

# DOCUMENT TRANSMITTAL

Document: **BRADFORD BYPASS  
HIGHWAY 400 – HIGHWAY 404 LINK  
AGRICULTURAL IMPACT ASSESSMENT**

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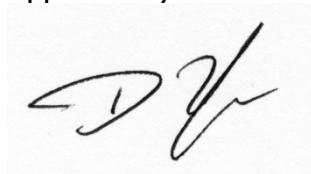
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Attention: Ms. Atherton and Ms. Wright      DRAFT      FINAL

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**DBH Soil Services Inc.**



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# TABLE OF CONTENTS

1	Introduction .....	1
2	Methodology .....	4
2.1	Consultation .....	5
2.2	Data Collection .....	5
2.2.1	Policy .....	6
2.2.2	Physiography .....	7
2.2.3	Topography and Climate.....	7
2.2.4	Agricultural Land Use .....	7
2.2.5	Minimum Distance Separation .....	7
2.2.6	Land Fragmentation/Severance.....	8
2.2.7	Soil Survey .....	8
2.2.8	Agricultural System.....	9
2.2.9	Agricultural Statistics .....	9
3	Policy Review .....	10
3.1	Provincial Agricultural Policy.....	10
3.2	The Growth Plan for the Greater Golden Horseshoe.....	12
3.3	The Greenbelt Plan .....	14
3.4	The Niagara Escarpment Plan.....	16
3.5	The Oak Ridges Moraine Conservation Plan .....	16
3.6	Official Plan Policy.....	16
3.6.1	York Region Official Plan.....	17
3.6.2	Town of East Gwillimbury Official Plan .....	21
3.6.3	Township of King Official Plan .....	23
3.6.4	The County of Simcoe Official Plan .....	25
3.6.5	The Town of Bradford – West Gwillimbury Official Plan.....	27
3.6.6	Zoning By-Laws.....	29
3.6.6.1	The Town of East Gwillimbury Zoning By-Law.....	29
3.6.6.2	The Township of King Zoning.....	30
3.6.6.3	The Town of Bradford – West Gwillimbury Zoning.....	30
4	Agricultural Resource Potential .....	32
4.1	Physical Characteristics .....	32
4.1.1	Physiography .....	32
4.1.2	Topography and Climate.....	33
4.2	Existing Land Use .....	33
4.2.1	Existing Land Use – Primary Study Area.....	38
4.2.2	Existing Land Use – Secondary Study Area.....	38
4.3	Agricultural Investment .....	39
4.3.1.1	Primary Study Area .....	40
4.3.1.2	Secondary Study Area .....	42
4.3.2	Artificial Drainage.....	48
4.3.3	Water Wells.....	50
4.3.4	Irrigation.....	50
4.3.5	Landforming .....	51
4.4	Fragmentation .....	51
4.5	Parcel or Land Severance.....	55



4.6	Soils and Canada Land Inventory (CLI) .....	56
4.6.1	Soil Capability for Agriculture .....	57
4.6.1.1	Canada Land Inventory (CLI) Class.....	57
4.6.1.2	Canada Land Inventory (CLI) Subclass.....	59
4.7	Agricultural Systems Portal .....	61
4.8	Agricultural Census Data.....	65
5	Resource Allocation and Conflict Potential.....	86
5.1	Impacts, Assessment and Compatibility with Surrounding Land Uses.....	86
5.2	Traffic, Trespass and Vandalism .....	90
5.3	Agricultural Infrastructure .....	91
5.4	Mitigation Measures .....	91
5.4.1	Avoidance.....	91
5.4.2	Minimizing Impacts.....	92
5.4.3	Mitigating Impacts .....	93
6	Summary of Approved Environmental Commitments .....	95
6.1	2002 Approved Environmental Assessment Commitments .....	95
6.2	Preliminary Design Commitments.....	97
7	Summary and Conclusions.....	101
8	References .....	107

## LIST OF FIGURES

Figure 1	Location Map .....	3
Figure 2	Growth Plan – Land Base Map.....	13
Figure 3	Provincial Land Use Plans .....	15
Figure 4	York Region Official Plan Map I – Regional Structure .....	18
Figure 5	York Region Official Plan Map IA – Land Use Designations.....	18
Figure 6	Town of East Gwillimbury Schedule A – Town Structure .....	21
Figure 7	Town of East Gwillimbury Schedule C – Rural Planning Area Land Use .....	22
Figure 8	Township of King Schedule A – Township Structure .....	23
Figure 9	Township of King Schedule M – Provincial Agricultural System .....	24
Figure 10	County of Simcoe Official Plan – Schedule 5.1 – Land Use .....	26
Figure 11	Town of Bradford – West Gwillimbury Official Plan .....	28
Figure 12	Town of East Gwillimbury Zoning.....	29
Figure 13	Township of King Zoning.....	30
Figure 14	Town of Bradford – West Gwillimbury Zoning By-Law .....	31
Figure 15	Physiographic Regions.....	34
Figure 16	Crop Heat Units Map .....	35
Figure 17	Existing Land Use.....	36
Figure 18	Agricultural Investment.....	41
Figure 19	Fragmentation.....	54
Figure 20	Canada Land Inventory (CLI).....	58
Figure 21	Agricultural Systems Mapping (OMAFRA) – Services and Support .....	63
Figure 22	Agricultural Systems Mapping (OMAFRA) – Field Crop Support and Services .....	64

## LIST OF TABLES

Table 1	Typical Land Use Designations .....	37
Table 2	Existing Land Use – Primary Study Area and Secondary Study Area.....	39
Table 3	Agricultural Facility.....	46
Table 4	Parcel Size and Parcel Count .....	55

Table 5	Canada Land Inventory – Percent Occurrence .....	61
Table 6	York Regional Municipality Census 2021 Data – Land Use .....	65
Table 7	York Regional Municipality Census 2021 Data – Crops.....	66
Table 8	York Regional Municipality Census 2021 Data – Livestock .....	67
Table 9	East Gwillimbury Township Census 2021 Data – Land Use.....	68
Table 10	East Gwillimbury Township Census 2021 Data – Crops.....	69
Table 11	East Gwillimbury Township Census 2021 Data – Livestock.....	70
Table 12	Comparison of Township and Regional Municipality Census 2021 Data - Crops.....	71
Table 13	Comparison of Township and Regional Municipality Census 2021 Data – Livestock.....	72
Table 14	King Township Census 2021 Data – Land Use .....	73
Table 15	King Township Census 2021 Data – Crops .....	73
Table 16	King Township Census 2021 Data – Livestock.....	74
Table 17	Comparison of Township and Regional Municipality Census 2021 Data - Crops.....	75
Table 18	Comparison of Township and Regional Municipality Census 2021 Data – Livestock.....	77
Table 19	Simcoe County Census 2021 Data – Land Use .....	77
Table 20	Simcoe County Census 2021 Data – Crops .....	78
Table 21	Simcoe County Census 2021 Data – Livestock .....	80
Table 22	Bradford-West Gwillimbury Census 2021 Data – Land Use .....	80
Table 23	Bradford-West Gwillimbury Census 2021 Data – Crops .....	81
Table 24	Bradford-West Gwillimbury Census 2021 Data – Livestock .....	82
Table 25	Comparison of Township and Regional Municipality Census 2021 Data - Crops.....	83
Table 26	Comparison of Township and Regional Municipality Census 2021 Data – Livestock.....	84
Table 27	Potential Impacts.....	87
Table 28	2002 Approved Environmental Assessment Commitments and Description of Changes Carried Forward Through Preliminary Design .....	96
Table 29	Summary of Preliminary Design Environmental Concerns and Commitments .....	98

## APPENDICIES

APPENDIX A	Agricultural Facility Photographs
APPENDIX B	Unique Soil Symbols List
APPENDIX C	Dave Hodgson Curriculum Vitae

# I INTRODUCTION

The Ontario Ministry of Transportation (the Ministry) has retained AECOM Canada Ltd. (AECOM) to undertake a Preliminary Design and project-specific assessment of environmental impacts for the proposed Highway 400 to Highway 404 Link (Bradford Bypass). The Bradford Bypass (the project) is being assessed in accordance with Ontario Regulation 697/21 (the Regulation). The Ministry previously completed a route planning study for the Bradford Bypass that received subsequent approval in 2002.

The project is a new 16.3 kilometre (km) controlled access freeway. The proposed highway will extend from Highway 400 between 8th Line and 9th Line in Bradford West Gwillimbury, will cross a small portion of King Township, and will connect to Highway 404 between Queensville Sideroad and Holborn Road in East Gwillimbury. There are proposed full and partial interchanges, as well as grade separated crossings at intersecting municipal roads and watercourses, including the Holland River and Holland River East Branch. This project will also include the design integration for the replacement of the 9th Line structure on Highway 400, which will accommodate the proposed future ramps north of the Bradford Bypass corridor. The Ministry is considering an interim four-lane configuration and an ultimate eight-lane design for the Bradford Bypass. The interim condition will include two general purpose lanes in each direction and the ultimate condition will include four lanes in each direction (one high-occupancy vehicle lane and three general purpose travel lanes in each direction). The interim and ultimate designs are being reviewed as the project progresses. This Report and its findings are based on the project footprint identified within this Report. Should the footprint change or be modified in any way, a review of the changes shall be undertaken, and the Report will be updated to reflect the changes, impacts, mitigation measures, and any commitments to future work.

DBH Soil Services Inc was retained to complete an Agricultural Impact Assessment (AIA) for the Preliminary Design and Environmental Assessment study in accordance with Ontario Regulation 697/21 for the proposed Highway 400 – Highway 404 Link (Bradford Bypass) (the project).

This AIA will address the proposed Highway 400 – Highway 404 Link (Bradford Bypass) in its entirety (including interchanges). The proposed future development of this link requires the completion of an Agricultural Impact Assessment as is stated in the Growth Plan (2019) and the Greenbelt Plan (2017). The purpose of this AIA is to document the existing agricultural character, identify agricultural impacts (potential and/or direct/indirect), and to provide avoidance or mitigative measures as necessary to offset or lessen any impacts.

For this study, the Bradford Bypass Right-of-way will be referred to as the Primary Study Area. For the purpose of an Agricultural Impact Assessment (AIA) report, agricultural operations and activities are also evaluated in a larger area, the Secondary Study Area, described as a potential zone of impact extending a minimum of 500 m (0.5 km) beyond the boundary of the Primary Study Area. A 500 m Secondary Study Area was defined as based on the project being a reassessment and update to the agricultural work that was completed in the 2002 approved Environmental Assessment (EA). The 2002 approved EA defined a route that took into

consideration reducing severances by attempting to locate the corridor along lot lines where possible and avoiding agricultural facilities/barns/homestead areas.

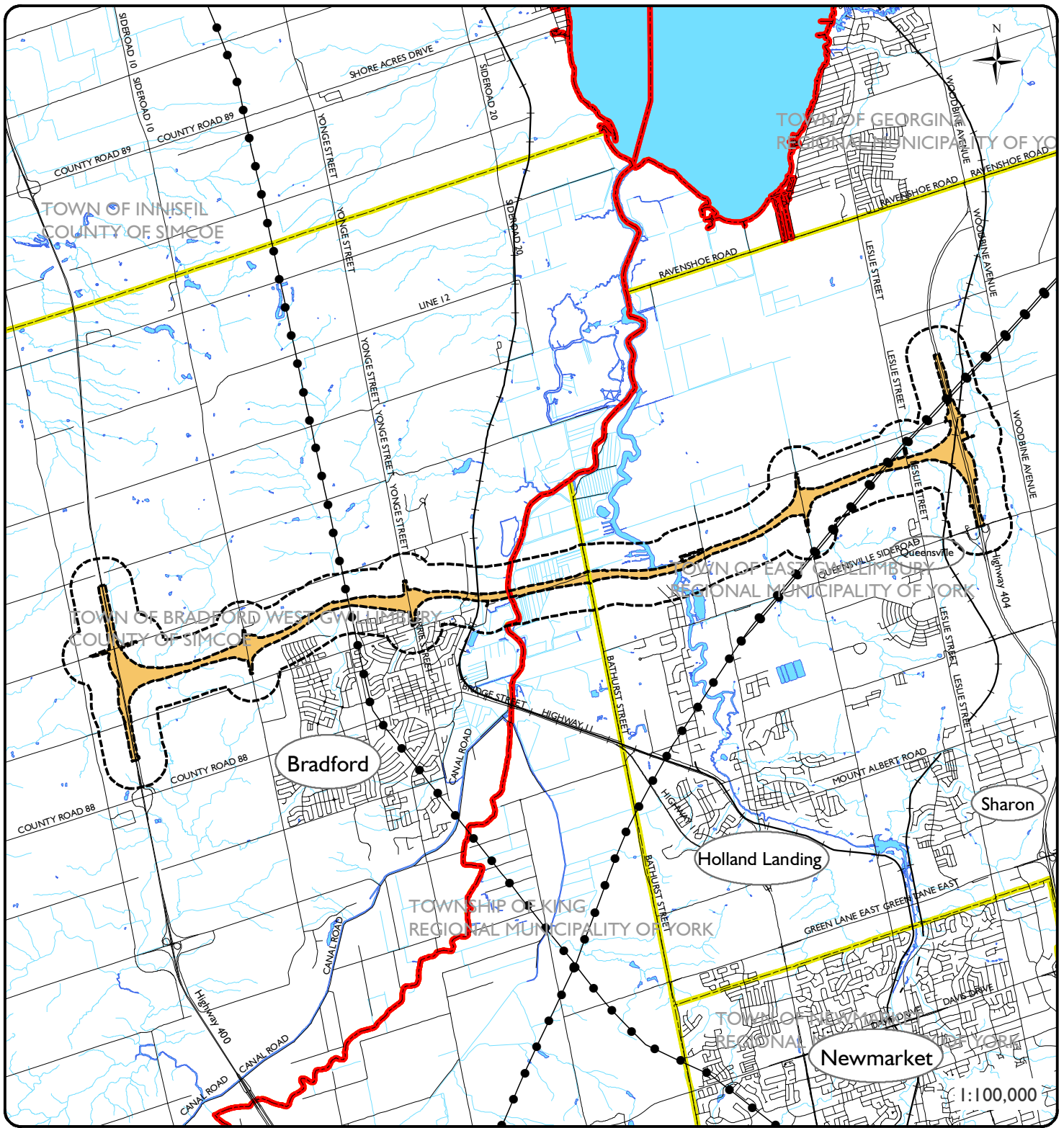
This minimum 500 m (0.5 km) area of potential impact outside the Primary Study Area is used to allow for characterization of the agricultural community and the assessment of impacts both on and in the immediate vicinity of the Primary Study Area.

In the Regional context, the Primary Study Area is a corridor that runs from Highway 400 (between Line 8 and Line 9, Town of Bradford West Gwillimbury, just north of the urban areas of Bradford crossing the Holland River East Branch and continuing east between Holborn Road and Queensville Sideroad) to the Highway 404.

The Primary Study Area and the Secondary Study Areas comprise a mix of land uses including urban uses, rural uses, agricultural lands (including Provincially designated Specialty Crop lands along the Holland River area (Bradford Marsh/Holland Marsh)), transportation corridors, and woodlands. A portion of the Secondary Study Area (south of the Primary Study Area) rests within the built boundary of Bradford.

Figure 1 illustrates the relative location and shape of the Primary Study Area and the Secondary Study Area with respect to the above-mentioned geographical and community features.

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



## Legend

- |  |                     |  |                              |
|--|---------------------|--|------------------------------|
|  | Roads (MNRF)        |  | Lower Tier Boundary (MNRF)   |
|  | Railway (MNRF)      |  | Primary Study Area           |
|  | Utility Line (MNRF) |  | Secondary Study Area (500 m) |
|  | Water Course (MNRF) |  | Water Body (MNRF)            |
|  |                     |  | Upper Tier Boundary (MNRF)   |

Figure 1

## Bradford Bypass Study Area Location

DBH Soil Services Inc.  
January 30, 2023

## 2 METHODOLOGY

A variety of data sources were evaluated to characterize the extent of agriculture resources and to assess any potential existing (or future) impacts to agriculture within the Primary Study Area and the surrounding Secondary Study Area that may occur as a result of the project.

A review of the *York Region Official Plan 2022 (November 4, 2022)*, *The Town of East Gwillimbury Consolidated Official Plan 2031 (October 2018 Consolidation)*, *The Township of King Official Plan (2019)* (track changes online version September 24, 2020), *The Official Plan of the County of Simcoe (December 29, 2016)*, and the *Official Plan of the Town of Bradford West Gwillimbury (Office Consolidation October 1, 2002) (provincially approved)* was completed to determine if there are specific local guidelines and/or requirements for the completion of an Agricultural Impact Assessment study. It should be noted that the County of Simcoe and the Town of Bradford West Gwillimbury are undergoing Official Plan reviews. The Town of Bradford West Gwillimbury has completed a final Official Plan on March 2, 2021, with the final Official Plan to go to the County of Simcoe for approval.

It was noted that the none of the Official Plans contained specific information on the requirements of how to complete an Agricultural Impact Assessment. As a result, a further review was completed to determine the existence and use of Agricultural Impact Assessment Guidelines in Ontario.

The review of Agricultural Impact Assessment guidelines in Ontario identified that the Region of Halton has created a document titled “*Agricultural Impact Assessment Guidelines, October 1985*”, and has updated those guidelines with a newer version from June 2014. The Region of Halton has specific standards and guidelines for completing Agricultural Impact Assessments (AIA) within the boundaries of the Region of Halton. The Halton Region guidelines are comprehensive and require considerable detail to complete. Further, the Town of Caledon has created a document titled “*Agricultural Impact Assessment Guidelines, Planning and Development Department Town of Caledon, June 2003*”. It is noted that neither the Primary Study Area nor the Secondary Study Area are located within either the Region of Halton or the Town of Caledon and as such this Report did not follow those municipal documents.

The review of 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 but is the basis for how OMAFRA addresses agricultural impacts and mitigation. Prior to completion of this Report, it was noted that the 2018 OMAFRA document was the most recent and relevant set of provincial AIA guidelines.

As a result of the review on the existence and use of Agricultural Impact Assessment guidelines in Ontario, this Agricultural Impact Assessment report has been completed with regard to the

review/reference to the OMAFRA “*Draft Agricultural Impact Assessment (AIA) Guidance Document, March 2018*” and through discussion with staff from OMAFRA.

## **2.1 CONSULTATION**

Agriculture is an important component of the economy in both Simcoe County and the Region of York. As such, consultation with the various agencies, provincial and municipal offices, and local farm community were initiated at the earliest stages of the project and have continued through the process.

An Environment, Community and Agriculture (ECA) Committee Meeting (#1) was conducted on December 8, 2021. Members from the Holland Marsh Growers, the York Region Federation of Agriculture, the National Farmers Union, and the Simcoe Federation of Agriculture were invited to attend and participate.

Representatives from the Holland Marsh Growers group indicated support for the proposed highway, as long as it is done correctly.

There were comments made regarding the potential use of round-a-bouts on side roads, and how round-a-bouts affect farm traffic. Long and slow farm vehicles are difficult to navigate in the tighter confines of the round-a-bouts and may cause a farm load to tip. Additionally, it was noted that some drivers do not respect how to drive within a round-a-bout and may not allow enough space or time for a farm vehicle. It was noted that farmers would prefer a ‘hard stop’, or stop sign/stop light, that would force traffic to stop and allow for farm traffic to maneuver on the road network.

A second ECA meeting (#2) was conducted on December 6, 2022. The purpose of the Environment, Community and Agriculture (ECA) Committee Meeting #2 was to understand and address community ideas, thoughts, and feedback which included gathering input on how to best implement the proposed Bradford Bypass from these perspectives. Members from the Holland Marsh Growers, the York Region Federation of Agriculture, the National Farmers Union, and the Simcoe Federation of Agriculture were invited to attend and participate. Of those invited, two ECA community representatives attended.

Additional consultation was completed through Public Information Centers. Public Information Centre (PIC) #1 was held virtually for the project in April and May 2021. PIC#2 was held virtually on November 24, 2022. Consultation has been ongoing throughout the Preliminary Design and project-specific assessment of environmental impact study.

## **2.2 DATA COLLECTION**

A variety of data sources were utilized in the assessment of agriculture in the Primary Study Area and Secondary Study Area. Data was collected in a variety of formats including digital (shapefiles

and imagery), paper copy, and through correspondence (telephone, meetings, email, etc). A synopsis of the type of data and the collection of the relevant data is provided below.

## 2.2.1 POLICY

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

The review included an examination of Provincial and Municipal policy as is presented in the

- *Provincial Policy Statement (2020)*
- *the Greenbelt Plan (2017)*
- *the Growth Plan for the Greater Golden Horseshoe (2019)*
- *the Oak Ridges Moraine Conservation Plan (2017)*
- *the York Region Official Plan 2022 (November 4, 2022)*
- *the Town of East Gwillimbury Consolidated Official Plan 2031 (October 2018 Consolidation)*
- *the Township of King Official Plan (2019) (track changes online version September 24, 2020)*
- *The Official Plan of the County of Simcoe (December 29, 2016)*
- *the Official Plan of the Town of Bradford West Gwillimbury (Office Consolidation October 1, 2002) (provincially approved)*
- *the Township of King Zoning By-Law for the Countryside By-law No. 2022-053 (September 2022)*
- *the Town of East Gwillimbury Zoning By-Law 2018-043 (Office Consolidation 2020)*
- *the Corporation of the Town of Bradford – West Gwillimbury Zoning By-Law 2010-050 (November 2014 Consolidation)*

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

An assessment of online data resources including:

- the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
- the Ministry of Natural Resources and Forestry (MNRF) Land Information Warehouse (Land Information Ontario (LIO))
- the Region of York website, the County of Simcoe website,
- the Township of King website
- the Town of Bradford – West Gwillimbury website
- the Town of East Gwillimbury website

Further, this assessment included telephone, email and in person communication/correspondence to derive a list of relevant policy, by-law and guidelines. Each relevant policy, by-law and guideline was collected in digital or paper format for examination for this project.



### **2.2.2 PHYSIOGRAPHY**

A review of the *Physiography of Southern Ontario 3rd Edition*, Ontario Geological Survey Special Volume 2, Ministry of Natural Resources (1984) and the associated digital GIS shapefiles was completed to document the type(s) and depth of bedrock and soil parent materials, and how these materials, in conjunction with glacial landforming processes, have led to the development of the existing soil resources.

### **2.2.3 TOPOGRAPHY AND CLIMATE**

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

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

### **2.2.4 AGRICULTURAL LAND USE**

Agricultural land use data was collected through observations made during roadside reconnaissance surveys and field surveys conducted in November/December 2021, and in September/October 2022. 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 Primary Study Area and Secondary Study Area.

### **2.2.5 MINIMUM DISTANCE SEPARATION**

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

MDS Guideline #2 states:

*Certain proposed uses are not reasonably expected to be impacted by existing livestock facilities or anaerobic digesters and as a result, do not require an MDS 1 setback. Such uses may include, but are not limited to:*

- *extraction of minerals, petroleum resources and mineral aggregate resources;*
- *infrastructure; and*
- *landfills.*

In accordance with MDS Guideline #2, MDS I calculations are not required to be completed as part of this AIA evaluation, as the Bradford Bypass is considered an infrastructure project.

### **2.2.6 LAND FRAGMENTATION/SEVERANCE**

Land fragmentation data was collected through a review of online interactive mapping on the Agmaps (OMAFRA) website, the Agricultural System Portal (OMAFRA), the Township of King, the Town of East Gwillimbury, the Town of Bradford – West Gwillimbury, the Region of York and the County of Simcoe websites. This data was used to determine the extent, location, relative shape of each parcel/property within both the Primary Study Area and the Secondary Study Area.

A digital shapefile containing the parcel data boundaries was provided by AECOM Canada Ltd. (AECOM), for use in the digital mapping for this Report. It should be noted that the digital shapefile did not include property polygons within the outer areas of the Secondary Study Area for 123 properties, as property data for those properties was not available at the time of this Report. The boundaries of these 123 parcels were digitized into GIS based on reviews of online data sources to allow an assessment of fragmentation for this study.

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.

Land severance is the severing or dividing of a parcel into multiple sections. An assessment of land was completed to determine the extent of parcels that will be severed by the proposed corridor, resulting in a portion of a field being on the opposite side of the proposed corridor and possibly limiting the use or and/or access to that piece of land.

### **2.2.7 SOIL SURVEY**

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

The digital soil survey data was also correlated to the printed soil survey reports and maps (*The Soil Survey of York County* (Report No. 19 of the Ontario Soil Survey. Hoffman, D.W and N.R. Richards, 1955) and *The Soil Survey of Simcoe County* (Report No. 29 of the Ontario Soil Survey. Hoffman, D.W, R.E. Wicklund, and N.R. Richards, 1955)) to determine if the digital soils data has been modified from the original soil survey data.

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

### **2.2.8 AGRICULTURAL SYSTEM**

The Ontario Ministry of Agriculture, Food and Rural Affairs online Agricultural Systems mapping were reviewed to determine the extent of agriculture within the Primary Study Area, in the Secondary Study Area, within the County of Simcoe, the Region of York, the Township of King, the Town of East Gwillimbury, and the Town of Bradford – West Gwillimbury.

OMAFRA identifies that the Agricultural System comprises two parts:

1. Agricultural Land Base; and
2. the Agri-Food Network.

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

The review of the Agricultural Network included a visual assessment of any agricultural services and transportation networks within the Primary Study Area and the Secondary Study Area, and a review of the OMAFRA Agricultural Systems Portal mapping.

### **2.2.9 AGRICULTURAL STATISTICS**

Agricultural statistics were obtained from the OMAFRA website. The statistics were provided for Southern Ontario, York Region, Simcoe County, the Greater Golden Horseshoe, and the Greater Toronto Area. The County of Simcoe data included census information for the Town of Bradford – West Gwillimbury and the County of Simcoe, while the Region of York data included census information for the Township of King, the Town of East Gwillimbury, and the Region of York. The data sets provide information up to (and including) the 2021 Census.

## 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 respective policy documents identified in Section 2.2.1 of this Report.

With respect to this AIA and the four Provincial Land Use Plans, a review of the boundaries of the Growth Plan for the Greater Golden Horseshoe Area, the Greenbelt Plan Area, the Niagara Escarpment Plan and the Oak Ridges Moraine Conservation Area was completed. It was determined that the Primary Study Area (and Secondary Study Area) were located within the Growth Plan for the Greater Golden Horseshoe, and the Greenbelt Plan Area.

The reviews of the respective Provincial and Municipal policies, and Zoning By-laws identified that portions of both the Primary Study Area and the Secondary Study Area are located in a Provincially designated Specialty Crop Area.

The relevant policies from the respective policy documents identified in Section 2.2.1 of this Report are presented as follows.

### 3.1 PROVINCIAL AGRICULTURAL POLICY

The *Provincial Policy Statement (2020)* was enacted to document the Ontario Provincial Governments development and land use planning strategies. The *Provincial Policy Statement* provides the policy foundation for regulating the development and use of land. With respect to the potential future development of the Primary Study Area, the following policies may apply. Agricultural policies are addressed within Sections 1.6 (Transportation and Infrastructure Corridors) and 2.3 (Agriculture) of the *Provincial Policy Statement (2020)*.

It is important to note Policy 1.6.8.1 where it is indicated that planning authorities shall plan for and protect corridors for infrastructure.

*1.6.8 Transportation and Infrastructure Corridors*

*1.6.8.1 Planning authorities shall plan for and protect corridors and rights-of-way for infrastructure, including transportation, transit and electricity generation facilities and transmission systems to meet current and projected needs.*

*1.6.8.2 Major goods movement facilities and corridors shall be protected for the long term.*

*1.6.8.3 Planning authorities shall not permit development in planned corridors that could preclude or negatively affect the use of the corridor for the purpose(s) for which it was identified.*

*New development proposed on adjacent lands to existing or planned corridors and transportation facilities should be compatible with, and supportive of, the long-term purposes of the corridor and should be designed to avoid, mitigate or minimize negative impacts on and from the corridor and transportation facilities.*

*1.6.8.4 The preservation and reuse of abandoned corridors for purposes that maintain the corridor's integrity and continuous linear characteristics should be encouraged, wherever feasible.*

*1.6.8.5 The co-location of linear infrastructure should be promoted, where appropriate.*

- 1.6.8.6 When planning for corridors and rights-of-way for significant transportation, electricity transmission, and infrastructure facilities, consideration will be given to the significant resources in Section 2: Wise Use and Management of Resources.
- 2.3.1 Prime agricultural areas shall be protected for long-term use for agriculture. Prime agricultural areas are areas where prime agricultural lands predominate. Specialty crop areas shall be given the highest priority for protection, followed by Canada Land Inventory Class 1, 2, and 3 lands, and any associated Class 4 through 7 lands within the prime agricultural area, in this order of priority.
- 2.3.2 Planning authorities shall designate prime agricultural areas and specialty crop areas in accordance with guidelines developed by the Province, as amended from time to time. Planning authorities are encouraged to use an agricultural system approach to maintain and enhance the geographic continuity of the agricultural land base and the functional and economic connections to the agri-food network.
- 2.3.3 Permitted Uses
- 2.3.3.1 In prime agricultural areas, permitted uses and activities are: agricultural uses, agriculture-related uses and on-farm diversified uses. Proposed agriculture-related uses and on-farm diversified uses shall be compatible with, and shall not hinder, surrounding agricultural operations. Criteria for these uses may be based on guidelines developed by the Province or municipal approaches, as set out in municipal planning documents, which achieve the same objectives.
- 2.3.3.2 In prime agricultural areas, all types, sizes and intensities of agricultural uses and normal farm practices shall be promoted and protected in accordance with provincial standards.
- 2.3.3.3 New land uses in prime agricultural areas, including the creation of lots and new or expanding livestock facilities, shall comply with the minimum distance separation formulae.
- 2.3.4 Lot Creation and Lot Adjustments
- 2.3.4.1 Lot creation in prime agricultural areas is discouraged and may only be permitted for:
- a) agricultural uses, provided that the lots are of a size appropriate for the type of agricultural use(s) common in the area and are sufficiently large to maintain flexibility for future changes in the type or size of agricultural operations;
  - b) agriculture-related uses, provided that any new lot will be limited to a minimum size needed to accommodate the use and appropriate sewage and water services;
  - c) a residence surplus to a farming operation as a result of farm consolidation, provided that:
    1. the new lot will be limited to a minimum size needed to accommodate the use and appropriate sewage and water services; and
    2. the planning authority ensures that new residential dwellings are prohibited on any remnant parcel of farmland created by the severance. The approach used to ensure that no new residential dwellings are permitted on the remnant parcel may be recommended by the Province, or based on municipal approaches which achieve the same objective; and
  - d) infrastructure, where the facility or corridor cannot be accommodated through the use of easements or rights-of-way.
- 2.3.4.2 Lot adjustments in prime agricultural areas may be permitted for legal or technical reasons.
- 2.3.4.3 The creation of new residential lots in prime agricultural areas shall not be permitted, except in accordance with policy 2.3.4.1(c).
- 2.3.5 Removal of Land from Prime Agricultural Areas
- 2.3.5.1 Planning authorities may only exclude land from prime agricultural areas for expansions of or identification of settlement areas in accordance with policy 1.1.3.8.
- 2.3.6 Non-Agricultural Uses in Prime Agricultural Areas
- 2.3.6.1 Planning authorities may only permit non-agricultural uses in prime agricultural areas for:
- a) extraction of minerals, petroleum resources and mineral aggregate resources; or
  - b) limited non-residential uses, provided that all of the following are demonstrated:
    1. the land does not comprise a specialty crop area;
    2. the proposed use complies with the minimum distance separation formulae;
    3. there is an identified need within the planning horizon provided for in policy 1.1.2 for additional land to accommodate the proposed use; and
    4. alternative locations have been evaluated, and
      - i. there are no reasonable alternative locations which avoid prime agricultural areas; and

- ii. *there are no reasonable alternative locations in prime agricultural areas with lower priority agricultural lands.*

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

Of particular importance is Policy 2.3.4.1d where it is indicated that lot creation is allowed for infrastructure provided that the corridor cannot be accommodated through the use of easements or rights-of-way.

Further, the PPS Policy 2.3.2 indicates the use of the Agricultural System approach to planning. The Agricultural System has been defined as:

*Agricultural System: A system comprised of a group of inter-connected elements that collectively create a viable, thriving agricultural sector. It has two components:*

- a) An agricultural land base comprised of prime agricultural areas, including specialty crop areas, and rural lands that together create a continuous productive land base for agriculture; and*
- b) An agri-food network which includes infrastructure, services, and assets important to the viability of the agri-food sector.*

The importance the use of the Agricultural System was identified in Policy 2.3.2. An Agricultural Systems approach to planning allows for the identification of agricultural lands and agricultural networks (services and assets), potential impacts to agricultural lands and agricultural networks, and to provide appropriate mitigation as is feasible to offset any potential impact.

A similar policy was noted in the *Growth Plan for the Greater Golden Horseshoe (2019)* as noted below.

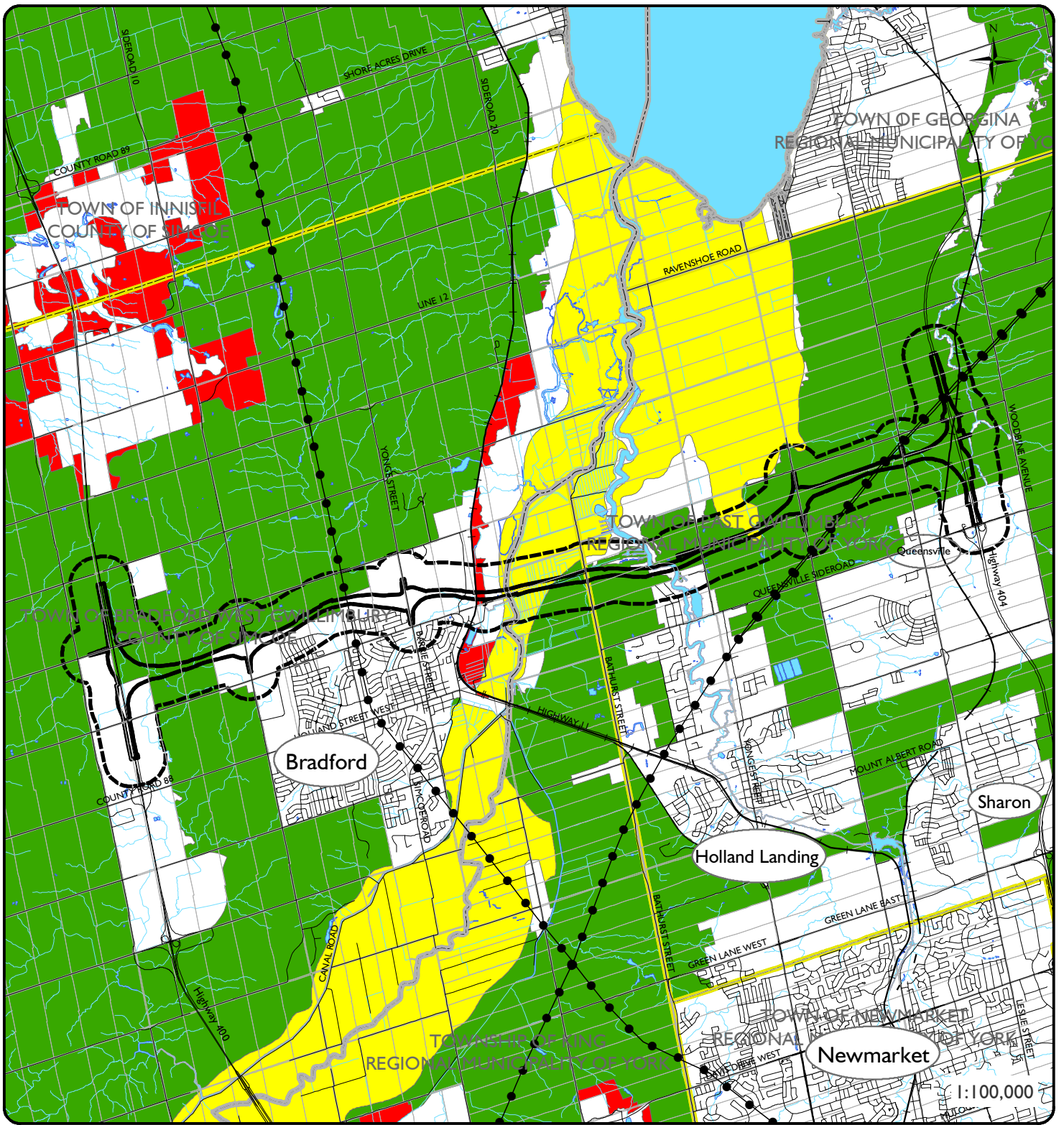
## **3.2 THE GROWTH PLAN FOR THE GREATER GOLDEN HORSESHOE**

A review of the location of the Primary Study Area and Secondary Study Area with the boundaries of the Growth Plan for the Greater Golden Horseshoe area was completed to determine if these areas are subject to the Growth Plan policies. An overlay of the Primary Study Area and the Secondary Study Area on the Provincial Agricultural Land Base mapping (online and in digital shapefile format) was completed to determine the extent of coverage

It was determined that much of the Primary Study Area and the Secondary Study Area lands comprise Prime Agricultural Areas. Smaller areas of Specialty Crop lands were identified adjacent to the Holland River and Holland River East Branch areas. Further, small areas of Candidate Prime Agricultural Areas were noted between the rail line and the Specialty Crop Areas east of the Holland River.

Figure 2 illustrates the relative location of the Primary Study Area and the Secondary Study Area with respect to the Growth Plan for the Greater Golden Horseshoe.

As identified previously in Section 2.1.8, the Provincial Land Use Plans require the implementation of an Agricultural System. The Agricultural System comprises two parts:



**Legend**

	Roads (MNRF)		Upper Tier Boundary (MNRF)
	Railway (MNRF)		Lower Tier Boundary (MNRF)
	Utility Line (MNRF)		Water Body (MNRF)
	Water Course (MNRF)	<b>Agricultural Land Base Identification (OMAFRA)</b>	
	Lot Lines (MNRF)		Candidate Area
	Primary Study Area		Prime Agricultural Area
	Secondary Study Area (500 m)		Specialty Crop Area

Figure 2  
**Agricultural Land Base**

DBH Soil Services Inc.  
 January 30, 2023

1. Agricultural Land Base; and
2. the Agri-Food Network.

The respective policies for the Agricultural System are as follows:

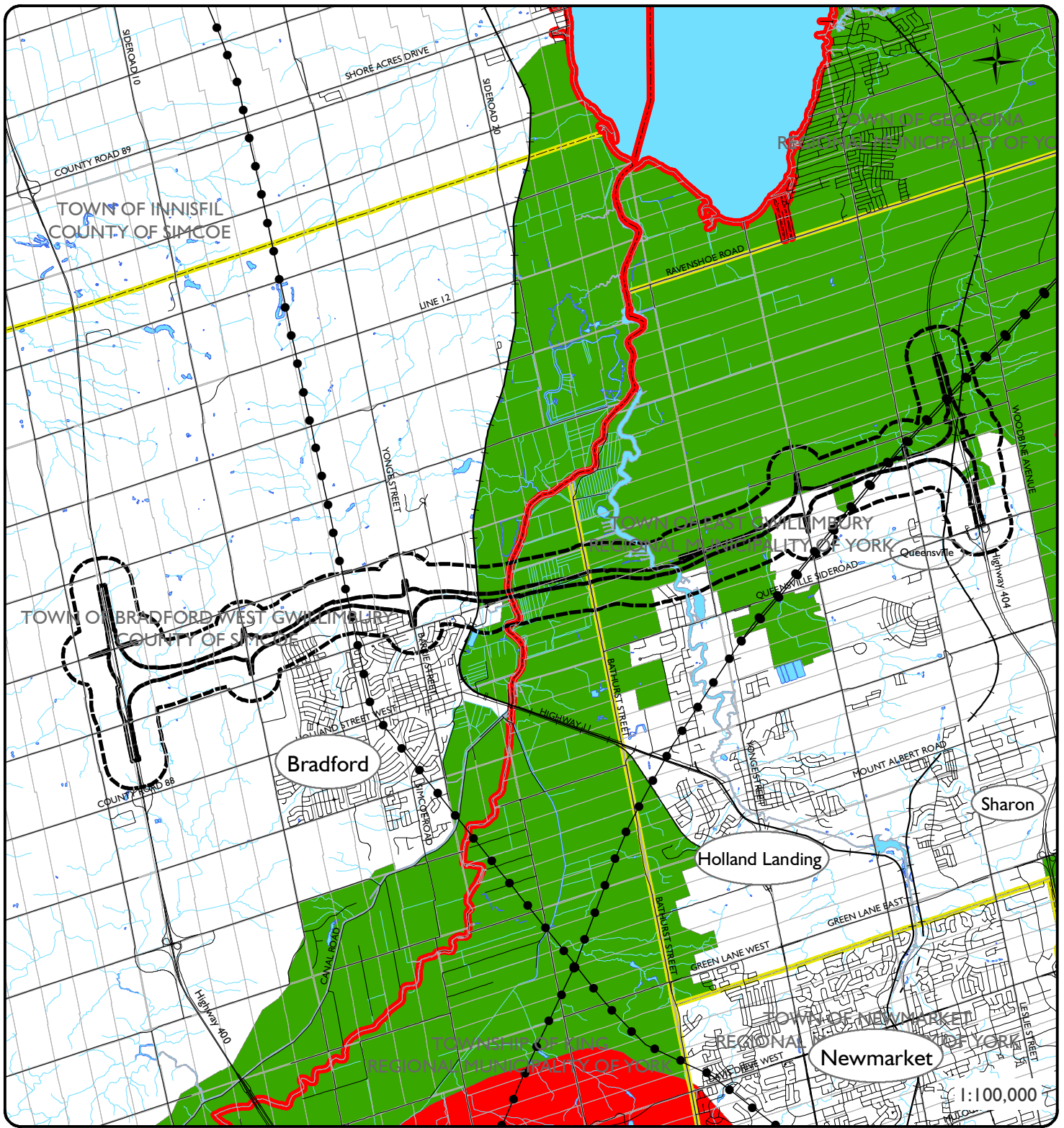
#### 4.2.6 Agricultural System

1. An Agricultural System for the GGH has been identified by the Province.
2. Prime agricultural areas, including specialty crop areas, will be designated in accordance with mapping identified by the Province and these areas will be protected for long-term use for agriculture.
3. Where agricultural uses and non-agricultural uses interface outside of settlement areas, land use compatibility will be achieved by avoiding or where avoidance is not possible, minimizing and mitigating adverse impacts on the Agricultural System. Where mitigation is required, measures should be incorporated as part of the non-agricultural uses, as appropriate, within the area being developed. Where appropriate, this should be based on an agricultural impact assessment.
4. The geographic continuity of the agricultural land base and the functional and economic connections to the agri-food network will be maintained and enhanced.
5. The retention of existing lots of record for agricultural uses is encouraged, and the use of these lots for non-agricultural uses is discouraged.
6. Integrated planning for growth management, including goods movement and transportation planning, will consider opportunities to support and enhance the Agricultural System.
7. Municipalities are encouraged to implement regional agri-food strategies and other approaches to sustain and enhance the Agricultural System and the long-term economic prosperity and viability of the agri-food sector, including the maintenance and improvement of the agri-food network by:
  - a) providing opportunities to support access to healthy, local, and affordable food, urban and near-urban agriculture, food system planning and promoting the sustainability of agricultural, agri-food, and agri-product businesses while protecting agricultural resources and minimizing land use conflicts;
  - b) protecting, enhancing, or supporting opportunities for infrastructure, services, and assets. Where negative impacts on the agri-food network are unavoidable, they will be assessed, minimized, and mitigated to the extent feasible; and
  - c) establishing or consulting with agricultural advisory committees or liaison officers.
8. Outside of the Greenbelt Area, provincial mapping of the agricultural land base does not apply until it has been implemented in the applicable upper- or single-tier official plan. Until that time, prime agricultural areas identified in upper- and single-tier official plans that were approved and in effect as of July 1, 2017 will be considered the agricultural land base for the purposes of this Plan.
9. Upper- and single-tier municipalities may refine provincial mapping of the agricultural land base at the time of initial implementation in their official plans, based on implementation procedures issued by the Province. For upper-tier municipalities, the initial implementation of provincial mapping may be done separately for each lower-tier municipality. After provincial mapping of the agricultural land base has been implemented in official plans, further refinements may only occur through a municipal comprehensive review.

### 3.3 THE GREENBELT PLAN

A review of the Greenbelt Plan (2017) mapping indicates that portions of the Primary Study Area and portions of the Secondary Study Area are located within the Greenbelt Plan area. The portions of the Primary Study Area and the Secondary Study Area that are in the Greenbelt Plan Area are generally located within the flood plain areas of the Holland River and Holland River East Branch areas. Figure 3 illustrates the relative location of the Greenbelt Plan Area with respect to the Primary Study Area and the Secondary Study Area. Further, a review of the current land use designations maps (2022) (Greenbelt Maps





## Legend

- |  |                              |                              |                            |
|--|------------------------------|------------------------------|----------------------------|
|  | Roads (MNRF)                 |                              | Upper Tier Boundary (MNRF) |
|  | Railway (MNRF)               |                              | Water Body (MNRF)          |
|  | Utility Line (MNRF)          | <b>Greenbelt Designation</b> |                            |
|  | Water Course (MNRF)          |                              | Niagara Escarpment Plan    |
|  | Lot Lines (MNRF)             |                              | Oak Ridges Moraine         |
|  | Lower Tier Boundary (MNRF)   |                              | Protected Countryside      |
|  | Primary Study Area           |                              | Urban River Valley         |
|  | Secondary Study Area (500 m) |                              |                            |

Figure 3

## Greenbelt Mapping

DBH Soil Services Inc.

January 30, 2023

<https://www.ontario.ca/page/greenbelt-maps>) did not reveal any changes within the Primary Study Area or Secondary Study Area land use designations.

The portions of the Primary Study Area and the Secondary Study Area that are within the Greenbelt Plan Area are considered as Protect Countryside.

The Greenbelt Plan has specific policies for Prime Agricultural Lands and provides the policies in Section 3.13. Section 3.1.3 states:

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

- 1. All types, sizes and intensities of agricultural uses and normal farm practices shall be promoted and protected and a full range of agricultural uses, agriculture-related uses and on-farm diversified uses are permitted based on provincial Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas. Proposed agriculture-related uses and on-farm diversified uses shall be compatible with and shall not hinder surrounding agricultural operations.*
- 2. Lands shall not be redesignated in official plans for non-agricultural uses except for:
  - a) Refinements to the prime agricultural area and rural lands designations, subject to the policies of section 5.3; or*
  - b) Settlement area boundary expansions, subject to the policies of section 3.4.**
- 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 (and associated digital mapping) was completed. The review indicated that no portions of the Primary Study Area or the Secondary Study Area are located within the Niagara Escarpment Plan area.

### **3.5 THE OAK RIDGES MORAINÉ CONSERVATION PLAN**

A review of the boundaries of the Oak Ridges Conservation Plan (and associated digital mapping) was completed. The review indicated that no portions of the Primary Study Area or the Secondary Study Area are located within the Oak Ridges Conservation Plan area.

### **3.6 OFFICIAL PLAN POLICY**

Official Plan policies are prepared under the Planning Act, as amended, of the Province of Ontario. Official Plans generally provide policy comment for land use planning while taking into

consideration the economic, social and environmental impacts of land use and development concerns. For the purpose of this AIA study, the review included an examination of:

- *the York Region Official Plan 2022 (November 4, 2022)*
- *the Town of East Gwillimbury Consolidated Official Plan 2031 (October 2018 Consolidation)*
- *the Township of King Official Plan (2019) (track changes online version September 24, 2020)*
- *The Official Plan of the County of Simcoe (December 29, 2016)*
- *the Official Plan of the Town of Bradford West Gwillimbury (Office Consolidation October 1, 2002) (provincially approved)*

### **3.6.1 YORK REGION OFFICIAL PLAN**

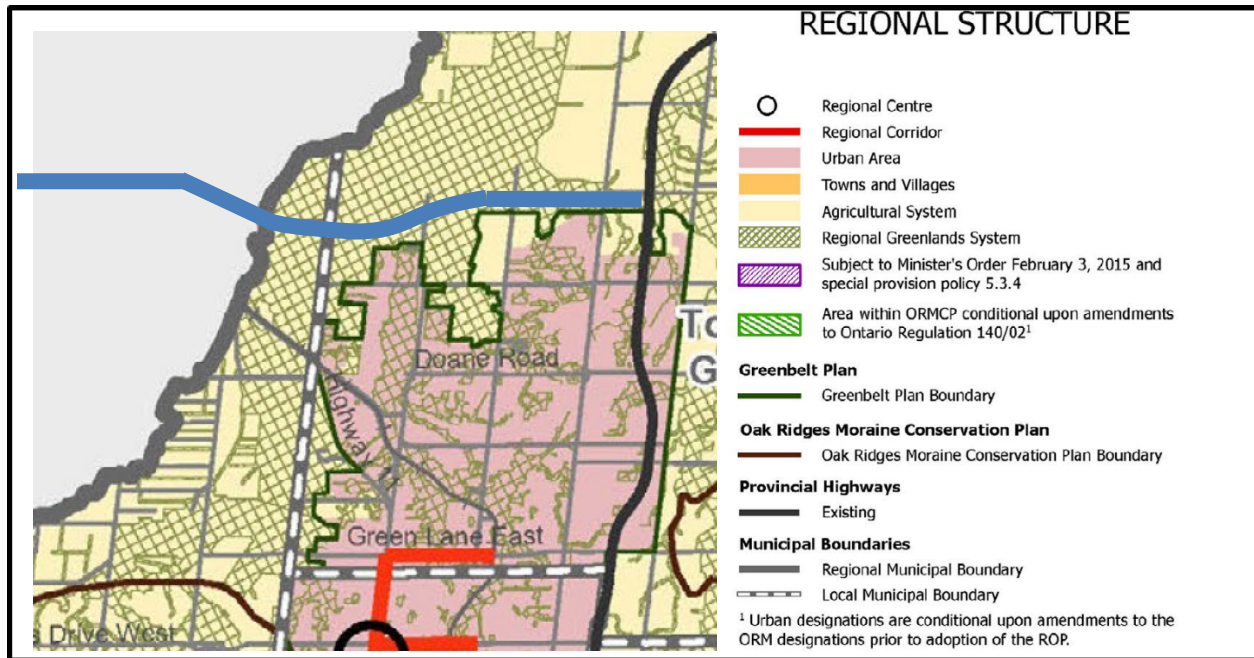
A review of the *York Region Adopted Official Plan 2022, Maps July 2022 Map 1 – Regional Structure* revealed that the portion of the Primary Study Area and Secondary Study Area that are located in the Region of York are identified as Regional Greenlands System, and Agricultural System.

Figure 4 illustrates a select portion of the *York Region Adopted Official Plan 2022, Maps July 2022 Map 1 – Regional Structure*.

A review of the *York Region Adopted Official Plan 2022, Maps July 2022 Map 1a – Land Use Designations* revealed that the portion of the Primary Study Area and Secondary Study Area that are located in the Region of York are identified as Holland Marsh Specialty Crop Area and Agricultural Area.

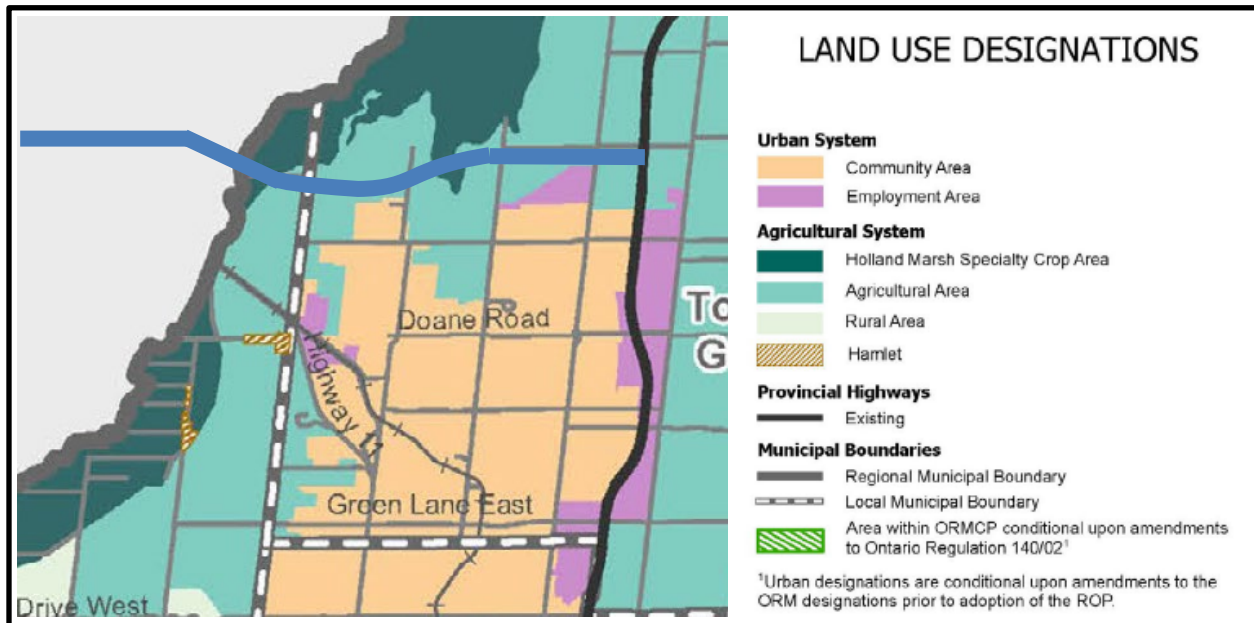
Figure 5 illustrates a select portion of the *York Region Adopted Official Plan 2022, Maps July 2022 Map 1a – Land Use Designations*. The approximate location of the Primary Study Area and the Secondary Study Area are illustrated as a solid blue line.

**Figure 4 York Region Official Plan Map I – Regional Structure**



Source: York Region Adopted Official Plan 2022 Maps (July 2022) – Regional Structure

**Figure 5 York Region Official Plan Map IA – Land Use Designations**



Source: York Region Adopted Official Plan 2022 Maps (July 2022) – Land Use Designations

The Agricultural Policies for the Region of York are provided in the *York Region Adopted Official Plan 2022 Section 5.0 – Supporting the Agricultural System*. The Agricultural System policies were



located in Section 5.1 while the Agricultural and Holland Marsh Specialty Crop Areas policies are located in Section 5.2.

Select and relevant agricultural policies from York Region Adopted Official Plan 2022 Section 5.1 – the Agricultural System are presented as follows.

*5.1.1 That the policies of Section 5.1 apply to the Agricultural System and the following land use designations as identified on Map 1A:*

- › Agricultural Area designation*
- › Holland Marsh Specialty Crop Area designation*
- › Rural Area designation*

*5.1.2 That the geographic continuity of the agricultural land base and the functional and economic connections to the agri-food network shall be maintained and enhanced.*

*5.1.3 That lands deemed to constitute prime agricultural areas and specialty crop areas within the Greenbelt Plan in York Region are designated as Agricultural Area and Holland Marsh Specialty Crop Area respectively on Map 1A.*

*5.1.4 That within the Agricultural Area, Holland Marsh Specialty Crop Area and Rural Area, normal farm practices and a full range of agricultural uses, agriculture-related uses and on-farm diversified uses are supported and permitted.*

*5.1.5 That agricultural uses, agriculture-related uses and on-farm diversified uses shall be permitted in accordance with Provincial guidelines, as further defined through local official plan policies. Proposed agriculture-related uses and on-farm diversified uses shall be compatible with, and shall not hinder, surrounding agricultural operations.*

*5.1.7 That limited new non-agricultural uses may be permitted in the Agricultural System subject to the following criteria:*

- a. Complies with applicable Provincial plans and policies;*
- b. Submission of an Agricultural Impact Assessment addressing the following elements to the satisfaction of the municipality in consultation with York Region: i. Proposed use is appropriate in size and scale to the area, including to the existing and/or planned infrastructure; ii. Proposed use shall not adversely affect the ecological integrity of the Regional Greenlands System; iii. Complies with Province's Minimum Distance Separation Formulae;*
- c. If within the Agricultural Area designation:*
  - i. Demonstrates a need within the planning horizon for additional land to accommodate the proposed use;*
  - ii. Alternative locations be evaluated, with confirmation that no reasonable alternative locations are available;*
  - iii. Lands will remain in the Agricultural Area designation;*

*5.1.10 That an application for the development of new or expanding infrastructure in the Agricultural System shall:*

- a. Demonstrate the need for the project;*
- b. Demonstrate that there is no reasonable alternative that could avoid or minimize impact on lands designated Agriculture; and*
- c. Undertake an Agricultural Impact Assessment or equivalent analysis as part of an Environmental Assessment.*

*5.1.12 That consents will only be permitted in accordance with Provincial plans, local official plans and zoning by-laws in the following instances:*

- a. Acquisition of land for infrastructure projects where the facility or corridor cannot be accommodated through the use of easements or rights-of-way;
- b. Within the Greenbelt Plan, conveyances to public bodies or non-profit agencies for natural heritage or conservation purposes, providing no separate residential lot is created;
- c. Minor lot adjustments or boundary additions, provided they do not create a separate lot for a residential dwelling in specialty crop or prime agricultural areas and there is no increased fragmentation of a key natural heritage feature or key hydrologic feature;
- d. Agricultural uses where both the subject and retained lands are a minimum size of 16 hectares (40 acres) in the Holland Marsh Specialty Crop Area and 40 hectares (100 acres) in the Agricultural Area;
- e. Existing or new agriculture-related uses, such as farm-related commercial and farm-related industrial uses that are small in scale and directly related to the farm operation and required to be located in close proximity to the farm operation. In these cases, the new lot will be limited to the minimum size required for the use and appropriate individual private on-site water and wastewater systems will be required; or,
- f. Severance of an existing residence that is surplus to a farming operation as a result of a farm consolidation, providing no additional residence can be constructed on the retained farmland and the severance is limited to the minimum size needed to accommodate the use and appropriate sewage and water services.

5.1.19 To work with local municipalities to support implementation of York Region's Agriculture and Agri-Food Strategy, by:

- a. Promoting the flow of goods and services in the value chain to drive growth and productivity and support job creation in the agri-food sector;
- b. Encouraging the provision of community driven local food programs and initiatives such as community gardens and other urban agriculture practices as appropriate;
- c. Fostering collaboration between York Region, the Province, the industry and other stakeholders to sustain and develop local markets for locally grown food; and
- d. Providing support for food and farming organizations including local farm groups, agri-tourism, start-up businesses, farm-gate sales, food incubators and accelerator hubs to strengthen the agriculture and agri-food cluster in the Greater Toronto Area.

These policies indicate that limited non-agricultural uses may be permitted in the Agricultural System subject to the criteria outlined in Section 5.1.7, and that an application for the development of new or expanding infrastructure is subject to the policies in Section 5.1.10 whereby there is a requirement to demonstrate the need for the project, to demonstrate that there are no reasonable alternative sites for the proposed infrastructure, and that an AIA or equivalent study is undertaking as part of an Environmental Assessment.

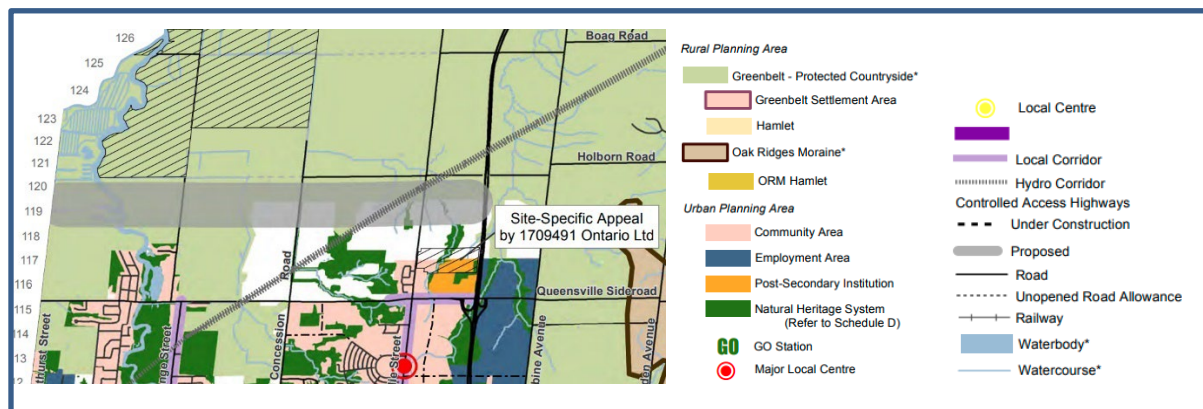
Select and relevant agricultural policies from York Region Adopted Official Plan 2022 Section 5.2 – Agricultural and Holland Marsh Specialty Crop Areas are presented as follows.

- 5.2.1 To recognize and protect the Agricultural Area and the Holland Marsh Specialty Crop Area, designated on Map 1A, for long-term use as natural resources of major importance to the economic and social viability of York Region.
- 5.2.2 That in addition to the policies of this section, the policies of Section 5.1 also apply to the Agricultural Area and the Holland Marsh Specialty Crop Area.
- 5.2.3 That the Agricultural Area and Holland Marsh Specialty Crop Area shall be designated and protected in local municipal official plans and zoning by-laws.
- 5.2.4 To discourage the use of the Holland Marsh Specialty Crop Area for uses that do not require its muck soils for food production.

### 3.6.2 TOWN OF EAST GWILLIMBURY OFFICIAL PLAN

The *Town of East Gwillimbury Consolidated Official Plan (October 2018 Consolidation)* was reviewed to determine the designated land uses for the portions of the Primary Study Area and Secondary Study Area that are located within the Town of East Gwillimbury. The *Town of East Gwillimbury Consolidated Official Plan Schedule A – Town Structure* revealed that the portions of the Primary Study Area and the Secondary Study Area that are located within the Town of East Gwillimbury are identified as Greenbelt Protected Countryside. Figure 6 illustrates a select portion of the *Town of East Gwillimbury Consolidated Official Plan Schedule A*. The proposed Bradford Bypass corridor is identified as a grey shaded area identified in the legend as ‘Proposed’.

**Figure 6 Town of East Gwillimbury Schedule A – Town Structure**



Source: The Town of East Gwillimbury Consolidated Official Plan (October 2018 Consolidation) Schedule A

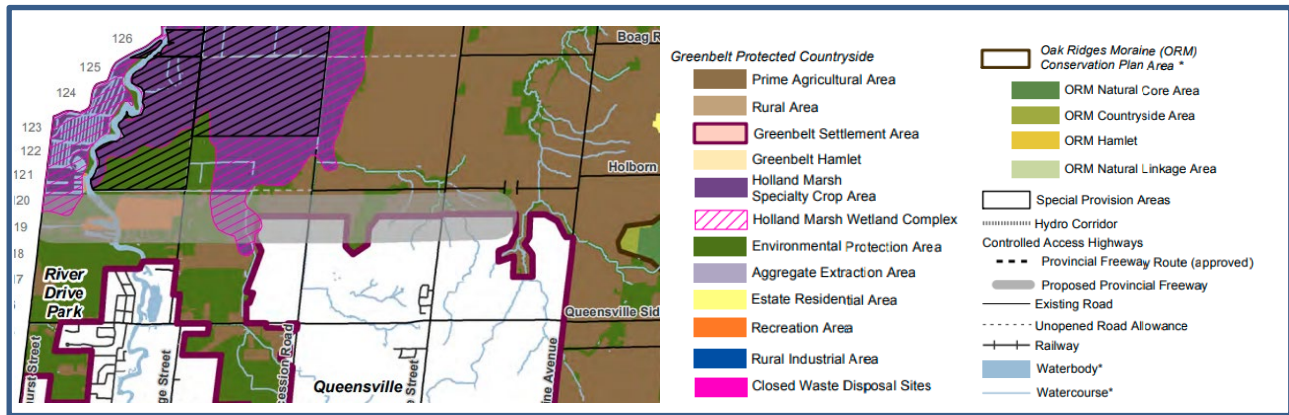
A review of the *Town of East Gwillimbury Consolidated Official Plan Schedule C – Rural Planning Area Land Use Plan* revealed that the portions of the Primary Study Area and the Secondary Study Area that are located within the Town of East Gwillimbury are identified as Prime Agricultural Area, Environmental Protection Area, Holland Marsh Specialty Crop Area, and Recreational Area.

Figure 7 illustrates a select portion of the *Town of East Gwillimbury Consolidated Official Plan Schedule C*. The proposed Bradford Bypass corridor is identified as a grey shaded area identified in the legend as ‘Proposed Provincial Freeway’.

The Agricultural Policies for the Town of East Gwillimbury are provided in the *Town of East Gwillimbury Consolidated Official Plan (October 2018 Consolidation)* Sections 4.10 (Agricultural/Long Term Growth Area), 4.11 (Greenbelt Plan Area (Protected Countryside)), 7.1 (General Infrastructure Policies), and 7.2 (Transportation).

Select and relevant agricultural policies from the *Town of East Gwillimbury Consolidated Official Plan (October 2018 Consolidation)* are presented as follows.

**Figure 7 Town of East Gwillimbury Schedule C – Rural Planning Area Land Use**



Source: The Town of East Gwillimbury Consolidated Official Plan (October 2018 Consolidation) Schedule C

- 7.1.6 *Infrastructure, and expansions and extensions of infrastructure within the Greenbelt Protected Countryside are permitted provided the project meets one of the following two objectives to the satisfaction of Council:*
- i) It supports agriculture, recreation and tourism, rural settlement areas, resource use or the rural economic activity in the Greenbelt Protected Countryside and is permitted within the Greenbelt;*
  - ii) It serves the significant growth and economic development expected in southern Ontario outside of the Greenbelt Protected Countryside by providing for the appropriate infrastructure connections among urban growth centres and between these centres and Ontario's borders.*
- 7.1.7 *Where permitted, the location and construction of infrastructure and expansions, extensions, operations and maintenance of infrastructure within the Greenbelt Protected Countryside are subject to the following policies:*
- i) Planning, design and construction practices shall minimize, wherever possible, the amount of the Greenbelt Protected Countryside, and particularly the Natural Heritage System, traversed and/or occupied by such infrastructure;*
  - ii) Planning, design and construction practices shall minimize, wherever possible, the negative impacts and disturbance of the existing landscape, including, but not limited to, impacts caused by light intrusion, noise and road salt;*
  - iii) Where practicable, existing capacity and coordination with different infrastructure services is optimized so that the rural and existing character of the Greenbelt Protected Countryside and any provincial growth management initiatives are supported and reinforced;*
  - iv) New or expanding infrastructure shall avoid key natural heritage features or key hydrologic features or its associated vegetation protection zone unless need has been demonstrated and it has been established that there is no reasonable alternative;*
  - v) Where infrastructure crosses the Natural Heritage System, intrudes into or results in the loss of a key natural heritage feature or key hydrologic feature, planning, design and construction practices shall minimize negative impacts and disturbance on the features or their related functions and, where reasonable, maintain or improve connectivity.*
- 7.1.8 *All existing, expanded or new infrastructure subject to and approved under the Canadian Environmental Assessment Act, the Environmental Assessment Act, the Planning Act, the Aggregate Resources Act, the Telecommunications Act or by the National or Ontario Energy Boards, or which receives a similar environmental approval, is permitted within the Greenbelt Protected Countryside, subject to the policies of this Plan.*
- 7.1.9 *Infrastructure serving the agricultural sector, such as agricultural irrigation systems, may need certain elements to be located within the vegetation protection zone of a key natural heritage feature or key hydrologic feature. In such instances, these elements of the infrastructure may be established within the feature itself or its associated vegetation protection zone but all reasonable efforts shall be made to keep such infrastructure out of key natural heritage features or key hydrologic features or the vegetation protection zones.*
- 7.2.4.2.5 *The Provincial Controlled Access Highway proposed between Highway 400 and the Highway 404 extension is considered necessary within the planning horizon of this Plan and is required to accommodate employment*



growth and inter-regional traffic associated with Simcoe County and northern York Region, as demonstrated by transportation studies completed by both the Region of York and the Town. This highway link shall be provided at the earliest possible time.

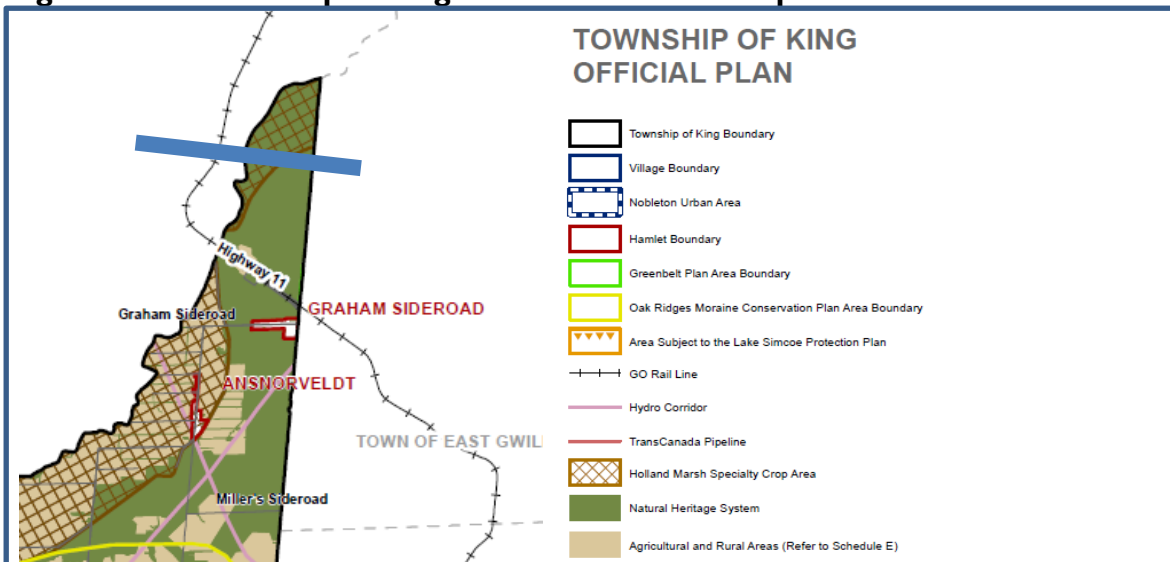
- 7.2.4.2.6 The alignment shown for the proposed Highway 400-404 Link on Schedule E is conceptual in order to recognize a future route approved by the Province in accordance with the Environmental Assessment Act and related Controlled Access Highway designation.
- 7.2.4.2.7 Council supports a review of the proposed Highway 400-404 Link as it relates to the planned alignment in order to address local environmental and cultural heritage features and impacts on existing land uses.
- 7.2.4.2.8 Upon finalization of planning for the Highway 400-404 Link through the area north of Queensville Sideroad, following completion of the Environmental Assessment and other studies, Schedule E of this Plan will be reviewed to consider any consequential changes, including the provision of one or more north-south linkages between the Highway 400-404 Link and road network serving this community. Until this review is carried out, it is the intent of this Plan that potential alternative locations for such linkages should be maintained and that actions that would foreclose potential alternatives should be discouraged.

These policies identify that transportation and infrastructure are permitted in all land use designations including agricultural and specialty crop areas, provided that specific conditions are met.

### 3.6.3 TOWNSHIP OF KING OFFICIAL PLAN

The Township of King Official Plan (2019) (track changes September 24, 2020 version) was reviewed to determine the designated land uses for the portions of the Primary Study Area and Secondary Study Area that are located within the Township of King. The Township of King Official Plan (2019) (track changes September 24, 2020 version) Schedule A – Township Structure revealed that the portions of the Primary Study Area and the Secondary Study Area that are located within the Township of King are identified as Natural Heritage System and Holland Marsh Specialty Crop Area. Figure 8 illustrates a select portion of the Schedule A. The approximate location of the proposed project is identified as a blue line on Figure 8.

**Figure 8 Township of King Schedule A – Township Structure**



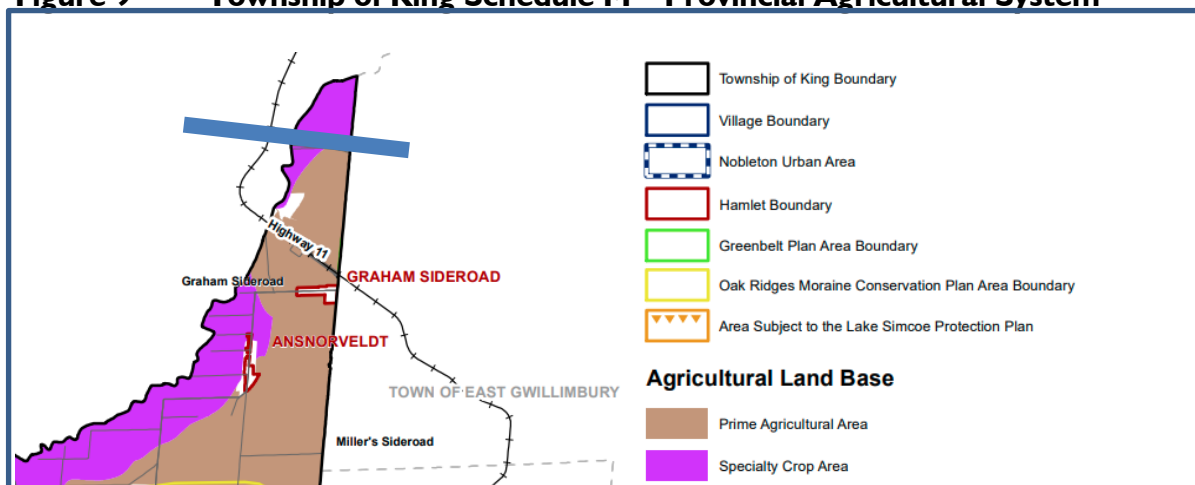
Source: The Township of King Official Plan 2019 (track changes September 24, 2020) Schedule A

A review of the *Township of King Official Plan (2019) (track changes September 24, 2020 version) Schedule M – Provincial Agricultural System* revealed that the portions of the Primary Study Area and the Secondary Study Area that are located within the Township of King are identified as Prime Agricultural Area and Specialty Crop Area.

Figure 9 illustrates a select portion of the *Township of King Official Plan (2019) (track changes September 24, 2020 version) Schedule M – Provincial Agricultural System*.

The Agricultural Policies for the Township of King are provided in the *Township of King Official Plan (2019) (track changes September 24, 2020 version) Section 6.3 Agricultural and Holland Marsh Specialty Crop Area Designations, Section 8.2.3 Infrastructure in the Greenbelt Plan Area, and Section 8.5.6 Planned Corridors and Interchanges*.

**Figure 9 Township of King Schedule M – Provincial Agricultural System**



Source: The Township of King Official Plan 2019 (track changes September 24, 2020) Schedule M

Select and relevant agricultural policies from the *Township of King Official Plan (2019) (track changes September 24, 2020 version)* are presented as follows.

- 8.2.1.1 *That infrastructure is generally permitted in all land use I. designations, subject to the applicable policies of this Plan.*
- 8.2.1.6 *To promote the co-location of linear infrastructure, where appropriate.*
- 8.2.3.1 *That all existing, expanded or new infrastructure subject to and approved under the Canadian Environmental Assessment Act, the Ontario Environmental Assessment Act, the Planning Act, the Aggregate Resources Act or the Telecommunications Act or by the National or Ontario Energy Boards, or which receives a similar environmental approval, is permitted within the Protected Countryside, subject to the policies of this section and provided it meets one of the following two objectives:*
  - .a. It supports agriculture, recreation and tourism, Villages and Hamlets, a resource use or the rural economic activity that exists and is permitted within the Greenbelt; or*
  - b. It serves the significant growth and economic development expected in southern Ontario beyond the Greenbelt by providing for the appropriate infrastructure connections among urban centres and between these centres and Ontario's borders*

- 8.2.3.2 That the location and construction of infrastructure and expansions, extensions, operations and maintenance of infrastructure in the Protected Countryside are subject to the following:
- a. Planning, design and construction practices shall minimize, wherever possible, the amount of the Greenbelt, and particularly our Natural Heritage System, traversed and/or occupied by such infrastructure;
  - b. Planning, design and construction practices shall minimize, wherever possible, the negative impacts on and disturbance of the existing landscape, including, but not limited to, impacts caused by light intrusion, noise and road salt;
  - c. Where practicable, existing capacity and co-ordination with different infrastructure services shall be optimized so that the rural and existing character of the Protected Countryside and the overall hierarchy of areas where growth will be accommodated in the GGH established by the Greenbelt Plan and the Growth Plan are supported and reinforced;
  - d. New or expanding infrastructure shall avoid key natural heritage features, key hydrologic features or key hydrologic areas unless need has been demonstrated and it has been established that there is no reasonable alternative;
  - e. Where infrastructure crosses our Natural Heritage System or intrudes into or results in the loss of a key natural heritage feature, key hydrologic feature or key hydrologic areas, including related landform features, planning, design and construction practices shall minimize negative impacts on and disturbance of the features or their related functions and, where reasonable, maintain or improve connectivity;
  - f. New or expanding infrastructure shall avoid specialty crop areas and other prime agricultural areas in that order of priority, unless need has been demonstrated and it has been established that there is no reasonable alternative;
  - g. Where infrastructure crosses prime agricultural areas, including specialty crop areas, an agricultural impact assessment or equivalent analysis as part of an environmental assessment shall be undertaken; and
  - h. New waste disposal sites and facilities, and organic soil conditioning sites are prohibited in key natural heritage features, key hydrologic features and their associated vegetation protection zones.

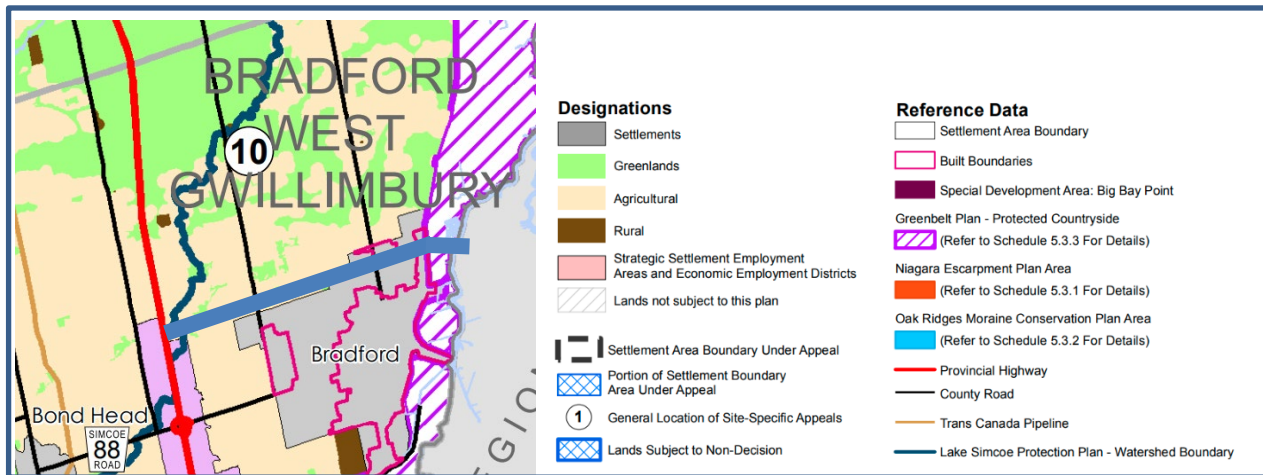
These policies identify that transportation and infrastructure are permitted in all land use designations including agricultural and specialty crop areas, provided that specific conditions are met.

### **3.6.4 THE COUNTY OF SIMCOE OFFICIAL PLAN**

A review of the *Official Plan of the County of Simcoe (December 29, 2016) Schedule 5.1 – Land Use Designations* revealed that the portion of the Primary Study Area and Secondary Study Area that are located in the County of Simcoe are identified as Greenbelt Protected Countryside, Agricultural, Greenlands, and are in close proximity to Settlements, and the Strategic Settlement Employment Areas and Economic Employment Districts.

Figure 10 illustrates a select portion of the *Official Plan of the County of Simcoe (December 29, 2016) Schedule 5.1 – Land Use Designations* map. The approximate location of the Primary Study Area and Secondary Study Area is illustrated as a blue line on Figure 10.

**Figure 10 County of Simcoe Official Plan – Schedule 5.1 – Land Use**



Source: The Official Plan of the County of Simcoe (December 29, 2016) Schedule 5.1 – Land Use

The Agricultural Policies for the County of Simcoe are provided in the *Official Plan of the County of Simcoe (December 29, 2016)* Section 3.6 Agricultural, and Section 4.8 Transportation

Select and relevant agricultural policies from the *Official Plan of the County of Simcoe (December 29, 2016)* are presented as follows.

- 3.3.6 *Where feasible, and subject to local municipal policies and bylaws, infrastructure and passive recreational uses may be located in any designation of this Plan, subject to Sections 3.8, and 4.2, and the requirements of the Niagara Escarpment Plan, Oak Ridges Moraine Conservation Plan, Greenbelt Plan and Lake Simcoe Protection Plan where applicable, and applicable provincial and federal policy and legislation. Where applicable, only such uses permitted in the Greenlands designation (see Section 3.8) are those which have successfully completed any required provincial and/or federal environmental assessment process or proceedings under the Drainage Act. Lot creation for infrastructure in the Agricultural designation is discouraged and should only be permitted where the use cannot be accommodated through an easement or right-of-way.*
- 3.6.7 *In the Agricultural designation lot creation is discouraged and may only be permitted for:*
- a) *Agricultural uses, provided new lots for agricultural uses should not be less than 40 hectares or the original survey lot size, whichever is lesser, or 16 hectares in specialty crop areas.*
  - b) *Agriculture-related uses (PPS 2014), provided that any new lot will be limited to a minimum size needed to accommodate the use and appropriate sewage and water services. Residential uses shall be prohibited on such lots, and they shall be zoned accordingly;*
  - c) *a residence surplus to a farming operation as a result of farm consolidation, provided that:*
    - i. *the new lot will be limited to a minimum size needed to accommodate the residential use and appropriate sewage and water services, and should be an approximate size of 1 hectare; and*
    - ii. *new residential dwellings are prohibited on any remnant parcel of farmland created by the severance. To ensure that no new residential dwellings are permitted on the remnant parcel, municipalities may use approaches such as zoning to prohibit the development of a dwelling unit(s), and/or the municipality may enter into agreements imposed as a condition to the approval of lot creation and the agreements may be registered against the land to which it applies; or*
  - d) *infrastructure, where the facility or corridor cannot be accommodated through the use of easements or rights-of-way.*

- 3.8.19 *Infrastructure authorized under an environmental assessment process may be permitted within the Greenlands designation or on adjacent lands. Infrastructure not subject to the environmental assessment process, may be permitted within the Greenlands designation or on adjacent lands in accordance with Section 3.3.15.*
- 3.12.8 *The following policies apply to the Holland Marsh Specialty Crop Area and the Greenbelt Agricultural designation, in addition to the other policies of Section 3.12.*
- *Development\* or site alteration\* for normal farm practices\*, agricultural, agriculture-related and secondary uses are permitted, in accordance with Section 4.6 of the Greenbelt Plan.*
  - *Lands within the Holland Marsh Specialty Crop Area and Greenbelt Agricultural designation shall not be redesignated in municipal official plans for non-agricultural uses\* except for those uses permitted in Sections 4.2 to 4.6 of the Greenbelt Plan.*
  - *Infrastructure\* is permitted if it is demonstrated to comply with Sections 4.2 and 4.6.2(a) of the Greenbelt Plan.*

These policies identify that transportation and infrastructure are permitted in all land use designations including agricultural and specialty crop areas, provided that specific conditions are met.

### **3.6.5 THE TOWN OF BRADFORD – WEST GWILLIMBURY OFFICIAL PLAN**

A review of the *Official Plan of the Town of Bradford West Gwillimbury (Office Consolidation October 1, 2002) Schedule A – Rural Land Use Plan* revealed that the portion of the Primary Study Area that is located in the Town of Bradford – West Gwillimbury comprised Agricultural, Bradford Urban Area, Open Space Conservation, Lands Subject to Minister’s Zoning Order, and Provincially Significant Wetland areas. The portion of the Secondary Study Area that is located in the Town of Bradford – West Gwillimbury comprised Agricultural, Bradford Urban Area, Open Space Conservation, Lands Subject to Minister’s Zoning Order, Provincially Significant Wetland areas, and marsh agricultural.

Figure 11 illustrates a select portion of the *Official Plan of the Town of Bradford West Gwillimbury (Office Consolidation October 1, 2002) Schedule A – Rural Land Use Plan* map. The approximate location of the Primary Study Area is illustrated on Schedule A and is identified as the Highway 400/404 Link.

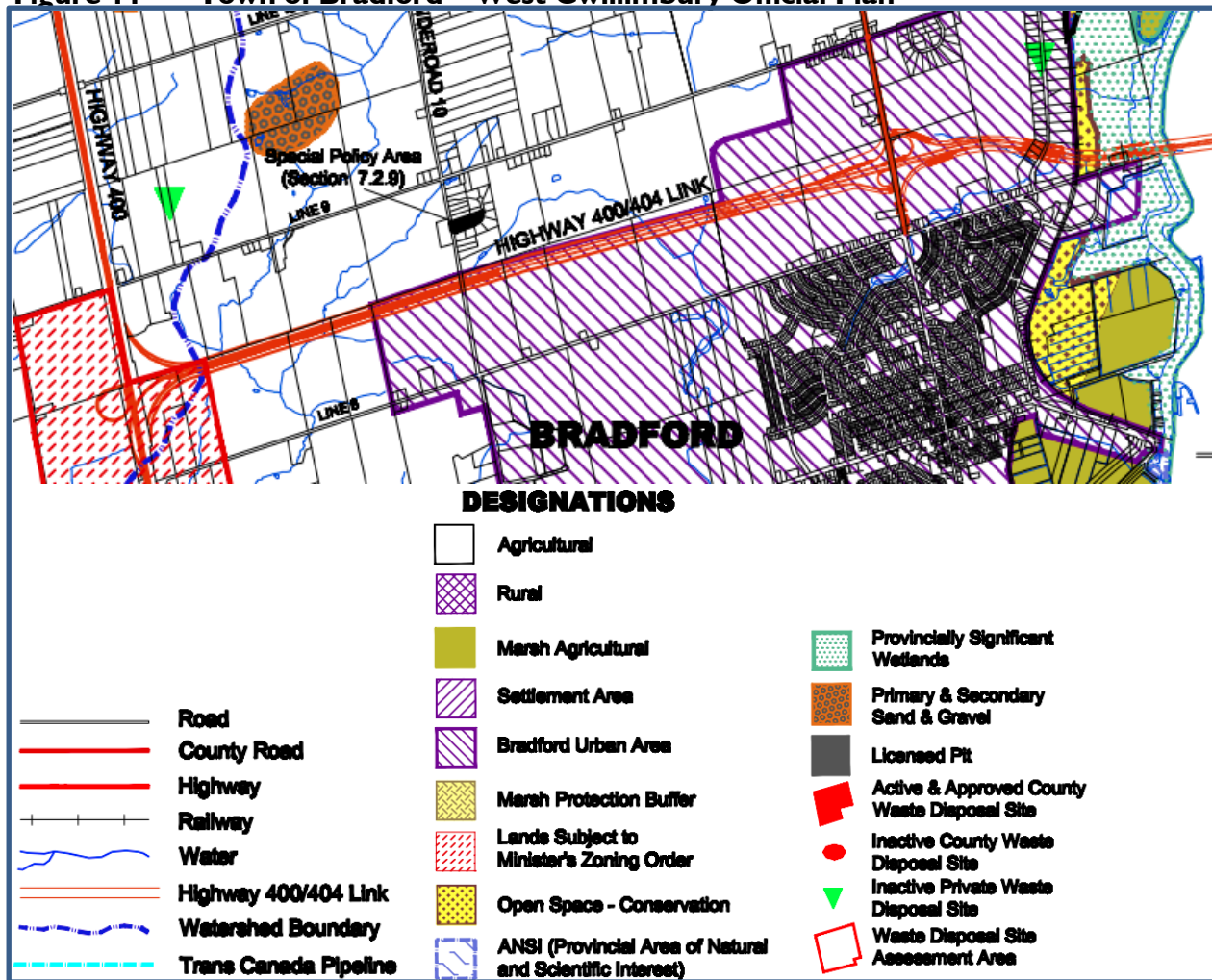
The Agricultural Policies for the Town of Bradford – West Gwillimbury are provided in the *Official Plan of the Town of Bradford West Gwillimbury (Office Consolidation October 1, 2002) Section 7 Agricultural and Rural Areas, and Section 9 Services and Utilities.*

Select and relevant agricultural policies from the *Official Plan of the Town of Bradford West Gwillimbury (Office Consolidation October 1, 2002)* and *Amendment No. 17 to the Official Plan of the Town of Bradford West Gwillimbury – Transportation Network Update (September 16, 2009)* are presented as follows.

- 2.2.3.10 *Numerous transportation and public transit issues have come to light during the preparation of the Plan. Of particular importance has been the submission of the Environmental Assessment document for the proposed highway link between Highway 400 and the northern extension of Highway 404 in the Town of East Gwillimbury. Policies are contained herein to ensure that development in the vicinity of the highway will be compatible with the functioning of the highway and its access points.*



**Figure 11 Town of Bradford – West Gwillimbury Official Plan**



Source: The Official Plan of the Town of Bradford West Gwillimbury (Office Consolidation October 1, 2002) Schedule A – Rural Land Use Plan

5.3.4.5 *Development of lands within the Industrial/Commercial designation located along the proposed Highway 400/404 Link may proceed in advance of the construction of the Highway. Development shall have regard to the construction of the Highway and shall be phased in accordance with the construction of access/service roads. The identification of development phasing and its required portion of the access/service road shall be part of the Community Plans for these areas. The service roads/access roads would not necessarily be required to be constructed in their entirety prior to development being permitted on the lands so identified.*

9.2.3.1 *This category includes divided multi-lane highways designed to carry large volumes of traffic over long distances. Highway 400 and the Future Highway 400/404 Link are so designated. Access to these highways is limited. Lands designated for the Future Highway 400/404 Link shall be reserved to protect for a 110 metre right-of-way for the highway's future construction. Schedules F-1 and F-2 identify possible interchanges with provincial highways. These interchanges have not been approved through the environmental assessment process. Further work by municipal or private proponents, including traffic operations studies, property protection, engineering, environmental assessment, and funding, is still required*

These policies identify that an Environmental Assessment document has been submitted for the proposed highway link between Highway 400 and the northern extension of Highway 404, and

that the *Official Plan of the Town of Bradford West Gwillimbury (Office Consolidation October 1, 2002)* recognizes the proposed link.

### 3.6.6 ZONING BY-LAWS

Official Plans set out a municipality’s general policies for existing and future land use. Zoning bylaws specify permitted uses and standards for each municipally designated zone. The specific requirements identified within a zoning bylaw are legally enforceable. Local municipalities are the approval authority for zoning bylaws. As such, this AIA reviewed the zoning bylaws for:

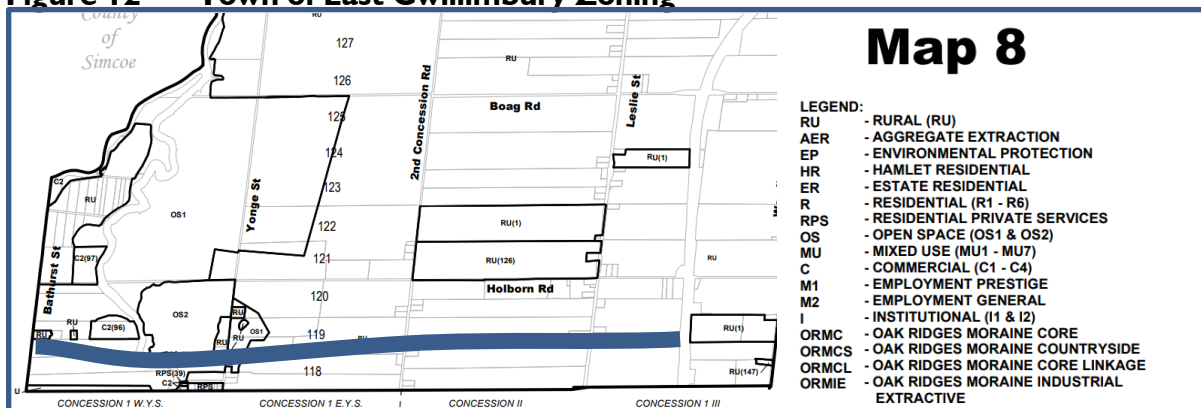
- the *Town of East Gwillimbury Zoning By-Law 2018-043 (Office Consolidation 2020)*
- the *Township of King Zoning By-Law for the Countryside By-law No. 2022-053 (September 2022)*
- the *Corporation of the Town of Bradford – West Gwillimbury Zoning By-Law 2010-050 (November 2014 Consolidation)*

#### 3.6.6.1 The Town of East Gwillimbury Zoning By-Law

The *Corporation of the Town of East Gwillimbury Zoning By-law 2018-043* was reviewed as part of this AIA. A review of the *Town of East Gwillimbury Zoning By-law 2018-043 Map 8* revealed that the portion of the Primary Study Area and Secondary Study Area that is located in the Town of East Gwillimbury is zoned as RU - Rural, OS1 – Open Space One, OS2 – Open Space Two, and RU(1) - Rural.

Figure 12 provides a select portion of the *Town of East Gwillimbury Zoning By-law 2018-043 Map 8* and illustrates the approximate location of the portions of the Primary Study Area and Secondary Study Area within the Town of East Gwillimbury as a blue line.

**Figure 12 Town of East Gwillimbury Zoning**



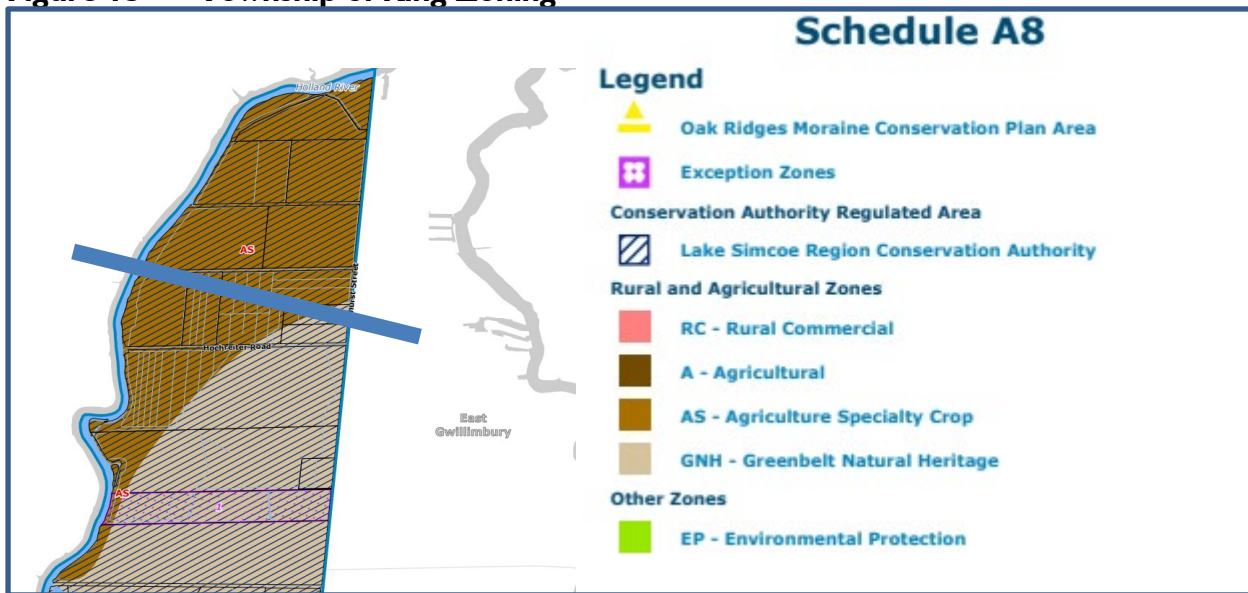
Source: The Town of East Gwillimbury Zoning By-law 2018-043 Map 8

### 3.6.6.2 The Township of King Zoning

The *Township of King Zoning By-law for the Countryside By-law No. 2022-053 (Final September 2022)* and associated schedules was reviewed as part of this AIA. The review of the associated schedules (Schedule A8) revealed that the portion of the Primary Study Area and Secondary Study Area that is located in the Township of King is zoned as Agriculture Specialty Crop and Greenbelt Natural Heritage.

Figure 13 provides a select portion of the online interactive mapping for the Township of King and illustrates the approximate location of the portions of the Primary Study Area and Secondary Study Area within the Township of King as a blue line.

**Figure 13 Township of King Zoning**



Source: The Township of King Zoning By-law for the Countryside By-law No. 2022-053 (Final September 2022) Schedule A8

The zoning standards for Agriculture Specialty Crop are provided in Part 7 – Rural and Agricultural Zones of the *Township of King Zoning By-law for the Countryside By-law No. 2022-053 (Final September 2022)* and indicate a minimum lot area of 16.0 ha for Agriculture Specialty Crop.

### 3.6.6.3 The Town of Bradford – West Gwillimbury Zoning

The *Corporation of the Town of Bradford West Gwillimbury Zoning By-Law 2010-050 (November 2014 Consolidation)* was reviewed as part of this AIA. A review of Schedule A – Key map illustrated that the portion of the Primary Study Area and Secondary Study Area that is located in the Town of Bradford West Gwillimbury is identified within Zoning maps 15, 16 and 17.



Figure 14 overlaps select portions of Zoning maps 15, 16 and 17 to illustrate the zoning for the portions of the Primary Study Area and Secondary Study Area within the Town of Bradford – West Gwillimbury.

**Figure 14 Town of Bradford – West Gwillimbury Zoning By-Law**



Source: The Corporation of the Town of Bradford West Gwillimbury Zoning By-Law 2010-050 (November 2014 Consolidation)

As illustrated in Figure 14, the Primary Study Area and Secondary Study Areas comprise areas zoned as A – Agricultural, urban areas, EP – Environmental Protection, NHS2\*2 – Natural Heritage System Two, and NHS1 – Natural Heritage System One.

Zone standards for Agriculture were presented in Part 9 – Countryside Zones, in section 9.5.1 – Agricultural (A). The zone standards are provided as follows.

**9.5.1 Agricultural (A)**

*Notwithstanding Table 9.2 above, no person shall within an Agricultural (A) Zone erect, alter or use a detached dwelling on a lot except in accordance with the following zone standards:*

- a) Minimum lot frontage 30.0 m;*
- b) Minimum lot depth 45.0 m;*
- c) Minimum lot area 1,800 sq.m;*
- d) Minimum required front yard 15.0 m;*
- e) Minimum required rear yard 7.5 m;*
- f) Minimum required interior side yard 3.6 m;*
- g) Minimum required exterior side yard 15.0 m;*
- h) Maximum height 11.0 m;*
- i) Maximum lot coverage 15% (for lots with a lot area less than 4.0ha).*

*Notwithstanding Section 4.20.1 and 4.21, Table 9.2 and Section 9.5.1 above, a detached dwelling shall not be permitted on a lot having between 4.04 hectares and 10.1 hectares in lot area.*

## 4 AGRICULTURAL RESOURCE POTENTIAL

### 4.1 PHYSICAL CHARACTERISTICS

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

#### 4.1.1 PHYSIOGRAPHY

On review of the Land Information Ontario (LIO) digital physiographic region data, and *The Physiography of Southern Ontario 3rd Edition*, (Ontario Geological Survey Special Volume 2, Ministry of Natural Resources, 1984), it was determined that portions of the Primary Study Area and portions of the Secondary Study Area are located within the Peterborough Drumlin Field physiographic region, the Simcoe Lowlands physiographic region, and the Schomberg Clay Plain physiographic region.

The Peterborough Drumlin Field physiographic region is described as a belt of land extending from Hastings County in the east to Simcoe County in the west, including the drumlins in Northumberland County, and north to the Oak Ridges Moraine. The Peterborough Drumlin Field is so named due to Peterborough occupying the geographical centre of the formation. The underlying bedrock is limestone. The general orientation of the drumlin axis is from northeast to southwest. The drumlins are composed of calcareous till materials. A series of deep valleys is also noted in this region. All the valleys have wide swampy bottoms with slow meandering streams.

The Simcoe Lowlands physiographic region is described as the lowlands bordering Georgian Bay and Lake Simcoe. There are two distinct areas of the Simcoe Lowlands, with one area described as plains to the west that drain into Nottawasaga Bay by way of the Nottawasaga River (called the Nottawasaga Basin), and the other area described as the eastern section of lowlands surrounding Lake Simcoe (called the Lake Simcoe Basin). The Primary Study Area and the Secondary Study Area are located within the Lake Simcoe Basin area. The southern end of the Lake Simcoe Basin extends as a broad valley between high morainic hills. The floor of the valley is a marsh area and the meandering Holland River. Between the marshy area and Holland Landing (see Figure 1) the soils are sandy. The area was partially cleared but could not support general farming, but parts of this sandy plain are now used for market garden type crops.

The Schomberg Clay Plains physiographic region is described as basins along the northern slopes of the Oak Ridges Moraine that contain deep deposits of clay and silt materials. The Schomberg sediments are typically varved with annual layers of 5 cm to 10 cm in thickness. The soils are typically comprised of silt and clay materials. Tile drains have been installed in many of the poorly drained low areas such that whole fields may be cultivated at the same time.

Figure 15 illustrates the geographic location and shape of the respective physiographic regions as compared to the location and shape of the Primary Study Area and Secondary Study Area.

#### **4.1.2 TOPOGRAPHY AND CLIMATE**

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

The Primary Study Area and the Secondary Study Area are a complex mix of topography, with the western extent (nearer Highway 400) comprising gently sloping to undulating lands and incised stream courses. The central portions of the Primary Study Area and Secondary Study Area comprise more rugged terrain around County Road 4 and sloping steeply toward the low marshy areas adjacent to the Holland River. The area east of the Holland River is relatively level to very gently sloping until just east of 2<sup>nd</sup> Concession Road where the lands rise steeply. East of this steep rise, the lands are more rugged, with undulating slopes and incised stream courses.

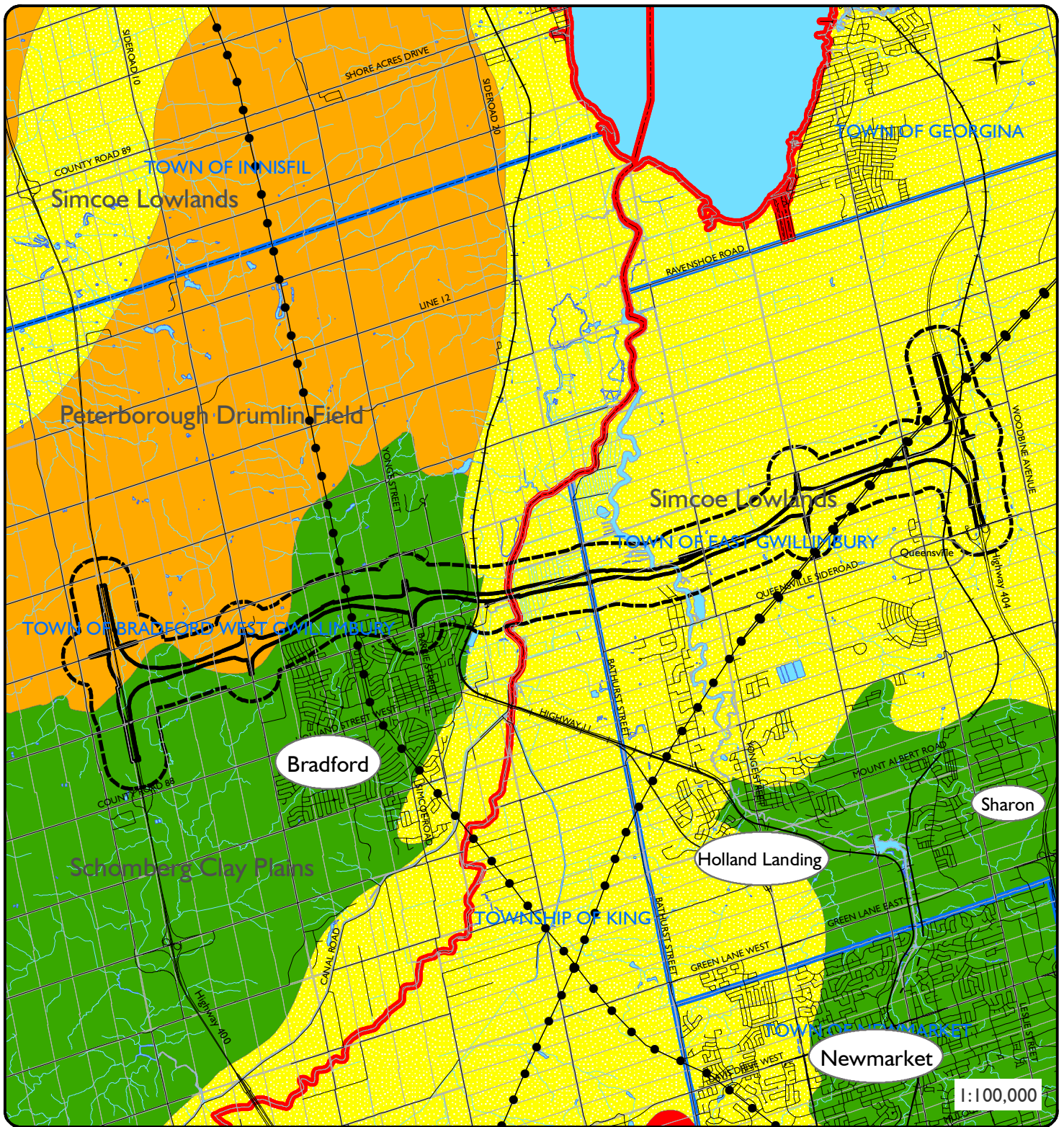
Climate data was taken from the OMAFRA document titled *Agronomy Guide for Field Crops – Publication 811 (June 2017)* and the *Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) Factsheet – Crop Heat Units for Corn and Other Warm Season Crops in Ontario, 1993*.

The Primary Study Area and Secondary Study Area are located between the 2900 and 3100 Crop Heat Units isolines (CHU-M1) available for corn production in Ontario. The Crop Heat Units (CHU) index was originally developed for field corn and has been in use in Ontario for 30 years. The CHU ratings are based on the total accumulated crop heat units for the frost-free growing season in each area of the province. CHU averages range between 2500 near North Bay to over 3500 near Windsor. The higher the CHU value, the longer the growing season and greater are the opportunities for growing value crops.

Crop Heat Units for corn (based on 1971-2000 observed daily minimum and maximum temperature (OMAFRA, 2017)) map is illustrated on Figure 16. The approximate location of the Primary Study Area and Secondary Study Area is marked with a blue star.

## **4.2 EXISTING LAND USE**

The existing land use for both the Primary Study Area and the Secondary Study Area was completed through a windshield survey (completed in October/November 2021 and September/October 2022), a review of recent aerial photography, Google Earth Imagery, Bing Imagery, Birdseye Imagery, the Region of York, County of Simcoe online Imagery, and correlation to the OMAFRA Land Use Systems mapping. Agricultural and non-agricultural land uses are illustrated on Figure 17.



Legend	
	Roads (MNRF)
	Railway (MNRF)
	Utility Line (MNRF)
	Water Course (MNRF)
	Lot Lines (MNRF)
	Lower Tier Boundary (MNRF)
	Primary Study Area
	Secondary Study Area (500 m)
	Upper Tier Boundary (MNRF)
	Water Body (MNRF)
Physiographic Region	
	Oak Ridges Moraine
	Peterborough Drumlin Field
	Schomberg Clay Plains
	Simcoe Lowlands

Figure 15  
**Physiographic Region**

DBH Soil Services Inc.  
 January 30, 2023

**Figure 16 Crop Heat Units Map**

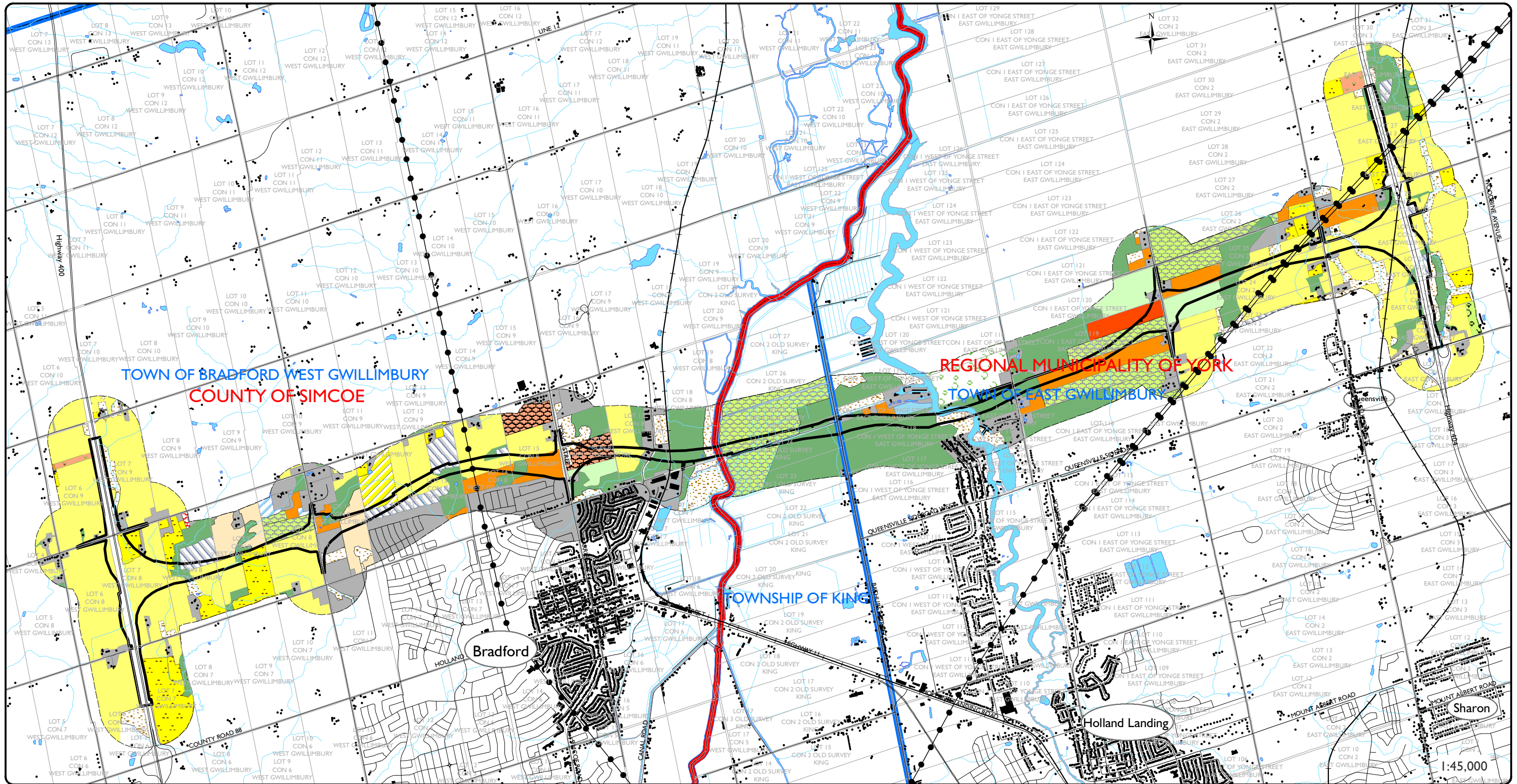


Source: Figure I-1 Crop Heat Units – Agronomy Guide for Field Crops (Publication 811)

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

- Built up
- Cherries
- Corn System
- Extraction Pits and Quarries
- Grazing System
- Hay System
- Idle Agricultural Land (5 - 10 years)
- Idle Agricultural Land (> 10 years)
- Market Gardens/Truck Farms
- Mixed System
- Nursery
- Orchard
- Pasture System
- Recreation
- Reforestation
- Sod Farm





## Legend

•	Building (MNR)	■	Building to Scale (MNR)	□	Primary Study Area	<b>Existing Land Use</b>							
—+—	Railway (MNR)	□	Lot Lines (MNR)	□	Secondary Study Area (500 m)	■	built up	■	golf course	■	nursery stock	■	scrubland
—	Roads (MNR)	□	Lower Tier Boundary (MNR)	□	Upper Tier Boundary (MNR)	■	common field crop	■	harvested	■	open field	■	small grains
●—●	Utility Line (MNR)	□	Water Body (MNR)	■	forage/pasture	■	cover crop	■	idle lands	■	planted	■	sod
—	Water Course (MNR)			■		■	market garden	■	marina water	■	plowed	■	unknown
				■		■	recreation	■	woodlands				

Figure 17

## Existing Land Use

DBH Soil Services Inc.

January 30, 2023

- Swamp/Marsh/Bog
- Unknown
- Vineyard
- Vineyard-Orchard
- Water
- Woodlands

The windshield survey identified the types of land uses including farm and non-farm uses (built up areas, commercial, and roads). Farms were identified as livestock 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, 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) or review of aerial photography. In some instances, no information is available. In those instances, the field polygon will be identified as ‘unknown crop’ or ‘unknown building use or type’.

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

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 Primary Study Area and the Secondary Study Area. Area calculations for each land use polygon (area) were calculated within the GIS software and exported as tabular data. The data is presented as follows. Land use designations and land use definitions are provided in Table I.

**Table I Typical Land Use Designations**

Land Use Designation	Land Use Definitions
Built Up/Disturbed Areas	Residential, commercial, industrial, man modified, existing road system and Velodrome area
Common Field Crop	Corn, Soybean, Cultivated
Forage/Pasture	Forage/Pasture
Market Garden	Vegetables, Garden Crops
Ponds	Small Body of Open Still Water

Land Use Designation	Land Use Definitions
Open Field	Unused field (<5 years)
Scrublands	Unused field (>5 years) – woody vegetation regrowth
Sod	Sod Production
Small Grains	Wheat, Oats, Barley
Woodlands	Forested Areas

#### **4.2.1 EXISTING LAND USE – PRIMARY STUDY AREA**

The Primary Study Area consisted of a variety of land uses including, but not limited to built-up/disturbed areas, common field crops, cover crops, forage/pasture lands, harvested areas, market garden, open field, plowed, scrublands, sod, unknown uses and woodland areas.

The Primary Study Area comprised land use of approximately 2.9 percent as built up/disturbed areas, 29.1 percent as common field crop (soybean, corn), 1.4 percent as cover crop, 2.5 percent as forage/pasture lands, 1.0 percent as harvested lands, 5.9 percent as market garden crops, 7.0 percent as open field, 2.3 percent as plowed lands, 2.7 percent as scrublands, 3.4 percent as sod, 2.6 percent as unknown, 15.0 percent as woodland areas, with the remaining 23.5 percent in road/highway corridors and river/stream areas.

On review of the existing land use data it was observed that the predominant land uses in the Primary Study Area include the production of common field crops, woodland areas, and open field areas. The next greatest percent of land use is derived from market garden, and unknown land use areas.

#### **4.2.2 EXISTING LAND USE – SECONDARY STUDY AREA**

The Secondary Study Area consisted of a variety of land uses including, but not limited to built-up/disturbed areas, common field crops, cover crops, forage/pasture lands, harvested areas, market garden, open field, planted, plowed, recreation, scrublands, small grains, sod, unknown uses and woodland areas.

The Secondary Study Area comprised land use of approximately 13.7 percent as built up/disturbed areas, 32.2 percent as common field crop (soybean, corn), 1.7 percent as cover crop, 4.8 percent as forage/pasture lands, 0.6 percent as harvested lands, 0.4 percent as idle lands, 7.7 percent as market garden crops, 3.4 percent as open field, 1.1 percent as plowed lands, 1.9 percent as recreation lands (eg. golf course), 6.6 percent as scrublands, 0.8 percent as small grains, 1.7 percent as sod, 0.3 percent as trailer park, 1.6 percent as unknown, 16.9 percent as woodland areas, with the remaining 4.6 percent in road/highway corridors and river/stream areas.

On review of the existing land use data it was observed that the predominant land uses in the Secondary Study Area include the production of common field crops, woodland areas, and built up/disturbed areas. The next greatest percent of land use is derived from market garden, and



scrubland areas.

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

**Table 2 Existing Land Use – Primary Study Area and Secondary Study Area**

Land Use Designation	Primary Study Area Percent Occurrence	Secondary Study Area Percent Occurrence
Built Up/Disturbed Areas	2.9	13.7
Common Field Crop	29.1	32.2
Cover Crop	1.4	1.7
Forage/Pasture	2.5	4.8
Harvested	1.0	0.6
Idle Lands	-	0.4
Market Garden	5.9	7.7
Open Field	7.0	3.4
Plowed	2.3	1.1
Recreation	-	1.9
Scrubland	2.7	6.6
Small Grains	0.5	0.8
Sod	3.4	1.7
Trailer Park	-	0.3
Unknown	2.6	1.6
Woodlands	15.0	16.9
Other (road/highway corridors, river/stream courses)	23.5	4.6
Totals	100.0	100.0

There will be permanent loss of the use of agricultural lands within the Study Area. The loss of lands includes the loss of designated agricultural lands, and lands that are used for agriculture but are not designated as agricultural lands.

### 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, processing and storage).

As a result, the lands and facilities that have increased capital investment are often considered as having greater affinity for preservation than similar capability lands and facilities that are

undergoing degradation and decline. 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 18 – Agricultural Investment.

Agricultural facilities (facilities that may be capable of housing livestock), barns, storage and processing facilities were identified through a combination of aerial photographic interpretation, a review of online digital imagery (Google Earth Pro, Bing Mapping, Provincial and municipal online imagery, and Birds Eye Imagery), 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. Further, field investigations also identified newer buildings that were not illustrated in the online imagery.

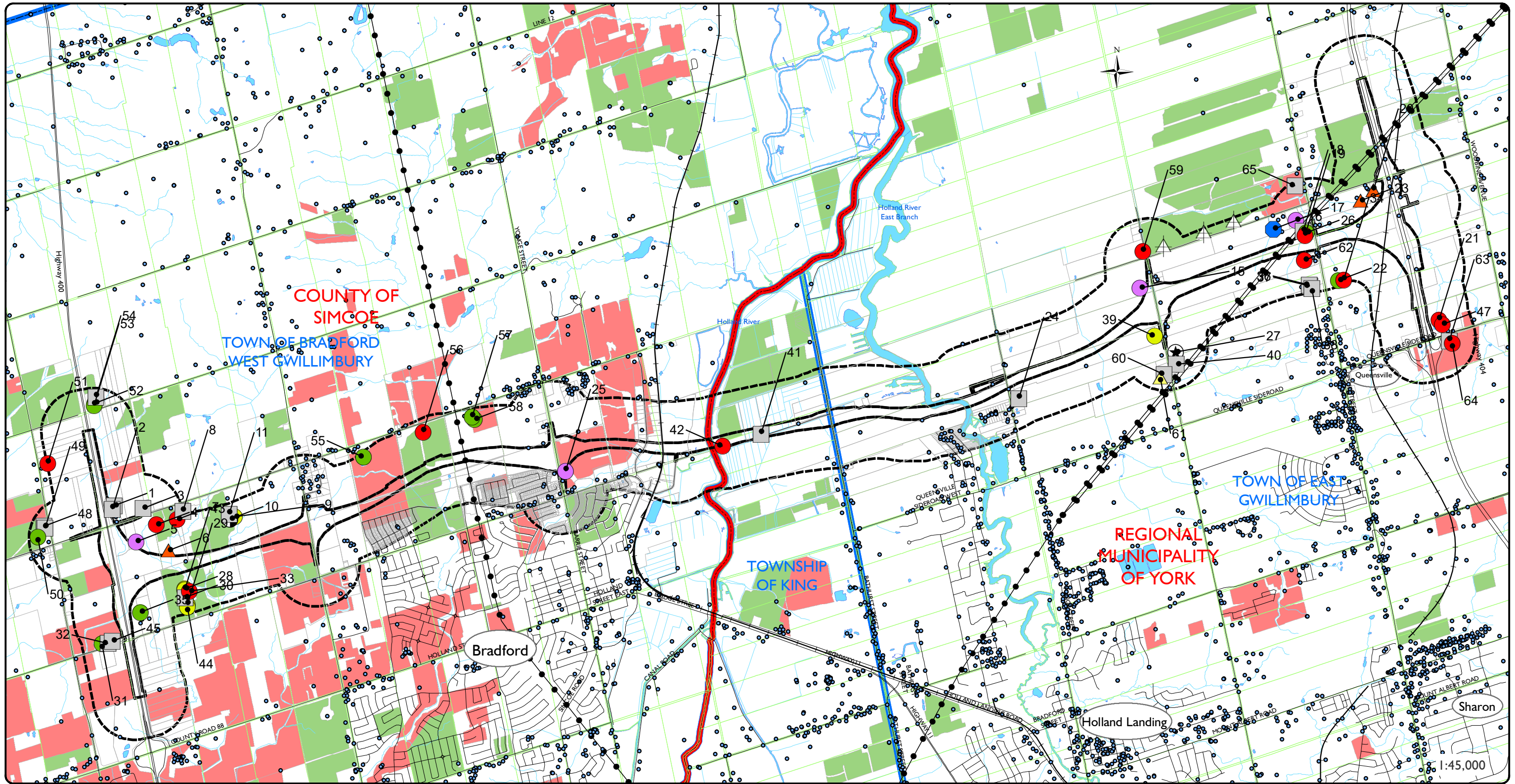
Agricultural activities such as livestock rearing usually involve an investment in agricultural facilities. Dairy operations require extensive facilities for the production of milk. Poultry and hog operations require facilities specific for those operations. Beef production, hobby horse and sheep operations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

Some cash crop operations are considered as having a large investment in agriculture if they have facilities that include grain handling equipment such as storage, grain driers and mixing equipment that is used to support ongoing agricultural activities. Figure 18 illustrates the location of buildings, agricultural facilities, areas of known irrigation, and tile drainage for both the Primary Study Area and the Secondary Study Area.

A total of 61 agricultural facilities or areas where facilities are located were identified within the Primary Study Area and Secondary Study Area. Two agricultural facilities were observed in the Primary Study Area (building 41 and building 19). The remaining 59 agricultural facilities were observed in the Secondary Study Area.

#### **4.3.1.1 Primary Study Area**

As stated above there are two agricultural facility/building located in the Primary Study Area. One agricultural building was identified as agricultural facility number 41 and was located at 750 Hochreiter Road. This facility is considered a machine shed/storage/processing building. There was no livestock or evidence of livestock observed at this facility. The second agricultural building was located at 21138 Leslie Street (part of the Wright Brothers Straw and Hay farm). Agricultural building number 19 was a pole barn which appeared to be used for storage purposes. No livestock were observed at this location.



### Legend

- |                     |                            |                                  |                      |                         |
|---------------------|----------------------------|----------------------------------|----------------------|-------------------------|
| Known Irrigation    | Lot Lines (MNRF)           | <b>Tile Drainage System Type</b> | <b>Building Type</b> | pole barn event venue   |
| Water Wells (MNRF)  | Lower Tier Boundary (MNRF) | Random                           | bank barn            | Quonset                 |
| Railway (MNRF)      | Parcel Fabric              | Systematic                       | greenhouses          | remnant                 |
| Roads (MNRF)        | Primary Study Area         | Water Body (MNRF)                | machine shed         | shed                    |
| Utility Line (MNRF) | Secondary Study Area       |                                  | mushroom barn        | tension fabric building |
| Water Course (MNRF) | Upper Tier Boundary (MNRF) |                                  | pole barn            |                         |

Figure 18

### Agricultural Investment

DBH Soil Services Inc.

January 30, 2023



The proposed future development of the Bradford Bypass will result in the loss of this building.

#### **4.3.1.2 Secondary Study Area**

Descriptions of the remaining 58 facilities/buildings are provided as follows.

Agricultural facilities/buildings numbered 1 and 2 were located at 3556 9<sup>th</sup> Line. This facility included a residential unit and two machine sheds. No livestock or evidence of livestock were observed at this facility. This appears to be a retired operation.

Agricultural facility number 3 was located at 3500 9<sup>th</sup> Line. This facility was identified as a machine shed. No livestock or evidence of livestock were observed at this facility. This building appears to be actively used for storage purposes.

Agricultural facilities/buildings numbered 4 and 6 were located at 3453 9<sup>th</sup> Line. This facility included a residential building, pole barn with gambrel roof, and a shed. A review of Google Earth imagery suggests that the barn is used for horses. This was confirmed during the roadside reconnaissance survey where horses were observed in the paddock area beside the barn. It is assumed that this is a hobby horse operation. The shed (building 6) could not be seen from the roadside. The review on Google Earth suggests that the shed is used for storage purposes.

Agricultural facility number 5 was located at 3521 9<sup>th</sup> Line. This facility included residential buildings, a remnant barn, which is no longer standing, as well as an uncapped silo. This agricultural facility is considered as retired.

Agricultural facilities/buildings numbered 7 and 8 were located at 3417 9<sup>th</sup> Line. These facilities included a residential building, a pole barn with extensions (missing roof boards) and a machine shed. The eastern portion of the property appears to comprise nursery stock and landscaping equipment. An online search for 3417 9<sup>th</sup> Line revealed that Delta Aquatics (<https://www.deltaaquatics.ca/>) was located at this address. No further information related to agriculture or nursery stock was identified. No livestock were observed at this facility. This facility is not considered a livestock operation.

Agricultural facilities/buildings numbered 9 – 11 were located at 3287 9<sup>th</sup> Line. These facilities included a residential building, pole barn, tension fabric building, and a machine shed. The name “The Bradford Barn” is on a sign at the entrance to the property and is part of the Bradford Barn Event Grounds. Building number 9 was a tension fabric building while building number 10 was a pole barn and building number 11 was a machine shed. No livestock or evidence of livestock were observed at this facility. A review of the Bradford Barn Event Grounds website (<https://www.thebradfordbarn.com/>) indicated that the pole barn building is used as a rental venue for weddings and entertainment.

Agricultural facility number 15 was located at 21286 2<sup>nd</sup> Concession Road. This facility included a remnant barn, which is no longer standing, and a deteriorating pole barn with overgrown

vegetation surrounding it. This agricultural facility is considered remnant and has no agricultural use.

Agricultural facility number 16 was located at 1337 Holborn Rd. This facility is the Holburne Mushroom Farm (<https://www.facebook.com/holburnemushroomfarm>). This is a mushroom farm and processing facility. A review of Google Earth imagery suggests that there is a small building located east of the main mushroom barn, that may include a small, fenced area with steps leading into the small building. This may be a small poultry barn although no livestock or evidence of livestock were observed from the roadside at this facility.

Agricultural facility number 17 was located at 21212 York Regional Rd 12. This operation included a residential unit, remnant barn and open topped silo. The facility was identified as a remnant pole barn and uncapped silo. This agricultural facility is considered retired. No livestock or evidence of livestock were observed from the roadside at this facility.

Agricultural facilities/buildings numbered 18, 19 and 26 were located at 21138 Leslie Street. These facilities included a residential unit, machine shed, pole barn and bank barn with extension. Building number 18 was a machine shed while building number 19 was a pole barn and building number 26 was identified as a bank barn with extension. Also observed at this location were two metal grain bins, hay bales, storage for a variety of items including farm equipment. An online review for this address identified that this property is part of the Wright Brothers Hay and Straw Environmental Service (<https://www.facebook.com/Wright-Brothers-Hay-and-Straw-2104923393060354>). No livestock or evidence of livestock were observed at this facility.

Agricultural facility number 20 was located at 1763 Holborn Road. This facility was identified as a shed with significant quantities of materials stored adjacent to it. No livestock or evidence of livestock were observed at this facility.

Agricultural facilities numbered 21 and 47 were located at 1982 Queensville Sideroad E. Building number 21 was identified as a pole barn while building number 47 was a pole barn with extension. Due to the overgrown vegetation around these buildings, they are considered retired. No livestock or evidence of livestock were observed at the facility.

Agricultural facilities/buildings number 22 and 34 were located at 20913 Leslie Street. These facilities included a residential building a bank barn and a pole barn. Building number 22 was a bank barn while building number 34 was identified as a pole barn. No livestock or evidence of livestock were observed at this location. A review of Google Earth historical imagery suggests that this operation may have been used for a horse operation. This operation is considered retired due to the overgrowth of vegetation around the barns and lack of evidence of livestock (no manure storage, no feed).

Agricultural facility number 23 was located at 1611 Holborn Road. This facility was identified as a shed with various materials stored in close proximity. No livestock or evidence of livestock were observed at this facility.

Agricultural facility number 24 was located at 20843 Yonge St. This facility includes a residential building as well as a machine shed located east of a small, ponded area. No livestock or evidence of livestock were observed at this facility.

Agricultural facility number 25 was located 2843 County Road 4 (Highway 11). This facility is considered a remnant and a review of Google Earth imagery included a boarded up residential unit and a capped and uncapped silo. No livestock or evidence of livestock were observed at this facility.

Agricultural facility number 27 is located at 20815 2<sup>nd</sup> Concession. This facility is the Crystal Star Nursery (<https://www.crystalstarnursery.com>) and comprises a residential unit and nine plastic covered green houses. This is a family run tropical plant nursery. No livestock or evidence of livestock were observed at this location. This facility is not considered a livestock operation.

Agricultural facilities/buildings numbered 28 – 30, 33, 43 and 44 were located at 3412 8<sup>th</sup> Line and were identified as part of the Dingo Farms (<https://dingofarms.wordpress.com/about/>). This facility included a residential unit, four tension fabric buildings, pole barn with extension, two machine sheds and a minimum of 7 grain bins (not all could be seen from the roadside). Buildings number 28, 29, 43 and 44 were tension fabric buildings while building 30 was a pole barn with extension and building 33 was a machine shed. A review of Google Earth imagery suggests that barn 30 was used for livestock, as evidenced by manure piles, feed and livestock seen on the imagery. It appears that the two tension fabric buildings located nearer 8<sup>th</sup> line are used for storage. The review of Google Earth imagery suggests that the two tension fabric buildings located north of the other buildings may be used as beef barns. Beef cattle were observed in the fields during the roadside surveys. For the purposes of this AIA, it is assumed that the livestock is beef.

Agricultural facilities/buildings numbered 31, 32 and 45 were located at 3664 8<sup>th</sup> Line The name “Hughesdale Farms” was identified on the side of the bank barn. An online search for Hughesdale farms returned a farm description that indicated the farm is ‘part of the support activities for crop production industry’. This farmstead included two machine sheds, bank barn with extension, several grain bins and associate loading facilities, and 2 capped silos. Building number 31 was a bank barn with extension while buildings 32 and 45 were machine sheds. No livestock or evidence of livestock were identified at this location.

Agricultural facility number 35 was located at 3538 8<sup>th</sup> Line. This facility included a residential unit as well as a bank barn. This building was considered a retired barn due to the overgrown vegetation surrounding the barn. No livestock or evidence of livestock were observed at this facility.

Agricultural facilities/buildings numbered 36, 37 and 38 were located at 20904 Leslie Street. This facility included a residential unit and three machine sheds. No livestock or evidence of livestock were identified at this location.

Agricultural facility number 39 appears to have multiple addresses. Google Earth imaging identifies this area as “Rollick Airpark” (<http://rollickairpark.com>). An online review of Rollick Airpark website indicates that their address is 20900 2<sup>nd</sup> Concession Road. An online review of OMAFRA AgMaps indicated that the address was 20929 2<sup>nd</sup> Concession Road. The facility comprised a tension fabric building used for housing gliders. No livestock or evidence of livestock were observed at this location. This facility is not considered a livestock operation.

Agricultural facility number 40 is located at 20775 2<sup>nd</sup> Concession Road. This facility included a residential unit and a garage/machine shed with numerous extensions. A review of Google Earth online imagery suggests that the eastern most extension may have been used to house livestock. An overgrown pasture area appears to be located to the north of the buildings. No livestock or evidence of livestock were observed at this facility.

Agricultural facility number 42 is located at 900 Hochreiter Road. This facility is considered a machine shed/storage/processing building. There was no livestock or evidence of livestock were observed at this facility.

Agricultural facility numbers 48, 49 and 50 were located at 3748 Line 9. This operation comprised a bank barn (building number 50), two machine sheds (buildings numbered 48 and 49), a concrete silo (capped), six grain bins, a grain handling facility, and a residential unit. The review of aerial photography suggested that this facility is retired from livestock operations and is run as a cash crop operation. No livestock were observed at this location. There are no paddocks, pasture lands, feed, or manure storage.

Agricultural facility number 51 is located at 3385 Sideroad 5. This operation comprised a pole barn with extension, indoor riding arena (and possible stable area), and a residential unit. Only the pole barn with extension is within the Secondary Study Area. The review of aerial imagery indicated that there were paddock/pasture areas adjacent to the riding arena, and possible fenced areas near the pole barn. Small manure piles were noted on the aerial imagery just east of the pole barn. This operation is set up for horses.

Agricultural facility numbers 52, 53, and 54 were located at 3556 Line 10. This operation comprised a residential unit, two bank barns (building numbers 52 and 53), a machine shed (building number 54), and silo (uncapped). The review of aerial imagery indicated that the bank barns were in disrepair and were overgrown with woody vegetation. The roadside survey confirmed the building types and conditions. There were no pasture/paddock areas, no manure pile, no feed. These barns are retired. The machine shed is used for storage.

Agricultural facility number 55 was located at 2925 Line 9. This operation comprised a residential unit, numerous sheds, a bank barn with extension, a concrete silo (uncapped). The review of aerial imagery suggested that the barn may be used for hobby livestock, as based on the small pen/paddock areas adjacent to the barn. A small manure pile was noted to the south southeast of the barn. No livestock were observed during the roadside survey. For the purposes of this AIA, it is assumed that the bank barn has the potential to house livestock.

Agricultural facility number 56 was located at 2779 Line 9. This operation comprised a residential unit, a garage/machine shed, and a pole barn with extension. The review of aerial imagery suggested that the pole barn was used for hobby livestock. A circular area (horse training) was noted to the east of the barn (and south of the residence). Paddock and pasture areas were noted to the north, west and south of the barn. For the purposes of this AIA, it is assumed that this barn houses horses.

Agricultural facility numbers 57 and 58 were located at 2673 Line 9. This operation comprised a residential unit, garage/machine shed, machine shed, and two bank barns. The review of online imagery indicated that the barns were not used for livestock as evidenced by a lack of pasture/paddock areas, no feed, no manure piles and the overgrown yard areas adjacent to the barns. It appears that these barns are retired and that this is a cash crop operation.

Agricultural facility number 59 is located at 682 Holborn Road. This operation comprised a residential unit, a small pole barn, and numerous small sheds. The pole barn appears to have been repurposed for storage. No livestock were observed during the roadside survey.

Agricultural facility numbers 60 and 61 were located at 20704 2<sup>nd</sup> Concession Road. This operation comprised a residential unit, remnant barn, machine shed and Quonset structure (storage). This operation appears to include outdoor storage of boats and trailers. No livestock were observed at this location.

Agricultural facility number 62 was located at 21044 Leslie Street. This operation comprised a residential unit, and pole barn with extensions. No livestock was observed at this location. Historical aerial imagery suggested that there were pasture/paddock areas around the barn.

Agricultural facility numbers 63 and 64 were located at 1973 Queensville Side Road East. This operation comprised two residential units, a garage, a pole barn with extensions (agricultural facility number 64), a machine shed (agricultural facility number 63), silo (open top), and a metal grain bin. No livestock were observed at this location. An online search of the address revealed that this address is associated with D & D Construction.

Agricultural facility number 65 was located at 21320 Leslie Street. This operation included a residential unit, and a machine shed/garage (agricultural facility number 65). No livestock were observed at this location.

**Table 3 Agricultural Facility**

Agricultural Facility	Type of Facility	Use	Type of Livestock
1	Machine Shed	Storage	None
2	Machine Shed	Storage	None
3	Machine Shed	Storage	None
4	Pole Barn	Stable	Horse
5	Remnant	Remnant	None



Agricultural Facility	Type of Facility	Use	Type of Livestock
6	Shed	Storage	None
7	Pole Barn	Retired	None
8	Machine Shed	Storage	None
9	Tension Fabric	Storage	None
10	Pole Barn	Event building	None
11	Machine Shed	Storage	None
15	Remnant	Remnant	None
16	Mushroom Barn	Mushroom	None
17	Remnant	Remnant	None
18	Machine Shed	Storage	None
19	Pole Barn	Storage	None
20	Shed	Storage	None
21	Pole Barn	Retired	None
22	Bank Barn	Retired	None
23	Shed	Storage	None
24	Machine Shed	Storage	None
25	Remnant	Remnant	None
26	Bank Barn	Storage	None
27	Greenhouses	Greenhouses	None
28	Tension Fabric	Beef	Beef
29	Tension Fabric	storage	Beef
30	Pole Barn	Livestock	Beef
31	Bank Barn	Retired	None
32	Machine Shed	Storage	None
33	Machine Shed	Storage	None
34	Pole Barn	Retired	None
35	Bank Barn	Retired	None
36	Machine Shed	Storage	None
37	Machine Shed	Storage	None
38	Machine Shed	Storage	None
39	Tension Sabric	Rollick Airpark	None
40	Garage/machine shed/storage	Equipment Storage	None
41	Machine shed/storage	Equipment Storage	None
42	Machine shed/storage	Equipment Storage	None
43	Tension Fabric	Beef	Beef
44	Tension Fabric	Storage	Beef
45	Machine Shed	Storage	None
47	Pole Barn	Retired	None
48	Machine Shed	Storage	None
49	Machine Shed	Storage	None

Agricultural Facility	Type of Facility	Use	Type of Livestock
50	Bank barn	Storage	None
51	Pole barn	Horses	Horses
52	Bank barn	Retired	None
53	Bank barn	Retired	None
54	Machine shed	Storage	None
55	Bank barn	Livestock	Unknown
56	Pole barn	Livestock	Horses
57	Bank barn	Retired	None
58	Bank barn	Retired	None
59	Pole barn	Retired	None
60	Machine shed	Storage	None
61	Quonset	Storage	None
62	Pole barn	Unknown	Unknown
63	Machine shed	Storage	None
64	Pole barn	Unknown	None
65	Machine shed	Unknown	None

Note: the agricultural facility numbers are derived from an assessment of online imagery prior to completing field work. Some numbers are dropped from the list as a result of what is noted during the roadside surveys. The numbers identified in the table represent the numbers attached to the online imagery assessment.

The proposed future development of the Bradford Bypass may result in the loss of buildings number 41 (depending on the design of the Holland River crossing), and number 19.

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

#### **4.3.2 ARTIFICIAL DRAINAGE**

An evaluation of artificial drainage in the Primary 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, Food and Rural Affairs (OMAFRA) 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 (roadside survey) of artificial tile drainage in either the Primary 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) in September 2021 (and again in September 2022) and were reviewed to determine if an agricultural tile drainage system had been registered anywhere in the Primary 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 18 illustrates the OMAFRA Artificial Drainage Systems Mapping for the Primary Study Area, Secondary Study Area, and the adjacent surrounding areas.

As noted in Figure 18, there was one small area of systematic tile drainage registered in the Primary Study Area east of the Holland River East Branch, adjacent to the existing Highway 404. A small area of systematic tile drainage was identified in the OMAFRA tile drainage data in the area between the Holland River and the Holland River East Branch, closer to the Holland River. Areas of random tile drainage were noted in the Primary Study Area between County Road 4 and the rail line to the east. Areas of random and systematic tile drainage were noted between 10 Sideroad and County Road 4. Small areas of random tile drainage were noted between 10 Sideroad and Highway 400. Small areas of systematic tile drainage were noted west of Highway 400.

A review of the digital data indicated that approximately 32.6 ha of random tile drainage and 10.6 ha of systematic tile drainage will be affected by the proposed development of the Primary Study Area.

Similar conditions were noted for the Secondary Study Area where small areas of systematic and random tile drainage were noted west of Highway 400, numerous areas of systematic and random tile drainage noted between Highway 400 and the Holland River East Branch. Additional areas of random and systematic tile drainage were noted along the northern portion of the Secondary Study Area, north of Holborn Road.

A review of Figure 18 illustrates the pattern of systematic and random tile drainage in the Secondary Study Area. The proposed future development of the Bradford Bypass will require the consideration of the properties with tile drainage and will need to maintain tile drainage in the adjacent affected fields.

Tile drainage systems within the Primary Study Area will be compromised as a result of the necessary land forming required for highway construction.

### **4.3.3 WATER WELLS**

A review was completed of the MECP Water Well records to determine the extent of water wells in the Primary 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 from the MSCP data are identified on Figure 18. As illustrated on Figure 18, numerous water wells are located within both the Primary Study Area and 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 construction and operation of the proposed Bradford Bypass. 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.

Due to the locations and numbers of water wells in the Primary Study Area and the Secondary Study Area, it will be important to either preserve the existing wells, or properly engineer the closing/capping of any water well, where necessary, to prevent potential groundwater contamination.

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

The proposed future development of the Bradford Bypass will result in water well impacts within the Primary Study Area.

A water well report was completed as part of the EA study. For additional information refer to the Bradford Bypass Draft Groundwater Protection and Well Monitoring Plan (AECOM, 2023), provided under separate cover.

### **4.3.4 IRRIGATION**

Observations noted during the reconnaissance survey indicated that portions of the Primary Study Area and the Secondary Study Area lands are irrigated. It was noted that these lands are set up for the use of irrigation equipment. Visual evidence supporting the use of irrigation equipment would include the presence of the irrigation equipment (piping, water guns, sprayers, tubing/piping, etc), the presence of a body of water (pond, lake, water course) capable of sustaining the irrigation operation and lands that are appropriate for the use of such equipment (large open and level fields).

Irrigation systems were noted on lands north of Holborn Road between 2<sup>nd</sup> Concession Road and Leslie Street. Large ponds were noted between 2<sup>nd</sup> Concession Road and Yonge Street. No irrigation equipment was observed at the time of the roadside reconnaissance survey. The

agricultural fields in this area included sod production (a high water user) and market garden operations (which may use irrigation). Figure 18 illustrates areas of known irrigation.

Further, the marsh areas adjacent to the Holland River and the Holland River East Branch comprise muck and sandy soils that are used for the production of market garden crops, which can be a high water user. Irrigation lines were noted on the aerial photographic imagery, but no irrigation equipment was noted during the roadside reconnaissance survey. The lack of visual evidence may be related to the timing of the roadside reconnaissance survey (late fall), when market garden crops production is generally finished for the season, and equipment has been stored.

The proposed future development of the Bradford Bypass may result in irrigation impacts within the Primary Study Area. Consideration will need to be given to lands that are irrigated, as to how water is provided (ponds, ground water, water courses, etc), how water is pumped, and how water is distributed. The proposed future development of the Bradford Bypass will need to accommodate any existing operations that use irrigation.

#### **4.3.5 LANDFORMING**

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

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

There has been landforming from the perspective of creating ditches within the marsh and low areas adjacent to the Holland River and the Holland River East Branch. These ditches provide channels for surface water flow. Surface water flow must be maintained with the proposed future development of the Bradford Bypass.

### **4.4 FRAGMENTATION**

Assessment data was evaluated to determine the characteristics and the degree of land fragmentation in the Primary Study Area and the Secondary Study Area.

In order to evaluate land fragmentation, the most recent Assessment Roll mapping and Assessment Roll information from the County of Simcoe, Town of Bradford West Gwillimbury, Region of York, Township of King, and the Town of East Gwillimbury were referenced on a property-by-property basis (for the Primary Study Area and the Secondary Study Area) to determine the approximate location, shape and size of each parcel. The assessment of fragmentation looks at the numbers of and proximity of properties within the Primary 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.”*

A review of the *York Region Official Plan 2022 (November 4, 2022)* revealed in Policy 6.3.7 that consents will be permitted in the Agricultural Area and Holland Marsh Specialty Crop Area where both the subject and retained lands are a minimum size of 40 ha in the Agricultural Area and 16 ha in the Holland Marsh Specialty Crop Area.

A review of the *Township of King Zoning By-law 74-53 (Office Consolidation, October 2020)* was completed and indicated a minimum lot area of 40.0 ha for an Agricultural Zone and a minimum lot area of 16.0 ha for an Agricultural Specialty Crop Zone.

A review of the *Town of East Gwillimbury Zoning By-Law 2018-043 (Office Consolidation 2020)* was completed and did not reveal a minimum lot size for agriculture zoning.

A review of the *Official Plan of the County of Simcoe (December 29, 2016)* revealed in Policy 3.6.7a that in the Agricultural designation lot creation is discouraged and any new lots for agricultural uses should not be less than 40 ha or 16 ha in the specialty crop areas.

A review of the *Corporation of the Town of Bradford West Gwillimbury Zoning By-Law 2012-050 (November 2014 Consolidation)* was completed and indicated a minimum lot area of 40.0 ha for an A (Agricultural) zoning.

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

Census of Agriculture (2016) data indicated that the average farm size in Ontario (for Census farms) was 100.8 ha (249) acres. Again, the Census of Agriculture (2016) average farm size is based on farmland holdings, which may include more than one parcel (property). Further, the Census of Agriculture (2016) information indicates that the average farm size in York Region is 81.1 ha (200.3 acres), and the average farm size for the Township of King is 67.3 ha (166.3 acres), and in the Town of East Gwillimbury is 82.5 ha (203.9 acres).

The Census of Agriculture (2016) information indicates that the average farm size in Simcoe County is 101.7 ha (251.3 acres), and the average farm size for the Town of Bradford – West Gwillimbury is 93.2 ha (230.4 acres).

Census of Agriculture (2021) data indicated that the average farm size in Ontario (for Census farms) was 98.3 ha (243 acres). Again, the Census of Agriculture (2021) average farm size is based on farmland holdings, which may include more than one parcel (property). Further, the Census of Agriculture (2021) information indicates that the average farm size in York Region is 90.0 ha (222.3 acres), and the average farm size for the Township of King is 72.6 ha (179.5 acres), and in the Town of East Gwillimbury is 88.0 ha (217.5 acres).

The Census of Agriculture (2021) information indicates that the average farm size in Simcoe County is 105.9 ha (261.8 acres), and the average farm size for the Town of Bradford – West Gwillimbury is 97.4 ha (240.7 acres).

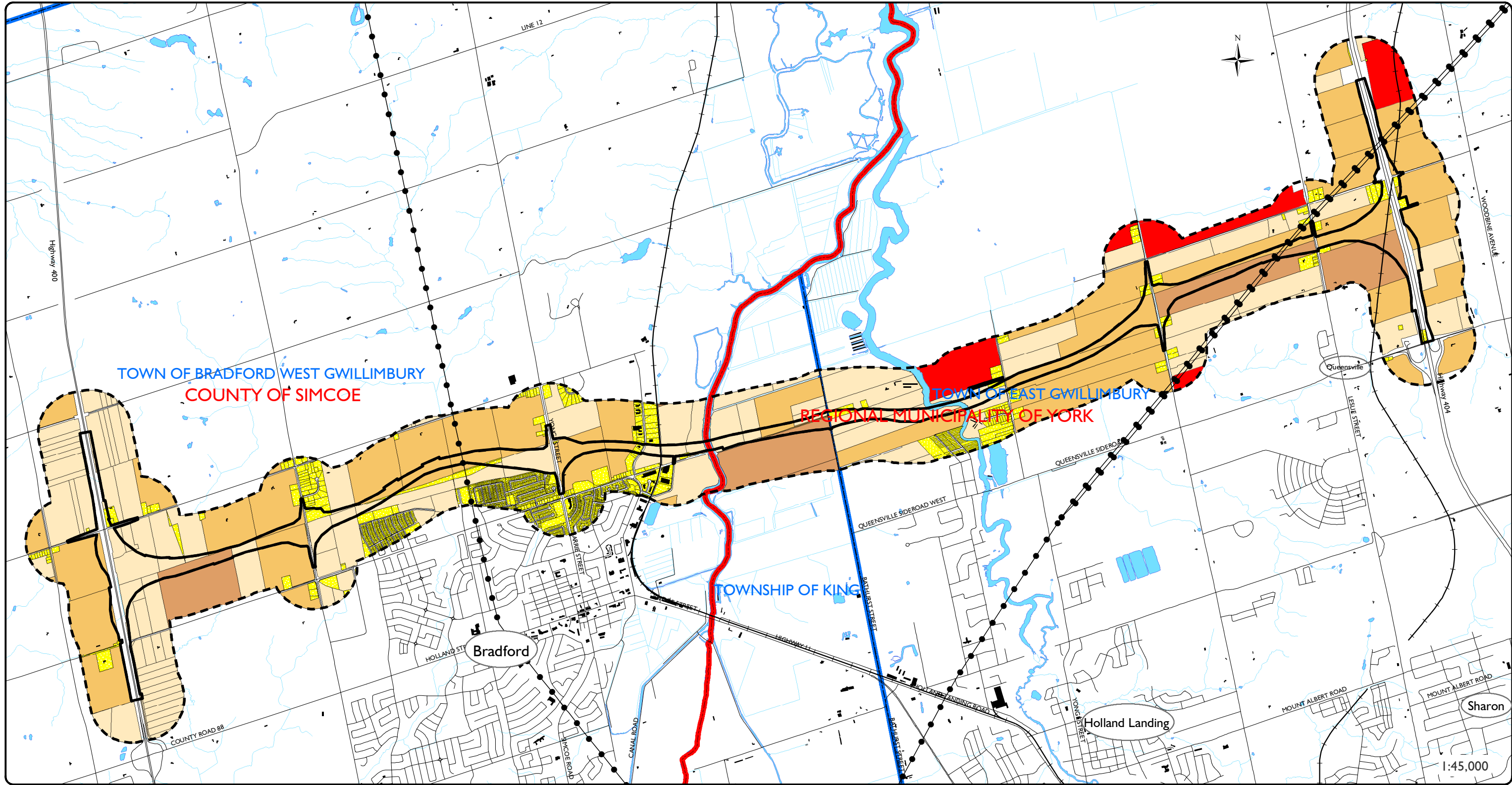
Figure 19 illustrates the complexity of the land fragmentation within the Primary Study Area and Secondary Study Area. GIS was utilized to calculate the area (in acres) of each parcel within the Secondary Study Area from which MPAC (Municipal Property Assessment Corporation) data was not available. Acre calculations were completed to allow an assessment or comparison of all the parcels within the Primary Study Area and the Secondary Study Area. This assessment was not limited to only the agricultural properties but included all parcels.

The proposed future development of the Bradford Bypass will result in the creation of severed parcels along the corridor. The original Environmental Assessment (EA) attempted to align the proposed Bradford Bypass with lot lines to reduce the impact of severing agricultural properties. The section of the proposed Bradford Bypass from Highway 400 to Yonge Street (County Road 4) runs along the back lot line, with a slight deviation just east of Yonge Street (County Road 4). The section of the proposed Bradford Bypass from Yonge Street (County Road 4) to 2<sup>nd</sup> Concession Road deviates across lot lines, resulting in the creation of severed parcels. The section from 2<sup>nd</sup> Concession Road to Highway 404, attempts to realign with lot lines in an effort to minimize the creation of severances.

The Census data provides detailed information on Census farms (farms which provided census data), while the data within the Secondary Study Area refers to all parcel data (agricultural areas and non-agricultural areas). Census data is provided in the unit format of acres, with the splits in the data at 0.0 – 9.9, 10.0 – 69.9, 70.0 – 129.9, 130.0 – 179.9 and greater than 180.0 acres. For the purposes of this AIA, similar splits in acre data were used for the comparison.

As illustrated in Figure 19, the Secondary Study Area comprises numerous parcels of varying size. Table 4 provides a comparison between the parcel count of the Primary Study Area, the Secondary Study area and the Census farm data. The parcel count for the Region of York, the County of Simcoe, the Township of King, the Town of East Gwillimbury, and the Town of Bradford West Gwillimbury reflects only the Census Farms in the 2016 census.

As illustrated in Table 4, the parcel count for the Primary Study Area and the Secondary Study Area indicates the presence of numerous small parcels, and fewer larger parcels. This type of fragmentation pattern is common in areas near urban boundaries and within the Greater Toronto Area (GTA) and Greater Golden Horseshoe (GGH) areas. It is noted that there are



### Legend

- |           |                     |  |                              |                                  |               |
|-----------|---------------------|--|------------------------------|----------------------------------|---------------|
| —+—+—     | Railway (MNRF)      |  | Lower Tier Boundary (MNRF)   | <b>Parcel Area Range (Acres)</b> |               |
| — — —     | Roads (MNRF)        |  | Primary Study Area           |                                  | 0.2 - 9.9     |
| ● — ● — ● | Utility Line (MNRF) |  | Secondary Study Area (500 m) |                                  | 10.0 - 69.9   |
| — — —     | Water Course (MNRF) |  | Upper Tier Boundary (MNRF)   |                                  | 70.0 - 129.9  |
|           |                     |  | Water Body (MNRF)            |                                  | 130.0 - 179.9 |
|           |                     |  |                              |                                  | > 180.0       |

Figure 19

### Fragmentation

DBH Soil Services Inc.

February 28 2023



large clusters of smaller parcels associated with the urban areas of Bradford and urban areas extending north from Holland Landing.

Portions of large parcels of land (130.0 – 179.9 acres) were noted within and south of the Primary Study Area in the Town of Bradford West Gwillimbury and the Town of East Gwillimbury.

**Table 4 Parcel Size and Parcel Count**

Parcel Size Range (Acre)	Primary Study Area	Secondary Study Area	Region of York (2021 Census)	Township of King (2021 Census)	Town of East Gwillimbury (2021 Census)	County of Simcoe (2021 Census)	Town of Bradford West Gwillimbury (2021 Census)
0.0 – 9.9	53	1827	81	28	18	101	7
10.0 – 69.9	43	101	234	66	38	507	25
70.0 – 129.9	27	44	105	35	22	451	17
130.0 – 179.9	4	6	30	11	1	170	5
> 180	1	6	154	42	27	617	30

Although a direct comparison of the parcel size count of the Primary Study Area and Secondary Study Area to the Census data cannot be made, as the census data only refers to census farms while the parcel data refers to all parcels, there are similarities in the proportion of the numbers between the Primary Study Area counts and the Census data. Table 4 shows an increase in counts in the 10.0 – 69.9 acre range when compared to the 70.0 – 129.9 count range.

#### 4.5 PARCEL OR LAND SEVERANCE

A parcel or land severance is defined as an authorized separation of a piece of land to form a new lot or parcel of land. The planning for the proposed BBP route has taken into consideration the potential of the creation of severed parcels which may result in the reduction in size of a farm parcel, a splitting of a parcel into multiple pieces (with pieces on opposite sides of the proposed route), and/or the creation of a land locked parcel that has no direct roadside access.

For the purposes of this AIA, GIS mapping was used to calculate the number of parcels that will lose a portion of the property to the Primary Study Area, and the number of parcels that will be severed (resulting in two separate portions).

The total number of parcels affected (based on a GIS assessment of all parcels, not including road corridor areas) is approximately 128 parcels. Of the 128 parcels, each parcel will lose a

portion of the property to the Primary Study Area, while thirteen of the parcels will be severed (resulting in two separate portions).

Of the thirteen severed parcels, eleven will result in a land locked parcel, with no roadside access. A total of seven severed parcels were noted in the Town of Bradford West Gwillimbury, one severed parcel was noted in the Town of King, and five severed parcels were noted in the Town of East Gwillimbury.

Three severed parcels, each with a landlocked portion, were noted between Yonge Street (County Road 4) and 10 Sideroad. Two severed parcels were noted between Yonge Street and the rail line to the east, with one landlocked parcel. Two severed parcels were noted between the rail line east to the Holland River, each with a land locked portion. One severed and landlocked parcel was noted between Bathurst Street and the Holland River, also comprising a land locked portion. Two severed parcels were noted between Bathurst Street and the Holland River East Branch, both with landlocked portions. Two severed parcels were noted between Yonge Street and 2<sup>nd</sup> Concession Road, one with a landlocked portion. One severed parcel was noted between Leslie Street and the existing Highway 404, resulting in a landlocked portion.

The proposed development of the Primary Study Area will result in the creation of thirteen severed parcels, with ten landlocked parcels.

#### **4.6 SOILS AND CANADA LAND INVENTORY (CLI)**

A review was completed of the soils and Canada Land Inventory (CLI) data base for the Primary 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 data warehouse in September 2021.

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

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

In Simcoe County, the unique symbols list (based on the SYMBOL1 column) provided 146 unique symbols combined with the associated slope and CLI class and CLI subclass (CLI\_1 and CLI\_2). The unique symbols list is provided in Appendix C. A review of this list indicated that there were some issues with a few symbols of the soils and the respective CLI class and/or

subclass. The soils with issues are highlighted in yellow. A review of these soil polygon issues indicated that none of the affected soil polygons were located within the Secondary Study Area.

Similar conditions were noted in the review of the York Region soils data. In York Region, the unique symbols list (based on the SYMBOL1 column) provided 67 unique symbols combined with the associated slope and CLI class and CLI subclass (CLI\_1 and CLI\_2). The unique symbols list for York Region is also provided in Appendix C. A review of this list indicated that there were some issues with a few symbols of the soils and the respective CLI class and/or subclass. The soils with issues are highlighted in yellow. A review of these soil polygon issues indicated that none of the affected soil polygons were located within the Secondary Study Area.

As noted in the list in Appendix C, a few symbols for a particular soil series would have two or more CLI classes listed for a mineral soil. Similar conditions were associated with the CLI subclass, where two or more CLI and CLI subclass combinations were associated with the soil series symbol. In many cases the difference between the CLI classification was related only to the subclass. Therefore, in those instances, the Canada Land Inventory (CLI) rating or classification for a particular soil did not change, only the subclass did which relates to a different limitation in the soil, but not a change in CLI class.

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

For the purposes of this AIA, the soil and CLI data presented on Figure 20 is considered appropriate in soil code and CLI rating.

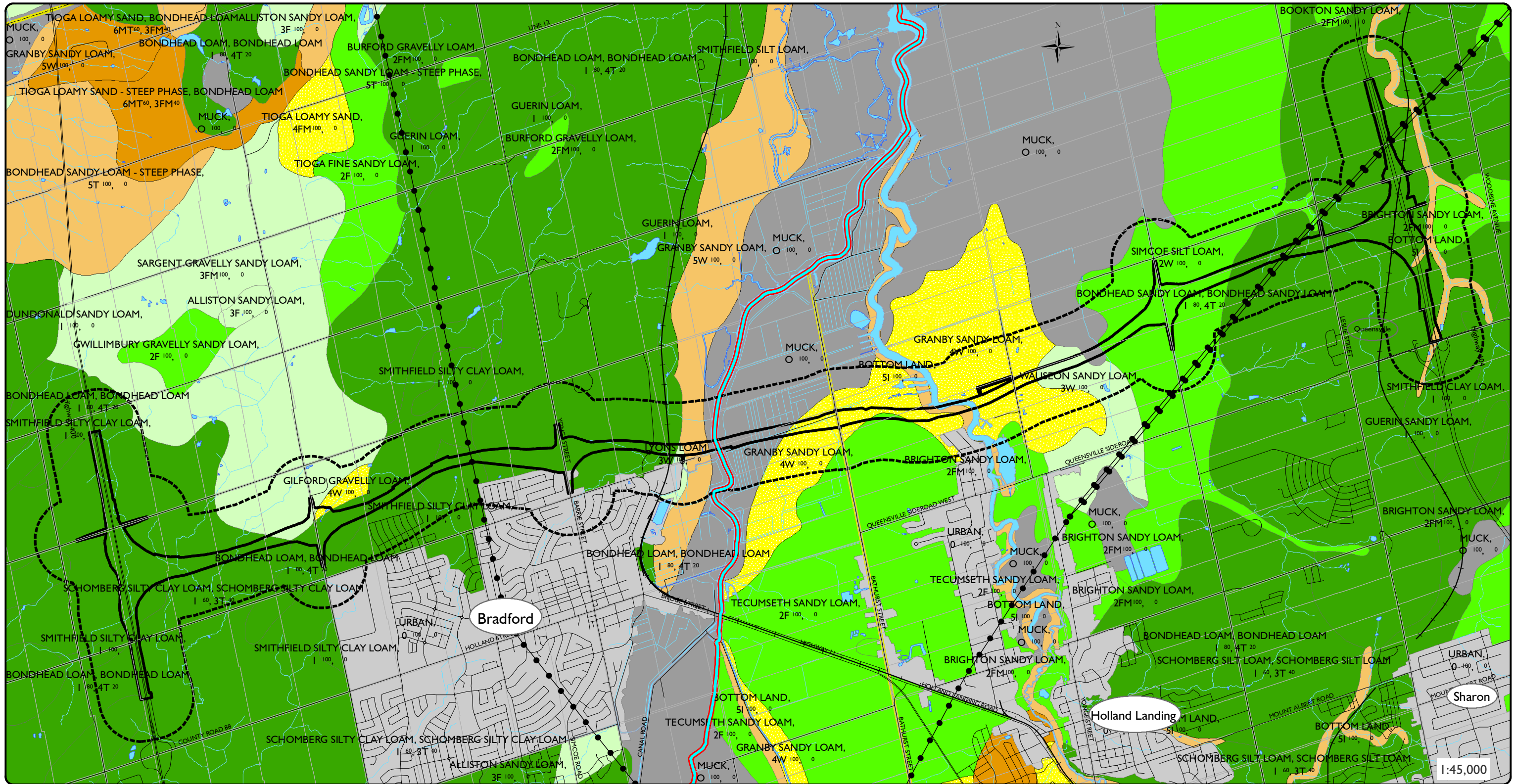
#### **4.6.1 SOIL CAPABILITY FOR AGRICULTURE**

Basic information about the soils of Ontario is made more useful by providing an interpretation of the agricultural capability of the soil for various crops. The Canada Land Inventory (CLI) system combines attributes of the soil to place the soils into a seven-class system of land use capabilities. The CLI soil capability classification system groups mineral soils according to their potentialities and limitations for agricultural use. The first three classes are considered capable of sustained production of common field crops, the fourth is marginal for sustained agriculture, the fifth is capable for use of permanent pasture and hay, the sixth for wild pasture and the seventh class is for soils or landforms incapable for use for arable culture or permanent pasture.

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

##### **4.6.1.1 Canada Land Inventory (CLI) Class**

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



### Legend

- |                     |                              |                                    |              |
|---------------------|------------------------------|------------------------------------|--------------|
| Railway (MNRF)      | Lower Tier Boundary (MNRF)   | <b>Canada Land Inventory (CLI)</b> | Class 5      |
| Roads (MNRF)        | Primary Study Area           | Urban Areas (Not Mapped)           | Class 6      |
| Utility Line (MNRF) | Secondary Study Area (500 m) | Class 1                            | Class 7      |
| Water Course (MNRF) | Upper Tier Boundary (MNRF)   | Class 2                            | Organic Soil |
| Lot Lines (MNRF)    | Water Body (MNRF)            | Class 3                            | Water        |
|                     |                              | Class 4                            |              |

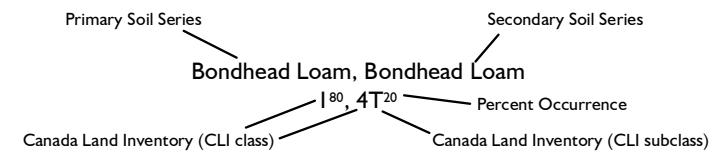


Figure 20  
Soils and  
Canada Land Inventory (CLI)

DBH Soil Services Inc.  
January 30, 2023

- “Class 1 - Soils in this class have no significant limitations in use for crops. Soils in Class 1 are level to nearly level, deep, well to imperfectly drained and have good nutrient and water holding capacity. They can be managed and cropped without difficulty. Under good management they are moderately high to high in productivity for the full range of common field crops*
- Class 2 - Soils in this class have moderate limitations that reduce the choice of crops, or require moderate conservation practices. These soils are deep and may not hold moisture and nutrients as well as Class 1 soils. The limitations are moderate and the soils can be managed and cropped with little difficulty. Under good management they are moderately high to high in productivity for a wide range of common field crops.*
- Class 3 - Soils in this class have moderately severe limitations that reduce the choice of crops or require special conservation practices. The limitations are more severe than for Class 2 soils. They affect one or more of the following practices: timing and ease of tillage; planting and harvesting; choice of crops; and methods of conservation. Under good management these soils are fair to moderately high in productivity for a wide range of common field crops.*
- Class 4 - Soils in this class have severe limitations that restrict the choice of crops, or require special conservation practices and very careful management, or both. The severe limitations seriously affect one or more of the following practices: timing and ease of tillage; planting and harvesting; choice of crops; and methods of conservation. These soils are low to medium in productivity for a narrow to wide range of common field crops, but may have higher productivity for a specially adapted crop.*
- Class 5 - Soils in this class have very severe limitations that restrict their capability to producing perennial forage crops, and improvement practices are feasible. The limitations are so severe that the soils are not capable of use for sustained production of annual field crops. The soils are capable of producing native or tame species of perennial forage plants and may be improved through the use of farm machinery. Feasible improvement practices may include clearing of bush, cultivation, seeding, fertilizing or water control.*
- Class 6 - Soils in this class are unsuited for cultivation, but are capable of use for unimproved permanent pasture. These soils may provide some sustained grazing for farm animals, but the limitations are so severe that improvement through the use of farm machinery is impractical. The terrain may be unsuitable for the use of farm machinery, or the soils may not respond to improvement, or the grazing season may be very short.*
- Class 7 - Soils in this class have no capability for arable culture or permanent pasture. This class includes marsh, rockland and soil on very steep slopes.”*

#### **4.6.1.2 Canada Land Inventory (CLI) Subclass**

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



*Subclass D – Undesirable Structure and/or Low Permeability*

*Subclass D denotes soils which are difficult to till, or which absorb or release water very slowly, or in which the depth of rooting zone is restricted by conditions other than a high water table or consolidated bedrock. In Ontario this Subclass is based on the existence of critical clay contents in the upper soil profile. These soils are generally more susceptible to compaction than are lighter textured soils.*

*Subclass F - Low Natural Fertility*

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

*Subclass I – Inundation by Streams or Lakes*

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

*Subclass M – Moisture Deficiency*

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

*Subclass 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 20 – Canada Land Inventory (CLI) illustrates the OMAFRA digital soils data for the Primary Study Area and the Secondary Study Area. The OMAFRA soils data base has not removed or discounted soils from roads, rails, urban or developed areas.

Table 5 illustrates the soils data as derived by percent occurrence within the respective polygons and summarizes the relative percent area occupied by each capability class for the Secondary Study Area.

**Table 5 Canada Land Inventory – Percent Occurrence**

Canada Land Inventory Class (CLI)	Primary Study Area Percent Occurrence
Class 1	39.3
Class 2	0.9
Class 3	28.8
Class 4	17.7
Class 5	1.6
Class 6	-
Class 7	-
Not Rated	11.6
Totals	100.0

The Primary Study Area comprised approximately 69.0 percent Canada Land Inventory (CLI) capability of Class 1 – 3, with approximately 39.3 percent as Class 1, 0.9 percent as Class 2, and 28.8 percent as Class 3. Approximately 17.7 percent of the Primary Study Area was Class 4 lands, with approximately 1.6 percent as Class 5. The remaining 11.6 percent of the lands were not rated and included organic soils, built up areas, roads and rail lines.

#### **4.7 AGRICULTURAL SYSTEMS PORTAL**

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

A review of the online Agricultural System Portal (OMAFRA) indicated that there were no farmers markets, pick your own operations, nurseries, frozen food manufacturing, refrigerated warehousing/storage, livestock assets, abattoirs or other agricultural services in the Primary Study Area. A number of vegetable fields were identified in the data from the Agricultural Systems Portal as being in the Primary Study Area. These lands were previously identified in this AIA in Section 4.2.1 Land Use and are located adjacent to 2<sup>nd</sup> Concession Road.

The review of agricultural services and agricultural operations from the Agricultural Systems Portal for the Secondary Study Area revealed there are limited agricultural resources/services in the Secondary Study Area.

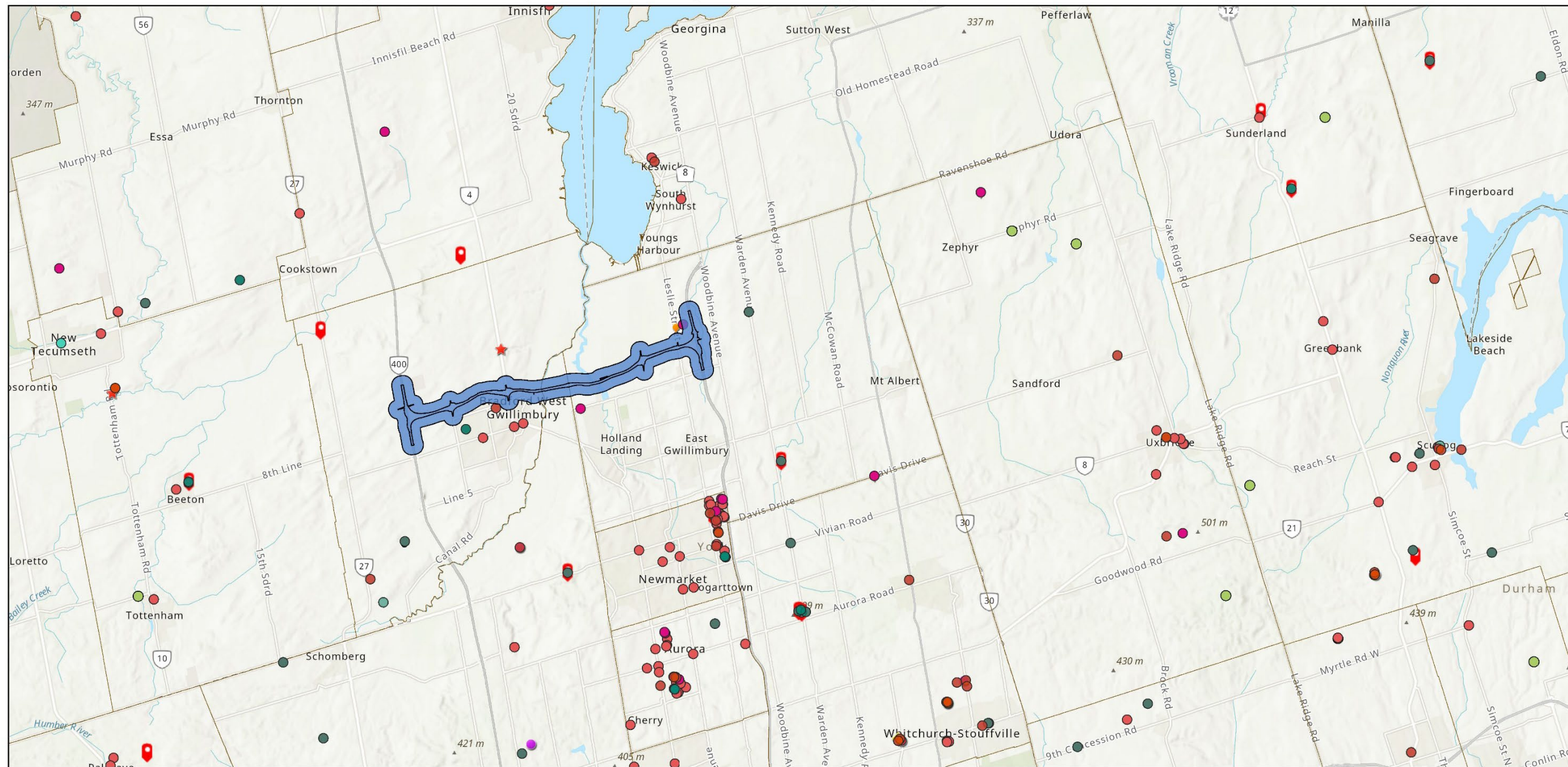


Numerous vegetable fields were noted in the Specialty Crop Area. Agricultural resources and services in noted in the urban area of Bradford.

The closest transportation network (major roadway) is Highway 400 which is located at the west end of the Primary Study Area, and Highway 404 which is located on the east end of the Primary Study Area. Further, a rail line crosses the Primary Study Area within the urban boundary of Bradford.

Figures 21 and 22 illustrate an overlay of the Primary Study Area and the Secondary Study Area on OMAFRA GIS data through the OMAFRA Agricultural System Portal website.

# Figure 21 - Agricultural Systems Mapping - Food and Beverage

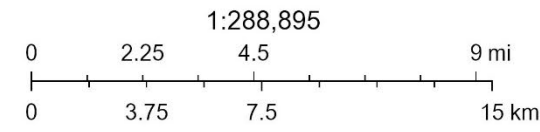


2023-01-30, 4:15:29 p.m.

- Secondary Study Area Jan 30 2023
- Primary Study Area Jan 27 2023 - Study Area Jan 27 2023
- Beverage manufacturing (ConnectON)
- Beverage and tobacco product manufacturing (ConnectON)
- Meat product manufacturing (ConnectON)
- Dairy product manufacturing (ConnectON)
- Fruit and vegetable preserving and specialty food manufacturing (ConnectON)

- Food Manufacturing (ConnectON)
- Provincially Licensed Meat Plants (OMAFRA)
- Federally Regulated Meat Plants (Canadian Food Inspection Agency)
- Provincially Licensed Dairy Plants (OMAFRA)
- Frozen Food Manufacturing (ConnectON)
- Maple Syrup and Products Production (ConnectON)

- Distilleries (Ontario Craft Distillers)
- Breweries (St. John's Wort)
- Wineries (OMAFRA)
- Craft Cideries (Ontario Craft Cider Association)
- Single and Lower Tier Municipalities (LIO)
- Upper Tier Municipalities and Districts (LIO)













Esri, CGIAR, USGS, Province of Ontario, York Region, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada

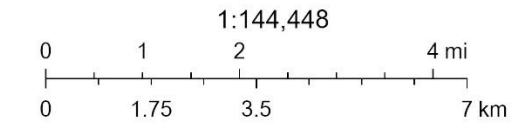


### Figure 22 - Agricultural Systems Mapping - Field Crops



2023-01-30, 4:20:03 p.m.

- |   |  |
|---|--|
|  Primary Study Area Jan 27 2023 - Study Area Jan 27 2023                       |  Agricultural Chemical and Other Merchant Wholesalers (ConnectON) |
|  Secondary Study Area Jan 30 2023  |  Oilseed and Grain Merchant Wholesalers (ConnectON)               |
|  Agricultural Implement Manufacturing (ConnectON)                              |  Support Activities for Crop Production (ConnectON)               |
|  Service Establishment Machinery, Equipment & Supplies (ConnectON)             |  Single and Lower Tier Municipalities (LIO)                       |
|  Industrial Machinery, Equipment and Supplies Merchant Wholesalers (ConnectON) |  Upper Tier Municipalities and District (LIO)                     |



Province of Ontario, York Region, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada, Esri Canada

## 4.8 AGRICULTURAL CENSUS DATA

A review of the Census of Agricultural data (Census 2021 including 2016, 2011 and 2006 data) was completed to determine the agricultural characteristics of York Regional Municipality and East Gwillimbury Township, and to allow comparison to the agricultural characteristics in the Primary Study Area and Secondary Study Area.

### 4.8.1 York Regional Municipality

Table 6 provides Census 2021 data for agricultural land use in York Regional Municipality and provides a comparison to the Provincial Census 2016, 2011 and 2006 agricultural data. As indicated in the Census data, York Regional Municipality comprises approximately 1.14 percent of the total area of farms in Ontario (Census 2021).

A review of Census 2021 data for York Regional Municipality reveals that the total area in farms is 134,414 acres (Census Farms). Much of the farmed land is in crops with a total of 109,180 acres. The remaining lands are listed as summerfallow land, tame or seeded pasture, natural land for pasture, Christmas trees, woodlands and wetlands and all other land.

**Table 6 York Regional Municipality Census 2021 Data – Land Use**

Item	York Regional Municipality	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Land Use, 2021 Census (acres)</b>						
Land in crops	109,180	9,051,011	1.21	1.20	1.31	1.31
Summerfallow land	123	13,964	0.88	1.13	2.73	5.57
Tame or seeded pasture	4,006	400,480	1.00	1.31	1.04	1.35
Natural land for pasture	3,265	626,366	0.52	0.64	0.70	0.74
Christmas trees, woodland & wetland	9,264	1,269,535	0.73	0.97	0.98	1.01
All other land	8,578	404,714	2.12	1.60	1.49	1.79
Total area of farms	134,414	11,766,071	1.14	1.15	1.21	1.26

Table 6 illustrates that there has been a decrease in summerfallow land, natural land for pasture, Christmas trees woodland & wetland acreage and total area farms since 2006. Fluctuations in acreage have been noted in land in crops, tame or seeded pasture, and all other land since 2006 with the general trend being a decrease in acreage over the last 5 years (As based on Census 2021 farm data).

Table 7 provides a more detailed inventory of agricultural lands, and it is evident from this data that York Regional Municipality contributes a small amount to the Provincial totals for production in major field crops (As based on Census farm data 2021).

**Table 7 York Regional Municipality Census 2021 Data – Crops**

Item	York Regional Municipality	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Major Field Crops, 2021 Census (acres)</b>						
Winter wheat	10,297	1,144,406	0.90	0.87	1.03	1.06
Oats for grain	126	84,320	0.15	0.40	0.66	0.52
Barley for grain	448	68,756	0.65	0.98	1.18	1.25
Mixed grains	945	59,961	1.58	1.32	1.50	1.43
Corn for grain	24,889	2,202,465	1.13	1.05	1.23	1.27
Corn for silage	1,333	289,678	0.46	0.68	0.77	0.73
Hay	17,448	1,704,017	1.02	1.23	1.25	1.22
Sod	934	22,833	4.09	29.25	25.33	28.99
Soybeans	32,741	2,806,255	1.17	0.99	0.99	0.99
Potatoes	1,645	39,193	4.20	4.23	3.30	3.09
<b>Major Fruit Crops, 2021 Census (acres)</b>						
Total fruit crops	335	48,661	0.69	0.67	0.78	1.88
Apples	94	16,008	0.59	0.66	0.69	1.29
Sour Cherries	0	1,383	0.00	-	-	0.11
Peaches	1	4,608	0.02	0.63	-	-
Grapes	123	18,432	0.67	0.31	0.60	2.98
Strawberries	89	2,633	3.38	3.81	4.20	5.04
Raspberries	5	438	1.14	2.79	3.99	4.42
<b>Major Vegetable Crops, 2021 Census (acres)</b>						
Total vegetables	10,418	127,893	8.15	7.95	8.39	5.45
Sweet corn	1,756	20,518	8.56	7.32	5.17	1.96
Tomatoes	41	14,614	0.28	0.70	1.59	1.63
Green peas	19	14,044	0.14	-	0.43	0.56
Green or wax beans	30	8,709	0.34	0.44	0.65	0.65
Chinese Cabbage	1,931	3,746	51.55	22.03	32.99	-
Carrots	2,623	9,075	28.90	26.29	30.94	27.07
Dry onions, yellow, Spanish, cooking, etc	1,813	5,701	31.80	27.17	28.87	21.65

Table 7 also illustrates Census 2021 data for major field crops, fruit crops and vegetable crops in York Regional Municipality and provides a percent of Province comparison from the Provincial Census 2016, 2011 and 2006. Table 7 illustrates an increase in acreage for soybean production in the last 15 years. Fluctuations were noted (as a percent of the Provincial totals) in all other major field crops with the exception of barley for grain where there has been a decrease in acreage since 2006.

With respect to fruit crops, York Regional Municipality is not a significant contributor to the Provincial totals for major fruit crops. Table 7 illustrates a decrease in acreage for apples, sour



cherries, strawberries, and raspberries over the last 15 years. Fluctuations were noted in acreage (as a percent of the Provincial totals) for grapes since 2006.

York Regional Municipality contributed a significant amount to the Provincial totals for production of vegetable crops with most of the acreage focused on carrots, Chinese cabbage, and onions. The Census data indicated an increase in York Regional Municipality's contribution (as a percent of the Provincial totals) for all major vegetable crops except tomatoes and green or wax beans over the last 5 years. As illustrated in Table 7, York Regional Municipality's contribution to major vegetable crops for the Province in 2021 included 51.55 percent for Chinese cabbage crop acreage, 31.80 percent for dry onions, yellow, Spanish, and cooking etc., and 28.90 for carrot crop acreage.

Table 8 illustrates the Census 2021 data for livestock. York Regional Municipality is a small producer of sheep and lambs with contributions of 2.95 percent to the Province in 2021. Decreases have occurred in dairy cow inventories over the last 15 years. Fluctuations have been noted in steers, beef cows, total pigs, total sheep and lambs' inventories since 2006.

York Regional Municipality contributes a small amount to the Provincial totals for poultry inventories. Decreases have occurred in total hens and chickens' inventories over the last 15 years.

**Table 8 York Regional Municipality Census 2021 Data – Livestock**

Item	York Regional Municipality	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Livestock Inventories, 2021 Census (number)</b>						
Total cattle and calves	10,060	1,604,810	0.63	0.81	0.97	0.87
Steers	2,613	299,540	0.87	1.10	1.83	1.71
Beef Cows	2,111	224,194	0.94	1.13	0.88	0.80
Dairy Cows	1,350	327,272	0.41	0.51	0.65	0.72
Total Pigs	7,910	4,071,902	0.19	-	0.16	0.16
Total sheep and lambs	9,524	322,508	2.95	1.87	2.37	2.52
<b>Poultry Inventories, 2021 Census (number)</b>						
Total hens and chickens	166,581	53,802,772	0.31	0.48	0.56	0.93
Total turkeys	68	2,453,126	0.00	-	-	-

#### 4.8.2 East Gwillimbury Township

A review of Census 2021 data for East Gwillimbury Township reveals that the total area in farms is 23,050 acres (Census Farms). Much of the farmed land is in crops with a total of 19,023 acres.

The remaining lands are listed as summerfallow land, tame or seeded pasture, natural land for pasture, Christmas trees, woodlands, and wetland and all other land.

Table 9 provides Census 2021 data for agricultural land use in East Gwillimbury Township and provides a percent comparison of East Gwillimbury Township's contribution from the Provincial Census 2016, 2011 and 2006 agricultural data. As indicated in the Census data, East Gwillimbury Township comprises approximately 0.21 percent of the land in crops for Census farms in Ontario (Census 2021).

In comparison to the Census 2016, 2011 and 2006 data, there have been fluctuations in acreage of all land uses since 2006 with the exception of all other land where there has been a decrease in acreage over the last 15 years.

**Table 9 East Gwillimbury Township Census 2021 Data – Land Use**

Item	East Gwillimbury Township	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Land Use, 2021 Census (acres)</b>						
Land in crops	19,023	9,051,011	0.21	0.21	0.29	0.20
Summerfallow land	11	13,964	0.08	-	0.70	0.57
Tame or seeded pasture	429	400,480	0.11	-	0.20	0.22
Natural land for pasture	260	626,366	0.04	0.08	0.14	0.10
Christmas trees, woodland & wetland	2,247	1,269,535	0.18	0.20	0.22	-
All other land	1,080	404,714	0.27	0.29	0.34	0.36
Total area of farms	23,050	11,766,071	0.20	0.15	0.26	0.20

Table 10 provides a breakdown of the major field crops in East Gwillimbury Township and illustrates a percent of Province in East Gwillimbury Township and provides a comparison from 2016, 2011 and 2006. East Gwillimbury Township contributes a limited amount to the Provincial totals for major field crops, major fruit crops, and major vegetable crops.

Major field crop contributions to the Provincial totals are limited. There have been fluctuations in acreage in all major field crops over the last 15 years. East Gwillimbury Township was a small contributor to the Provincial totals with a contribution of 3.69 percent in potato crop (Census 2021).

Table 10 also provides Census data for major fruit crops. East Gwillimbury Township's contribution to the Provincial totals for major fruit crops is limited with 4 acres of apples and one acre each of peaches and raspberries (Census 2021).

East Gwillimbury Township's contribution to the Provincial totals for major vegetable crops is significant. East Gwillimbury Township contributed 46.13 percent in Chinese cabbage acreage,



11.47 percent in carrot acreage, and 10.12 percent in dry onions, yellow, Spanish, and cooking, etc acreage in 2021.

**Table 10 East Gwillimbury Township Census 2021 Data – Crops**

Item	East Gwillimbury Township	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Major Field Crops, 2021 Census (acres)</b>						
Winter wheat	793	1,144,406	0.07	0.09	0.27	0.12
Oats for grain	0	84,320	0.00	0.00	0.11	-
Barley for grain	105	68,756	0.15	0.00	0.10	0.23
Mixed grains	70	59,961	0.12	0.00	0.16	0.17
Corn for grain	4,164	2,202,465	0.19	0.22	0.46	0.21
Corn for silage	65	289,678	0.02	0.04	0.28	0.09
Hay	2,454	1,704,017	0.14	0.19	0.17	0.23
Sod	6	19,479	0.03	-	4.36	2.26
Soybeans	3,702	2,806,255	0.13	0.14	0.24	0.11
Potatoes	1,448	39,193	3.69	3.70	0.00	2.13
<b>Major Fruit Crops, 2021 Census (acres)</b>						
Total fruit crops	18	48,661	0.04	0.03	0.19	-
Apples	4	16,008	0.02	0.03	0.18	-
Sour Cherries	0	1,383	0.00	-	-	-
Peaches	1	4,608	0.02	-	-	-
Grapes	0	18,432	0.00	-	-	-
Strawberries	0	2,633	0.00	0.14	-	-
Raspberries	1	438	0.23	0.00	0.67	-
<b>Major Vegetable Crops, 2021 Census (acres)</b>						
Total vegetables	4,024	127,893	3.15	2.02	2.92	1.10
Sweet corn	47	20,518	0.23	-	0.35	0.12
Tomatoes	4	14,614	0.03	0.03	0.04	-
Green peas	0	14,044	0.00	0.01	0.01	-
Green or wax beans	2	8,709	0.02	-	-	-
Chinese cabbage	1,728	3,746	46.13	-	22.91	-
Carrots	1,041	9,075	11.47	8.98	-	-
Dry onions, yellow, Spanish, cooking etc.	577	5,701	10.12	-	-	-

Table 11 provides the Census 2021 data for livestock for East Gwillimbury Township. As indicated below, East Gwillimbury Township's contribution to the Provincial totals has fluctuated in all livestock inventories with the exception of total pigs and total turkeys where there has been no contribution over the last 10 years.

**Table 11 East Gwillimbury Township Census 2021 Data – Livestock**

Item	East Gwillimbury Township	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Livestock Inventories, 2021 Census (number)</b>						
Total cattle and calves	995	1,604,810	0.06	0.08	0.13	-
Steers	46	299,540	0.02	0.13	0.05	0.09
Beef cows	331	224,194	0.15	-	0.18	0.14
Dairy cows	114	327,272	0.03	-	0.10	0.09
Total pigs	0	4,071,902	0.00	-	-	0.02
Total sheep and lambs	830	322,508	0.26	0.30	0.50	0.25
<b>Poultry Inventories, 2021 Census (number)</b>						
Total hens and chickens	24,706	53,802,772	0.05	-	0.36	-
Total turkeys	0	2,453,126	0.00	-	-	0.00

Table 12 provides a side-by-side comparison of East Gwillimbury Township and York Regional Municipality Census 2021 data for major crops. Table 12 also provides this comparison as a percent calculation of the contribution from East Gwillimbury Township to York Regional Municipality (2021, 2016, 2011 and 2006).

As illustrated in Table 12, East Gwillimbury Township has a significant contribution to the major field crops in York Regional Municipality. Increases in contribution have been noted (as a percent of York Regional Municipality totals) for potatoes over the last 15 years. East Gwillimbury contributed 88.02 percent to the total potato crops in 2021. There have been fluctuations in the percent contribution from East Gwillimbury Township to York Regional Municipality totals for all other major field crops over the last 15 years.

With respect to major fruit crops, East Gwillimbury Township's contribution to York Regional Municipality's major fruit totals is small with a contribution of 5.37 percent of total fruit crops.

East Gwillimbury Township's contribution to major vegetable crops acreage in York Regional Municipality included an 89.49 percent contribution of Chinese cabbage crop acreage, a 39.69 percent contribution of carrot crop acreage and a 31.83 percent contribution of dry onions, yellow, Spanish, cooking etc. crop acreage in 2021.

**Table 12 Comparison of Township and Regional Municipality Census 2021 Data - Crops**

Item	East Gwillimbury Township	York Regional Municipality	Percent of York Regional Municipality 2021	Percent of York Regional Municipality 2016	Percent of York Regional Municipality 2011	Percent of York Regional Municipality 2006
<b>Major Field Crops, 2021 Census (acres)</b>						
Winter wheat	793	10,297	7.70	10.24	-	10.75
Oats for grain	0	126	0.00	0.00	21.89	-
Barley for grain	105	448	23.44	0.00	10.49	18.68
Mixed grains	70	945	7.41	0.00	15.65	11.73
Corn for grain	4,164	24,889	16.73	20.58	24.85	16.43
Corn for silage	65	1,333	4.88	6.00	16.63	11.64
Hay	2,454	17,448	14.06	15.77	20.15	19.18
Sod	6	934	0.64	-	17.23	7.80
Soybeans	3,702	32,741	11.31	14.47	17.48	9.85
Potatoes	1,448	1,645	88.02	87.40	78.62	68.73
<b>Major Fruit Crops, 2021 Census (acres)</b>						
Total fruit crops	18	335	5.37	4.93	23.79	-
Apples	4	94	4.26	4.76	25.69	-
Sour Cherries	0	0	0.00	-	-	0.00
Peaches	1	1	100.00	-	-	-
Grapes	0	123	0.00	-	-	-
Strawberries	0	89	0.00	3.60	-	-
Raspberries	1	5	20.00	0.00	-	-
<b>Major Vegetable Crops, 2021 Census (acres)</b>						
Total vegetables	4,024	10,418	38.63	25.45	34.77	1.10
Sweet corn	47	1,756	2.68	-	6.81	0.12
Tomatoes	4	41	9.76	4.55	2.28	-
Green peas	0	19	0.00	-	3.08	-
Green or wax beans	2	30	6.67	-	-	-
Chinese cabbage	1,728	1,931	89.49	-	69.44	-
Carrots	1,041	2,623	39.69	34.16	-	-
Dry onions, yellow, Spanish, cooking etc.	577	1,813	31.83	-	-	-

Table 13 provides a side-by-side comparison of East Gwillimbury Township and York Regional Municipality Census (2021) data for livestock inventories. Table 13 also provides this comparison as a percent calculation of the contribution from East Gwillimbury Township to York Regional Municipality (2021, 2016, 2011 and 2006). As illustrated in Table 13, East Gwillimbury Township contributed 15.68 percent in beef cows, 9.89 percent in total cattle and calves, 8.71 percent in total sheep and lambs and 8.44 percent in dairy cows to York Regional Municipality. A review of the Census data indicates that there have been fluctuations in East

Gwillimbury Township’s contribution to the York Regional Municipality’s livestock totals since 2006 for all livestock inventories with the exception of total pigs where there has been a decrease in inventory.

East Gwillimbury Township contributed 14.83 percent of York Regional Municipality’s total hens and chickens’ inventories in 2021.

**Table 13 Comparison of Township and Regional Municipality Census 2021 Data – Livestock**

Item	East Gwillimbury Township	York Regional Municipality	Percent of York Regional Municipality 2021	Percent of York Regional Municipality 2016	Percent of York Regional Municipality 2011	Percent of York Regional Municipality 2006
<b>Livestock Inventories, 2021 Census (number)</b>						
Total cattle and calves	995	10,060	9.89	9.65	13.96	-
Steers	46	2,613	1.76	12.09	2.68	5.03
Beef cows	331	2,111	15.68	-	20.84	17.48
Dairy cows	114	1,350	8.44	-	15.04	12.28
Total pigs	0	7,910	0.00	-	-	13.16
Total sheep and lambs	830	9,524	8.71	16.24	21.24	10.07
<b>Poultry Inventories, 2021 Census (number)</b>						
Total hens and chickens	24,706	166,581	14.83	-	65.19	-
Total turkeys	0	68	0.00	-	-	-

### 4.8.3 King Township

A review of Census 2021 data for King Township reveals that the total area in farms is 32,669 acres (Census Farms). Much of the farmed land is in crops with a total of 26,547 acres. The remaining lands are listed as summerfallow land, tame or seeded pasture, natural land for pasture, Christmas trees, woodlands, and wetland and all other land.

Table 14 provides Census 2021 data for agricultural land use in King Township and provides a percent of Province comparison from the Provincial Census 2016, 2011 and 2006 agricultural data. As indicated in the Census data, King Township comprises approximately 0.29 percent of the land in crops for Census farms in Ontario (Census 2021).

In comparison to the Census 2016, 2011 and 2006 data, there has been an increase in acreage of in tame or seeded pasture and a decrease in acreage of land in crops since 2006. All other land uses have experienced fluctuations over the last 15 years.

**Table 14 King Township Census 2021 Data – Land Use**

Item	King Township	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Land Use, 2021 Census (acres)</b>						
Land in crops	26,547	9,051,011	0.29	0.33	0.33	0.38
Summerfallow land	55	13,964	0.39	0.43	0.50	0.36
Tame or seeded pasture	2,044	400,480	0.51	0.35	0.34	0.34
Natural land for pasture	701	626,366	0.11	0.25	0.19	0.19
Christmas trees, woodland & wetland	2,122	1,269,535	0.17	0.24	0.18	0.25
All other land	1,201	404,714	0.30	0.68	0.45	0.42
Total area of farms	32,669	11,766,071	0.28	0.33	0.30	0.35

Table 15 provides a breakdown of the major field crops in King Township and provides a percent comparison from the Provincial Census 2016, 2011 and 2006. King Township contributes a limited amount to the Provincial totals for major field crops, major fruit crops, and major vegetable crops.

Major field crop contributions to the Provincial totals are small. There have been increases in sod acreage and decreases in contribution for winter wheat and oats for grain since 2006. Fluctuations were noted in barley for grain, mixed grain, corn for grain and silage, hay, soybeans, and potatoes over the last 15 years.

Table 15 also provides Census data for major fruit crops and major vegetable crops. King Township's contribution to the Provincial totals for major fruit crops is extremely limited with 36 acres of apples and one acre of strawberries (Census 2021).

King Township's contribution to the Provincial totals for major vegetable crops is significant. King Township contributed 17.86 percent in dry onions, yellow, Spanish, and cooking etc. crop acreage, 15.23 percent in carrot acreage, and 3.23 percent in Chinese cabbage crop acreage in 2021.

**Table 15 King Township Census 2021 Data – Crops**

Item	King Township	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Major Field Crops, 2021 Census (acres)</b>						
Winter wheat	2,469	1,144,406	0.22	0.23	0.25	0.37
Oats for grain	12	84,320	0.01	0.10	0.20	0.20
Barley for grain	241	68,756	0.35	0.37	0.30	0.29
Mixed grains	382	59,961	0.64	0.49	0.38	0.45
Corn for grain	4,216	2,202,465	0.19	0.17	0.21	0.26
Corn for silage	338	289,678	0.12	0.19	0.08	0.11

Item	King Township	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
Hay	5,693	1,704,017	0.33	0.41	0.35	0.35
Sod	448	19,479	2.30	-	-	-
Soybeans	7,536	2,806,255	0.27	0.25	0.26	0.30
Potatoes	16	39,193	0.04	0.00	0.00	0.04
<b>Major Fruit Crops, 2021 Census (acres)</b>						
Total fruit crops	46	48,661	0.09	0.15	0.05	0.08
Apples	36	16,008	0.22	0.23	0.14	0.18
Sour Cherries	0	1,383	0.00	0.00	0.00	-
Peaches	0	4,608	0.00	-	0.00	-
Grapes	0	18,432	0.00	-	-	-
Strawberries	1	2,633	0.04	-	0.00	-
Raspberries	0	438	0.00	-	-	-
<b>Major Vegetable Crops, 2021 Census (acres)</b>						
Total vegetables	3,214	127,893	2.51	2.96	3.23	2.60
Sweet corn	3	20,518	0.01	-	0.05	-
Tomatoes	2	14,614	0.01	0.13	0.09	0.16
Green peas	1	14,044	0.01	0.02	0.03	0.07
Green or wax beans	16	8,709	0.18	0.02	0.03	-
Chinese Cabbage	121	3,746	3.23	15.49	8.62	25.36
Carrots	1,382	9,075	15.23	16.02	17.57	16.12
Dry onions, yellow, Spanish, cooking etc.	1,018	5,701	17.86	17.95	23.13	14.82

Table 16 provides the Census 2021 data for livestock for King Township. There have been increases in contribution to Provincial totals from King Township for beef cows, total sheep and lambs and total hens and chickens in the last 15 years. Decreases in contribution have been noted for steers and dairy cows (Census 2021). Total cattle and calves inventories have fluctuated over the last 15 years.

**Table 16 King Township Census 2021 Data – Livestock**

Item	King Township	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Livestock Inventories, 2021 Census (number)</b>						
Total cattle and calves	2,939	1,604,810	0.18	0.23	0.14	0.16
Steers	181	299,540	0.06	0.07	0.07	0.08
Beef cows	866	224,194	0.39	0.39	0.21	0.20
Dairy cows	278	327,272	0.08	0.18	0.18	0.19
Total pigs	7	4,071,902	0.00	-	-	-

Item	King Township	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
Total sheep and lambs	1,343	322,508	0.42	0.21	0.20	0.20
<b>Poultry Inventories, 2021 Census (number)</b>						
Total hens and chickens	34,807	53,802,772	0.06	-	-	-
Total turkeys	16	2,453,126	0.00	-	-	-

Table 17 provides a side-by-side comparison of King Township and York Regional Municipality Census 2021 data for crops. Table 17 also provides this comparison as a percent calculation of the contribution from King Township to York Regional Municipality (2021, 2016, 2011 and 2006).

As illustrated in Table 17, King Township is a significant contributor to the major field crops in York Regional Municipality. Increases in contribution have been noted (as a percent of York Regional Municipality totals) for barley for grain and sod. Decreases in acreage have occurred in oats for grain and soybeans. There have been fluctuations in the percent contribution from King Township to York Regional Municipality totals for all other major field crops.

With respect to major fruit crops, King Township's contribution to York Regional Municipality's major fruit totals is minimal with 46 acres of total fruit crops resulting in a 13.73 percent contribution to York Regional Municipality's totals. King Township contributed 36 acres of apples and one acre of strawberries to York Regional Municipality in 2021. As illustrated in Table 17, King Township's contribution to major vegetable crop acreage in York Regional Municipality includes a 53.33 percent contribution of green or wax bean crop acreage, a 52.69 contribution of carrot crop acreage in 2021.

**Table 17 Comparison of Township and Regional Municipality Census 2021 Data - Crops**

Item	King Township	York Regional Municipality	Percent of York Regional Municipality 2021	Percent of York Regional Municipality 2016	Percent of York Regional Municipality 2011	Percent of York Regional Municipality 2006
<b>Major Field Crops, 2021 Census (acres)</b>						
Winter wheat	2,469	10,297	23.98	26.99	24.00	32.62
Oats for grain	12	126	9.52	25.00	29.83	39.56
Barley for grain	241	448	53.79	37.29	25.38	23.07
Mixed grains	382	945	40.42	37.00	25.11	31.42
Corn for grain	4,216	24,889	16.94	16.23	16.91	20.45
Corn for silage	338	1,333	25.36	27.86	10.37	15.35
Hay	5,693	17,448	32.63	33.29	28.16	28.97
Sod	448	934	47.97	-	-	-



Item	King Township	York Regional Municipality	Percent of York Regional Municipality 2021	Percent of York Regional Municipality 2016	Percent of York Regional Municipality 2011	Percent of York Regional Municipality 2006
Soybeans	7,536	32,741	23.02	25.57	25.89	28.30
Potatoes	16	1,645	0.97	-	-	1.19
<b>Major Fruit Crops, 2021 Census (acres)</b>						
Total fruit crops	46	335	13.73	22.31	6.31	4.25
Apples	36	94	38.30	34.29	20.18	13.79
Sour Cherries	0	0	0.00	-	-	-
Peaches	0	1	0.00	-	-	-
Grapes	0	123	0.00	-	-	-
Strawberries	1	89	1.12	-	-	-
Raspberries	0	5	0.00	-	-	-
<b>Major Vegetable Crops, 2021 Census (acres)</b>						
Total vegetables	3,214	10,418	30.85	37.16	38.51	47.76
Sweet corn	3	1,756	0.17	-	0.91	-
Tomatoes	2	41	4.88	18.18	5.70	9.70
Green peas	1	19	5.26	-	6.15	13.33
Green or wax beans	16	30	53.33	4.65	5.00	-
Chinese Cabbage	121	1,931	6.27	70.31	26.14	-
Carrots	1,382	2,623	52.69	60.94	56.81	59.56
Dry onions, yellow, Spanish, cooking etc.	1,018	1,813	56.15	66.05	80.10	68.47

Table 18 provides a side-by-side comparison of King Township and York Regional Municipality Census (2021) data for livestock and poultry inventories. As illustrated in Table 18, King Township contributed 41.02 percent in beef cows, 29.21 percent in total cattle and calves, 20.59 percent in dairy cows, and 14.10 percent in total sheep and lambs to York Regional Municipality's inventories. A review of the Census data indicates that there have been fluctuations in King Township's contribution to the York Regional Municipality's livestock totals since 2006 for most livestock inventories but the general trend (with the exception of dairy cows) has been increases in number over the last 5 years.

King Township contributed 20.89 percent of York Regional Municipality's total hens and chickens' inventories and 23.53 percent of the total turkeys in 2021.

**Table 18 Comparison of Township and Regional Municipality Census 2021 Data – Livestock**

Item	King Township	York Regional Municipality	Percent of York Regional Municipality 2021	Percent of York Regional Municipality 2016	Percent of York Regional Municipality 2011	Percent of York Regional Municipality 2006
<b>Livestock Inventories, 2021 Census (number)</b>						
Total cattle and calves	2,939	10,060	29.21	28.21	14.69	91.14
Steers	181	2,613	6.93	6.40	3.81	4.58
Beef cows	866	2,111	41.02	34.78	23.89	26.47
Dairy cows	278	1,350	20.59	35.72	27.77	8.86
Total pigs	7	7,910	0.09	-	-	-
Total sheep and lambs	1,343	9,524	14.10	11.13	8.30	8.02
<b>Poultry Inventories, 2021 Census (number)</b>						
Total hens and chickens	34,807	166,581	20.89	0.72	-	-
Total turkeys	16	68	23.53	-	-	-

#### 4.8.4 Simcoe County

Table 19 provides Census 2021 data for agricultural land use in Simcoe County and provides a comparison to the Provincial Census 2016, 2011 and 2006 agricultural data. As indicated in the Census data, Simcoe County comprises approximately 4.11 percent of the total area of farms in Ontario (Census 2021).

A review of Census 2021 data for Simcoe County reveals that the total area in farms is 483,350 acres (Census Farms). Much of the farmed land is in crops with a total of 373,658 acres. The remaining lands are listed as summerfallow land, tame or seeded pasture, natural land for pasture, Christmas trees, woodlands and wetlands and all other land.

**Table 19 Simcoe County Census 2021 Data – Land Use**

Item	Simcoe County	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Land Use, 2021 Census (acres)</b>						
Land in crops	373,658	9,051,011	4.13	4.13	4.07	4.03
Summerfallow land	575	13,964	4.12	2.84	6.70	8.24
Tame or seeded pasture	16,314	400,480	4.07	3.36	3.96	3.78
Natural land for pasture	30,285	626,366	4.84	4.16	4.74	4.76

Item	Simcoe County	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
Christmas trees, woodland & wetland	45,098	1,269,535	3.55	3.41	3.17	3.20
All other land	17,423	404,714	4.31	4.28	4.73	4.15
Total area of farms	483,350	11,766,071	4.11	4.02	4.03	4.01

Table 19 illustrates that there has been an increase in land in crops since 2006. Fluctuations in acreage have been noted in all other land use since 2006 with the general trend being an increase in acreage over the last 5 years (As based on Census 2021 farm data).

Table 20 provides a more detailed inventory of agricultural lands, and it is evident from this data that Simcoe County contributes a small amount to the Provincial totals for production of major field crops (As based on Census farm data).

Table 20 also illustrates a percent of Province in Simcoe County and provides a comparison from the Provincial Census 2016, 2011 and 2006. Table 20 illustrates an increase in acreage for soybean production (Census 2021). Decreases in acreage occurred for corn for silage and hay contribution and fluctuations were noted (as a percent of the Provincial totals) for winter wheat, oats and barley for grain, corn for grain and potato crops since 2006. Contributions of 38.73 percent were made by Simcoe County to the Province from potato crops in 2021.

**Table 20 Simcoe County Census 2021 Data – Crops**

Item	Simcoe County	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Major Field Crops, 2021 Census (acres)</b>						
Winter wheat	62,857	1,144,406	5.49	6.18	5.30	4.50
Oats for grain	3,648	84,320	4.33	4.45	4.56	4.54
Barley for grain	3,585	68,756	5.21	5.75	5.02	6.14
Mixed grains	1,919	59,961	3.20	2.99	4.16	4.08
Corn for grain	70,763	2,202,465	3.21	2.97	2.80	2.81
Corn for silage	4,765	289,678	1.64	1.86	1.87	2.47
Hay	71,883	1,704,017	4.22	4.30	4.44	4.59
Soybeans	112,981	2,806,255	4.03	3.80	3.71	3.16
Potatoes	15,179	39,193	38.73	38.73	32.00	36.87
<b>Major Fruit Crops, 2021 Census (acres)</b>						
Total fruit crops	884	48,661	1.82	1.38	1.55	1.34
Apples	376	16,008	2.35	2.06	3.25	2.34
Sour Cherries	2	1,383	0.14	-	-	-

Item	Simcoe County	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
Peaches	6	4,608	0.13	-	-	-
Grapes	75	18,432	0.41	0.33	0.11	0.05
Strawberries	184	2,633	6.99	4.84	3.56	4.62
Raspberries	32	438	7.31	8.09	5.88	5.81
<b>Major Vegetable Crops, 2021 Census (acres)</b>						
Total vegetables	7,702	127,893	6.02	5.91	4.98	5.78
Sweet corn	663	20,518	3.23	3.04	2.45	2.60
Tomatoes	44	14,614	0.30	0.30	0.40	0.30
Green peas	123	14,044	0.88	0.20	0.13	0.55
Green or wax beans	32	8,709	0.37	0.90	-	-
Chinese cabbage	781	3,746	20.85	-	32.94	-
Carrots	2,078	9,075	22.90	19.31	14.90	28.38
Dry onions, yellow, Spanish, cooking, etc.	1,896	5,701	33.26	35.42	23.76	27.49

With respect to fruit crops, Simcoe County is a small contributor to the Provincial totals for major fruit crops. Table 20 illustrates an increase in acreage for sour cherries, peaches, and grapes. Fluctuations were noted in acreage (as a percent of the Provincial totals) for apples, strawberries, and raspberries since 2006 (Census 2021).

Simcoe County contributes a significant amount to the Provincial totals for production of vegetable crops with most of the acreage focused on carrots, Chinese cabbage, and onions. As illustrated in Table 20, Simcoe County's contribution to major vegetable crop acreage for the Province in 2021 includes 33.26 percent for dry onions, yellow, Spanish, cooking, etc., crop acreage, 22.90 for carrot acreage, and 20.85 percent for Chinese cabbage acreage.

Table 21 illustrates the Census 2021 data for livestock. Simcoe County is a small producer of beef cows, total sheep and lambs and total cattle and calves for the Province (Census 2021). When compared to the Census 2016, 2011 and 2006 data, decreases in inventory have occurred for total cattle and calves, steers, dairy cows and total sheep and lambs over the last 15 years. Fluctuations were noted in beef cows and total pigs inventories since 2006.

Simcoe County is a small producer of total hens and chickens with contributions of 1.73 percent to the Province in 2021. Contributions of 2.93 percent were made by Simcoe County to the Province for total turkeys in 2021. Fluctuations have been noted in total hens and chickens' inventories and in total turkey inventories since 2006 with the general trend being an increase in contribution over the last 5 years (Census 2021).

**Table 21 Simcoe County Census 2021 Data – Livestock**

Item	Simcoe County	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Livestock Inventories, 2021 Census (number)</b>						
Total cattle and calves	38,719	1,604,810	2.41	2.83	3.15	3.43
Steers	5,681	299,540	1.90	2.84	2.97	3.36
Beef Cows	10,233	224,194	4.56	4.96	5.24	5.15
Dairy Cows	4,875	327,272	1.49	1.72	1.79	2.05
Total Pigs	48,944	4,071,902	1.20	1.31	1.01	1.57
Total sheep and lambs	10,449	322,508	3.24	4.82	5.72	6.65
<b>Poultry Inventories, 2021 Census (number)</b>						
Total hens and chickens	930,800	53,802,772	1.73	1.72	1.67	1.38
Total turkeys	71,886	2,453,126	2.93	0.74	0.81	2.03

#### 4.8.5 Bradford-West Gwillimbury

A review of Census 2021 data for Bradford-West Gwillimbury reveals that the total area in farms is 20,219 acres (Census Farms). Much of the farmed land is in crops with a total of 18,621 acres. The remaining lands are listed as summerfallow land, tame or seeded pasture, natural land for pasture, Christmas trees, woodlands, and wetland and all other land.

Table 22 provides Census 2021 data for agricultural land use in Bradford-West Gwillimbury and provides a percent comparison of Bradford-West Gwillimbury's contribution from the Provincial Census 2016, 2011 and 2006 agricultural data. As indicated in the Census data, Bradford-West Gwillimbury comprises approximately 0.21 percent of the land in crops for Census farms in Ontario (Census 2021).

In comparison to the Census 2016, 2011 and 2006 data, there have been fluctuations in acreage of all land uses since 2006.

**Table 22 Bradford-West Gwillimbury Census 2021 Data – Land Use**

Item	Bradford-West Gwillimbury	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Land Use, 2021 Census (acres)</b>						
Land in crops	18,621	9,051,011	0.21	0.26	0.22	0.33
Summerfallow land	21	13,964	0.15	-	-	1.59

Item	Bradford-West Gwillimbury	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
Tame or seeded pasture	413	400,480	0.10	-	0.14	0.13
Natural land for pasture	123	626,366	0.02	0.08	0.06	0.11
Christmas trees, woodland & wetland	719	1,269,535	0.06	0.10	0.06	0.16
All other land	322	404,714	0.08	0.19	-	0.16
Total area of farms	20,219	11,766,071	0.17	0.22	0.19	0.27

Table 23 provides a breakdown of the major field crops in Bradford-West Gwillimbury and illustrates a percent of Province in Bradford-West Gwillimbury and provides a comparison from 2016, 2011 and 2006. Bradford-West Gwillimbury contributes a limited amount to the Provincial totals for major field crops, major fruit crops, and major vegetable crops (Census 2021).

Major field crop contributions to the Provincial totals are limited. Increases in contribution have occurred in potato crops over the last 5 years. There have been decreases in contribution for barley for grain and mixed grain since 2006. Fluctuations were noted in winter wheat, oats for grain, corn for grain and silage, hay, and soybeans over the last 15 years (Census 2021).

Table 23 also provides Census data for major fruit crops and major vegetable crops. Bradford-West Gwillimbury had no contribution to the Provincial totals for major fruit crops in 2021.

Bradford-West Gwillimbury's contribution to the Provincial totals for major vegetable crops is significant. Bradford-West Gwillimbury contributed 21.10 percent in dry onions, yellow, Spanish, and cooking, etc. crop acreage, 18.19 percent in carrot crop acreage and 3.79 percent in Chinese cabbage crop acreage (Census 2021).

**Table 23 Bradford-West Gwillimbury Census 2021 Data – Crops**

Item	Bradford-West Gwillimbury	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Major Field Crops, 2021 Census (acres)</b>						
Winter wheat	3,775	1,144,406	0.33	0.35	0.00	0.47
Oats for grain	7	84,320	0.01	0.00	0.00	0.67
Barley for grain	126	68,756	0.18	0.20	0.21	0.36
Mixed grains	0	59,961	0.00	0.00	0.00	0.32
Corn for grain	3,277	2,202,465	0.15	0.23	0.17	0.26
Corn for silage	107	289,678	0.04	0.09	0.03	0.06
Hay	1,398	1,704,017	0.08	0.13	0.11	0.16
Soybeans	4,954	2,806,255	0.18	0.24	0.19	0.30



Item	Bradford-West Gwillimbury	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
Potatoes	454	39,193	1.16	0.00	0.00	-
<b>Major Fruit Crops, 2021 Census (acres)</b>						
Total fruit crops	1	48,661	0.00	0.02	-	0.15
Apples	0	16,008	0.00	-	0.00	0.25
Sour Cherries	0	1,383	0.00	0.00	0.00	-
Peaches	0	4,608	0.00	-	0.00	-
Grapes	0	18,432	0.00	-	0.00	-
Strawberries	0	2,633	0.00	-	-	-
Raspberries	0	438	0.00	-	0.00	-
<b>Major Vegetable Crops, 2021 Census (acres)</b>						
Total vegetables	4,034	127,893	3.15	3.03	2.69	3.35
Sweet corn	0	20,518	0.00	-	-	-
Tomatoes	1	14,614	0.01	0.01	-	-
Green peas	0	14,044	0.00	0.02	-	-
Green or wax beans	1	8,709	0.01	0.03	-	-
Chinese cabbage	142	3,746	3.79	0.10	-	-
Carrots	1,651	9,075	18.19	16.31	14.69	24.28
Dry onions, yellow, Spanish, cooking, etc.	1,203	5,701	21.10	24.35	-	21.30

Table 24 provides the Census 2021 data for livestock for Bradford-West Gwillimbury. As indicated below, Bradford-West Gwillimbury's contribution to the Provincial totals has decreased in all livestock inventories, except for total pigs where there has been no contribution, since 2016. Bradford-West Gwillimbury contributed 0.04 percent to the Provincial totals for total hens and chickens' inventories in 2021 (Census 2021).

**Table 24 Bradford-West Gwillimbury Census 2021 Data – Livestock**

Item	Bradford-West Gwillimbury	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
<b>Livestock Inventories, 2021 Census (number)</b>						
Total cattle and calves	951	1,604,810	0.06	0.09	0.07	0.11
Steers	7	299,540	0.00	0.01	0.02	0.04
Beef cows	181	224,194	0.08	0.11	-	0.16
Dairy cows	268	327,272	0.08	0.13	-	0.10
Total pigs	0	4,071,902	0.00	-	-	0.04
Total sheep and lambs	49	322,508	0.02	0.13	0.12	0.37
<b>Poultry Inventories, 2021 Census (number)</b>						
Total hens and chickens	23,167	53,802,772	0.04	0.19	-	-

Item	Bradford-West Gwillimbury	Province	Percent of Province 2021	Percent of Province 2016	Percent of Province 2011	Percent of Province 2006
Total turkeys	20	2,453,126	0.00	-	-	-

Table 25 provides a side-by-side comparison of Bradford-West Gwillimbury and Simcoe County Census 2021 data for crops. Table G also provides this comparison as a percent calculation of the contribution from Bradford-West Gwillimbury to Simcoe County (2021, 2016, 2011 and 2006).

As illustrated in Table 25, Bradford-West Gwillimbury has a small contribution to the major field crops in Simcoe County. Increases in contribution have been noted (as a percent of Simcoe County totals) for potatoes. Decreases have been noted in barley for grain and mixed grain contributions over the last 15 years. There have been fluctuations in the percent contribution from Bradford-West Gwillimbury to Simcoe County totals for all other major field crops with the general trend being a decrease in acreage over the last 5 years (Census 2021).

With respect to major fruit crops, Bradford-West Gwillimbury did not have a contribution to Simcoe County's major fruit totals in 2021.

As illustrated in Table G, Bradford-West Gwillimbury's contribution to major vegetable crops in Simcoe County includes 79.45 percent contribution for carrot crop acreage, 63.45 percent contribution for dry onions, yellow, Spanish, cooking, etc. crop acreage, and 18.18 percent contribution for Chinese cabbage crop acreage in 2021. It should be noted that Bradford-West Gwillimbury contributed 52.38 percent to Simcoe County's total vegetables acreage in 2021.

**Table 25 Comparison of Township and Regional Municipality Census 2021 Data - Crops**

Item	Bradford-West Gwillimbury	Simcoe County	Percent of Simcoe County 2021	Percent of Simcoe County 2016	Percent of Simcoe County 2011	Percent of Simcoe County 2006
<b>Major Field Crops, 2021 Census (acres)</b>						
Winter wheat	3,775	62,857	6.00	5.71	0.00	10.39
Oats for grain	7	3,648	0.19	0.00	0.00	14.76
Barley for grain	126	3,585	3.51	3.54	4.11	5.86
Mixed grains	0	1,919	0.00	0.00	0.00	7.82
Corn for grain	3,277	70,763	4.63	7.82	6.23	9.22
Corn for silage	107	4,765	2.25	4.92	1.81	2.50
Hay	1,398	71,883	1.94	2.95	2.47	3.46
Soybeans	4,954	112,981	4.38	6.38	5.11	9.54
Potatoes	454	15,179	2.99	0.00	0.00	-

Item	Bradford-West Gwillimbury	Simcoe County	Percent of Simcoe County 2021	Percent of Simcoe County 2016	Percent of Simcoe County 2011	Percent of Simcoe County 2006
<b>Major Fruit Crops, 2021 Census (acres)</b>						
Total fruit crops	1	884	0.11	1.56	-	10.75
Apples	0	376	0.00	-	-	-
Sour Cherries	0	2	0.00	-	-	-
Peaches	0	6	0.00	-	-	-
Grapes	0	75	0.00	-	-	-
Strawberries	0	184	0.00	-	-	-
Raspberries	0	32	0.00	-	-	-
<b>Major Vegetable Crops, 2021 Census (acres)</b>						
Total vegetables	4,034	7,702	52.38	51.36	53.99	58.01
Sweet corn	0	663	0.00	-	-	-
Tomatoes	1	44	2.27	4.26	-	-
Green peas	0	123	0.00	9.09	-	-
Green or wax beans	1	32	3.13	3.41	-	-
Chinese cabbage	142	781	18.18	-	-	-
Carrots	1,651	2,078	79.45	84.46	98.64	85.54
Dry onions, yellow, Spanish, cooking, etc.	1,203	1,896	63.45	68.73	-	77.48

Table 26 provides a comparison of Simcoe County and Bradford-West Gwillimbury Census 2021 data for livestock inventories. As illustrated in Table 26, Bradford-West Gwillimbury contributed 5.50 percent in dairy cows, 2.46 percent in total cattle and calves and 1.77 percent in beef cows in 2021. A review of the Census data indicates that there have been decreases in Bradford-West Gwillimbury's contribution to steers and total pigs since 2006. Fluctuations were noted in Bradford-West Gwillimbury's contribution to the Simcoe County's livestock totals since 2006 for all other livestock inventories over the last 15 years (Census 2021).

Bradford-West Gwillimbury contributed 2.49 percent of Simcoe County's total hens and chickens' inventories and 0.03 percent of total turkey inventories in 2021 (Census 2021).

**Table 26 Comparison of Township and Regional Municipality Census 2021 Data – Livestock**

Item	Bradford-West Gwillimbury	Simcoe County	Percent of Simcoe County 2021	Percent of Simcoe County 2016	Percent of Simcoe County 2011	Percent of Simcoe County 2006
<b>Livestock Inventories, 2021 Census (number)</b>						
Total cattle and calves	951	38,719	2.46	3.30	2.27	3.12
Steers	7	5,681	0.12	0.39	0.82	1.21

Item	Bradford- West Gwillimbury	Simcoe County	Percent of Simcoe County 2021	Percent of Simcoe County 2016	Percent of Simcoe County 2011	Percent of Simcoe County 2006
Beef cows	181	10,233	1.77	2.31	-	3.04
Dairy cows	268	4,875	5.50	7.45	-	4.80
Total pigs	0	48,944	0.00	-	0.27	2.65
Total sheep and lambs	49	10,449	0.47	2.79	2.03	5.49
<b>Poultry Inventories, 2021 Census (number)</b>						
Total hens and chickens	23,167	930,800	2.49	10.92	-	-
Total turkeys	20	71,866	0.03	-	-	-

## 5 RESOURCE ALLOCATION AND CONFLICT POTENTIAL

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

### 5.1 IMPACTS, ASSESSMENT AND COMPATABILITY WITH SURROUNDING LAND USES

The identification and assessment of potential impacts is paramount to determining potential mitigation measures to either eliminate or offset the impact to the extent feasible. A review of the OMAFRA draft Agricultural Impact Assessment guidance document identified numerous potential impacts to agriculture which may include:

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

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

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

Secondary Study Area comprise portions of active agricultural land uses (including livestock, specialty crop, and cash crop operations), built areas (urban land uses), commercial enterprises, rural residential use, recreational uses, woodlands, and scrublands.

It has been documented that portions of the Primary Study Area and portions of the Secondary Study Area include built areas of Bradford.

The Primary Study Area and the Secondary Study Area comprised a mix of land fragmentation, with a few large parcels located at various locations south of and including portions of the Primary Study Area. Numerous small parcels (associated with the urban areas of Bradford and north of Holland Landing) were noted in the Primary Study Area and Secondary Study Area.

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

With respect to the potential impacts as listed on the previous page of this report, and the proposed future development of the Bradford Bypass, the Table 27 provides some context as to the extent of the potential impacts.

**Table 27 Potential Impacts**

Potential Impact	Actual Impact
Interim or permanent loss of agricultural lands	There will be a permanent loss of the use of agricultural lands within the Primary Study Area. There will be no loss of agricultural lands in the Secondary Study Area. The impact is applicable for both the construction and the operation of the project.
Fragmentation, severing or land locking of agricultural lands and operations	There will be fragmentation and severing of agricultural lands as a result of the proposed future development of the Bradford Bypass. In the Town of Bradford West Gwillimbury, the majority of the proposed corridor for the Bradford Bypass runs along the back property lines in the agricultural area thereby limiting fragmentation and providing for the largest remaining agricultural area. In the Town of Bradford West Gwillimbury a total of seven severed parcels were noted. Of the seven severed parcels, six parcels were considered as landlocked (no access). In the Town of King the proposed corridor will sever one parcel and landlock a portion of it. In the Town of East Gwillimbury the proposed corridor will



Potential Impact	Actual Impact
<p>The loss of existing and future farming opportunities</p> <p>The loss of infrastructure, services or assets</p> <p>The loss of investments in structures and land improvements</p> <p>The loss of use of ground water wells</p> <p>Disruption or loss of functional drainage systems</p> <p>Disruption or loss of irrigation systems</p>	<p>sever five parcels (landlocking four parcels). The impact is applicable for both the construction and the operation of the project.</p> <p>There will be a loss of existing and future farming opportunities on the Bradford Bypass lands due to the creation of the proposed highway. The impact is applicable for both the construction and the operation of the project.</p> <p>There will be no loss of infrastructure or services as a result of the project.</p> <p>There is a net loss of investment in agriculture (potentially two buildings (agricultural buildings 19 and 41), tile drainage, and possibly some irrigation) as a result of the project. The impact is applicable for both the construction and the operation of the project.</p> <p>There exists the potential for impact from the loss of the use of ground waters well due to lack of quantity and/or quality. Due to the locations and numbers of water wells in the Primary Study Area, it will be important to either preserve the existing wells, or properly engineer the closing/capping of any wells in the Primary Study Area to prevent potential groundwater contamination. The impact is applicable for the construction of the project.</p> <p>There will be a net loss of artificial tile drainage on the Primary Study Area, and there is no net loss or disruption to artificial tile drainage systems in the Secondary Study Area. In areas where the proposed corridor will impact agricultural fields containing tile drainage, the remaining portions of the tile drainage system in the agricultural fields will need to be maintained and functional. The impact is applicable for the construction of the project.</p> <p>There may be loss of investment in irrigation systems depending on the type of irrigation system used. In areas where the proposed corridor will impact agricultural fields containing irrigation systems, the remaining portions of irrigation system in the agricultural fields will need to be maintained and functional. The impact is applicable for the construction of the project.</p>

Potential Impact	Actual Impact
<p>Changes to soil drainage</p> <p>Changes to surface drainage</p> <p>Changes to landforms</p> <p>Changes to hydrogeological conditions</p> <p>Disruption to surrounding farm operations</p> <p>Effects of noise, vibration, dust</p> <p>Potential compatibility concerns</p> <p>Traffic concerns</p>	<p>There will be no net change in soil drainage in the Secondary Study Area as a result of future development of the Bradford Bypass lands.</p> <p>There will be no net change in surface drainage within the Secondary Study Area as a result of future development of the Bradford Bypass lands. The future development of the corridor should take into account the existing agricultural surface drainage and maintain the functionality of the existing drainage.</p> <p>There will be no changes to landforms (with respect to agriculture) in the Secondary Study Area as a result of future development of the Bradford Bypass lands. There will be changes in landforms as part of the development of interchanges within the corridor.</p> <p>Any potential changes in hydrogeological conditions are addressed under separate cover by the hydrogeological consultant.</p> <p>There will be limited disruption for surrounding/adjacent farms as the project will be within the proposed corridor. The impact is applicable for both the construction and the operation of the project.</p> <p>There should be limited potential for additional vibration and dust during the operational phase of the Bradford Bypass. There is a potential for noise, vibration and dust during the initial construction phase, and the potential for increased noise during the operation of the Bradford Bypass. To view applicable mitigation measures pertaining to noise, vibration and dust please reference the following reports under separate cover: Bradford Bypass Draft Noise Report (AECOM, 2023), and Bradford Bypass Draft Air Quality Report (AECOM, 2023). The impact is applicable for both the construction and the operation of the project.</p> <p>There should be limited potential for compatibility concerns with the future development of the Bradford Bypass lands and the adjacent agricultural lands as these lands have been identified in the respective Official Plans, with continued planning for compatibility with the adjacent land uses.</p> <p>It is noted that population and employment forecasts are anticipated to rise through the horizon year, and as a result it is anticipated that traffic volumes on the road network are anticipated to increase. As a result, there</p>

Potential Impact	Actual Impact
<p>Changes to adjacent cropping due to light pollution</p> <p>Fugitive dust, salt spray, deicing substances/compounds</p> <p>Potential shading of Specialty Crop Area from highway bridges</p>	<p>may need to be the need for more coordination of agricultural traffic. The scope of this project study is confined to the Primary Study Area and does not include an assessment of local municipal roads. To review applicable mitigation measures pertaining to traffic please reference the traffic study under separate cover. The impact is applicable for both the construction and the operation of the project.</p> <p>There is potential for changes in cropping due to light pollution, as the project will include lighting. Any use of lighting should take into consideration the impact on adjacent agricultural lands. The impact is applicable for both the construction and the operation of the project.</p> <p>There is the potential for fugitive dust, salt spray and deicing compounds to potentially impact the adjacent agricultural areas. The impact is applicable for both the construction and the operation of the project.</p> <p>There is the potential for the proposed bridge(s) over the Holland River to create shaded areas over the Specialty Crop Area lands. The impact is applicable for both the construction and the operation of the project.</p>

## 5.2 TRAFFIC, TRESPASS AND VANDALISM

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

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

Traffic patterns for the proposed future development of the Bradford Bypass lands will place additional traffic in close proximity to agricultural land uses. Further, the proposed interchanges

at Bathurst Street and at 2<sup>nd</sup> Concession Road, will place additional traffic on those roads.

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.

Trespassing and vandalism are more often a concern with specialty crop operations and livestock operations. The location of the proposed future Bradford Bypass crosses a Provincially designated Specialty Crop Area, of which portions are actively farmed for the production of market garden crops. The proposed interchange at Bathurst Street will place additional traffic in close proximity to these specialty crop lands, thereby potentially increasing the opportunity for trespass and vandalism.

### **5.3 AGRICULTURAL INFRASTRUCTURE**

The reconnaissance level land use survey failed to identify any agricultural equipment dealers, seed dealers/cleaning/drying services or farm equipment maintenance service businesses within the Primary Study Area or Secondary Study Area.

A review of the OMAFRA Agricultural System Portal was completed to identify the presence of any livestock assets and services (renderers, meat plants, abattoirs), refrigerated warehousing and storage, frozen food manufacturing, farm markets, wineries, or cideries within the Primary Study Area. None of these features was identified within the agricultural areas of the Primary Study Area. It was noted that there are various farm services located in the Secondary Study Area (and the urban areas of Bradford) that are associated with the market garden crops grown in the Specialty Crop Areas, and other areas within the Secondary Study Area.

It is noted that the Holland Marsh area is a Provincially designated Specialty Crop area and that this area is used for the production of specialty crops (market garden crops). Services (processing, transportation facilities) were observed in the urban area of Bradford.

### **5.4 MITIGATION MEASURES**

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

#### **5.4.1 AVOIDANCE**

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

The first method of addressing potential impacts is to avoid the potential impact. In this study, the proposed future development of the Bradford Bypass lands will be a permanent use with portions of the Bradford Bypass being located within designated agricultural areas. As a result, there will be designated agricultural lands lost due to the project, which cannot be avoided.

Similar statements can be made with regard to tile drainage systems, irrigation systems, farm buildings, and water wells. The proposed future development of the Bradford Bypass will result in direct impacts (loss) to each of those agricultural investments. This cannot be avoided.

Further, the proposed future development of the Bradford Bypass will result in the creation of severed agricultural parcels and increased fragmentation of the agricultural land base. This cannot be avoided.

#### **5.4.2 MINIMIZING IMPACTS**

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

For this project, any potential impacts to agricultural lands will be related to the loss of agricultural land, loss of prime agricultural land, creation of severed parcels, increased fragmentation of the land base on the designated agricultural lands. These potential impacts cannot be avoided. There will also be the potential of impacts on the adjacent agricultural lands and community by virtue of the proposed locations of the interchanges and by the proposed highway lighting.

Impacts may be minimized by directing impacts away from the adjacent agricultural lands. The first method of minimizing impacts was addressed in the original EA whereby efforts were made to minimize impacts by locating the proposed route along lot lines, or property lines where possible, in an effort to minimize severances and fragmentation. Secondly, the original EA attempted to cross the Provincially designated Specialty Crop Area in as straight a line as possible, and at a narrow location in an effort to minimize loss of Specialty Crop lands. Thirdly the original EA attempted to maintain as straight a corridor as possible in an effort to minimize severances and fragmentation. Finally, the original EA attempted to avoid agricultural investment in agricultural buildings, tile drainage, and irrigation areas.

As a result of the use of these efforts, the proposed corridor has taken into consideration the original EA by maintaining parts of the original alignment and employing similar technics in this study to minimize the corridor footprint, impact the fewest agricultural buildings, investment and agricultural operations. Mitigation included the design of the corridor to impact the smallest footprint and fewest agricultural operations, thereby minimizing the potential impacts to the agricultural land base, agricultural operations, and the agricultural system.

### 5.4.3 MITIGATING IMPACTS

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

Potential mitigation measures may include:

- The creation of berms or vegetated feature between the different types and intensities of land uses to reduce the potential for trespassing and potential vandalism. These types of buffers reduce impacts by preventing trespassing and associated problems such as litter and vandalism. Effective buffers between agriculture and transportation/urban uses may combine a separation of uses, vegetation/plantings and berms. Vegetated buffers should include the use of deciduous and coniferous plants, with foliage from base to crown. These types of plantings will be effective in the capture of dust, salt spray, and deicing compound drift.
- The use of salt management plans to reduce the amount of salt required for de-icing (liquid de-icers, broad casting and selective broad casting).
- The use of adequate fencing between different land uses to reduce the potential for trespassing and potential vandalism, where possible.
- The use of signage between the different types and intensities of land uses to indicate No Trespassing or Private Property. The use of signage is more suited to the edges of the fields, particularly in the Specialty Crop Areas.
- The use of plantings/vegetation as screens and buffers to reduce visual impacts and sounds. Any proposed use of plantings/vegetation as screens and buffers would require these plantings to be located within the proposed corridor, such that no additional agricultural lands are removed from production.
- The use of controlled intersections (stop sign, stop lights) will provide for a safer traffic environment for slow moving agricultural equipment.
- Implementation of surface and/or groundwater monitoring in areas where agricultural operations make use of surface or groundwater as part of their normal farm practices.
- It is recommended to limit the use of tall streetlights or use lighting that is directed down (light shielding) and away from agricultural lands. Limit the use of any type of lighting (high pressure sodium (HPS) lights, and LED lights are known to interfere with soybean production) that has a negative effect on agricultural lands, livestock or crops. To view specific details refer to the Bradford Bypass Electrical Report (2023) under separate cover.
- The use of design elements to direct traffic away from farming areas.
- Construct or replace agricultural buildings to mitigate the loss of agricultural buildings.

- Provide new wells or other water access for any potential groundwater disruption.
- Restore impacts to tile drainage systems.
- Restore impacts to irrigation systems.
- Create a traffic plan that identifies closures and open routes to minimize impacts to local traffic.
- Maintain local roads to allow access for the movement of oversized agricultural equipment.

It should be noted that the use of fencing, signage, berms, vegetation screening, etc as part of a mitigation effect, will require that these types of mitigation are used/created on the lands that are to be developed and not on the adjacent agricultural lands. The adjacent landowners should not be responsible for providing mitigation or any of the costs associated with the mitigation measures as a result of the future development of the Bradford Bypass lands.

It should also be noted that there are opportunities for local agricultural operations with the future development of the Bradford Bypass lands. The future development of the Bradford Bypass lands will bring people closer to the agricultural areas and specialty crop areas/market garden/field vegetable areas which will result in increased potential for expanding sales of local vegetable crops from the farm markets.

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



## **6 SUMMARY OF APPROVED ENVIRONMENTAL COMMITMENTS**

### **6.1 2002 APPROVED ENVIRONMENTAL ASSESSMENT COMMITMENTS**

The 2002 Approved Environmental Assessment identified a number of proposed mitigation and commitments to future work for the project. Table 28 below identifies the agriculture commitments carried forward through to Preliminary Design and describes any applicable changes to the 2002 Approved Environmental Assessment commitment. Commitments identified in the 2002 Approved Environmental Assessment are to be carried forward to Detail Design phase unless otherwise stated in Table 28 below.

**Table 28 2002 Approved Environmental Assessment Commitments and Description of Changes Carried Forward Through Preliminary Design**

Factor / Criterion	Issue	Concerned Group / Agency	Potential Net Environmental Effect (as taken from 2002 Approved Environmental Report)	Proposed Mitigation / Commitments to Future Work (as taken from 2002 Approved Environmental Report)	Changes to Mitigation/ Protection/ Monitoring (Yes/No/NA)	Description of Commitment Carried Forward through Preliminary Design for Mitigation, Protection and Monitoring
<b>Agriculture</b>	Preserve agriculture land and minimizing negative impacts on agricultural operations	<ul style="list-style-type: none"> <li>Ministry of Transportation, Ontario Ministry of Agriculture, Food and Rural Affairs, agricultural property owners, general public</li> </ul>	<ul style="list-style-type: none"> <li>Thirteen field crop and three livestock farming operations are affected by the proposed facility in the west section.</li> <li>Seven specialty crop, three livestock and five field crop operations are directly affected by the proposed Link in the east and central sections.</li> <li>The total land area, currently in active agricultural production, directly affected by the proposed facility is 84.4 hectares in the western section and 69.9 hectares in the east and central section totaling 154.3 hectares</li> </ul>	<ul style="list-style-type: none"> <li>To minimize the negative effects of the route on agricultural operations and avoid major severances, the alignment is located mid-concession where possible, or along existing lot lines.</li> </ul>		<ul style="list-style-type: none"> <li>An Agriculture Impact Assessment is being prepared to assess potential impacts to agricultural operations.</li> <li>Refinements and adjustments to the alignment will be identified and evaluated using a reasoned argument (trade-off) method to consider advantages and disadvantages to an alternative, including those related to agricultural lands and operations.</li> </ul>

## **6.2 PRELIMINARY DESIGN COMMITMENTS**

Impacts to agriculture and proposed mitigation measures, monitoring activities and commitments identified during this agriculture impact assessment are summarized in Table 29 below.

**Table 29 Summary of Preliminary Design Environmental Concerns and Commitments**

ID	Issues / Concerns / Potential Effects	Concerned Agencies	ID	Mitigation, Protection, Monitoring, and Commitments
<b>Agriculture</b>				
<b>AGR-1.00</b>	Interim or permanent loss of agricultural lands	Ministry of Transportation, Ontario Ministry of Agriculture, Food and Rural Affairs, agricultural property owners, general public	AGR-1.01	There will be a permanent loss of the use of agricultural lands within the Primary Study Area (Figure 17 – Existing Land Use). Mitigation includes design of the corridor to impact the smallest footprint and fewest agricultural operations.
<b>AGR-2.00</b>	Fragmentation, severing or land locking of agricultural lands and operations	Ministry of Transportation, Ontario Ministry of Agriculture, Food and Rural Affairs, agricultural property owners, general public	AGR-2.01	There will be fragmentation and severing of agricultural lands as a result of the proposed future development of the Bradford Bypass. Mitigation includes design of the corridor to impact smallest footprint and fewest agricultural operations. Mitigation also includes locating the corridor along lot lines, where feasible, to reduce the chance of severing parcels.
<b>AGR-3.00</b>	The loss of existing and future farming opportunities	Ministry of Transportation, Ontario Ministry of Agriculture, Food and Rural Affairs, agricultural property owners, general public	AGR-3.01	There will be a loss of existing and future farming opportunities. Mitigation includes design of the corridor to impact smallest footprint and fewest agricultural operations. Mitigation also includes locating the corridor along lot lines, where feasible, to reduce the chance of severing parcels.
<b>AGR-4.00</b>	The loss of infrastructure, services or assets	Ministry of Transportation, Ontario Ministry of Agriculture, Food and Rural Affairs, agricultural property owners, general public	AGR-4.01	There is no anticipated loss of infrastructure or services as a result of the project.
<b>AGR-5.00</b>	The loss of investments in structures and land	Ministry of Transportation, Ontario Ministry of Agriculture, Food and Rural	AGR-5.01	There is a net loss of investment in agriculture (two buildings (numbers 19 and 41 on Figure 18 – Agricultural Investment), tile drainage, and possibly some irrigation) as a result of the project. Recommended mitigation measures include restoration and maintenance of

ID	Issues / Concerns / Potential Effects	Concerned Agencies	ID	Mitigation, Protection, Monitoring, and Commitments
	improvements including tile drainage and irrigation	Affairs, agricultural property owners, general public		irrigation and tile drainage systems in agricultural fields. In areas where the proposed corridor will impact agricultural fields containing tile drainage, the remaining portions of the tile drainage system in the agricultural fields will need to be maintained and functional. In areas where the proposed corridor will impact agricultural fields containing irrigation systems, the remaining portions of irrigation system in the agricultural fields will need to be maintained and functional. Details will be further determined as the Preliminary Design study progress and further details will be confirmed during subsequent Detail Design phases.
<b>AGR-6.00</b>	The loss of use of ground water wells	Ministry of Transportation, Ontario Ministry of Agriculture, Food and Rural Affairs, agricultural property owners, general public	AGR-6.01	It is recommended to preserve the existing wells, or properly engineer the closing/capping of any wells in the Primary Study Area to prevent potential groundwater contamination. Well locations can be observed on Figure 18 – Agricultural Investment. Details will be confirmed during subsequent Detail Design phases. For additional information refer to the Bradford Bypass Draft Groundwater Protection and Well Monitoring Plan (AECOM, 2023), provided under separate cover.
<b>AGR-7.00</b>	Disruption to surrounding farm operations	Ministry of Transportation, Ontario Ministry of Agriculture, Food and Rural Affairs, agricultural property owners, general public	AGR-7.01	There will be limited disruption for surrounding/adjacent farms as the project will be within the proposed corridor. There may be impacts during construction related to traffic (movement of equipment through construction zones, temporary closure of roads), dust emissions, noise. Recommended mitigation includes maintaining an operational road system during construction and providing appropriate signage where feasible. Further mitigation may involve the use of water or dust suppression materials to control dust, and the use of adequate sound suppression on all construction equipment if warranted through a Noise Study.
<b>AGR-8.00</b>	Effects of noise, vibration, dust, salt	Ministry of Transportation, Ontario Ministry of Agriculture, Food and Rural Affairs, agricultural property owners, general public	AGR-8.01	To view applicable mitigation measures pertaining to noise, vibration, dust and salt impacts, please reference the following reports under separate cover: Bradford Bypass Draft Noise Report (AECOM, 2023), and Bradford Bypass Draft Air Quality Report (AECOM, 2023).

ID	Issues / Concerns / Potential Effects	Concerned Agencies	ID	Mitigation, Protection, Monitoring, and Commitments
<b>AGR-9.00</b>	Traffic concerns	Ministry of Transportation, Ontario Ministry of Agriculture, Food and Rural Affairs, agricultural property owners, general public	AGR-9.01	Mitigation measures should note that the use of roundabouts in agricultural areas is inappropriate for the heavy, slow and long equipment and trailers. The raised curbing associated with roundabouts can also cause farm trailers to tip, spill loads and create safety issues with other road users.
<b>AGR-10.00</b>	Changes to adjacent cropping due to light pollution	Ministry of Transportation, Ontario Ministry of Agriculture, Food and Rural Affairs, agricultural property owners, general public	AGR-10.01	Mitigation measures should take into consideration the impact on adjacent agricultural lands.
<b>AGR-11.00</b>	Potential shading of Specialty Crop Area from highway bridges	Ministry of Transportation, Ontario Ministry of Agriculture, Food and Rural Affairs, agricultural property owners, general public	AGR-11.01	Mitigation measures should consider the overall bridge footprint to mitigate potential shading of Specialty Crop Areas (Figure 2 – Agricultural Land Base) where feasible.

## 7 SUMMARY AND CONCLUSIONS

The Ontario Ministry of Transportation (the Ministry) has retained AECOM Canada Ltd. (AECOM) to undertake a Preliminary Design and project-specific assessment of environmental impacts for the proposed Highway 400 to Highway 404 Link (Bradford Bypass). The Bradford Bypass (the project) is being assessed in accordance with Ontario Regulation 697/21 (the Regulation). The Ministry previously completed a route planning study for the Bradford Bypass that received subsequent approval in 2002.

DBH Soil Services Inc was retained to complete an Agricultural Impact Assessment (AIA) for the Preliminary Design and Environmental Assessment study in accordance with Ontario Regulation 697/21 for the proposed Highway 400 – Highway 404 Link (Bradford Bypass).

In the Regional context, the Primary Study Area is a corridor that runs from Highway 400 (between Line 8 and Line 9, Town of Bradford West Gwillimbury, just north of the Town of Bradford crossing the Holland River East Branch and continuing east between Holborn Road and Queensville Sideroad) to the Highway 404 in the Town of East Gwillimbury.

The Primary Study Area and the Secondary Study Areas comprise a mix of land uses including urban uses, rural uses, agricultural lands, transportation corridors, and woodlots. A portion of the Secondary Study Area (south of the Primary Study Area) rests within the built boundary of Bradford.

The proposed future development of the Bradford Bypass lands necessitated this study.

The results of this Agricultural Impact Assessment are presented below:

- **Geographical Limits**

Portions of the Primary Study Area and portions of the Secondary Study Area are located within the Peterborough Drumlin Field physiographic region, the Simcoe Lowlands physiographic region, and the Schomberg Clay Plain physiographic region.

The Peterborough Drumlin Field physiographic region is described as a belt of land extending from Hastings County in the east to Simcoe County in the west, including the drumlins in Northumberland County, and north to the Oak Ridges Moraine. The Peterborough Drumlin Field is so named due to Peterborough occupying the geographical centre of the formation. The underlying bedrock is limestone. The general orientation of the drumlin axis is from northeast to southwest. The drumlins are composed of calcareous till materials. A series of deep valleys is also noted in this region. All the valleys have wide swampy bottoms with slow meandering streams.

The Simcoe Lowlands physiographic region is described as the lowlands bordering Georgian Bay and Lake Simcoe. There are two distinct areas of the Simcoe Lowlands, with



one area described as plains to the west that drain into Nottawasaga Bay by way of the Nottawasaga River (called the Nottawasaga Basin), and the other area described as the eastern section of lowlands surrounding Lake Simcoe (called the Lake Simcoe Basin). The Primary Study Area and the Secondary Study Area are located within the Lake Simcoe Basin area. The southern end of the Lake Simcoe Basin extends as a broad valley between high morainic hills. The floor of the valley is a marsh area and the meandering Holland River. Between the marshy area and Holland Landing the soils are sandy. The area was partially cleared but could not support general farming, but parts of this sandy plain are now used for market garden type crops.

The Schomberg Clay Plains physiographic region is described as basins along the northern slopes of the Oak Ridges Moraine that contain deep deposits of clay and silt materials. The Schomberg sediments are typically varved with annual layers of 5 cm to 10 cm in thickness. The soils are typically comprised of silt and clay materials. Tile drains have been installed in many of the poorly drained low areas such that whole fields may be cultivated at the same time.

The Primary Study Area and the Secondary Study Area are a complex mix of topography, with the western extent (nearer Highway 400) comprising gently sloping to undulating lands and incised stream courses. The central portions of the Primary Study Area and Secondary Study Area comprise more rugged terrain around County Road 4 and sloping steeply toward the low marshy areas adjacent to the Holland River. The area east of the Holland River is relatively level to very gently sloping until just east of 2<sup>nd</sup> Concession Road where the lands rise steeply. East of this steep rise, the lands are more rugged, with undulating slopes and incised stream courses.

The Primary Study Area and Secondary Study Area are located between the 2900 and 3100 Crop Heat Units isolines (CHU-M1) available for corn production in Ontario. The Crop Heat Units (CHU) index was originally developed for field corn and has been in use in Ontario for 30 years. The CHU ratings are based on the total accumulated crop heat units for the frost-free growing season in each area of the province. CHU averages range between 2500 near North Bay to over 3500 near Windsor. The higher the CHU value, the longer the growing season and greater are the opportunities for growing value crops.

The Primary Study Area comprised approximately 69.0 percent Canada Land Inventory (CLI) capability of Class 1 – 3, with approximately 39.3 percent as Class 1, 0.9 percent as Class 2, and 28.8 percent as Class 3. Approximately 17.7 percent of the Primary Study Area was Class 4 lands, with approximately 1.6 percent as Class 5. The remaining 11.6 percent of the lands were not rated and included organic soils, built up areas, roads and rail lines.

- **Agricultural Policy**

A review of the boundaries of the *Growth Plan for the Greater Golden Horseshoe (2019)* area determined that much of the Primary Study Area and the Secondary Study Area lands

comprise Prime Agricultural Areas. Smaller areas of Specialty Crop lands were identified adjacent to the Holland River and Holland River East Branch areas. Further, small areas of Candidate Prime Agricultural Areas were noted between the rail line and the Specialty Crop Areas east of the Holland River.

A review of the *Greenbelt Plan (2017)* mapping indicates that portions of the Primary Study Area and portions of the Secondary Study Area are located within the Greenbelt Plan area. The portions of the Primary Study Area and the Secondary Study Area that are in the Greenbelt Plan Area are generally located within the flood plain areas of the Holland River and Holland River East Branch areas.

A review of the *York Region Adopted Official Plan 2022, Maps July 2022 Map 1a – Land Use Designations* revealed that the portion of the Primary Study Area and Secondary Study Area that are located in the Region of York are identified as Holland Marsh Specialty Crop Area and Agricultural Area.

A review of the *Town of East Gwillimbury Consolidated Official Plan Schedule A – Town Structure* revealed that the portions of the Primary Study Area and the Secondary Study Area that are located within the Town of East Gwillimbury are identified as Greenbelt Protected Countryside.

A review of the *Town of East Gwillimbury Consolidated Official Plan Schedule C – Rural Planning Area Land Use Plan* revealed that the portions of the Primary Study Area and the Secondary Study Area that are located within the Town of East Gwillimbury are identified as Prime Agricultural Area, Environmental Protection Area, Holland Marsh Specialty Crop Area, and Recreational Area.

A review of the *Township of King Official Plan (2019) (track changes September 24, 2020 version) Schedule A – Township Structure* revealed that the portions of the Primary Study Area and the Secondary Study Area that are located within the Township of King are identified as Natural Heritage System and Holland Marsh Specialty Crop Area. A review of the *Township of King Official Plan (2019) (track changes September 24, 2020 version) Schedule M – Provincial Agricultural System* revealed that the portions of the Primary Study Area and the Secondary Study Area that are located within the Township of King are identified as Prime Agricultural Area and Specialty Crop Area.

A review of the *Official Plan of the County of Simcoe (December 29, 2016) Schedule 5.1 – Land Use Designations* revealed that the portion of the Primary Study Area and Secondary Study Area that are located in the County of Simcoe are identified as Greenbelt Protected Countryside, Agricultural, Greenlands, and are in close proximity to Settlements, and the Strategic Settlement Employment Areas and Economic Employment Districts.

A review of the *Official Plan of the Town of Bradford West Gwillimbury (Office Consolidation October 1, 2002) Schedule A – Rural Land Use Plan* revealed that the portion of the Primary Study Area that is located in the Town of Bradford – West Gwillimbury comprised

Agricultural, Bradford Urban Area, Open Space Conservation, Lands Subject to Minister's Zoning Order, and Provincially Significant Wetland areas. The portion of the Secondary Study Area that is located in the Town of Bradford – West Gwillimbury comprised Agricultural, Bradford Urban Area, Open Space Conservation, Lands Subject to Minister's Zoning Order, Provincially Significant Wetland areas, and marsh agricultural.

- **Agricultural Land Use**

The Primary Study Area comprised land use of approximately 2.9 percent as built up/disturbed areas, 29.1 percent as common field crop (soybean, corn), 1.4 percent as cover crop, 2.5 percent as forage/pasture lands, 1.0 percent as harvested lands, 5.9 percent as market garden crops, 7.0 percent as open field, 2.3 percent as plowed lands, 2.7 percent as scrublands, 3.4 percent as sod, 2.6 percent as unknown, 15.0 percent as woodland areas, with the remaining 23.5 percent in road/highway corridors and river/stream areas.

On review of the existing land use data it was observed that the predominant land uses in the Primary Study Area include the production of common field crops, woodland areas, and open field areas.

The Secondary Study Area comprised land use of approximately 13.7 percent as built up/disturbed areas, 32.2 percent as common field crop (soybean, corn), 1.7 percent as cover crop, 4.8 percent as forage/pasture lands, 0.6 percent as harvested lands, 0.4 percent as idle lands, 7.7 percent as market garden crops, 3.4 percent as open field, 1.1 percent as plowed lands, 1.9 percent as recreation lands (eg. golf course), 6.6 percent as scrublands, 0.8 percent as small grains, 1.7 percent as sod, 0.3 percent as trailer park, 1.6 percent as unknown, 16.9 percent as woodland areas, with the remaining 4.6 percent in road/highway corridors and river/stream areas.

On review of the existing land use data it was observed that the predominant land uses in the Secondary Study Area include the production of common field crops, woodland areas, and built up/disturbed areas. The next greatest percent of land use is derived from market garden, and scrubland areas.

- **Agricultural Investment**

A total of 61 agricultural facilities or areas where facilities are located were identified within the Primary Study Area and Secondary Study Area. Two agricultural facilities were observed in the Primary Study Area (building 41 and building 19). The remaining 59 agricultural facilities were observed in the Secondary Study Area.

There is investment in artificial tile drainage and potentially irrigation in the Primary Study Area.

Systematic and random tile drainage was noted on various lands within the Primary Study

Area and the Secondary Study Area.

There is investment in irrigation in the Secondary Study Area, and possibly in the Primary Study Area.

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

Minimum Distance Separation I (MDS I) calculations were not completed for this AIA, as MDS is not required for an infrastructure project.

A review of the online Agricultural System Portal (OMAFRA) indicated that there were no nurseries, specialty farms (crop or livestock), frozen food manufacturing, refrigerated warehousing/storage, livestock assets or abattoirs in the Primary Study Area or Secondary Study Area. The Agricultural System Portal did indicate the presence of vegetable fields, which were also noted in the land use survey.

There are no agricultural services within the Primary Study Area. Agricultural services related to crop processing and transportation were noted in the urban areas of Bradford (part of the Secondary Study Area).

The closest transportation networks (major roadway) are Highway 400 which is located on the west end of the Primary Study Area, and Highway 404 which is located on the east end of the Primary Study Area.

- **Land Fragmentation**

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

The Secondary Study Area comprises numerous parcels of varying size. The parcel count for the Secondary Study Area indicates the presence of numerous small parcels (associated with the urban areas of Bradford), and fewer larger parcels. This type of fragmentation pattern is common in areas near urban boundaries and within the Greater Toronto Area (GTA). It is noted that portions of the Primary Study Area and the Secondary Study Area include urban areas of Bradford and north of Holland Landing.

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

Given the geographical location of these lands, it is the conclusion of this study that the proposed future development of the Bradford Bypass lands would have minimal impact on the surrounding

agricultural activities within the Secondary Study Area and that the Primary Study Area lands can reasonably be developed for the Bradford Bypass.

Sincerely

**DBH Soil Services Inc.**

A handwritten signature in black ink, appearing to read "D Hodgson", is placed over a light gray rectangular background.

Dave Hodgson, P. Ag  
President

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## **APPENDIX A**

### AGRICULTURAL FACILITIES PHOTOGRAPHS

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Note: As stated previously in this AIA, the agricultural building images were taken from Google Earth, Bing Mapping, or other online data sources, including Municipal webpages.



Agricultural Facilities 1 and 2



Agricultural Facility 3



Agricultural Facility 4



Agricultural Facility 5



Agricultural Facility 6



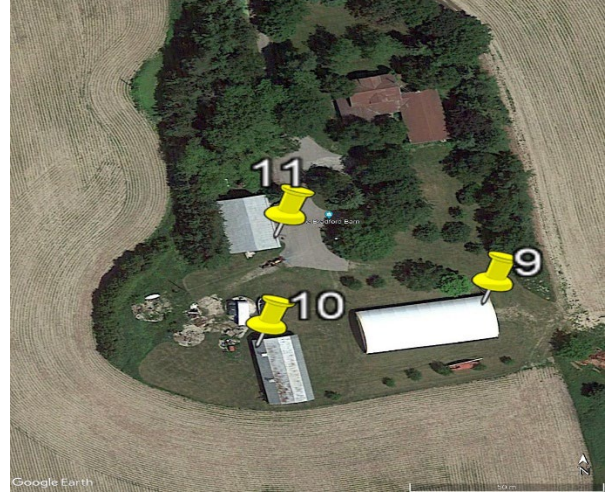
Agricultural Facility 7

Note: As stated previously in this AIA, the agricultural building images were taken from Google Earth, Bing Mapping, or other online data sources, including Municipal webpages.





Agricultural Facility 8



Agricultural Facilities 9 - 11



Agricultural Facility 15



Agricultural Facility 16



Agricultural Facility 17



Agricultural Facilities 18, 19 and 26

Note: As stated previously in this AIA, the agricultural building images were taken from Google Earth, Bing Mapping, or other online data sources, including Municipal webpages.





Agricultural Facility 20



Agricultural Facilities 21 and 47



Agricultural Facilities 22 and 34



Agricultural Facility 23



Agricultural Facility 24



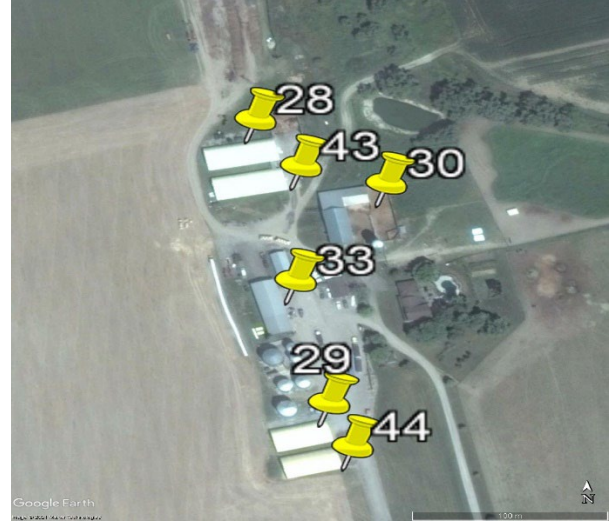
Agricultural Facility 25

Note: As stated previously in this AIA, the agricultural building images were taken from Google Earth, Bing Mapping, or other online data sources, including Municipal webpages.

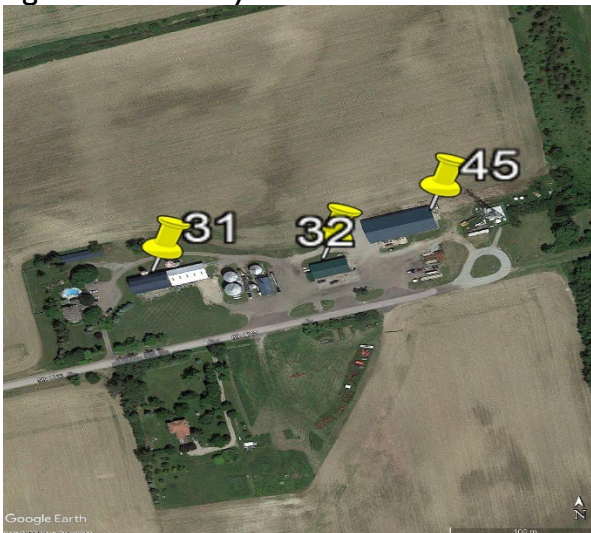




Agricultural Facility 27



Agricultural Facilities 28 – 30, 33, 43 and 44



Agricultural Facilities 31, 32 and 45



Agricultural Facility 35



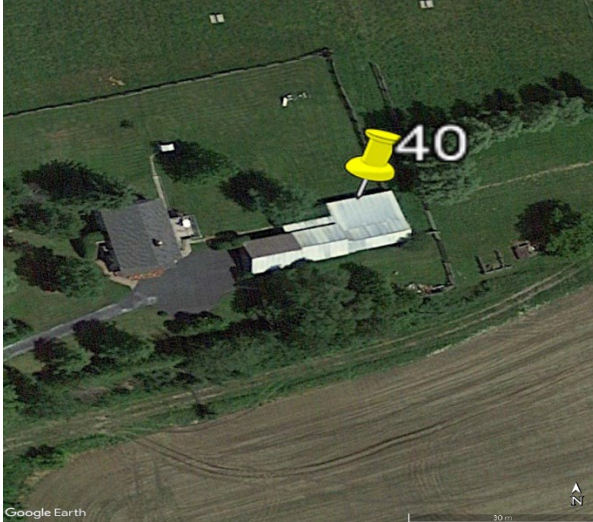
Agricultural Facilities 36 - 38



Agricultural Facility 39

Note: As stated previously in this AIA, the agricultural building images were taken from Google Earth, Bing Mapping, or other online data sources, including Municipal webpages.





Agricultural Facility 40



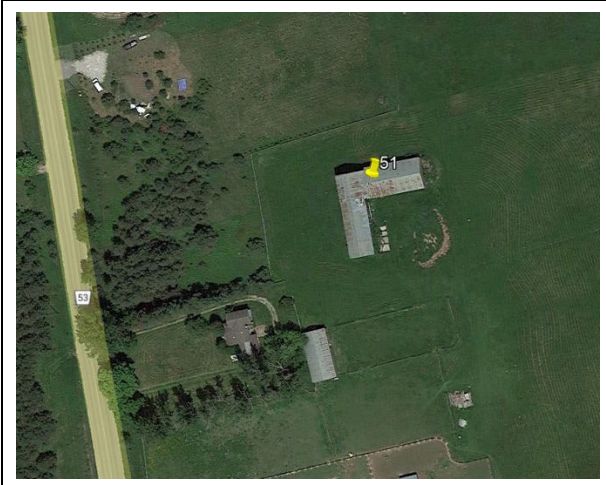
Agricultural Facility 41



Agricultural Facility 42



Agricultural Facility 48, 49 and 50



Agricultural Facility 51



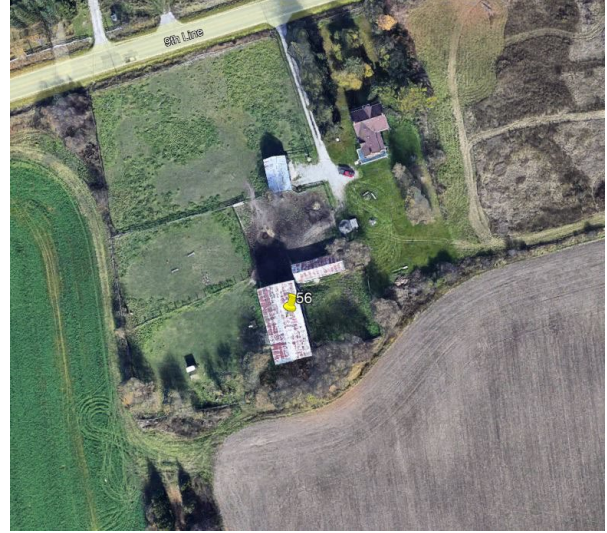
Agricultural Facilities 52, 53 and 54

Note: As stated previously in this AIA, the agricultural building images were taken from Google Earth, Bing Mapping, or other online data sources, including Municipal webpages.





Agricultural Facility 55



Agricultural Facility 56



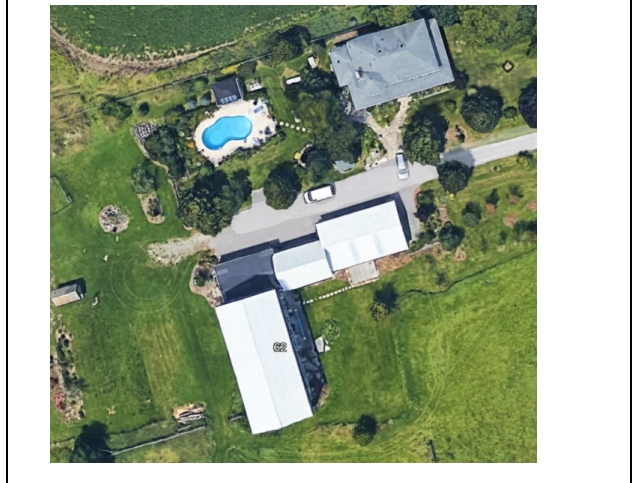
Agricultural Facilities 57 and 58



Agricultural Facility 59



Agricultural Facilities 60 and 61



Agricultural Facilities 62

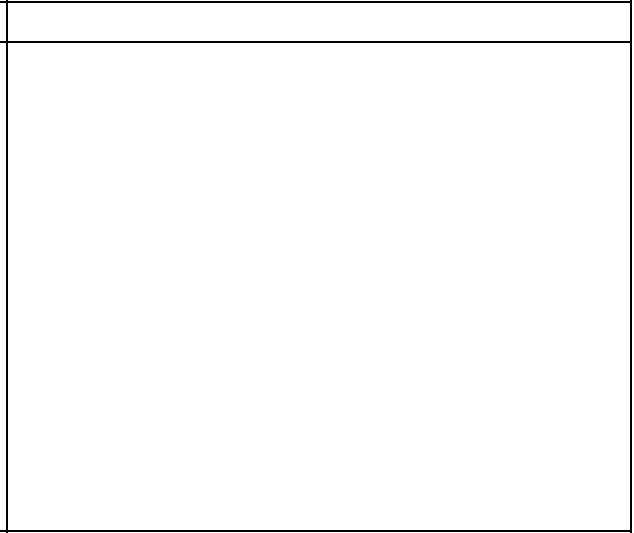
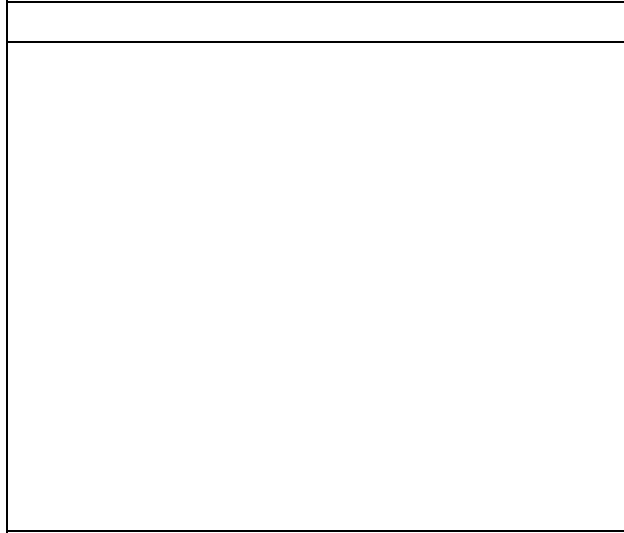
Note: As stated previously in this AIA, the agricultural building images were taken from Google Earth, Bing Mapping, or other online data sources, including Municipal webpages.



Agricultural Facility 63 and 64



Agricultural Facility 65



Note: As stated previously in this AIA, the agricultural building images were taken from Google Earth, Bing Mapping, or other online data sources, including Municipal webpages.

## **APPENDIX B**

### **Unique Soil Symbols and Canada Land Inventory (CLI) List**

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As stated previously in Section of the this AIA, the review of the OMAFRA soils data in Simcoe County, the unique symbols list (based on the SYMBOL1 column) provided 146 unique symbols combined with the associated slope and CLI class and CLI subclass (CLI\_1 and CLI\_2). A review of this list indicated that there were some issues with a few symbols of the soils and the respective CLI class and/or subclass. The soils with issues are highlighted in yellow. A review of these soil polygon issues indicated that none of the affected soil polygons were located within the Secondary Study Area.

#### Unique Symbols List for Simcoe County Soils and CLI

SYMBOL1	SLOPE1	CLASS1	RANGE1	STONINESS1	CLI1	CLI1_1	CLI1_2
Anf	3.5	C	2 - 5	0	2	F	
Ans	3.5	C	2 - 5	0	3	F	
Ans	1.2	B	0.5 - 2	0	3	F	
Ans-b	3.5	C	2 - 5	1	5	P	
Ayc	1.2	B	0.5 - 2	0	3	W	
Aycl	1.2	B	0.5 - 2	0	3	W	
Aysc	1.2	B	0.5 - 2	0	3	W	
Aysc-b	1.2	B	0.5 - 2	4	5	P	
B.L.	-9.0			0	5	I	
Bef	3.5	C	2 - 5	0	2	F	
Bes	3.5	C	2 - 5	0	2	F	
Bg	7.0	D	5 - 9	1	2	F	M
Bg	3.5	C	2 - 5	0	2	M	
Bg	3.5	C	2 - 5	1	2	M	
Bif	12.0	E	9 - 15	0	1		
Bl	3.5	C	2 - 5	1	1		
Bnf	3.5	C	2 - 5	0	1		
Bof	7.0	D	5 - 9	0	2	F	M
Bos	12.0	E	9 - 15	0	2	F	M
Bos	7.0	D	5 - 9	0	2	F	M
Brsl	3.5	C	2 - 5	0	2	F	M
Brsl/g	3.5	C	2 - 5	0	2	F	M
Bs	3.5	C	2 - 5	1	1		
Bs-b	7.0	D	5 - 9	4	5	P	
Bs-s	22.5	F	15 - 30	1	5	T	
Cg	7.0	D	5 - 9	1	2	F	M
Cg	3.5	C	2 - 5	1	2	F	M
Dc	12.0	E	9 - 15	1	6	T	S
Df	7.0	D	5 - 9	0	1		
Ds	7.0	D	5 - 9	0	1		
Duc	37.5	G	30 - 45	1	7	T	



SYMBOL1	SLOPE1	CLASS1	RANGE1	STONINESS1	CLI1	CLI1_1	CLI1_2
El	3.5	C	2 - 5	1	1		
El-sh	3.5	C	2 - 5	2	3	R	
Es	3.5	C	2 - 5	0	1		
Ets	22.5	F	15 - 30	0	7	E	
Fl	1.2	B	0.5 - 2	2	6	R	
Gf	1.2	B	0.5 - 2	0	4	W	
Gg	1.2	B	0.5 - 2	1	2	F	
Gg-b	1.2	B	0.5 - 2	4	5	P	
Gil	1.2	B	0.5 - 2	1	4	W	
Grs	1.2	B	0.5 - 2	0	5	W	
Gs	1.2	B	0.5 - 2	0	5	W	
Gsl	1.2	B	0.5 - 2	0	4	W	
Gsl	1.2	B	0.5 - 2	0	5	W	
Gsl-b	0.2	A	0 - 0.5	0	6	P	W
Gul	3.5	C	2 - 5	1	1		
Gul-b	3.5	C	2 - 5	4	6	P	
Gus	3.5	C	2 - 5	1	1		
Gus-b	3.5	C	2 - 5	4	6	P	
Hal	12.0	E	9 - 15	2	4	T	
Hg	1.2	B	0.5 - 2	2	5	F	M
HI	3.5	C	2 - 5	1	1		
HI	22.5	F	15 - 30	1	1		
HI-s	12.0	E	9 - 15	1	4	T	
Hs	3.5	C	2 - 5	1	1		
Hs	12.0	E	9 - 15	1	2		
Kc	3.5	C	2 - 5	1	1		
Kc-sh	3.5	C	2 - 5	1	5	R	
Ks	1.2	B	0.5 - 2	0	5	W	
Ksc	3.5	C	2 - 5	1	1		
Lcl	3.5	C	2 - 5	0	2	D	
Ll	1.2	B	0.5 - 2	1	3	W	
Ll-b	1.2	B	0.5 - 2	4	6	P	W
Lvc	3.5	C	2 - 5	0	2	W	
Lvc-b	3.5	C	2 - 5	4	5	P	
Lvs	3.5	C	2 - 5	0	2	W	
Lvs-b	3.5	C	2 - 5	4	5	P	
M	0.2	A	0 - 0.5	0	0		
M	1.2	B	0.5 - 2	0	0		
M	1.2	B	0.5 - 2	0	0		
Ma	1.2	B	0.5 - 2	0	7	W	
Ma	0.2	A	0 - 0.5	0	7	W	
Mes	7.0	D	5 - 9	0	2	E	

SYMBOL1	SLOPE1	CLASS1	RANGE1	STONINESS1	CLI1	CLI1_1	CLI1_2
Mesc	7.0	D	5 - 9	0	2	E	
Mmc	1.2	B	0.5 - 2	0	2	W	
Mms	1.2	B	0.5 - 2	0	2	W	
Ms	1.2	B	0.5-2	0	3	F	
Ms	1.2	B	0.5 - 2	0	3	F	
OI	3.5	C	2 - 5	1	1		
OI	3.5	C	2 - 5	3	3	P	
OI-b	7.0	D	5 - 9	4	6	P	
OI-s	22.5	F	15 - 30	2	5	T	
Opl	7.0	D	5 - 9	3	3	T	
Opl	7.0	D	5 - 9	3	3	P	
Opl	22.5	F	15 - 30	1	3	T	
Opl	37.5	G	30 - 45	3	6	T	
Opl	57.5	H	45 - 70	3	7	D	T
Opl	37.5	G	30 - 45	3	7	T	
Osl	3.5	C	2 - 5	1	1		
Pal	1.2	B	0.5 - 2	1	2	W	
Pfs	3.5	C	2 - 5	0	1		
Pfs-s	12.0	E	9 - 15	3	4	P	T
Psl	38.0	G	30 - 45	1	6	M	T
Psl	37.5	G	30 - 45	1	6	T	
R	22.5	F	15 - 30	4	7	R	
R	12.0	E	9 - 15	4	7	R	
R.L.	22.5	F	15 - 30	0	7	R	
R.L.	12.0	E	9 - 15	4	7	R	
Scl	3.5	C	2 - 5	0	1		
Scl	1.2	B	0.5-2	0	1		
Sg	7.0	D	5 - 9	0	3	F	M
Shc	3.5	C	2 - 5	0	1		
Shs	3.5	C	2 - 5	0	1		
Shsc	3.5	C	2 - 5	0	1		
Shsc-b	3.5	C	2 - 5	2	3	P	
Shsc-s	22.5	F	15 - 30	0	5	T	
Sic	1.2	B	0.5 - 2	0	2	W	
Sis	1.2	B	0.5 - 2	0	2	W	
Sisc	1.2	B	0.5 - 2	0	2	W	
Sisc-b	1.2	B	0.5 - 2	3	3	P	
Sms	3.5	C	2 - 5	0	1		
Sms	1.2	B	0.5 - 2	0	1		
Smsc	3.5	C	2 - 5	0	1		
Smsc	3.5	C	2 - 5	0	2	F	
Ssc	3.5	C	2 - 5	1	1		



SYMBOL1	SLOPE1	CLASS1	RANGE1	STONINESS1	CLI1	CLI1_1	CLI1_2
Stsl	7.0	D	5 - 9	0	3	F	M
Stsl-s	22.5	F	15 - 30	0	6	F	M
Tfsl	1.2	B	0.5-2	0	1		
Tif	7.0	D	5 - 9	0	2	F	
Tif	7.0	D	5 - 9	0	3	F	M
Tis	7.0	D	5 - 9	0	4	F	M
Tis	3.5	C	2 - 5	0	4	F	M
Tis	22.5	F	15 - 30	1	6	M	T
Tis	37.5	G	30 - 45	1	6	T	M
Tis	22.5	F	15 - 30	1	6	T	M
Tis	37.5	G	30 - 45	1	7	T	
Tis	57.5	H	45 - 70	1	7	E	T
Tis-b	22.5	F	15 - 30	4	6	P	
Tis-e	37.5	G	30 - 45	1	7	E	
Tisl	7.0	D	5 - 9	0	3	F	M
Tis-s	22.5	F	15 - 30	1	6	T	
Tis-s	22.5	F	15 - 30	0	6	M	T
Tsl	3.5	C	2 - 5	0	2	F	
Tsl	1.2	B	0.5 - 2	1	2	F	
Un	-9.0			0			
UR	-9.0			0			
Vasl	12.0	E	9 - 15	2	2	F	
Vasl-b	12.0	E	9 - 15	3	6	P	
Vasl-s	12.0	E	9 - 15	2	7	T	
Vc	3.5	C	2 - 5	1	1		
VI	7.0	D	5 - 9	1	2	F	
Vs	7.0	D	5 - 9	1	2	F	
Vsc	3.5	C	2 - 5	1	1		
Waf	1.2	B	0.5 - 2	0	3	W	
Was	1.2	B	0.5 - 2	0	3	W	
Wes	7.0	D	5 - 9	0	4	F	M
Wes	7.0	D	5 - 9	0	5	F	M
Wg	7.0	D	5 - 9	2	5	F	M
WI	3.5	C	2 - 5	1	1		
WI-b	7.0	D	5 - 9	3	4	P	
Wsl	22.5	F	15 - 30	0	5	S	T
ZZ	-9.0				W		

## Unique Symbols List for York Region Soils and CLI

SYMBOL1	SLOPE1	CLASS1	RANGE1	STONINESS1	CLI1	CLI1_1	CLI1_2
B.L.	-9.0	N	N	0	5	I	
Bes	3.5	C	2 - 5	0	2	F	
Bg	3.5	C	2 - 5	1	2	F	
Bis	22.5	F	15 - 30	0	7	E	M
Bl	3.5	C	2 - 5	1	1		
Bos	3.5	C	2 - 5	0	2	F	
Brs1	3.5	C	2 - 5	0	2	F	M
Brs1	7.0	D	5 - 9	0	2	F	M
Brs1/g	7.0	D	5 - 9	0	2	F	M
Bs	3.5	C	2 - 5	1	1		M
Bsl	1.2	B	0.5 - 2	0	2	F	
BU	-9.0	N	N	N	0		
Cac	3.5	C	2 - 5	0	1		
Chc	3.5	C	2 - 5	1	1		
Dsl	3.5	C	2 - 5	0	2	F	
Dsl	7.0	D	5 - 9	0	2	F	
E1	3.5	C	2 - 5	1	1		
E1	3.5	C	2 - 5	0	1		
Fsl	3.5	C	2 - 5	0	2	F	
Gg	3.5	C	2 - 5	1	2	F	M
Gil	1.2	B	0.5 - 2	1	4	W	
Gsl	1.2	B	0.5 - 2	0	4	W	
Gul	3.5	C	2 - 5	1	1		
Gus	3.5	C	2 - 5	1	1		
Jc	1.2	B	0.5 - 2	1	3	W	
Kic	12.0	E	9 - 15	1	4	T	
Kic	12.0	E	9 - 15	0	4	T	
Kis	12.0	E	9 - 15	1	4	T	
Ki-s	22.5	F	15 - 30	1	5	T	
L1	1.2	B	0.5 - 2	1	2	W	
M	0.2	A	0 - 0.5	0	O		
M	1.2	B	0.5 - 2	0	O		
Mac	1.2	B	0.5 - 2	0	3	W	
M1	3.5	C	2 - 5	1	1		
Moc	3.5	C	2 - 5	1	1		
Mos	3.5	C	2 - 5	1	1		
Oc	3.5	C	2 - 5	1	1		
O1	3.5	C	2 - 5	1	1		
Osl	3.5	C	2 - 5	1	1		
Pec	3.5	C	2 - 5	0	1		

SYMBOL1	SLOPE1	CLASS1	RANGE1	STONINESS1	CL11	CL11_1	CL11_2
Pfs	3.5	C	2 - 5	0	1		
Ps	22.5	F	15 - 30	0	6	T	
Ps	37.5	G	30 - 45	1	6	T	
Psl	22.5	F	15 - 30	0	6	T	
Psl	37.5	G	30 - 45	1	6	M	
Psl	37.5	G	30 - 45	1	6	T	T
Rsl	1.2	B	0.5 - 2	0	2	F	
Scl	3.5	C	2 - 5	0	1		
Sg	7.0	D	5 - 9	1	3	F	
Sg	1.2	B	0.5 - 2	0	3	F	M
Shc	3.5	C	2 - 5	0	1		M
Shc-s	12.0	E	9 - 15	0	4	T	
Shs	3.5	C	2 - 5	0	1		
Shsc	3.5	C	2 - 5	0	1		
Sic	3.5	C	2 - 5	0	2	W	
Sic	0.2	A	0 - 0.5	0	2	W	
Sis	1.2	B	0.5 - 2	0	2	W	
Tisl	3.5	C	2 - 5	0	3	F	
Tsl	3.5	C	2 - 5	0	2	F	
Tsl	1.2	B	0.5 - 2	0	2	F	
Tsl/g	3.5	C	2 - 5	0	2	F	
UR	-9.0	N	N	N	0		
Was	1.2	B	0.5 - 2	0	3	W	
Wol	3.5	C	2 - 5	1	1		
Wos	3.5	C	2 - 5	1	1		
ZZ	-9.0	N	N	N	W		

**APPENDIX C**

DAVE HODGSON CURRICULUM VITAE

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

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

**AREAS OF PROFESSIONAL EXPERIENCE**

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

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

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

**SELECT PROJECT EXPERIENCE**

**Environmental Assessment Studies**

- Agricultural Component of the Highway 6 Widening Hamilton 2022 – ongoing.
- Agricultural Component of the Bradford Bypass (Highway 400 to 404 link) 2021 – ongoing.
- Agricultural Component of the Green for Life (GFL) Environmental, Moose Creek, Eastern Ontario Waste Handling Facility (EOWHF) Expansion, 2020 – ongoing.
- Agricultural Component of the Greater Toronto Area West (GTAW) Highway 413 Corridor Assessment, 2019 – ongoing.
- Peer Review of the Walker Environmental Group (WEG) Inc. Southwestern Landfill Proposal, Ingersoll, 2013 – 2021.
- Agricultural Component for the High-Speed Rail Kitchener to London –Terms of Reference, 2018,
- Agricultural Component of the Mount Nemo Heritage District Conservation Study – City of Burlington, 2014 – 2015.
- Agricultural Component of the Greater Toronto Area West (GTAW) Highway Corridor Assessment – Phase 2, 2014 – 2016.
- Peer Review of the Agricultural Component of the Walker Group Landfill – Ingersoll, 2013 – 2015.
- Agricultural Component of the Highway 407 East Extension Design and Build Phase, 2012 – 2013.



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

### **Agricultural Impact Assessment/Minimum Distance Separation Studies**

- Thornbury Acres Agricultural Impact Assessment, 2022 – ongoing.
- Highway 6 Widening Hamilton Agricultural Impact Assessment, 2022 – ongoing.
- Whistle Bare Pit Agricultural Impact Assessment, 2022.
- Middletown Road Agricultural Impact Assessment, 2022.
- Claremont Minimum Distance Separation, Durham Region. 2022.
- Grand Valley Settlement Area Boundary Expansion 2022 -ongoing.
- Hagersville Minimum Distance Separation, 2022.
- East River Road Minimum Distance Separation, County of Brant, 2022.
- Brampton Brick Norval Quarry, Agricultural Impact Assessment, 2022 – ongoing.
- Northfield Drive Minimum Distance Separation, Waterloo Region, 2021
- 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.
- Reesor Road Minimum Distance Separation, Markham, 2021.
- Maclean School Road Minimum Distance Separation, County of Brant, 2021.
- Petersburg 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 I), August 2018,
- Cedar Creek Pit/Alps Pit (North Dumfries), Agricultural Impact Assessment (AIA), 2018 – 2021,
- Belle Aire Road (Simcoe County) Agricultural Impact Assessment (AIA) Study, 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 I (MDS I Study), 2016.
- Halton Hills Employment Area Secondary Plan, Halton, 2015 - 2016.
- Peer Review of Agricultural Impact Assessment, Oro-Medonte Township, 2015.
- Greenwood Construction Aggregate Pit, Mono Township, 2014 - 2015.
- Innisfil Mapleview Developments, Town of Innisfil – Minimum Distance Separation (MDS 1), 2014.
- Loyalist Township – Minimum Distance Separation (MDS 1 & 2), 2014.
- Rivera Fine Homes, Caledon – Minimum Distance Separation (MDS 1), 2014.
- Town of Milton PanAm Velodrome – Minimum Distance Separation (MDS) 2012 – 2013.

### Soil Surveys/Soil Evaluations

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

### Municipal Comprehensive Review and Mapping Studies (MCR)

- Bruce County 2022 – ongoing.



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

### **Land Evaluation and Area Review Studies (LEAR)**

- Mapping Audit Bruce County. Assessment of Prime and Non-Prime Agricultural Lands, 2022.
- Mapping Audit Northumberland County. Comparison of Regional and Provincial Prime Agricultural Area Mapping – 2021 - ongoing.
- Mapping Audit Simcoe County. Comparison of Regional and Provincial Prime Agricultural Area Mapping – 2021 - ongoing.
- Mapping Audit Halton Region. Comparison of Regional and Provincial Prime Agricultural Area Mapping – 2019 - 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.
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### **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.



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### Monitoring Studies

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

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