policies for lot creation in local Official Plans can be more restrictive than the following policies and still conform to this Plan.
>
> a) The consent to convey is for an *agricultural use* where the severed and retained lots are intended for *agricultural uses* and provided the minimum lot size is 40-acres (16.2 hectares).

The *Town of Grimsby Official Plan, May 12, 2012 (Office Consolidation 2018)* was reviewed for policy directed at a minimum lot size for agriculture. The following general policy 3.3.2.3 states

> *"General Policies:*
> *3.3.2.3 Within the Specialty Crop Area designation, the minimum lot size for new farm lots is 16.2 hectares north of the escarpment and 40 hectares south of the escarpment."*

The *Corporation of the Town of Grimsby By-Law No. 14-45 (Town of Grimsby Zoning By-law, Consolidated August 2019)* was reviewed to determine the minimum lot size for agricultural lands. Table 6.2.1 of the *Corporation of the Town of Grimsby By-Law No. 14-45* indicates a minimum lot area of 40 ha, except 16.2 ha in the Specialty Crop Zone north of the Escarpment.

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, 2016). It should be noted that the average farm size is based on farmland holdings, which may include more than one parcel (property).

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

In order to evaluate land fragmentation, the most recent Assessment Roll mapping and Assessment Roll information from the Region of Niagara, and the Town of Grimsby were referenced to determine the approximate location, shape, and size of each parcel. The

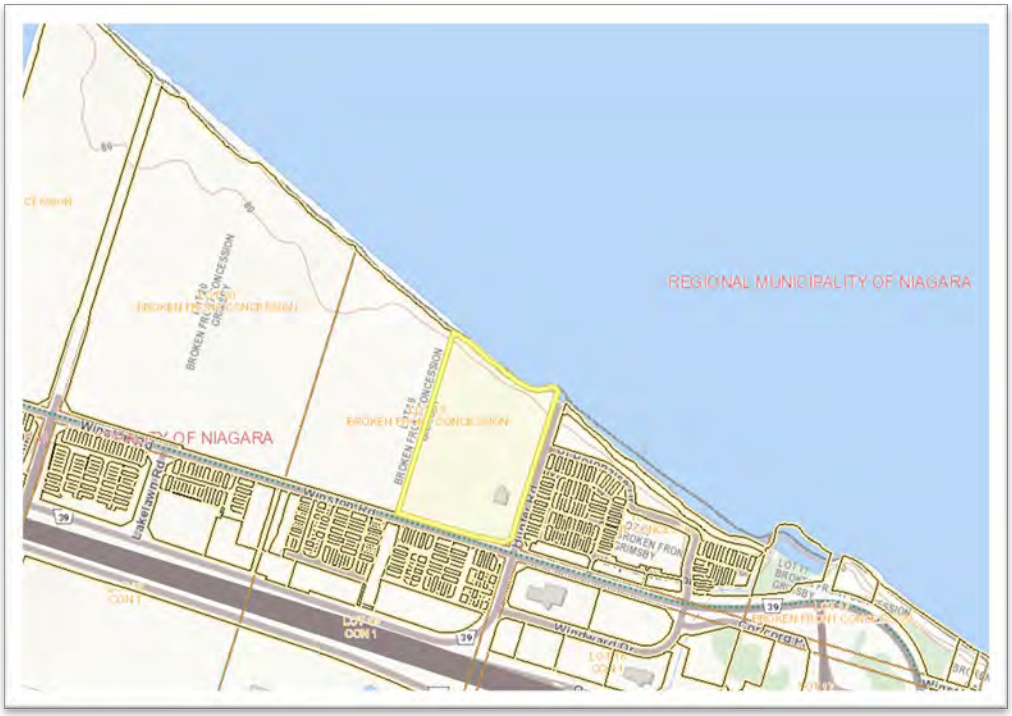
approximate location and shape of each large property were reviewed to illustrate the overall land fragmentation patterns within the Study Area and the Secondary Study Areas.

Discussions with the respective municipalities indicated that the digital parcel data (GIS Shapefile) was not available for public use due to licensing limitations with the Municipal Property Assessment Corporation (MPAC). Therefore, the review of fragmentation is limited to a visual assessment of the parcel boundaries as provided from the respective online interactive mapping from each of the municipalities and through a review of the same data presented visually on the Agricultural Information Atlas (OMAFRA, December 2020) at the following link. (https://www.lioapplications.lrc.gov.on.ca/AgMaps/Index.html?viewer=AgMaps.AgMaps&locale=en-CA).

4.5.1 FRAGMENTATION STUDY AREA

The image below (Figure 13) represents an image from the Agricultural Information Atlas (OMAFRA, December 2020) and illustrates the parcel boundary for the Study Area as a yellow-coloured line (polygon).

Figure 13 Parcel Boundaries Study Area



Source: Agricultural Information Atlas Online Image (March 2021)

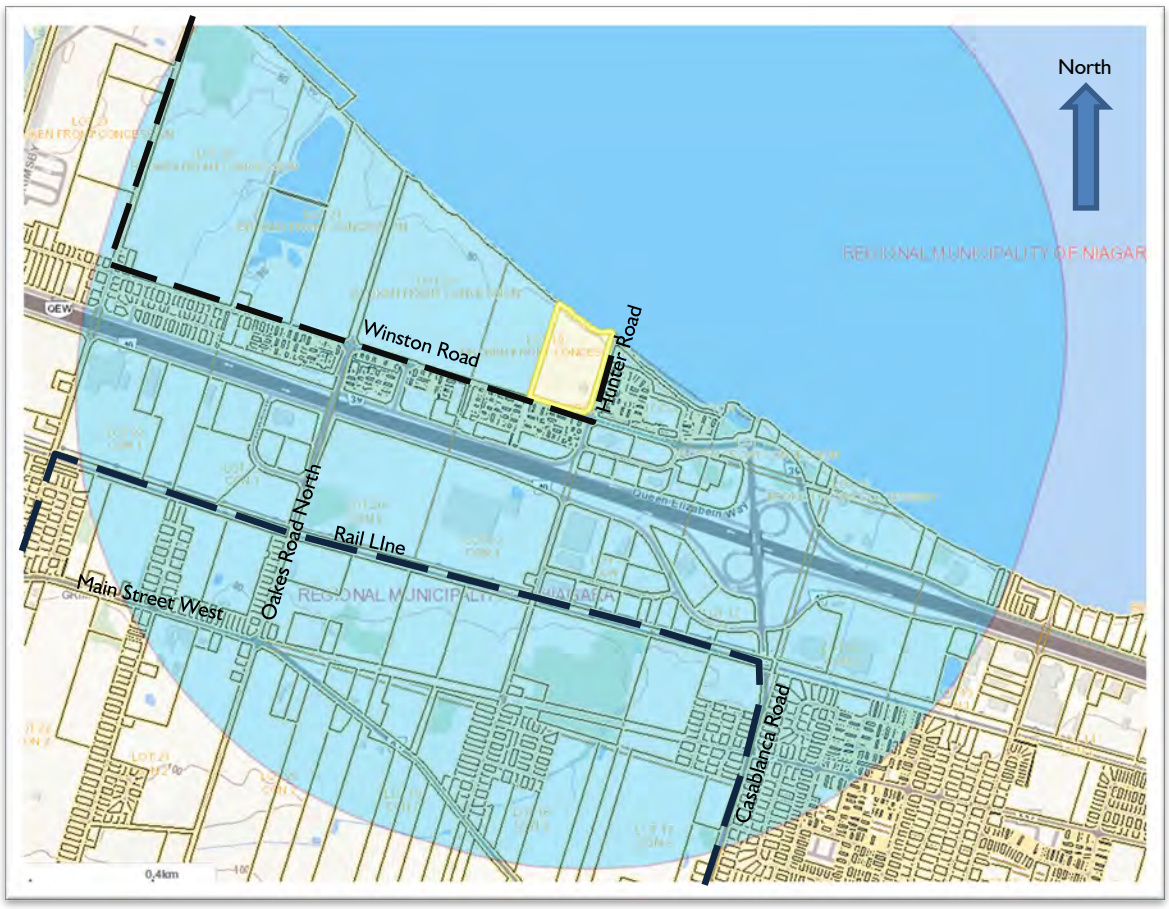
The Study Area is a single parcel bounded by Lake Ontario to the north, and numerous small parcels associated with urban lands uses to the east and south.

4.5.2 FRAGMENTATION SECONDARY STUDY AREA

The fragmentation of the Secondary Study Area was completed in the same format as the assessment of fragmentation for the Study Area. The assessment of fragmentation of the Secondary Study Area was completed as a visual review of the parcel boundary data provided from online sources.

Figure 14 illustrates the complexity of the fragmentation within the Secondary Study Area. The Secondary Study Area is shown as a light blue overlay on the parcel data in Figure 14.

Figure 14 Parcel Boundaries Secondary Study Area



Source: Agricultural Information Atlas Online Image (March 2021)

As illustrated in Figure 14, the agricultural areas are shown north of the dashed line along Winston Road, and south of the dashed line along the rail line. The lands between the dashed lines are built up/developed/designated urban areas.

The fragmentation north of Winston Road in the Secondary Study Area comprised mostly larger parcels associated with the Winona Rifle Range (DND), the Fifty Point Conservation Authority lands, the Biggar Lagoons and the lands used for the eight (8) communications antennae. A few smaller parcels were noted along Winston Road. The smaller parcels comprise residential units,

and buildings related to the sewage pumping station.

The fragmentation south of the QEW (which includes portions of designated urban lands) includes a mix of parcel sizes and shapes. Some of the larger parcels are located between the QEW and the rail line, on lands that are designated as urban. Within the agricultural areas, there are many smaller parcels associated with rural residential and subdivision type developments. The agricultural parcels are also generally small parcels. While this is often considered a detriment or limitation to agriculture in other areas of Ontario, where larger farms producing common field crop are the norm, in the Specialty Crop areas, farms are often comprised of smaller parcels.

It was noted that numerous smaller parcels were located in the Specialty Crop Area (area south of the rail line dashed line) and included rural residential and built-up areas that are not designated as urban or settlement area. These built-up areas include subdivision type developments and linear development along Main Street West, Oakes Road North, Casablanca Road and Hunter Road.

4.6 SOILS AND CANADA LAND INVENTORY (CLI)

A review was completed of the soils and Canada Land Inventory (CLI) data base for the Study Area and the Secondary Study Area. The review was completed to determine the extent and location of the high capability soils. Digital soils data was retrieved from the Land Information Ontario (LIO, 2020) data warehouse in December 2020 for the Region of Niagara.

The review included a download of the latest version of the soils data from the Land Information Ontario (LIO, 2020) website and discussions with OMAFRA staff to determine if the downloaded data set is the latest iteration of the soils data. This soils information was further correlated to *the Soils of the Regional Municipality of Niagara (Volumes 1 and 2), Report No. 60 of the Ontario Institute of Pedology (Kingston, M.S and E.W. Presant, 1989)*.

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 Niagara. In an effort to confirm the correctness of the soils and the Canada Land Inventory (CLI) data on a soil series basis, the dbase data file that is associated with the Region of Niagara soil survey complex file was exported to Excel to run a unique symbols list based on Soil Series, topography, CLI class and CLI subclass. It was noted that the soils data file included 7204 polygons in the Niagara Region. The polygons included a collection of single soil polygons (simple) and multiple soil series in a polygon (complex). In the Niagara soils data, the complex soil polygons included a secondary component with the percent occurrence of the soils as either a 50:50 or 70:30 ratio of the primary component to a secondary component.

The unique soil symbols list (based on the SYMBOL1 column) provided 282 unique symbols combined with the associated slope and CLI class and CLI subclass (CLI_1 and CLI_2). The

unique soil symbols list is provided in Appendix B. A review of this list indicated that there were some minor issues with some of the soils and the respective CLI class and/or subclass.

As noted in the list in Appendix B, the many 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 classification rating.

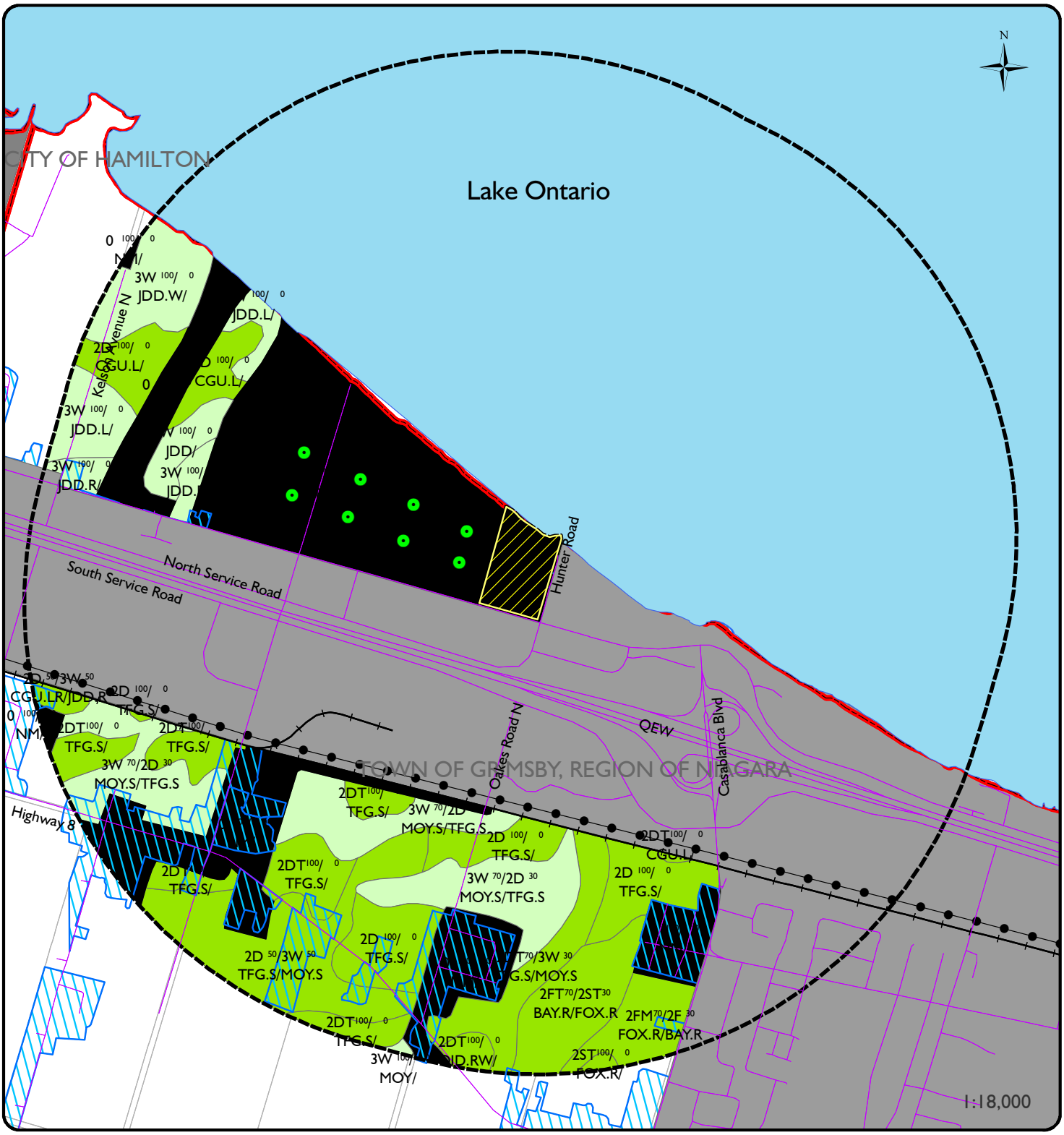
4.6.1 SOIL CAPABILITY FOR AGRICULTURE

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 (CLI) in Ontario" (OMAFRA, February 2021), 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.*



Legend

- Antenna
- Hydro Line (MNRF)
- Railway (MNRF)
- Roads (MNRF)
- Lot Line (MNRF)
- Municipal Boundary Line (MNRF)
- Built Up Areas (MNRF)
- Secondary Study Area (1.5 km)
- Study Area
- Urban Area (City of Hamilton and Region of Niagara)
- Water Body (MNRF)

Canada Land Inventory (OMAFRA)

- Not Mapped/Not Rated
- Class 1
- Class 2
- Class 3
- Class 4
- Class 5
- Class 6
- Class 7
- Water

Canada Land Inventory (CLI) Class
Canada Land Inventory (CLI) Subclass
Percent Occurrence
2D70/3W30
TFG.S/MOY.S
Soil Symbol

Figure 15

Soils and Canada Land Inventory (CLI)

DBH Soil Services Inc.

February 2022

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

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

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

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

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

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

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 (CLI) in Ontario" (OMAFRA, February 2021), 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 I – Inundation by Streams or Lakes

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

Subclass M – Moisture Deficiency

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

Subclass S - Adverse Soil Characteristics

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

Subclass T - Topography

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

Subclass W – Excess Water

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

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

Figure 15 – Soils and Canada Land Inventory (CLI) illustrates the OMAFRA digital soils data for the Study Area and the Secondary Study Area. The OMAFRA soils data base has not removed or discounted all the soils from all the roads, rails, urban or developed areas.

It should also be noted that the soils data presented by OMAFRA may include a primary and secondary component. Figure 15 illustrates the primary and secondary components as labels within each soil polygon. As an example, a label of $2F^{50}/3DW^{50}$ indicates that the soil polygon has a primary and secondary component, with the primary component a CLI class 2F of 50 percent area, and a secondary component of CLI class 3DW also at 50 percent of the area. Some soil

polygon labels may show a $2FM^{100}/^{0}$, which indicates that the soil polygon has only a primary soil component at 100 percent, and the secondary component at 0 percent.

For the purposes of the comparison of soils data between the Study Area and the Secondary Study Area, Table 3 illustrates the soils data as derived by percent occurrence within the respective polygons. Table 3 summarizes the relative percent area occupied by each capability class for the Study Area and Secondary Study Area.

Table 3 Canada Land Inventory – Study Area and Secondary Study Area

Canada Land Inventory Class (CLI)	Study Area Percent Occurrence	Secondary Study Area Percent Occurrence
Class 1	-	-
Class 2	-	11.4
Class 3	-	7.6
Class 4	-	-
Class 5	-	-
Class 6	-	-
Class 7	-	-
Not Rated (disturbed areas, urban areas, built-up areas, Lake Ontario, Not Mapped soils)	100.0	81.0
Totals	100.0	100.0

On review of Figure 15 it is noted that the OMAFRA soils database has no soil record for this area. Therefore, the Study Area is considered 100 percent as Not Mapped, which relates to a Not Rated soil.

Discussions with staff from OMAFRA indicated that they were aware of the issue and had no additional comment at that time. This is of importance when considering that the Provincial Land Base Mapping that defines the Prime Agricultural Areas in the Greater Golden Horseshoe makes use of the Provincial soils data set. In fact, the soils component (LE – Land Evaluation) of the Provincial LEAR (Land Evaluation and Area Review) study that defined the Provincial Prime Agricultural Areas assigned a 60% weighting of the LEAR score to the LE component.

Therefore, if a soil polygon has no soils data (no CLI rating), then those soil polygons would have a LEAR score that is only based on the Area Review component (which accounts for 40% of the LEAR score total). Any area classified with a LEAR score only based on the AR component would drop below the threshold for classifying Prime Agricultural Areas and should not be considered for inclusion within a Prime Agricultural Area.

A similar comment was noted in the *AgPlan Limited – Specialty Crop Greenbelt Study Report for the Town of Grimsby (October 28, 2016)* where it was stated in Section 6.0 Findings Summary under bullet point 6:

- *the north section of lands proposed to be removed from the specialty crop area designation has 70% of the area not mapped for soils (in 1989 the land use was non-agricultural and therefore not mapped) or developed for non-agricultural uses*

It is also understood that OMAFRA holds Specialty Crop Areas in the highest regard and that CLI and LEAR studies are not necessarily the determining factor in defining a Specialty Crop Area. Specialty Crop areas are defined on the following ideas.

> *Specialty crop areas are areas where crops are grown like tender fruit (e.g., peaches, cherries and plums), grapes, other fruit crops, vegetable crops, greenhouse crops, and crops from agriculturally developed organic soil. Usually a combination of suitable soil, climate, specialized production skills and capital investments enable successful specialty crop production.*
>
> *Specialty crop areas are unique and their significance is assessed based on factors such as production diversity and concentration, agricultural investments, specific soil types, microclimate, infrastructure, and economic significance (e.g., employment, tourism, agri-food businesses, tax revenue).* (Implementation Procedures for the Agricultural System in Ontario's Greater Golden Horseshoe, Publication 856, March 2020*)*

It should be noted that in the definition above, it does reference 'specific soil types', of which there are none identified for the Study Area.

The Secondary Study Area comprises approximately 19.0 percent Canada Land Inventory (CLI) capability of Class 1 – 3, with approximately 11.4 percent as Class 2 lands, and 7.6 percent as Class 3 lands. The remaining 81.0 percent of the Secondary Study Area is defined as Not Rated. The Not Rated lands include urban areas, built up areas, not mapped areas, roads, rail lines and portions of Lake Ontario.

The assessment of CLI has confirmed the lack of soils data on the Study Area and has illustrated a low percent occurrence of high capability agricultural soils within Secondary Study Area. The limited quantity of soils is a reflection of the agricultural area being in close proximity to urban areas, built up areas, and Lake Ontario.

It should be noted that similar conditions were noted in comments in the *AgPlan Limited – Specialty Crop Greenbelt Study Report for the Town of Grimsby (October 28, 2016)* where it was stated:

> The Town of Grimsby has already documented land use characteristics within Grimsby and have included information specific to the specialty crop area in a letter sent to the 2015 Co-ordinated Review Panel (April 30, 2015). It is not the intent of this report to repeat the contents of this letter. However, I do agree with the statement within the letter that:
>
> > Some lands designated as tender fruit have not been tender fruit growing or used for agricultural purposes for decades (i.e. Radio Tower Lands), some have had soils stripped and are surrounded by uses such as residential which render the lands inappropriate for tender fruit and good grape production.

The AgPlan Limited report also concluded that:

- specialty crop production is not predominant,
- soil capability and soil potential in Grimsby is not the best found in Niagara and in some areas is diminished due to non-agricultural development,

- fewer farms and farmers are producing fruits and vegetables within Grimsby and, as a result, there is diminishing infrastructure as well as fewer farmers skilled in the production of fruits and vegetables.

4.6.2 SPECIALTY CROP POTENTIAL

Basic soils (and Canada Land Inventory (CLI)) information was provided in the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) soils and mapping report titled *the Soils of the Regional Municipality of Niagara (Volumes 1 and 2), Report No. 60 of the Ontario Institute of Pedology (Kingston, M.S and E.W. Presant, 1989)*. Digital mapping was provided by the Ontario Ministry of Agricultural, Food and Rural Affairs (OMAFRA) through the Land Information Ontario (LIO, 2020) Geowarehouse website. The digital mapping was provided at a scale of 1:50000.

T*he Soils of the Regional Municipality of Niagara (Volumes 1 and 2), Report No. 60 of the Ontario Institute of Pedology (Kingston, M.S and E.W. Presant, 1989)* also provided Agricultural Suitability Classification for Specialty Crops which also consider climate and soil considerations.

Specialty crop ratings were reviewed for the soils identified in the Study Area and in the Secondary Study Area. The soils identified in the Study Area and the Secondary Study Area (as based on the OMAFRA digital soils mapping) are provided in Tables 4 and 5 respectively.

Table 4 Soil Series Study Area

SOILCODE1	SOIL_NAME1	SYMBOL1
CGU	CHINGUACOUSY - LOAMY PHASE	CGU.L
JDD	JEDDO - LOAMY PHASE	JDD.L
JDD	JEDDO - RED PHASE	JDD.R
JDD	JEDDO	JDD
JDD	JEDDO - WASHED PHASE	JDD.W
WIO	WINONA SANDY LOAM	Wi
ZNM	NOT MAPPED	NM
ZST	STREAM COURSE	SC
ZUR	URBAN	UL

Table 5 Soil Series Secondary Study Area

SOILCODE1	SOIL_NAME1	SYMBOL1
BAY	BRADY - RED PHASE	BAY.R
CGU	CHINGUACOUSY - LOAMY PHASE	CGU.L
CGU	CHINGUACOUSY - LOAMY RED PHASE	CGU.LR
FOX	FOX - RED PHASE	FOX.R
JDD	JEDDO SANDY LOAM	Jo
JDD	JEDDO - LOAMY PHASE	JDD.L
JDD	JEDDO - RED PHASE	JDD.R
JDD	JEDDO - WASHED PHASE	JDD.W
MOY	MORLEY - SHALLOW PHASE	MOY.S
MOY	MORLEY	MOY
OID	ONEIDA - RED WASHED PHASE	OID.RW
TFG	TRAFALGAR SILTY CLAY LOAM	Tr
TFG	TRAFALGAR - SHALLOW PHASE	TFG.S
WIO	WINONA SANDY LOAM	Wi
ZNM	NOT MAPPED	NM
ZST	STREAM COURSE	SC

A review of *the Soils of the Regional Municipality of Niagara (Volumes 1 and 2), Report No. 60 of the Ontario Institute of Pedology (Kingston, M.S and E.W. Presant, 1989)* revealed (in Volume 1, Table 7) the Agricultural land suitability ratings for tree fruits, grapes, and small fruits in the Regional Municipality of Niagara. These ratings were reviewed as part of this AIA due to the Study Area and Secondary Study Area being located in the Specialty Crop Area which is also defined as the Grape and Tender Fruit Area. The ratings in Table 7 of *Soils of the Regional Municipality of Niagara (Volumes 1 and 2), Report No. 60 of the Ontario Institute of Pedology (Kingston, M.S and E.W. Presant, 1989)* reference crop types of peaches, apricots, nectarines, sweet cherries, sour cherries, labrusca grapes, vinifera grapes, apples, pears, plums, strawberries, raspberries, currants and gooseberries.

Table 6 provides a rating for these crop types for the soils (based on Symbol1 and Symbol 2 (primary and secondary soil component when applicable) and slope characteristics as indicated on the OMAFRA soils data and presented on Figure 15 of this AIA. Each of the soils identified on the Study Area comprised soils with slopes of 0.5 – 2.0 percent (Slope Class B,b OMAFRA soils data). The soils identified on the Secondary Study Area include slopes in the 0.5 – 2.0 percent and 2.0 – 5.0 percent (Slope Class C,c) ranges. Table 6 provides the specialty crop suitability ratings for these soils on the respective slope classes. The upper-case Slope Class represents a slope length of less than 50 metre (simple slope), while a lower-case represents a slope length of more than 50 metres (complex slope).

As illustrated on Figure 15, the majority of the soils identified on the Study Area are Jeddo (Washed, Loamy, and no phase) and Chingaucousy (Loamy phase). The Jeddo soils are generally

rated as Poor to Very Poor for all crop types. The Chingaucousy soils are rated as Poor or Poor to Very Poor for peaches, apricots, nectarines, sweet cherries, sour cherries, strawberries and raspberries, and as Fair or Fair to Good for labrusca grapes, vinifera grapes, apples, pears, plums, currants and gooseberries. The majority of these soils are located within the Winona Rifle Range area and are not available for agricultural use.

The soils in the Secondary Study Area comprise a mix of specialty crop ratings with much of the area identified as shallow soils with limited specialty crop suitability as shown by ratings of Poor, Poor to Very Poor, and Unsuitable.

Similar comments were noted in the *AgPlan Limited – Specialty Crop Greenbelt Study Report for the Town of Grimsby (October 28, 2016)* where that report referred to lands that included this AIA's Study Area by stating that:

- *specialty crop production is not predominant,*
- *soil capability and soil potential in Grimsby is not the best found in Niagara and in some areas is diminished due to non-agricultural development.*

Table 6 Specialty Crop Ratings

Soil Map Unit Component	Map Symbol	Slope Classes	Management Factors	Crop Groups*								
				1	2	3	4	5	6	7	8	9
BRADY - RED PHASE	BAY.R	B C,c	 Drainage Irrigation	P-F P-F +1 +2	F F +1 +1	F F +1 +1	P-F P-F +1 -	P-F P-F +1 +2	P-F P-F +1 +1	P-F P-F +1 +1	P-F P-F +1 +1	P P - -
CHINGUACOUSY - LOAMY PHASE	CGU.L	B C,c	 Drainage	P P +1	VP VP +1	P P +1	F F +1	F F +1	F F +1	F-G F-G +1	P-F P-F +1	F-G F-G +1
CHINGUACOUSY - LOAMY RED PHASE	CGU.LR	B C,c	 Drainage	P P +1	VP VP +1	P P +1	F F +1	F F +1	F F +1	F-G F-G +1	P-F P-F +1	F-G F-G +1
FOX - RED PHASE	FOX.R	B C,c	 Irrigation	F F +2	F-G F-G +1	F-G F-G +1	F F +1	F F +1	F F +1	F F +1	F F +1	P-F P-F +1
JEDDO	JDD	B C,c	 Drainage	VP VP +1	VP VP +1	VP VP +1	VP VP +2	VP VP +2	VP VP +2	P P +2	VP VP +2	P P +2
JEDDO SANDY LOAM	Jo	B C,c	No Ratings Listed									
JEDDO - LOAMY PHASE	JDD.L	B C,c	 Drainage	VP VP +1	VP VP +1	VP VP +1	VP VP +2	VP VP +2	VP VP +2	P P +2	VP VP +2	P P +2
JEDDO - RED PHASE	JDD.R	B C,c	 Drainage	VP VP +1	VP VP +1	VP VP +1	VP VP +2	VP VP +2	VP VP +2	P P +2	VP VP +2	P P +2
JEDDO - WASHED PHASE	JDD.W	B C,c	 Drainage	P P +1	P P +1	P P +1	VP VP +2	P P +2	VP VP +2	P P +2	VP VP +2	P P +2
MORLEY - SHALLOW PHASE	MOY.S	B C,c	 Drainage	U U -	U U -	U U -	VP VP +2	VP VP +2	VP VP +1	U U -	VP VP +2	P P +2
MORLEY	MOY	B C,c	 Drainage	U U -	U U -	U U -	VP VP +2	VP VP +2	VP VP +1	VP VP +2	VP VP +2	P P +2
ONEIDA - RED WASHED PHASE	OID.RW	B C,c		F F	F F	F F	F-G F-G	F-G F-G	F-G F-G	G G	F F	G F
TRAFALGAR SILTY CLAY LOAM	Tr	B C,c	No Ratings Listed									
TRAFALGAR - SHALLOW PHASE	TFG.S	B C,c	 Drainage	U U -	U U -	U U -	F F +1	P-F P-F +1	VP VP +1	U U -	P-F P-F +1	F-G F-G +1
WINONA SANDY LOAM	Wi	B C,c	No Ratings Listed									

Crop Groups * 1 = Peaches, apricots, nectarines; 2 = Sweet Cherries; 3 = Sour Cherries; 4 = Labrusca Grapes; 5 = Vinifera grapes; 6 = Apples; 7 = Pears, Plums; 8 = Strawberries, raspberries; 9 = Currants, gooseberries

P – Poor, F – Fair, G- Good, VP – Very Poor
U - Unsuitable

4.7 AGRICULTURAL SYSTEMS PORTAL

A review of the OMAFRA Agricultural System Portal (December 2020, and again in February 2022) online resource for agricultural services/agricultural network (markets, abattoirs, renderers, livestock auctions, investment, warehousing and storage, wineries and breweries) was completed for the Study Area and Secondary Study Area.

The review of the online Agricultural System Portal (OMAFRA) indicated that there were no agricultural network type facilities on the Study Area lands. The Secondary Study Area comprised a few agricultural network type facilities/services including alcohol beverage manufacturing (wineries, cideries), and farm equipment manufacturing, all of which are located in the urban area between the QEW and the rail line to the south. In the Township scale, numerous farmer's markets, wineries and distilleries were located farther to the east, closer to the Beamsville area. Federally licensed meat plants were also noted in the City of Hamilton, west of the Study Area and above the escarpment brow.

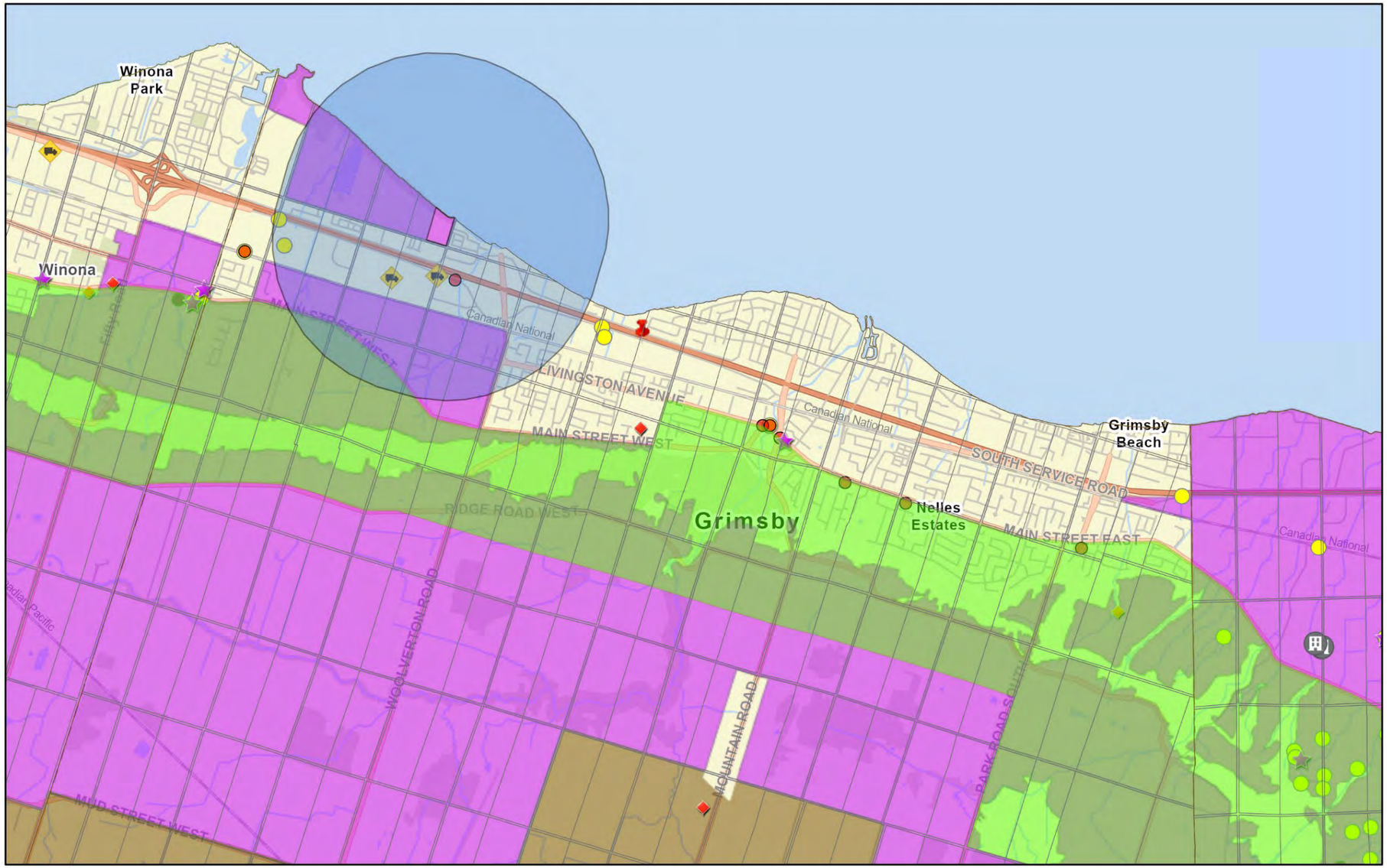
A copy of the online image has been provided in Figure 16 – Agricultural Systems Portal Mapping. This figure includes a large area (more of a Township scale coverage) around the Study Area and the Secondary Study Area, for the purposes of identifying agricultural services and networks in the local community.

It should be noted that the legend in Figure 16 is not complete and is missing numerous labels.

Figure 16 also clearly illustrates that the Study Area is an isolated agricultural area (Specialty Crop), that is surrounded by urban lands (settlement areas).

With respect to the Study Area lands, there were no agricultural network facilities. Therefore, there is no net loss of agricultural network facilities as a result of the ROPA and LOPA applications or the proposed change in redesignation of the Study Area from Specialty Crop to Rural.

Figure 16 – Agricultural Systems Portal Mapping 2022



2022-02-13, 2:13:46 p.m.

1:72,224

0 0.45 0.9 1.8 mi

0 0.5 1 2 km

Agricultural Land Base
- Prime Agricultural Area
- Candidate Area
- Specialty Crop Area

Secondary Study Area - Buffer_of_new_study_area
Single and Lower Tier Municipalities (LIO)
Upper Tier Municipalities and District (LIO)

Geographic Township Improved (LIO)
Lot Fabric Improved (LIO)
Niagara Escarpment Plan Boundary (LIO)

City of Hamilton, Province of Ontario, Niagara Region, Esri Canada, Esri, OMAFRAGIS

4.8 AGRICULTURAL CENSUS DATA

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

It was noted in the Census data that there were some differences in total numbers when comparing the 'Ag Profile Niagara Regional Mun' sheet with the 'Ag Census over time' sheet in the Niagara Census data downloaded from OMAFRA. The differences in numbers are not great, but they do exist. This would be considered as a limitation of the data set.

4.8.1 REGIONAL MUNICIPALITY OF NIAGARA

Table 7 provides Census 2016 data for agricultural land use in the Regional Municipality of Niagara and provides a comparison to the Provincial Census 2011 and 2006 agricultural data. As indicated in the census data, the Regional Municipality of Niagara comprises approximately 1.77 percent of the total area of farms in Ontario (Census 2016).

Table 7 Regional Municipality of Niagara Census 2016 Data – Land Use

Item	Region of Niagara	Province	Percent of Province (2016)	Percent from 2011	Percent From 2006
Land Use, 2016 Census (acres)					
Land in crops	181,507	9,021,298	2.01	-0.32	0.73
Summerfallow land	1,134	15,885	7.14	-38.17	-59.02
Tame or seeded pasture	2,606	514,168	0.51	-29.47	-43.46
Natural land for pasture	3,639	783,566	0.46	8.76	-48.07
Christmas trees, woodland & wetland	15,253	1,542,637	0.99	-6.65	-16.76
All other land	14,112	470,909	3.00	-9.63	-25.01
Total area of farms	218,251	12,348,463	1.77	-2.09	-5.82

Table 7 illustrates that there has been a noticeable decrease in most agricultural land uses (with the exception of Natural land for pasture in 2011) since 2006.

Table 8 provides a more detailed inventory of agricultural lands and it is evident from this data that the Region of Niagara 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 Regional Municipality of Niagara. A further review indicates that the Regional Municipality of Niagara is a significant producer (in 2016) of sour cherries, peaches, and grapes, accounting for over 32.1 percent, 89.4 percent, and 84.0 percent of the provincial acreage in production.

Table 8 Region of Niagara Census 2016 Data - Crops

Item	Region of Niagara	Province	Percent of Province (2016)	Percent from 2011	Percent from 2006
Major Field Crops, 2016 Census (acres)					
Winter wheat	23,801	1,080,378	2.20	56.49	36.23
Oats for grain	640	82,206	0.78	-18.99	-75.78
Barley for grain	209	103,717	0.20	409.76	-71.01
Mixed grains	0	92,837	0.00	-100.00	-
Corn for grain	23,083	2,162,004	1.07	-11.14	12.25
Corn for silage	2,040	295,660	0.69	14.03	-31.34
Hay	22,198	1,721,214	1.29	-20.76	
Soybeans	78,152	2,783,443	2.81	1.58	26.70
Potatoes	84	34,685	0.24	68.00	-38.69
Major Fruit Crops, 2016 Census (acres)					
Total fruit crops	24,892	51,192	48.62	-3.90	-15.10
Apples	763	15,893	4.80	19.03	-7.06
Sour Cherries	681	2,121	32.11	-21.45	-33.82
Peaches	4,681	5,232	89.47	-18.15	-27.61
Grapes	15,730	18,718	84.04	1.58	-6.49
Strawberries	158	2,915	5.42	15.33	-3.07
Raspberries	29	680	4.26	-53.23	-66.67
Major Vegetable Crops, 2016 Census (acres)					
Total vegetables	x	135,420	-	-	-
Sweet corn	171	22,910	0.75	-42.81	-32.41
Tomatoes	81	15,744	0.51	-30.17	-55.74
Green peas	25	16,268	0.15	-7.41	-16.67
Green or wax beans	x	9,732	-	-	-

Table 8 also illustrates the change in production (percent) from 2011 and 2006. The Census data indicates a significant reduction in grain production (oats and mixed grain), and a reduction in hay, while there has been an increase in the production of barley for grain, winter wheat, corn for silage and potatoes in 2011. There was a decrease in crop production for oats for grain, barley for grain, corn grain, potatoes, total fruit crops, apples, sour cherries, peaches, grapes, strawberries and raspberries since 2006.

With respect to fruit crops, there has been a decrease in sour cherries, peaches and raspberries, while there was an increase in the acreage used for apples, grapes and strawberry production. There has been a net decrease in major vegetable crop production since 2011 and 2006.

Table 9 illustrates the Census 2016 data for livestock. As shown in Table 9, the Region of Niagara provides a small portion of the total cattle and calves and dairy cows for the Province. When compared to the Census 2011 data, there have been decreases in most livestock inventories, with the exception of steers and total pigs where there have been increases.

It was also noted that the Region of Niagara is a significant producer of total hens and chickens, and total turkeys, with totals of approximately 8.5 percent and 5.0 percent of the province totals respectively. There has been a net decrease in total hens and chicken production since 2011.

Table 9 Region of Niagara Census 2016 Data - Livestock

Item	Region of Niagara	Province	Percent of Province (2016)	Percent Change from 2011	Percent Change from 2006
Livestock Inventories, 2016 Census (number)					
Total cattle and calves	9,682	1,623,710	0.60	-16.37	-29.36
Steers	528	305,514	0.17	26.62	5.60
Beef cows	1,242	236,253	0.53	-34.04	-44.95
Dairy cows	2,787	311,960	0.89	-1.48	-21.14
Total pigs	46,741	3,534,104	1.32	10.81	7.10
Total sheep and lambs	4,457	321,495	1.39	-10.47	-7.20
Poultry Inventories, 2016 Census (number)					
Total hens and chickens	4,322,051	50,759,994	8.51	-3.02	-4.09
Total turkeys	189,986	3,772,146	5.04	-20.13	7.89

4.8.2 TOWN OF GRIMSBY

A review of Census 2016 data for the Town of Grimsby reveals that the total area in farms is 4,516 acres (Census Farms). The majority of the farmed land is in crops with a total of 3,176 acres. The remaining lands are listed as tame or seed pasture, natural land for pasture, and Christmas trees, woodlands and wetlands.

Table 10 provides Census 2016 data for agricultural land use in the Town of Grimsby and provides a comparison to the Provincial Census 2011 agricultural data. As indicated in the census data, the Town of Grimsby comprise approximately 0.04 percent of the total area of farms in Ontario (Census 2016), while seeing a decrease of 24.4 percent since the 2011 census.

Table 10 Town of Grimsby Census Data (2016)

Item	Town of Grimsby	Province	Percent of Province (2016)	Percent Change from 2011	Percent Change from 2006
Land Use, 2016 Census (acres)					
Land in crops	3,176	9,021,298	0.04	-31.02	-45.70
Summerfallow land	46	15,885	0.29	-9.80	-
Tame or seeded pasture	66	514,168	0.01	-50.75	-
Natural land for pasture	137	783,566	0.02	41.24	-70.41
Christmas trees, woodland & wetland	471	1,542,637	0.03	8.78	-53.13
All other land	620	470,909	0.13	-5.49	-38.12
Total area of farms	4,516	12,348,463	0.04	-24.42	-46.14

Table 11 provides a breakdown of the major field crops in the Town of Grimsby and provides a comparison of the Towns contribution to the Provincial totals.

The Census 2016 data illustrates that winter wheat, hay and soybeans are the major field crops grown in Town of Grimsby. In comparison to the Census 2011 data there has been a decrease in hay production. There have been increases in the production of soybeans and winter wheat. The Town of Grimsby contributes a limited amount to the provincial totals for major field crops.

A review of the Town's production of major fruit crops indicated that the Town contributes a limited amount of production in major fruit crops to the provincial totals. The major fruit crops are grapes and apples, with an overall net decrease in major fruit crop production since 2011 and 2006.

Table 11 Town of Grimsby Census 2016 - Crops

Item	Town of Grimsby	Province	Percent of Province (2016)	Percent Change from 2011	Percent Change from 2006
Major Field Crops, 2016 Census (acres)					
Winter wheat	379	1,080,378	0.04	35.36	-27.95
Oats for grain	0	82,206	0.00	-	-
Barley for grain	0	103,717	0.00	-	-
Mixed grains	0	92,837	0.00	-	-
Corn for grain	0	2,162,004	0.00	-	-
Corn for silage	0	295,660	0.00	-	-
Hay	409	1,721,214	0.02	-69.29	
Soybeans	1,395	2,783,443	0.05	16.54	6.41
Potatoes	0	34,685	0.00	-	-
Major Fruit Crops, 2016 Census (acres)					
Total fruit crops	577	51,192	1.13	-36.10	-58.19
Apples	92	15,893	0.58	-32.85	-47.13
Sour Cherries	x	2,121	-	-	-
Peaches	6	5,232	0.11	-78.57	-76.92
Grapes	378	18,718	2.02	-35.71	-54.89
Strawberries	x	2,915	-	-	-
Raspberries	x	680	-	-	-
Major Vegetable Crops, 2016 Census (acres)					
Total vegetables	20	135,420	0.01	-31.03	-
Sweet corn	1	22,910	-	-	-
Tomatoes	1	15,744	0.01	-87.50	-50.00
Green peas	x	16,268	-	-	-
Green or wax beans	1	9,732	0.01	-	-

Table 11 also provides census data for major vegetable crops. Again, the Town of Grimsby provides a limited amount of production to the provincial totals and has seen decreases in the production of total vegetables since 2011 and 2006.

Table 12 provides the Census 2016 data for livestock for the Town of Grimsby. As indicated below, the Town of Grimsby accounts for limited input to the provincial livestock or poultry inventories.

Table 12 Town of Grimsby Census 2016 - Livestock

Item	Town of Grimsby	Province	Percent of Province (2016)	Percent Change from 2011	Percent Change from 2006
Livestock Inventories, 2016 Census (number)					
Total cattle and calves	183	1,623,710	0.01	-	-17.57
Steers	23	305,514	0.01	-	-
Beef cows	x	236,253	-	-	-
Dairy cows	x	311,960	-	-	-
Total pigs	x	3,534,104	-	-	-
Total sheep and lambs	149	321,495	0.05	-53.14	-47.35
Poultry Inventories, 2016 Census (number)					
Total hens and chickens	236,919	50,759,994	0.47	1.97	-12.67
Total turkeys	x	3,772,146	-	-	-

Table 13 provides a side-by-side comparison of the Town of Grimsby and the Region of Niagara Census 2016 data for crops. Table 13 also provides a calculation of the percent occurrence of the Town of Grimsby agricultural census data (2011, 2006) as a comparison to the Region of Niagara agricultural census data (2016).

As illustrated in Table 13, the Corporation of the Town of Grimsby provides a limited contribution to the major field crop in Region of Niagara, as evidenced by values of less than 2 percent of the Region totals. The Town of Grimsby contribution to the major fruit crops production in Region of Niagara illustrates a more significant input to apples with 12.1 percent of the Regional total (2016 data). The Town of Grimsby is not a major contributor to the Regional major vegetable crop totals and has seen a general decline in the contributions since 2006.

Similar comments were noted in the *AgPlan Limited – Specialty Crop Greenbelt Study Report for the Town of Grimsby (October 28, 2016)* where that report referred to lands that included this AIA's Study Area by stating that:

- *specialty crop production is not predominant,*
- *soil capability and soil potential in Grimsby is not the best found in Niagara and in some areas is diminished due to non-agricultural development.*

Table 13 Comparison of Township and Region Census Data 2016 - Crops

Item	Town of Grimsby	Region of Niagara	Percent of Region of Niagara 2016	Percent Region of Niagara 2011	Percent of Region Niagara 2006
Major Field Crops, 2016 Census (acres)					
Winter wheat	379	23,801	1.5		
Oats for grain	0	640	-	-	-
Barley for grain	0	209	-	-	-
Mixed grains	0	0	-	-	-
Corn for grain	0	23,083	-	-	-
Corn for silage	0	2,040	-	-	-
Hay	409	22,198	1.8		
Soybeans	1,395	78,152	1.8	1.6	2.1
Potatoes	0	84	-	-	-

Item	Town of Grimsby	Region of Niagara	Percent of Region of Niagara 2016	Percent Region of Niagara 2011	Percent of Region Niagara 2006
Major Fruit Crops, 2016 Census (acres)					
Total fruit crops	577	24,892	2.1	3.5	4.7
Apples	92	763	12.1	21.4	21.2
Sour Cherries	x	681	-	4.7	-
Peaches		6	-	0.5	0.4
Grapes	378	15,730	2.4	3.8	5.0
Strawberries	x	158	-	-	-
Raspberries	x	29	-	3.2	-
Major Vegetable Crops, 2016 Census (acres)					
Total vegetables	20	x	-	1.8	-
Sweet corn	1	171	0.6	-	-
Tomatoes	1	81	0.2	6.9	1.1
Green peas	x	25	-	-	-
Green or wax beans	1	x	-	-	-

Table 14 provides a comparison of the Town of Grimsby and the Region of Niagara Census (2016) data for livestock inventories. As illustrated in Table 14, the Town of Grimsby contributes to the Regional Municipality of Niagara total steers, sheep and lambs, total hens and chicken inventories at 4.4, 3.3, and 5.5 percent respectively

A review to the 2011 and 2006 data indicates a consistency in percent for total cattle and calves, total sheep and lambs, and total hens and chickens.

Table 14 Comparison of Township and Region Census Data 2016 – Livestock

	Town of Grimsby	Region of Niagara	Percent of Region of Niagara 2016	Percent of Region of Niagara Change 2011	Percent of Region of Niagara Change 2006
Livestock Inventories, 2016 Census (number)					
Total cattle and calves	183	9,682	1.9	-	1.6
Steers	23	528	4.4	-	-
Beef cows	x	1,242	-	-	-
Dairy cows	x	2,787	-	-	-
Total pigs	x	46,741	-	-	-
Total sheep and lambs	149	4,457	3.3	6.4	5.9
Total hens and chickens	236,919	4,322,051	5.5	5.2	6.0
Total turkeys	x	189,986	-	0.0	-

In general terms, the Regional Municipality of Niagara is a large contributor to the Provincial agricultural production of fruit crops. The Town of Grimsby is a small contributor to the Province of Ontario agricultural production but is a large contributor to the Regional Municipality of Niagara apple crop production.

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 *Draft Agricultural Impact Assessment (AIA) Guidance Document,* (March 2018*),* 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 any and all other discipline reports (if any) in an effort to provide an adequate evaluation of the above-mentioned potential impacts.

The agricultural character of both the Study Area and the Secondary Study Area has been examined and documented in this AIA report. It has been determined that the Study Area

comprises lands that although are designated as Specialty Crop lands, are not used for agricultural production. There is no agricultural land use on the Study Area.

The Secondary Study Area comprises portions of active agricultural land uses including common field crop and cash crop operations. A large portion of the Secondary Study Area is comprised of Lake Ontario and Urban Land uses. The agricultural areas in the Secondary Study Area are designated as Specialty Crop lands. The active agriculture in the Secondary Study Area is located south of the urban developments, the QEW, the rail line and hydro corridor, approximately 600 m away from the Study Area. It should be noted that the portions of the Secondary Study Area that are located immediately west of the Study Area (north of Winston Road) comprise conservation authority lands, Department of National Defense training area, restored wetland areas, and large open fields containing eight guy wired antennae. None of the lands west of the Study Area, north of Winston Road, and east of Kelson Avenue North are used for agricultural production of any kind.

The Study Area is comprised of one single parcel. The Secondary Study Area comprised a mix of land fragmentation.

In general, the fragmentation in the Secondary Study Area included numerous small parcels associated with the urban areas, and rural residential units along Main Street West, Oakes Road North, and Cline Mountain Road South. The fragmentation within the Secondary Study Area north of Winston Road included a few smaller parcels located along Winston Road, plus larger areas associated with the Winona Rifle Range, the Fifty Point Conservation Area, and the lands associated with the antenna array. The Biggar lagoons area was a medium sized parcel. The fragmentation of the Secondary Study Area south of the rail line included a few larger parcels, with numerous smaller parcels. The smaller parcels were predominantly residential.

These types of fragmentation are a clear indication of an area in transition from an agricultural land base to a more rural/urban environment. The lack of, or low numbers of large agricultural properties plus the large number of small parcels and commercial/industrial/rural residential land uses within the Specialty Crop Area 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 redesignation of the Study Area, the following provides some context as to the extent of the potential impacts.

- Interim or permanent loss of agricultural lands - the proposed change in land use designation is from Specialty Crop to Rural. The proposed change will result in the loss of an incorrectly designated Specialty Crop land area. The remaining portions of the Specialty Crop Area north of Winston Road include lands that comprised uses that are incompatible with agriculture in their existing configurations (Winona Rifle Range, Fifty Point Conservation Area, Biggar Lagoons, antenna array).
- Fragmentation, severing or land locking of agricultural lands and operations -

There will be no fragmentation, severing or landlocking of agricultural lands as a result of the proposed change in land use designation from Specialty Crop to Rural.

- The loss of existing and future farming opportunities - there will be no loss of existing or future farming opportunities as a result of the proposed change in land use designation, as there is minimal opportunity for agricultural opportunities on the Study Area as is exists.
- The loss of infrastructure, services or assets - there will be no loss of infrastructure, services or assets.
- The loss of investments in structures and land improvements – there will be no loss of investments in structures and land improvements as a result of the proposed change in land use designation from Specialty Crop to Rural.
- The loss of the use of a groundwater well - there will be no loss of any existing ground water wells as a result of the proposed change of land use designation. The proposed change in land use designation from Specialty Crop to Rural is not associated with a proposed development.
- Disruption or loss of functional drainage systems - there will be no net loss of artificial tile drainage on the Study Area as a result of the proposed change in land use designation from Specialty Crop to Rural.
- Disruption or loss of irrigation systems - there will be no loss of investment in irrigation systems as a result of the proposed change in land use designation from Specialty Crop to Rural.
- Changes to soil drainage - there will be no net change in soil drainage as a result of the proposed change in land use designation from Specialty Crop to Rural.
- Changes to surface drainage - there will be no net change in surface drainage as a result of the proposed change in land use designation from Specialty Crop to Rural.
- Changes to landforms - there will be no changes to landforms (with respect to agriculture) as a result of the proposed change in land use designation from Specialty Crop to Rural.
- Changes to hydrogeological conditions - there will be no change to hydrogeological conditions as a result of the proposed change in land use designation from Specialty Crop to Rural.
- Disruption to surrounding farm operations - there will be no disruption for surrounding/adjacent farms as a result of the proposed change in land use designation from Specialty Crop to Rural.
- Effects of noise, vibration, dust - there will be no change in effects of noise, vibration, or dust as a result of the proposed change in land use designation from Specialty Crop to Rural.
- Potential compatibility concerns - there will be no potential for compatibility concerns as a result of the proposed change in land use designation from Specialty Crop to Rural.
- Traffic concerns - there will be no change in traffic concerns as a result of the proposed change in land use designation from Specialty Crop to Rural
- Changes to adjacent cropping due to light pollution - there will be no potential for

changes in cropping due to light pollution as a result of the proposed change in land use designation from Specialty Crop to Rural.

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 around the Study Area will not change as a result of the proposed change in land use designation, therefore, there should be no additional traffic issues.

The proposed change in land use designation from Specialty Crop to Rural will not change the potential for trespassing and/or vandalism. There will be no increase in the potential for trespassing and/or vandalism, as there is no change to the existing land use.

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 Agricultural System Portal (OMAFRA, December 2020) 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. John Deere equipment dealers were noted in the urban area between the QEW and the rail line to the south. Andrew Peller Limited has two locations noted in the Agricultural Systems Portal mapping, again, located in the urban area between the QEW and the rail line to the south.

There were no other features identified within the agricultural areas of the Study Area or 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 Specialty Crop or prime agricultural area may 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 change in land use designation from Specialty Crop to Rural, will maintain the Study Area in the existing state. The lands are not used for agriculture, and there is limited opportunity to return the lands to an agricultural use due to the presence of the banquet hall and associated parking.

There are no agricultural land uses to avoid.

Further, when addressing impacts on the adjacent agricultural area, the Study Area is bounded on the north by Lake Ontario, on the south and east by fragmented urban lands, and on the west by non-agricultural open field lands.

5.4.2 MINIMIZING IMPACTS

When avoidance is not possible, the next priority would be to minimize impacts to the extent feasible.

As stated previously within this AIA, the Study Area, although designated as Specialty Crop lands, is not used for agricultural purposes, nor are the lands able to be used for agriculture in their present state.

The proposed change of land use designation from Specialty Crop to Rural will have no impact to existing agricultural land uses. Therefore, there are no impacts to minimize.

No additional mitigation is required.

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. The proposed change in land use designation from Specialty Crop to Rural will have no impact on agriculture as the lands are not compatible with agriculture in their present state.

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 a description of the existing agricultural conditions and an Agricultural Impact Assessment (AIA) for the lands identified as:

502 Winston Road/321 Hunter Road
Part Lot 19, Broken Front Concession
Town of Grimsby
Regional Municipality of Niagara

These lands are roughly bounded by Lake Ontario to the north, Winston Road to the south, Hunter Road to the east, and open field areas containing 8 large communication antennae. These lands comprise approximately 5.7 ha.

In the greater County wide or Regional context, the Study Area is located wholly within the Town of Grimsby, in the Regional Municipality of Niagara. The Study Area is surrounded by urban and developed lands on the west, south and east. A major highway corridor (Queen Elizabeth Way (QEW)) is located approximately 200 m to the south, with a major rail corridor and electric transmission line located approximately 300 m farther south of the QEW. The nearest agricultural lands are located approximately 600 m south of the Study Area.

The Niagara Escarpment is located approximately 2.0 km to the south of the Study Area.

This AIA was prepared as part of the submission in support of planning applications for a Region of Niagara Official Plan Amendment and a Town of Grimsby Official Plan Amendment and is a required component of a complete application in each case.

The purpose of the planning applications is to seek approval for a Regional Official Plan Amendment and a Town Official Plan Amendment to re-designate the Study Area lands on the easterly boundary from the Unique Agricultural Area to the Rural designation in the Region of Niagara Official Plan, and from the Specialty Crop Area – Tender Fruit and Grape Lands to the Rural Area designation in the Town of Grimsby Official Plan.

The results of this Agricultural Impact Assessment are presented below:

- **Geographical Limits**

  The Study Area and the Secondary Study Area are located within the Iroquois Plain physiographic unit.

The Iroquois Plain physiographic unit is described as the lowland area bordering Lake Ontario. This physiographic unit was part of a glacial lake when the last glaciers were receding and includes (around the periphery) old shoreline features (cliffs, bars, beaches and boulder pavements) which are in strong contrast to the glacial lake bottom which was smoothed by waves and covered in lacustrine deposits. This lake bottom area is the Iroquois Plain. The Plain extends around the western end of Lake Ontario from the Niagara River to the Trent River.

The Study Area and the Secondary Study Area are a relatively simple mix of topography. The Study Area comprises large open areas that are gently sloping toward Lake Ontario.

The topography in the Secondary Study Area is similar in that the agricultural and open land areas generally comprise gently sloping lands that drop to Lake Ontario. Much of the urban lands have been landformed to a degree and have controlled drainage consistent with an urban environment. A portion of the Secondary Study Area, north of Winston Road comprises a marshy area that includes the Biggar Lagoons, plus additional marsh lands between Biggar Lagoons and Lake Ontario.

The highest point of topography within the Secondary Study Area is generally the lands to the south, with the overall slope down to Lake Ontario.

The Study Area and Secondary Study Area are located in the greater than 3300 Crop Heat Units (CHU-M1) available for corn production area 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.

The Study Area comprises approximately 100.0 percent Not Rated lands including built up areas and unclassified/undocumented soils within the Provincial soils data set.

The Secondary Study Area comprises approximately 19.0 percent Canada Land Inventory (CLI) capability of Class 1 – 3, with approximately 11.4 percent as Class 2 lands, and 7.6 percent as Class 3 lands. The remaining 81.0 percent of the Secondary Study Area is defined as Not Rated. The Not Rated lands include urban areas, built up areas, roads, rail lines and portions of Lake Ontario.

The assessment of CLI has confirmed the lack of soils data on the Study Area and has illustrated a low percent occurrence of agricultural soils within Secondary Study Area. The limited quantity of agricultural soils is a reflection of the Study Area being in close proximity to urban areas, built up areas, and Lake Ontario. Further, that the lack of soils data on the Study Area illustrates that the Provincial soils data base reflects the limitations of the soils in this area.

- **Agricultural Policy**

  Both the Study Area and the Secondary Study Area are located in the *Greenbelt Plan (2017) Area* and the *Growth Plan for the Greater Golden Horseshoe (GGH 2019) Area*.

  The Study Area is located in a Specialty Crop Area. Portions of the Secondary Study Area are located within a Provincially designated Specialty Crop area.

  The Study Area lands and the portions of the Secondary Study Area that are within the Greenbelt Plan Area are considered as Protected Countryside on Schedule 1, and as Niagara Peninsula Tender Fruit and Grape Are on Schedule 2.. Further, portions of the Secondary Study Area are located within the Niagara Escarpment Plan area.

  The *Regional Official Plan, Niagara Region (2014)* was reviewed for agricultural policy. A review of Schedule B – Agricultural Land Base indicates that the Study Area and portions of the Secondary Study Area are located within the Unique Agricultural Area. Portions of the Secondary Study Area are also located within the Urban Area with smaller portions of the Secondary Study Area also comprising areas of the Niagara Escarpment Plan (2017) Area.

  A review of the *Town of Grimsby Official Plan (Office Consolidation August 2018)* Schedule B – Land Use revealed that the Study Area comprised Specialty Crop Areas (Tender Fruit and Grape Lands).

  A review of the *Corporation of the Town of Grimsby By-law No. 14-45 (Consolidated August 2019)* illustrated that the Study Area is a mix of zoning that includes SC – Specialty Crop, and O1 – Private Open Space.

  The review of the zoning schedules of the *Corporation of the Town of Grimsby By-law No. 14-45 (Consolidated August 2019)* illustrated that the Secondary Study Area is a mix of zoning that includes SC – Specialty Crop, O1 – Private Open Space, ND – Neighbourhood Developed, U – Utility, various RD – Residential Detached, GE – General Employment, O2 – Public Open Space, RU – Rural, CC – Convenience Commercial, I – Institutional, CS – Service Commercial, RM – Residential Multiple, TRM – Transitional Residential Multiple, PE – Prestige Employment, and MS – Main Street.

- **Agricultural Land Use**

  There are no agricultural uses of the Study Area lands.

  There are no buildings or structures related to agriculture on the Study Area lands. There is a building associated with the St. Vladimir's banquet hall and private club (321 Hunter Road).

  The Study Area is part of an isolated pocket of Specialty Crop land that is disconnected from adjacent Prime Agricultural Areas (Specialty Crop) by a large designated urban land

use, which includes a multilane highway and major rail corridor.

The Secondary Study Area consists of a variety of land uses including, but not limited to built up/disturbed areas (urban lands, built lands, rural residential, commercial, industrial, institutional, road corridors), common field crops, forage/pasture lands, grains, open field, pond, specialty crop and woodland areas.

The Secondary Study Area comprises land use of approximately 75.5 percent as built up/disturbed lands and Lake Ontario, 3.7 percent as common field crop, 1.7 percent as Department of National Defense lands, 0.5 percent as forage/pasture, 0.6 percent as grains, 5.1 percent as open field, 0.5 as recreational lands, 1.3 percent as specialty crop land use (includes old orchard, orchard, vineyard and tree farm), 1.0 percent as pond/lagoon, 6.5 percent as scrubland, and 3.6 percent as woodlands.

- **Agricultural Investment**

There are no buildings or structures related to agriculture on the Study Area lands.

A total of 9 agricultural facilities or buildings related to agriculture were located and identified within the Secondary Study Area. These facilities include cash crop, potential livestock, unused and machine shed buildings.

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

There is no random tile drainage registered within the Secondary Study Area. Systematic tile drainage is noted in small areas on various lands to the south of Main Street West, and one parcel north of Main Street West just to the west of Hunter Road.

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

There is no investment in landforming for the purposes of agriculture, on either the Study Area or the Secondary Study Area.

A review of the online Agricultural System Portal (OMAFRA, December 2020) indicated that there were a few agricultural network type facilities/services including alcohol beverage manufacturing (wineries, cideries), and farm equipment manufacturing, all of which are located in the urban area between the QEW and the rail line to the south. The review at a Township scale identified numerous farmer's markets, wineries and distilleries were located farther to the east, closer to the Beamsville area. There were no additional nurseries, specialty farms (crop or livestock), frozen food manufacturing, refrigerated warehousing/storage, livestock assets or abattoirs in the Study Area or Secondary Study Area.

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

The closest transportation network (major roadway) is the QEW which is located within the urban area, bisecting the area in a roughly east-west direction.

- **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 Study Area is a single parcel bounded by Lake Ontario to the north, and numerous small parcels associated with urban lands uses to the east and south.

  The fragmentation in the Secondary Study Area north of Winston Road comprised mostly larger parcels associated with the Winona Rifle Range (DND), the Fifty Point Conservation Authority lands, the Biggar Lagoons and the lands used for the eight (8) communications antennae. A few smaller parcels were noted along Winston Road. The smaller parcels comprise residential units, and buildings related to the sewage pumping station.

  The fragmentation south of the QEW (which includes portions of designated urban lands) includes a mix of parcel sizes and shapes. Some of the larger parcels are located between the QEW and the rail line, on lands that are designated as urban. Within the agricultural areas, there are many smaller parcels associated with rural residential and subdivision type developments. The agricultural parcels are also generally small parcels. While this is often considered a detriment or limitation to agriculture in other areas of Ontario, where larger farms producing common field crop are the norm, in the Specialty Crop areas, farms are often comprised of smaller parcels.

  It was noted that numerous smaller parcels were located in the Specialty Crop Area (area south of the rail line dashed line) and included rural residential and built-up areas that are not designated as urban or settlement area. These built-up areas include subdivision type developments and linear development along Main Street West, Oakes Road North, Casablanca Road and Hunter Road.

The foregoing represents a comprehensive Agricultural Impact Assessment with the purpose of evaluating the existing agricultural character of the Study Area and Secondary Study Area.

This AIA was prepared as part of the submission in support of planning applications for a Region of Niagara Official Plan Amendment (Regional Official Plan Amendment – ROPA) and a Town of Grimsby Official Plan Amendment (Local Official Plan Amendment – LOPA) and is a required component of a complete application in each case.

The purpose of the planning applications is to seek approval for a Regional Official Plan Amendment and a Town Official Plan Amendment to re-designate the Study Area lands on the easterly boundary from the Unique Agricultural Area to the Rural designation in the Region of Niagara Official Plan, and from the Specialty Crop Area – Tender Fruit and Grape Lands to the Rural Area designation in the Town of Grimsby Official Plan.

Further, this AIA also provided comment with regard to the potential change in land use designation of the Study Area from Specialty Crop to Rural.

Given the geographical location, condition of the lands and present-day land use onsite and within the Secondary Study Area, it is the conclusion of this study that the proposed change in land use designation of the Study Area from Specialty Crop to Rural would have no impact on the activities within the Study Area (as there are no agricultural activities in the Study Area), or the surrounding agricultural uses in the Secondary Study Area.

This AIA report builds on the *AgPlan Limited – Specialty Crop Greenbelt Study Report for the Town of Grimsby (October 28, 2016),* and comes to the same conclusion that specialty crop is not predominant on the Study Area lands, and that the Study Area lands can reasonably be removed from Specialty Crop designation.

It is the opinion of this study that the Study Area lands are an existing and established non-agricultural use and could reasonably be changed from Specialty Crop to a Rural designation.

Sincerely
DBH Soil Services Inc.

Dave Hodgson, P. Ag
President

7 REFERENCES

- 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 6050 47850
  10 17 6100 47850
  10 17 6050 47800
  10 17 6100 47800
  10 17 6150 47800
  10 17 6050 47750
  10 17 6100 47750
  10 17 6150 47750
- 1:50000 scale NTS Map No 31 G/6 and 31 G/7. 1984. Ministry of Energy Mines and Resources, Canada,
- 1:50000 scale NTS Map No 31 G/6 and 31 G/7. Canada Land Inventory (CLI) Capability Mapping (date unknown),
- AgPlan Limited – Specialty Crop Greenbelt Study Report for the Town of Grimsby (October 28, 2016),
- Agricultural Impact Assessment (AIA) Guidelines. Regional Official Plan Guidelines. Halton Region. June 18, 2014,
- Agricultural Information Atlas online resource, (OMAFRA, December 2020),
- Agricultural Resource Inventory, Ontario Ministry of Agriculture and Food, 1988,
- Agricultural System Portal online resource, (OMAFRA, December 2020),
- Agronomy Guide for Field Crops, OMAFRA. (Publication 811, 2017),
- Birdseye Online Imagery, (December 2020),
- Canada Land Inventory, (CLI),
- Census of Agriculture data, (Census 2016, 2011 and 2006),
- Classifying Prime and Marginal Agricultural Soils and Landscapes: Guidelines for Application of the Canada Land Inventory in Ontario. (OMAFRA, February 2021),
- Corporation of the Town of Grimsby By-law No. 14-45, (Town of Grimsby Zoning By-Law, Consolidated August 2019),
- Draft Agricultural Impact Assessment (AIA) Guidance Document, (March 2018),
- Google Earth Pro Online Imagery, (December 2020),
- Greenbelt Plan, (2017),
- Growth Plan for the Greater Golden Horseshoe, (GGH 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. OMAFRA (Publication 851),
- 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),
- Land Information Ontario Geowarehouse, (LIO, 2020),

- Oak Ridges Moraine Conservation Plan (2017),
- Ontario Ministry of Agriculture and Food - Land Use Systems Mapping Online (December 2020),
- Ontario Ministry of Agriculture and Food - Artificial Drainage Mapping Online (December 2020),
- Provincial Policy Statement (PPS, 2020),
- Region of Niagara Assessment Roll Data, (2020),
- Regional Official Plan, Niagara Region, (2014),
- Specialty Crop Greenbelt Study Report for the Town of Grimsby, October 28, 2016. AgPlan Limited,
- Statistics Canada Census of Agriculture, (2016),
- 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 Soils of the Regional Municipality of Niagara (Volumes 1 and 2), Report No. 60 of the Ontario Institute of Pedology (Kingston, M.S. and E.W. Presant, 1989),
- Town of Grimsby Assessment Data, (2020),
- Town of Grimsby Official Plan May 12, 2012 (Office Consolidation 2018),
- Town of Grimsby website,
- Windshield and field surveys by DBH Soil Services staff November 13, 2020.

APPENDIX A

POTENTIAL AGRICULTURAL FACILITIES PHOTOGRAPHS

Agricultural Facility #5 and #6

Agricultural Facility #7

Agricultural Facility #8

Agricultural Facility #9

Agricultural Facility #10

Agricultural Facility #11

Agricultural Facility #12 and #13

APPENDIX B

UNIQUE SOIL SYMBOLS LIST

SYMBOL1	CLI1	CLI1_1	CLI1_2	SYMBOL1	CLI1	CLI1_1	CLI1_2
1-ALU	5	I		BRT.R	3	T	
1-ALU.V	6	R		BRT.R	4	T	
2-ALU	3	I		BRT.R	5	T	
3-ALU	3	I		BRT.R	6	T	
4-ALU	3	I		BVY	2	D	E
BAY	2	F		BVY	2	D	T
BAY.R	2	F	T	BVY	2	D	
BAY.R	2	F		BVY	3	T	
BFO	2	D	E	BVY.C	2	D	E
BFO	2	D	T	BVY.C	2	D	T
BFO	2	D		BVY.C	3	T	
BFO	3	T		BVY.L	2	D	E
BFO	4	T		BVY.L	2	D	T
BFO	5	T		BVY.L	2	D	
BFO	6	T		BVY.L	3	T	
BFO.L	2	D	T	BVY.LR	2	D	T
BFO.R	2	D	T	BVY.LR	2	D	
BFO.R	3	T		BVY.R	2	D	E
BFO.R	4	T		BVY.R	2	D	T
BFO.R	5	T		BVY.R	2	D	
BFO.R	6	T		CGU	2	D	E
BNG	2	M	E	CGU	2	D	T
BNG	2	M		CGU	2	D	
BNG	3	T		CGU	3	T	
BNG	4	T		CGU.C	2	D	E
BNG.R	2	M	E	CGU.C	2	D	
BNG.R	2	M		CGU.L	2	D	E
BOK.S	4	W		CGU.L	2	D	T
BOK.V	5	W		CGU.L	2	D	
BOO	2	M	T	CGU.L	3	T	
BOO.R	2	M	T	CGU.LR	2	D	E
BRR	1			CGU.LR	2	D	T
BRR	2	T		CGU.LR	2	D	
BRR	3	T		CGU.R	2	D	E
BRR.R	2	T		CGU.R	2	D	T
BRR.T	1			CGU.R	2	D	
BRR.T	2	T		CGU.R	3	T	
BRT	3	T		CGU.RW	1		
BRT	4	T		CGU.RW	2	D	E
BRT	5	T		CGU.RW	2	D	T
BRT.R	2	T		CGU.W	1		
BRT.R	2	E		CGU.W	2	D	E

SYMBOL1	CLI1	CLI1_1	CLI1_2	SYMBOL1	CLI1	CLI1_1	CLI1_2
CGU.W	2	D	T	GMY	2	M	
CGU.W	3	T		GMY	2	E	
CPX1	6	E		GMY	3	T	
CPX7	7	R		GMY	4	T	
CSH	2	D	E	GMY	5	T	
CSH	2	D	T	GMY	6	T	
CSH	3	T		GMY.B	3	T	
CSH	4	T		GMY.B	4	T	
CSH	5	T		GNY	2	W	
CSH	6	T		HIM	3	D	T
CSH.HR	3	D	T	HIM	3	D	
CSH.HR	3	D		HIM.C	3	D	
CSH.HR	4	T		HIM.L	3	D	T
CSH.W	2	D	E	HIM.L	3	D	
CSH.W	2	D	T	HOY	O		
CWO	2	W		JDD	3	W	
CWO.R	2	W		JDD.L	3	W	
ESC	7	R		JDD.LR	3	W	
FKW.S	3	R	T	JDD.R	3	W	
FKW.S	3	R		JDD.RW	3	W	
FKW.V	4	R		JDD.W	3	W	
FMB	2	W		LIC	3	W	D
FMB.B	2	W		LIC.C	3	W	D
FNT	2	F	M	LIC.L	3	W	D
FNT	2	S	T	LRR	O		
FNT	3	T		MAR	7	I	
FNT	4	T		MAT	3	W	
FNT	5	T		MAT.H	3	W	D
FOX	2	F	M	MAT.HR	3	W	D
FOX	2	S	T	MAT.LR	3	W	
FOX	3	T		MAT.R	3	W	
FOX	4	T		MOY	3	W	
FOX.R	2	F	M	MOY.S	3	W	
FOX.R	2	S	T	MPW	2	W	E
FOX.R	3	T		MPW	2	W	
FRM	6	R		MPW.R	2	W	
FRM.S	3	R	T	MPW.T	2	W	
FRM.S	3	R		MPW.TR	2	W	
FRM.S	5	T		NGR	3	D	T
FRM.V	4	R	T	NGR	3	D	
FRM.V	4	R		NGR.L	3	D	T
GMY	2	T		NGR.L	3	D	

SYMBOL1	CLI1	CLI1_1	CLI1_2	SYMBOL1	CLI1	CLI1_1	CLI1_2
NM	0			PEL.L	2	D	
OID	2	D	E	PEL.LR	2	D	E
OID	2	D	T	PEL.LR	2	D	T
OID	2	D		PEL.LR	2	D	
OID	3	T		PEL.R	2	D	E
OID	4	T		PEL.R	2	D	T
OID	5	T		PEL.R	2	D	
OID	6	T		PEL.R	3	T	
OID.L	2	D	E	PFD	3	F	
OID.L	3	T		PFD.D	3	F	T
OID.LR	4	T		PFD.D	4	T	
OID.R	2	D	E	PFD.D	5	T	
OID.R	2	D	T	PUH	O		
OID.R	2	D		QRY	O		
OID.R	3	T		RVE	2	F	M
OID.R	4	T		SHV	3	D	T
OID.R	5	T		SHV	3	D	
OID.R	6	T		SHV	4	T	
OID.RW	1			SHV	5	T	
OID.RW	2	D	E	SHV.L	3	D	T
OID.RW	2	D	T	SIH	2	W	
OID.RW	3	T		SRK	O		
OID.W	1			TFG	2	D	E
OID.W	2	D	E	TFG	2	D	
OID.W	2	D	T	TFG.L	2	D	T
OID.W	3	T		TFG.L	2	D	
OID.W	4	T		TFG.S	2	D	E
OID.W	5	T		TFG.S	2	D	T
OID.W	6	T		TFG.S	2	D	
OTI	3	D	T	TLD	3	W	
OTI	3	D		TLD.C	3	W	
OTI	4	T		TLD.L	3	W	
OTI	5	T		TLD.LR	3	W	
PEL	2	D	E	TLD.P	4	W	
PEL	2	D	T	TLD.R	3	W	
PEL	2	D		TUC	1		
PEL	3	T		TUC	2	T	
PEL.C	2	D		TUC.R	1		
PEL.H	3	D	T	TUC.R	2	T	
PEL.HR	3	D	T	TUC.R	3	T	
PEL.HR	3	D		TVK	1		
PEL.L	2	D	E	TVK	2	T	

SYMBOL1	CLI1	CLI1_1	CLI1_2	SYMBOL1	CLI1	CLI1_1	CLI1_2
TVK	2	E		VIT.R	2	T	
TVK	3	T		VLD	1		
TVK.R	1			VLD	2	T	
TVK.R	2	T		VLD	2	E	
TVK.R	2	E		VLD	3	T	
TVK.T	1			VLD.B	1		
TVK.T	2	E		VLD.B	2	T	
TVK.T	2	T		WAF	O		
TVK.TR	1			WAM	3	F	
TVK.TR	2	E		WLL	3	W	D
TVK.TR	2	T		WLL.L	3	W	D
TVK.TR	3	T		WLL.P	4	W	
VIT	1			WUS	2	W	
VIT	2	T		ZZ	W		
VIT.R	1						

APPENDIX C

DAVE HODGSON CURRICULUM VITAE

DBH Soil Services Inc
217 Highgate Court
Kitchener Ontario N2N 3N9

phone: (519) 578-9226
email: dhodgson@dbhsoilservices.ca

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

EDUCATION

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

AREAS OF PROFESSIONAL EXPERIENCE

2000 to Present

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

1992 to 2000

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

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

SELECT PROJECT EXPERIENCE

Environmental Assessment Studies

- Agricultural Component of the Bradford Bypass (Highway 400 to 404 link) 2021 – ongoing.
- Agricultural Component of the Green for Life (GFL) Environmental, Moose Creek, Eastern Ontario Waste Handling Facility (EOWHF) Expansion, 2020 – 2021.
- Agricultural Component of the Greater Toronto Area West (GTAW) Highway Corridor Assessment, 2019 – ongoing.
- Peer Review of the Walker Environmental Group (WEG) Inc. Southwestern Landfill Proposal, Ingersoll, 2013 – 2021.
- Agricultural Component for the High-Speed Rail Kitchener to London –Terms of Reference, 2018,
- Agricultural Component of the Mount Nemo Heritage District Conservation Study – City of Burlington, 2014 – 2015.
- Agricultural Component of the Greater Toronto Area West (GTAW) Highway Corridor Assessment – Phase 2, 2014 – 2016.
- Peer Review of the Agricultural Component of the Walker Group Landfill – Ingersoll, 2013 – 2015.
- Agricultural Component of the Highway 407 East Extension Design and Build Phase, 2012 – 2013.
- Agricultural Component of the Beechwood Road Environmental Centre (Landfill/Recycling) – Napanee,

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

Agricultural Impact Studies
- Bradford Bypass Highway 400- 404 Link, Agricultural Impact Assessment, 2021 – ongoing.
- Wilfrid Laurier Milton Campus, Agricultural Impact Assessment, 2021 – ongoing.
- Town of Lincoln Road Realignment, Agricultural Impact Assessment, 2021 – ongoing.
- Britannia Secondary Plan, Agricultural Impact Assessment, Milton, 2021 – ongoing.
- Petersburgh Sand Pit, Agricultural Impact Assessment, 2021 – ongoing.
- Milton, CRH Quarry Expansion, Agricultural Impact Assessment, 2020 – ongoing.
- Grimsby, Specialty Crop Area Redesignation, Agricultural Impact Assessment, 2020-ongoing.
- Halton Hills, Premier Gateway Phase 2 Employment Lands Secondary Plan, Agricultural Impact Assessment, 2020 - 2021.
- Milton Education Village Secondary Plan, Agricultural Impact Assessment, 2020 - 2021.
- Woodstock, Pattullo Avenue Realignment, Agricultural Impact Assessment, 2020 - 2021.
- Smithville, West Lincoln Master Community Plan, Agricultural Impact Assessment, AECOM, 2019 – On-going.
- Kirby Road Agricultural Impact Assessment, HDR, Vaughan, 2019 – 2021.
- Elfrida Lands, City of Hamilton, Agricultural Impact Assessment Update, WSP, 2019 – 2021.
- Dorsay Development – Durham Region High Level Agricultural Assessment, 2019.
- Stoney Creek Landfill AIA Update – GHD, 2019.
- Town of Wilmot, Agricultural Impact Assessment (AIA) Aggregate Pit Study (Hallman Pit), 2018, On-going.
- Courtice Area South East Secondary Plan (Clarington) Agricultural Impact Assessment (AIA), 2019,
- Town of Halton Hills, Minimum Distance Separation (MDS 1), 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 1), February 2017.
- Township of Erin, County of Wellington – Minimum Distance Separation 1(MDS1 Study), 2016.
- Halton Hills Employment Area Secondary Plan, Halton, 2015 - 2016.
- Peer Review of Agricultural Impact Assessment, Oro-Medonte Township, 2015.
- Greenwood Construction Aggregate Pit, Mono Township, 2014 - 2015.
- Innisfil Mapleview Developments, Town of Innisfil – Minimum Distance Separation (MDS 1), 2014.
- Loyalist Township – Minimum Distance Separation (MDS 1 & 2), 2014.
- Rivera Fine Homes, Caledon – Minimum Distance Separation (MDS 1), 2014.
- Town of Milton PanAm Velodrome – Minimum Distance Separation (MDS) 2012 – 2013.

Soil Surveys/Soil Evaluations
- Soil Sampling, City of Kitchener, 2021 – 2022.

- Soybean Cyst Nematode Soil Sampling, Enbridge, 2021.
- Soil Survey and Canada Land Inventory Evaluation, Max Becker Enterprises, City of Kitchener, 2021
- Soil Survey and Canada Land Inventory Evaluation, Max Beck Enterprises, City of Kitchener, 2021 – 2022.
- Soil Survey and Canada Land Inventory Evaluation, Burlington, Nelson Quarry, 2020-2021.
- City of Kitchener, City Wide Soil Studies, 2020-ongoing.
- Soil Survey, Fallowfield Drive, City of Kitchener Development Manual Study, 2020 - ongoing.
- Soil Survey, Williamsburg Estates, City of Kitchener Development Manual Study, 2020 - 2021.
- Soil Survey, South Estates, City of Kitchener Development Manual Study, 2020 - 2021.
- Soil Survey and Canada Land Inventory Evaluation, Burlington, Nelson Quarry, 2019.
- Soil Survey and Canada Land Inventory Evaluation, Maryhill Pit, 2019.
- Soil Survey and Canada Land Inventory Evaluation, Glen Morris Pit, Lafarge Canada, 2018,
- Soil Survey and Canada Land Inventory Evaluation, Brantford Pit Extension, Lafarge Canada, 2018,
- Soil Survey and Canada Land Inventory Evaluation, Pinkney Pit Extension, Lafarge Canada, May 2018,
- Soil evaluation and opinion, King-Vaughan Road, March 2018,
- Soil Sampling, Upper Medway Watershed, Agriculture and Agri-Food Canada. December 2017 – June 2018.
- Soil Survey and Canada Land Inventory Evaluation, Hillsburgh Pit Extension, SBM St Marys, December 2017.
- Soil Survey and Canada Land Inventory Evaluation, Erin South Pit Extension, Halton Crushed Stone, December 2017.
- City of Kitchener, City Wide Urban Soil Assessments, 2016 – On-going.
- Soil Survey and Canada Land Inventory Evaluation, Solar Feed-In Tariff (FIT) Program Study, 2016.
    - Bruce County (15 sites)
    - Grey County (4 sites)
- Soil Survey and Canada Land Inventory Evaluation, Wasaga Beach area, County of Simcoe, 2016.
- Soil Survey and Canada Land Inventory Evaluation Study, MHBC Bradford, Simcoe County, 2016.
- Soil Survey and Canada Land Inventory Evaluation, Solar Feed-In Tariff (FIT Program Study), Carbon Foot Print Offsetters, Durham Region, 2015.
- Soil Survey and Canada Land Inventory Evaluation, Solar Feed-In Tariff (FIT Program Study), Abundant Solar Energy (12 Sites – Peterborough, Madoc, Havelock, Belleville), 2015.
- Soil Survey and Canada Land Inventory Evaluation, Solar Feed-In Tariff (FIT Program Study), City of Hamilton, 2015.

Municipal Comprehensive Review Studies (MCR)

- Simcoe County, 2020 - ongoing.
- Northhumberland County, 2020 - ongoing.
- Halton Region, 2019 - ongoing.

Land Evaluation and Area Review Studies (LEAR)

- Mapping Audit Northumberland County. Comparison of Regional and Provincial Prime Agricultural Area Mapping – 2021 - ongoing.
- Mapping Audit Simcoe County. Comparison of Regional and Provincial Prime Agricultural Area Mapping – 2021 - ongoing.
- Mapping Audit Halton Region. Comparison of Regional and Provincial Prime Agricultural Area Mapping – 2019 - 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.

Expert Witness

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

Monitoring Studies

- Union Gas/Enbridge Gas 20" Gas Pipeline Construction Monitoring – Kingsville – 2019 - 2020.
- Union Gas/Enbridge Gas – Gas Pipeline Construction Monitoring for Tree Clearing. Kingsville Project. February/March 2019.
- CAEPLA – Union Gas 36" Gas Pipeline Construction Monitoring and Post Construction Clean Up – Agricultural Monitoring Panhandle Project. 2017 – 2018.
- CAEPLA – Union Gas 36" Gas Pipeline Construction Clearing Panhandle Project (Dawn Station to Dover Station) – Agricultural Monitoring, 2017 (Feb-March).
- City of Kitchener, Soil Sampling and data set analysis, 2017 – On-going.
- GAPLO – Union Gas 48" Gas Pipeline (Hamilton Station to Milton) Construction Soil and Agricultural Monitoring, 2016 – 2017.
- GAPLO – Union Gas 48" Gas Pipeline (Hamilton –Milton) Clearing – Agricultural Monitoring, 2016.

Publications

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