AGRICULTURAL IMPACT ASSESSMENT
FOR
1700 RICHARDSON SIDE ROAD, CITY OF OTTAWA

PREPARED FOR:

MINTO COMMUNITIES INC.
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1. INTRODUCTION

1.1 Retainer

Colville Consulting Inc. was retained by Minto Communities Inc. to complete an Agricultural Impact Assessment (AIA) for the lands located at 1700 Richardson Side Road, in the City of Ottawa. These lands, herein referred to as the Subject Lands, are located east of the intersection of Huntmar Drive and Richardson Side Road and are approximately 31.4 ha (77.5 acres) in size. The Subject Lands are currently designated Agricultural Resource Area in Schedule B9 of the City of Ottawa Official Plan.

1.2 Development in Ontario

1.2.1 Planning Framework

The *Provincial Planning Statement 2024 (PPS)* provides the framework for land use planning and *development* in Ontario. It provides policy direction on matters of provincial interest related to land use planning and *development*. The intent of the planning statement is to ensure "Ontario's vibrant agricultural sector and sensitive areas will continue to form part of the province's economic prosperity and overall identity. Growth and development will be prioritized within urban and rural settlements that will, in turn, support and protect the long-term viability of rural areas, local food production, and the agri-food network. In addition, resources, including natural areas, water, aggregates and agricultural lands will be protected."

1.2.2 Defined Terms and Meanings

Italicized terms throughout this AIA are often consistent with terms and definitions contained in the *Provincial Planning Statement* and provincial guidance documents. The definitions of these italicized terms are provided in the Glossary of Terms section of this report.

1.2.3 Guidance Documents

This AIA refers to several provincial guidance documents, materials, and technical criteria that are frequently considered when preparing an AIA. These guidance documents are meant to inform and assist planning authorities and decision-makers when implementing the policies of the *Provincial Planning Statement*. The guidance documents also provide practitioners with direction on what the Province considers important and how studies such as an AIA are to be undertaken. As stated in the *PPS*, "Information, technical criteria and approaches outlined in provincial guidance are meant to support implementation but not add to or detract from the policies of this Provincial Planning Statement."

1.3 Qualified Professionals

The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) prepared the draft Agricultural Impact Assessment (AIA) Guidance Document and published it in 2018[1]. This document provides guidance

[1] The Ontario Ministry of Agriculture, Food and Rural Affairs is now two separate ministries. They are the Ontario Ministry of Agriculture, Food and Agribusiness (OMAFA) and the Ministry of Rural Affairs (MRA).

on how to prepare an AIA and the qualifications practitioners must have in order to prepare an AIA. It states that qualified persons should have knowledge in:

- Agri-businesses, agricultural supply chain linkages, rural/agricultural economic *development* in Ontario, and within the GGH, the *agri-food network*, where relevant
- Rural and agricultural land use planning
- Canada Land Inventory (CLI) classifications of capability for agriculture assessment and, where relevant a practical understanding of soil science, including the ability to review technical information from non-agricultural disciplines and assess its relevance and utility in identifying potential agricultural impacts and
- Assessment and evaluation of the potential effectiveness of agricultural impact mitigation measures to reduce impacts.

The guidance document goes on to say that Qualified Persons (QPs) "should have demonstrable experience evaluating and assessing agricultural impacts and university or college degree(s) in one or more of the following: agriculture, soil science, geoscience, landscape architecture, resource management-related disciplines, environmental-related disciplines, agricultural engineering, or land use planning."

The guidance document states that the authors of the AIA, and those contributing to it, should have a "relevant academic base, Ontario experience, and preferably membership in a professional organization with a code of ethics and ongoing professional development requirements". As an example of such a professional organization, it specifically refers to the Ontario Institute of Agrologists (OAI) and registered professional agrologists (P.Ag.). All QPs should have demonstrated experience providing objective, professional judgment, advice, and testimony as an expert witness.

Colville Consulting Inc. was established in 2003 and provides agricultural and environmental consulting services to both private and public sector clients throughout Ontario. Colville Consulting Inc. has extensive experience preparing Agricultural Impact Assessments for proposed *developments* related to *settlement area* boundary expansion applications across the province of Ontario.

This study was led by Sean Colville, B.Sc., P.Ag., has over 35 years of experience preparing Agricultural Impact Assessments in Ontario, and assisted with the preparation of the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) draft Agricultural Impact Assessment Guidance Document (2018).

John Liotta, B.Sc., P.Ag., was responsible for the preparation of the AIA. John has over seven combined years of formal education in Environmental and Agricultural Planning and work experience preparing Agricultural Impact Assessments and Agricultural Characterization Reports with Colville Consulting Inc.

Colville Consulting Inc. staff meet the guidance documents qualifications for QPs. The curriculum vitae (CV) of Sean Colville and John Liotta can be found in Appendix A.

1.4 Description of Proposal

It is understood that Minto Communities Inc. is pursuing an Official Plan Amendment (OPA) to change the designation of the Subject Lands from Agricultural Resource Area to Rural Countryside in the City of Ottawa Official Plan. At this time, no development of the Subject Lands is being proposed.

1.5 Purpose of Study

The Subject Lands are currently located within the City of Ottawa's Agricultural Resource Area. Section 9.1.1.3.b of the City of Ottawa Official Plan states that "Official Plan amendments for the removal of land from an Agricultural Resource Area designation, outside of a comprehensive review and that does not constitute urban or village expansion, shall only be considered where it is demonstrated that the land does not meet the requirements for an Agricultural Resource Area through: An area-specific assessment, where the area is equal to or greater than 250 hectares, or where an area of less than 250 hectares is agreed to by the City. The assessment will demonstrate that; based upon new information, related to one or more LEAR factors, the lands are not part of a prime agricultural area; and, any re-designation avoids the potential for adverse impacts to any adjacent agricultural land and operations, or if unavoidable, such adverse impacts are mitigated to the extent feasible."

The redesignation of the Subject Lands to Rural Countryside requires the removal of the lands from the Agricultural Resource Area designation. The purpose of this AIA is to reassess the LEAR score of the Subject Lands based upon new information and to identify any potential impacts to surrounding agricultural lands and operations associated with the proposed redesignation.

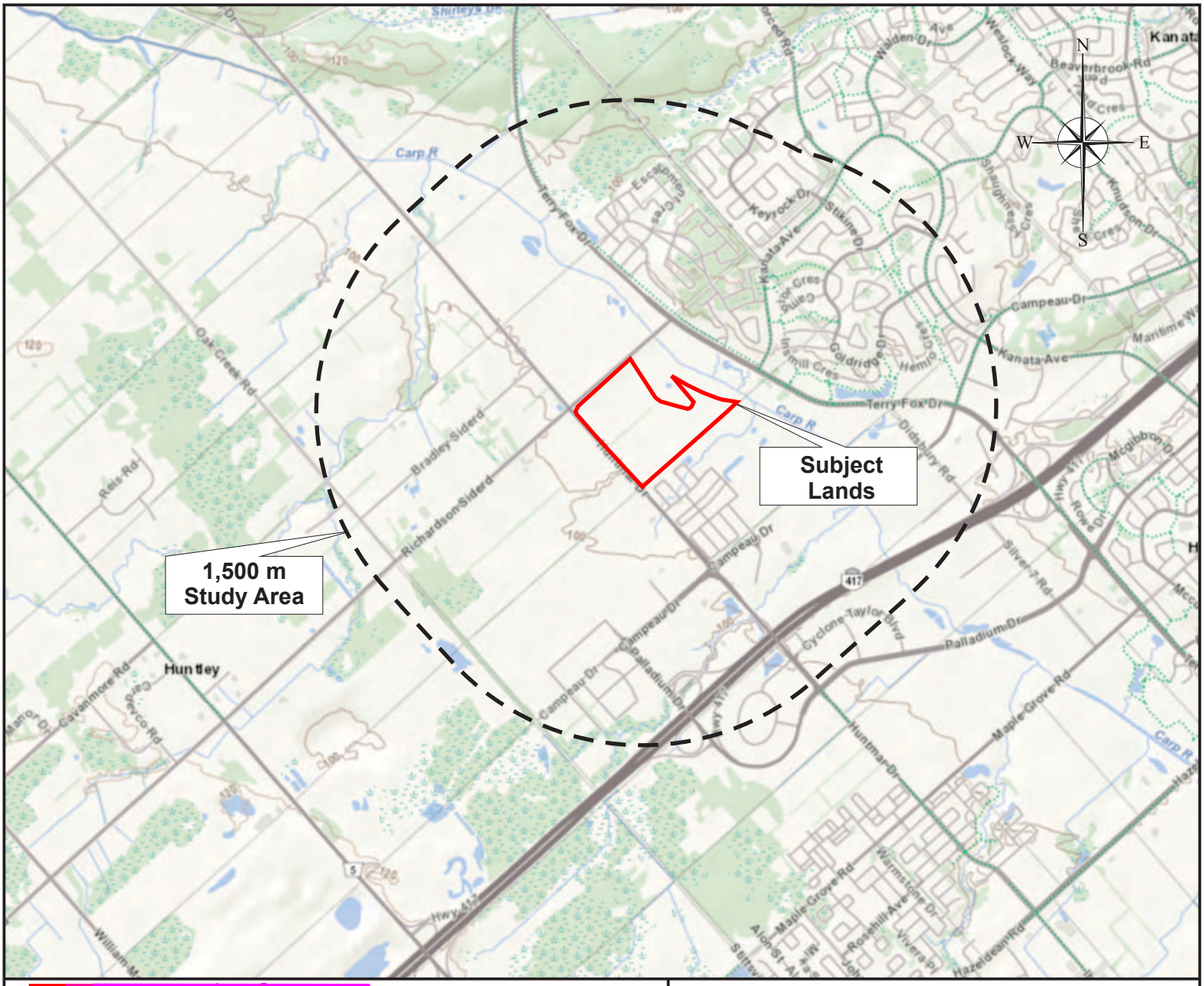
This AIA has been prepared in accordance with OMAFRA's Draft Agricultural Impact Assessment (AIA) Guidance Document (2018). The AIA assesses and evaluates the potential impacts of the proposed redesignation on agricultural operations, the farming community, and the broader *Agricultural System*. In cases where impacts cannot be avoided, the AIA recommends ways to mitigate adverse impacts. The AIA also assesses whether the proposal is consistent with provincial, regional, and municipal agricultural policies.

1.6 Study Area

To be consistent with the draft Agricultural Impact Assessment Guidance Document (2018), the AIA must identify a Primary Study Area and a Secondary Study Area. For this AIA, the Primary Study Area (PSA) includes the Subject Lands, while all lands within 1.5 km (1,500 m) of the PSA boundaries comprise the Secondary Study Area (SSA). Figure 1 shows the Study Area, which includes the Primary (Subject Lands) and Secondary Study Areas.

1.6.1 Primary Study Area – Subject Lands

The Subject Lands are an irregularly shaped parcel which is approximately 31.4 ha (77.5 acres) in size. The Subject Lands are located east of the intersection of Huntmar Drive and Richardson Side Road. The Subject Lands are designated Agricultural Resource Area in the City of Ottawa Official Plan, and abuts the Suburban Transect and Urban Boundary of the City of Ottawa to the south.



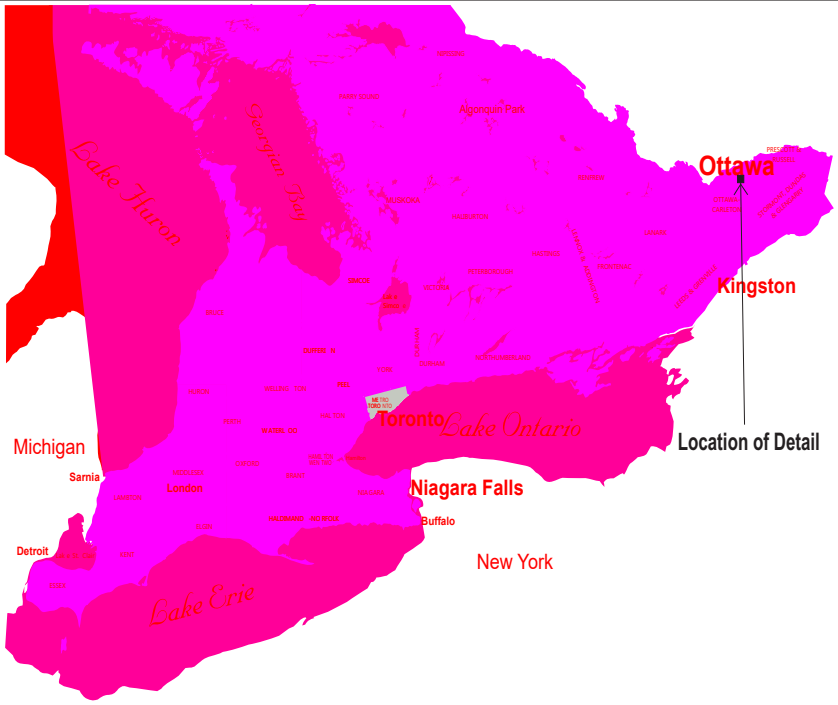


FIGURE 1
Location Map

Agricultural Impact Assessment for
1700 Richardson Side Road, City of Ottawa

Prepared for: **MINTO COMMUNITIES INC.**

Prepared by: COLVILLE CONSULTING INC.

DATE: June 2025

FILE: C20061

1.6.2 Secondary Study Area – Study Area

The Secondary Study Area, herein referred to as the *Study Area*, includes all lands within 1.5 km (1,500 m) of the Subject Lands' boundaries. The *Study Area* is generally bounded to the west by Oak Creek Rd, to the north by the Lot 8/9 Concession 1 March line, to the south by the Lot 1/2 Concession 1 March line, and to the east by Kanata Avenue east of Goulbourn Forced Rd.

The northwestern portion of the study area is primarily designated Agricultural Resource Areas, with small areas of Rural Countryside and Rural Industrial and Logistics, while the southern and eastern portions of the Study Area are primarily within the urban boundary of the City of Ottawa, with small areas of land within the Agricultural Resource Area designation. The portions of the *Study Area* within the urban boundary consists of neighbourhood, greenspace, hub, mixed industrial, and industrial and logistics designations.

2. SCOPE OF STUDY

To be consistent with the Draft Agricultural Impact Assessment Guidance Document (2018), the study scope includes:

- a review of applicable agricultural policies, land use information, and other background information for lands within the surrounding area (e.g., aerial photography);
- a review of data sources such as AgMaps, the Agricultural Systems Portal, and OMAFA's digital soil resource database (for soil and CLI information, parcel fabric and land fragmentation, artificial drainage, agri-food components, etc.);
- a land use survey of all lands within one and a half kilometres (1.5 km) of the Subject Lands and a characterization of the area;
- the identification of agricultural resources and investments in agricultural land improvements;
- the identification *agricultural uses*, *agriculture-related uses*, *on-farm diversified uses*; and *non-agricultural uses*;
- an assessment of the level of fragmentation of agricultural lands in the *Study Area*;
- an assessment of the relative agricultural priority of the lands;
- an assessment of the potential impacts of the proposal on the *Agricultural System*, agricultural resources, farm operations, and the broader *agri-food network*;
- the recommendation of potential mitigation measures that can be implemented to avoid or minimize potential impacts to the extent feasible;
- an assessment of net impacts following the implementation of recommended mitigation measures;
- an assessment of the proposed redesignation's consistency with agricultural policies of the *Provincial Planning Statement* and the City of Ottawa Official Plan.

The findings of the above scope of work have been summarized in this report.

3. METHODOLOGY

The study methodology for the AIA was prepared in accordance with OMAFRA's draft Agricultural Impact Assessment Guidance Document (2018). It includes a review of relevant agriculture-related sources of information and the completion of field inventories. Following the completion and assessment of the data, the potential impacts of the proposal will be considered and recommendations to avoid and/or minimize potential impacts will be made.

3.1 Background Data Collection

Information sources reviewed for this study included:

- *Provincial Planning Statement* (2024);
- City of Ottawa Official Plan and Land Use Schedules (2021);
- City of Ottawa's Economic Development Update – Q2 2024;
- The Soils of the Regional Municipality of Ottawa-Carleton County, Report No. 58 of the Ontario Institute of Pedology (1987);
- OMAFA's digital Soil Resource Database to obtain soil series and CLI agricultural capability mapping and data;
- OMAFRA's The Minimum Distance Separation (MDS) Document: Formulae and Guidelines for Livestock Facility and Anaerobic Digester Odour Setbacks. Publication 853 (2016);
- OMAFA's Artificial Drainage Systems mapping;
- OMAFA's AgriSuite, AgMaps and Agri-Systems databases;
- OMAFRA's Draft Agricultural Impact Assessment (AIA) Guidance Document (2018); and
- Ortho-rectified, digital aerial photography viewed using Google Earth™ and GeoOttawa (maps.ottawa.ca).

Aerial photography covering the *Study Area* and the parcel fabric were examined to assess the presence of *non-agricultural land uses*, *agricultural uses*, *agriculture-related uses*, *on-farm diversified uses*, and the level of fragmentation based on the lot fabric. This review will provide a general impression of the agricultural activity and level of agricultural investments in the area surrounding the Subject Lands.

3.2 Field Inventories

3.2.1 Soil Survey

A detailed soil survey was completed on August 13, 2020. The Subject Lands were traversed on foot and the soil profile was exposed at eleven locations using a hand-held Dutch auger. The physical properties of the soil, such as the mode of deposition, *soil horizons* and horizon depths, *soil texture*, drainage, and stoniness, were described and recorded on field data sheets. The slope percentage within the soil polygons was measured using a hand-held clinometer.

The method used to describe the *soil profiles* was consistent with the Canadian System of Soil Classification (CSSC, Agriculture and Agri-Food Canada, 1982) and the Field Manual for Describing Soils in Ontario (Ontario Centre for Soil Resource Evaluation, 1993).

3.2.2 Land Use Survey

A reconnaissance level land use survey was completed on August 13, 2020, which identified the number and type of agricultural operations (both active and *retired*), *agriculture-related uses*, *on-farm diversified uses*, and the extent and type of *non-agricultural land uses* in the area. Field crops observed were identified and mapped. Visual evidence of agricultural land improvements was recorded where identified.

3.2.3 MDS Calculations

The *MDS* is a land use planning tool developed by OMAFA to minimize land use conflicts and nuisance complaints arising from odours generated by *livestock* operations. The *MDS* calculates a recommended separation distance between a *livestock* or *manure storage* system and other land use(s). The most recent version of the MDS Guidelines, The Minimum Distance Separation (MDS) Document, Publication 853 (2016), came into effect on March 1st, 2017. The *MDS formulae* only apply to lands designated *prime agricultural area* (Agricultural Resource Area in the City of Ottawa) or rural.

The *MDS* uses two separate formulae depending on the type of land use proposed: *MDS I formula* and the *MDS II formula*. The *MDS I formula* is used when a new non-agricultural *development* is proposed in proximity to existing *livestock facilities*. The *MDS II formula* is used to calculate the distance from a proposed new, enlarged, or remodeled *livestock facility* or *manure storage* systems and existing or approved non-agricultural *development.*

Guideline #10 of the MDS Guidance Document states in part that "An MDS I setback is required for all proposed amendments to rezone or redesignate land to permit development in prime agricultural areas and rural lands presently zoned for agricultural uses." The Subject Lands are currently zoned for *agricultural uses* and are proposed to remain zoned for *agricultural uses*. Therefore, the proposed redesignation is not required to comply with *MDS I* setbacks. The *MDS formulae* would also still apply to any future *development* applications on the Subject Lands.

Although it is not required through policy, the *MDS I formula* has been applied to all *livestock facilities* capable of housing *livestock* observed within 1,500 m of the Subject Lands. The purpose of this exercise was to contribute to the assessment of the agricultural priority of the Subject Lands, and the characterization of the *Agricultural System*. The information required to complete the *MDS I* calculation was obtained through a combination of sources. As per the MDS Guidelines, attempts were made to gather information directly from the landowner/tenant. Where landowners could not be contacted or were not available, self-addressed envelopes were left in mailboxes of potential *livestock facilities*.

OMAFA's Agricultural Planning Tools (AgriSuite) was used to determine the *MDS* requirements. It provides the most up to date software developed by OMAFA to calculate the *MDS I* requirements for active *livestock facilities* and *unoccupied livestock facilities* that are structurally sound and capable of housing *livestock.* To determine the *MDS I* setback requirements, specific information regarding each *livestock facility* is required. This includes:

- the type of *livestock* housed in the facility;
- the maximum capacity of the barn housing *livestock*;
- the type of *manure storage* system; and
- the size of the property upon which the *livestock facility* is located.

This information was collected for all *livestock facilities* (active and *unoccupied*). In cases where landowners could not be contacted, visual observations of the *livestock facility* were used to determine the most likely type of *livestock* housed, and the type of *manure storage* system used. These observations were supplemented with aerial photography and web mapping tools such as AgMaps and Google Earth Barn capacity and lot size were determined using these online mapping tools.

3.3 Evaluation of the Agricultural System

An *Agricultural System* includes a continuous and productive land base comprised of *prime agricultural areas,* including *specialty crop areas*, and *rural lands*, as well as a complementary *agri-food network* that together enable the agri-food sector to thrive. An evaluation of the *Agricultural System* and associated features within the *Study Area* was completed through a reconnaissance level land use survey on August 13th, 2020, and online review to assist in identifying agricultural related features.

Potential features identified include regional infrastructure and transportation networks, on-farm buildings and infrastructure, agricultural services, as well as small towns and hamlets that are supportive of agriculture and are important to the viability of the agri-food sector. The evaluation of the *Agricultural System* within the *Study Area* is used to identify those features and provide insight into their significance on the overall *Agricultural System* within the Region.

3.4 Evaluation of Alternative Locations

The *PPS* directs *settlement area* boundary expansion and non-agricultural *development* to avoid *prime agricultural areas*, where possible. Where *prime agricultural areas* cannot be avoided, policy directs *development* to lower priority agricultural lands. As previously stated, the proposed redesignation of the Subject Lands does not include *development* or *settlement area* boundary expansion. Therefore, an assessment of alternative locations has not been completed as part of this AIA.

3.5 Evaluation of Agricultural Priority

The *PPS* requires that non-agricultural *developments* avoid locating in *prime agricultural areas* whenever possible. Where this is not possible or practical, the *PPS* directs *development* to "lower priority agricultural lands". Although neither the *PPS* nor other provincial policy documents specifically define in policy "lower priority agricultural lands", there are a number of considerations used by OMAFA to determine the 'agricultural priority' of an area. These considerations include criteria such as the current land use, amount of capital investment in agricultural infrastructure, amount of land under active cultivation, existing degree

of lot fragmentation to the surrounding agricultural land base, and proximity to incompatible land uses such as urban and rural *settlement areas.* This AIA considers these criteria to assess the agricultural priority of the Subject Lands.

3.6 Identification of Potential Impacts and Mitigation Measures

Potential impacts of the proposed redesignation of the Subject Lands were identified following an assessment of the agricultural resources on and adjacent to the Subject Lands. Direct impacts are those that directly impact the Subject Lands and include:

a) Interim or permanent loss of agricultural land, including the quality and quantity of farmland lost;
b) The type of *agricultural*, *agriculture-related* or *on-farm diversified uses* being lost and the significance this has for supporting other agricultural production in the surrounding area;
c) The loss of infrastructure, services or assets important to the surrounding agricultural community and agri-food sector; and,
d) The loss of agricultural investments in structures and land improvements (e.g. artificial drainage) and the disruption or loss of function to artificial drainage and irrigation installations.

Indirect impacts can negatively affect adjacent lands, farm operations and farm practices. They include:

a) Fragmentation of agricultural lands and operations;
b) Changes to surface drainage features which could have an effect on adjacent lands;
c) Disruption to surrounding farm operations, activities, and management (e.g. temporary loss of productive agricultural lands, cultivation, seeding, spraying, harvesting, field access, use of road network);
d) The potential effects of noise, vibration, dust, traffic, and vandalism and trespassing, on agricultural operations, lands, activities, and investments;
e) Potential compatibility concerns between agricultural operations employing *normal farm practices* and new non-farm development (e.g. nuisance complaints);
f) The inability or challenges to move farm vehicles and equipment along roads due to increased traffic caused by haul routes, or changes in road design.

Mitigation measures will then be developed for both direct and indirect impacts identified, which avoid or minimize potential impacts on the *Agricultural System*.

3.7 Assessment of Consistency with Agricultural Policies

All planning decisions must be consistent with the *PPS* and comply with applicable provincial land use plans. Municipalities also have their own agricultural policies to which the proposal must adhere to. A background review of all applicable provincial and municipal policies relating to agriculture was undertaken. Polices applicable to the proposal were identified and assessed for consistency as part of this AIA.

4. AGRICULTURAL POLICIES

4.1 Provincial Planning Statement (2024)

Land Use Policy and *development* in Ontario are directed by the *Provincial Planning Statement (PPS).* The *PPS* was issued under the authority of Section 3 of the Planning Act and came into effect on October 20, 2024. Section 3 of the Planning Act states that decisions affecting planning matters "shall be consistent with" policy statements issued under the Act.

4.1.1 Prime Agricultural Areas

Section 4.3 of the *Provincial Planning Statement* specifically deals with agricultural policy. Section 4.3.1.1 states that "Planning authorities are required to use an agricultural system approach, based on provincial guidance, to maintain and enhance a geographically continuous agricultural land base and support and foster the long-term economic prosperity and productive capacity of the agri-food network."

Section 4.3.1.2 states that "As part of the agricultural land base, prime agricultural areas, including specialty crop areas, shall be designated and protected for long-term use for agriculture". The *Provincial Planning Statement* defines *prime agricultural areas* as areas where *prime agricultural lands* predominate. *Prime agricultural lands* include *specialty crop areas* and Canada Land Inventory (CLI) Classes 1, 2, and 3 soils, in this order of priority for protection.

4.1.2 Policies for Removal of Land from Prime Agricultural Areas

Policy 4.3.4.1 of the *Provincial Planning Statement* states that "Planning authorities may only exclude land from prime agricultural areas for expansion of or identification of settlement areas in accordance with policy 2.3.2."

However, while there is no planned expansion or identification of the *settlement area*, the Province approved The City of Ottawa's Official Plan, which has policy in place (Section 9.1.1.3) that allows for the removal of land from the Agricultural Resource Area designation through an Official Plan amendment, where it is demonstrated that the land does not meet Agricultural Resource Area requirements.

4.2 City of Ottawa Official Plan

The City of Ottawa Official Plan came into effect on November 4, 2022. Section 9.1 of the City of Ottawa Official Plan recognizes and defines the Agricultural Resource Area, which is mapped in Schedule B9 of the Official Plan. Section 9.1 defines Agricultural Resource Area designations as "lands [that] are comprised of Class 1, 2 and 3 soils, as identified through a Land Evaluation and Area Review (LEAR) study. Lands designated Agricultural Resource Area may also include lands with other classes of soil in order to recognize their part in an agricultural system."

Section 9.1.1.3 outlines policy for the removal of lands from the Agricultural Resource Area, Section 9.1.1.3 states that "Official Plan amendments for the removal of land from an Agricultural Resource Area designation, outside of a comprehensive review and that does not constitute urban or village expansion, shall only be considered where it is demonstrated that the land does not meet the requirements for an Agricultural Resource Area through:

a) A municipal-wide Land Evaluation and Area Review; or

b) An area-specific assessment, where the area is equal to or greater than 250 hectares, or where an area of less than 250 hectares is agreed to by the City. The assessment will demonstrate that:
    i. Based upon new information, related to one or more LEAR factors, the lands are not part of a prime agricultural area; and
    ii. Any re-designation avoids the potential for adverse impacts to any adjacent agricultural land and operations, or if unavoidable, such adverse impacts are mitigated to the extent feasible."

Given that the Subject Lands are under 250 ha in size, and no *development* or *settlement area* boundary expansion is proposed at this time, the redesignation of the Subject Lands from Agricultural Resource Area to Rural Countryside may be permitted, if agreed to by the City. It must be demonstrated that the Subject Lands are not part of a *prime agricultural area* through new information related to one or more LEAR factors, and that adjacent agricultural land would not be adversely impacted by the redesignation, or adverse impacts are mitigated if unavoidable.

5. STUDY FINDINGS

5.1 Physiography

The Subject Lands are situated in a broad area known as the Ottawa Valley clay plains physiographic region (Chapman & Putnam, 1984). Much of this area is comprised of deep silt and clay, deep water sediments, and slightly older *morainal tills* deposited by the Laurentide ice sheet during the last period of glaciation. The silt and clay sediments are derived from material deposited during inundation of the area by the Champlain Sea. This sea was formed in an area referred to as the Ottawa – St. Lawrence Lowland during the final retreat of the Laurentide ice sheet. Initially formed as a freshwater, proglacial lake, the Champlain Sea eventually connected to the Atlantic Ocean and became an epicontinental sea approximately 11,000 to 11,500 B.P. (Anderson, T.W. 1988). Uplifting of the basin due to isostatic rebound caused the relative quick transition from a marine environment to an estuarine system and eventually, by approximately 10,000 B.P., to a fluvial system.

The topography of this physiographic region is level to very gently sloping, and soil drainage is generally slow. The North Gower, Dalhousie, Castor, and Osgoode, soil associations have developed on these clayey marine and lacustrine sediments. The most intensive farming operations are generally located on these high capability soils associated with the broad clay plains.

Glacial landforms (drumlins and undulating till plains) have been buried by the post-glacial marine sediments. Where exposed at the surface, the glacial tills show characteristics of having been extensively modified by wave action and inundation by the Champlain Sea. This has caused the morainal material to be washed (i.e., removal and re-deposition of the finer material) and the smoothing of its original topographic expression.

The moderately- to coarsely-textured till occurs as drumlinoid ridges and undulating to hummocky till plains. Grenville soils have developed on these till deposits. In this area the glacial till was inundated by the Champlain Sea. As the sea receded, wave action modified the surface texture of the till and left the appearance of a glaciofluvial deposit at the surface. These areas are often stony as a result and beach strands are often found along the upper till ridges.

5.1.1 Bedrock and Surficial Geology

The underlying bedrock consists of both flat-lying sedimentary rocks southwest of the Carp River and metamorphic rocks north and east of the Carp River. The Ordovician aged rocks consist of limestone, dolostone, shale, and sandstone. The Precambrian aged metamorphic rock appears as a northwest-southeast trending ridge rising above the younger sedimentary rocks, and is known as the Carp Ridge.

5.1.2 Surface Drainage Features

The Carp River is the main surface drainage feature in the Study Area. It is located near the contact between the Precambrian and Ordovician rocks, and it flows in a northwest direction approximately 42 km into the Ottawa River at Fitzroy Harbour (Carp River Watershed-Subwatershed Study, 2004). The headwaters of the Carp River originate in the Glen Cairn area of Kanata and its main tributaries include the Corkery, Huntley, Feedmill and Poole Creeks. The Carp River Watershed drains an area of approximately 306 square kilometres of both urban and *rural lands*.

The upper reaches of the river are located predominantly in urban and urban impacted areas, while the lower portion of the river is located in mainly rural environments. For most of its length, the Carp River is classified as a degraded, warm-water system. Some areas within the floodplain are seasonally inundated. As a result, in some locations, the original meandering course of the river has been channelized and straightened to improve drainage of adjacent agricultural lands. Over the years however, portions of the river have become choked with debris and sediment. The water quality of the river and several of its' small tributaries have been impaired by relatively high levels of phosphorus, nitrogen, and E. Coli, from sources such as agricultural fertilizers and animal wastes.

To improve the water quality and natural function of the river, restoration plans have been developed for the upper portions (i.e., the urban areas) of the Carp River and for Poole and Feedmill Creeks.

5.2 Climate

Climate data is available through Environment Canada's National Climate Data and Information Archive's online database. Climate Normals and Extremes for Ottawa Airport (1991-2020) were obtained from the online database (Appendix B).

Environment Canada's Ottawa Macdonald-Cartier International Airport station is closest to the Subject Lands, at approximately 21 km from the Lands. Records show that this area receives an average of 929.8 mm of precipitation annually; 757.2 mm of rainfall, and 231.9 cm of snowfall. The daily average temperature ranges from a high of 21.2°C to a low of -10°C.

The Ministry of Agriculture and Food Factsheets provide data on crop production and growing seasons across Ontario. The rate of development of crops from planting to maturity is mainly dependent upon temperature. Regions within the Ottawa area begin to experience average temperatures greater than 10°C starting May 3rd before reaching temperatures greater than 12.8°C for 3 consecutive days around May 16th. During this time and up until the season's average ending date, September 29th, the area accumulates an average of 2890 crop heat units (CHU).

On average, the last spring frost in the Ottawa Macdonald-Cartier International Airport area occurs on April 29th. The first fall frost is expected on October 7th. This provides the surrounding with a growing period of approximately 160 days. The climate in the Ottawa area provides a good overall growing period that can support a wide range of crops.

5.3 Agricultural Crop Statistics

Agricultural crop statistics are available from OMAFA and Statistics Canada's Agriculture and Food Statistics Census of Agriculture. The Subject Lands are located within the Census Eastern Ontario Region, Ottawa. Agricultural crop statistics were obtained from the online database and are included in Appendix C. This data provides a general overview of agriculture and agri-food operations in the area but is unlikely to be inclusive of all operations present at the time of this report.

The County and Township Agricultural Profile for Ottawa includes data from the 2011, 2016, and 2021 census periods. The total number of farms in Ottawa decreased from 1,045 in 2016 to 906 in 2021, with total cropland decreasing from 77,475 hectares in 2016 to 75,517 hectares in 2021.

Field crops grown in Ottawa include soybeans, corn for grain and silage, hay, winter wheat, barley for grains, oats for grains, mixed grains, and potatoes. Between 2016-2021, field crop acreage decreased for winter wheat, barley for grain, mixed grains, corn for grain, and potatoes, while acreage increased for oats for grain, corn for silage, hay, and soybeans.

Fruit crops grown in Ottawa include strawberries, apples, grapes, and raspberries. Vegetable crops grown in Ottawa include sweet corn, green or wax beans, tomatoes, and green peas. Fruit crop acreage decreased from 344 acres to 290 acres from 2016 to 2021. Vegetable acreage is missing census data for 2016, and was recorded to be 1,785 acres in 2021, an increase from 1,481 acres recorded in 2011.

The Agricultural Systems Portal shows that there was a total of 906 farms reporting within the City of Ottawa in the 2021 Census. These are summarized in Table 1 below. Of the 906 farms reporting in the City of Ottawa in 2021, 350 farms had *livestock*, of which, cattle ranching and dairy cattle were the most common types of operations. Oilseed and grain farming was the most common cropping type reported.

Table 1. Reporting Farms in the City of Ottawa – 2021 Census

Farm Type	Number Reported
Total Number of Farms	906
Hogs and Pigs	1
Poultry and Egg Production	19
Sheep and Goats	18
Dairy Cattle	80
Horse and Other Equine	74
Beef Cattle Ranching	119
Other Animal Production	113
Oilseed and Grains	343
Soybeans	196
Fruit and Tree Nuts	17
Greenhouse, Nursery, Floriculture	43
Other Crop Farming	124

5.4 Specialty Crop Areas

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

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

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

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

There are two *specialty crop areas* recognized by the Province through the Greenbelt Plan: the Niagara Peninsula Tender Fruit and Grape Area and the Holland Marsh. The province also recognizes *specialty crop areas* identified by municipalities which have included *specialty crop areas* in their land use schedules. The City of Ottawa has not identified any of the lands within its municipal boundaries as a *specialty crop area*. Neither the Subject Lands, nor any portion of the *Study Area*, are located within a *specialty crop area*. Additionally, the Subject Lands do not exhibit any of the characteristics of a *specialty crop area.*

5.5 Regional Soils

5.5.1 Soil Series

The *Soils of the Regional Municipality of Ottawa-Carleton County*, Report No. 58 of the Ontario Institute of Pedology (1987) includes a soil map that shows the distribution of the various soil series mapping in the county. The county level survey mapped the soils at a scale of 1:50,000 which is appropriate for county level planning decisions. However, for site specific *development* applications, more detailed soil mapping is often required.

The digital Provincial Soil Resource database is compiled and administered by OMAFA and includes most of the soil surveys completed in Ontario. Much of this information is accessible from the Province's Agricultural Information Atlas (AgMaps). This is an interactive online application that enables users to obtain agricultural information for Ontario such as soils and drainage, as well as data layers from other Government of Ontario ministries (e.g., lot boundaries). This mapping is consistent with the soil mapping in the Soils of the Regional Municipality of Ottawa-Carleton County (Sheet 3) which maps the North Gower, Dalhousie, Osgoode, and Castor soils within the Study Area and on the Subject Lands.

At depths greater than two metres, the heavier textured materials from which the North Gower and Dalhousie soils have developed are often found. Where the depth of the heavier textured soil is less than one metre, the Castor soil association is mapped.

North Gower Association

The North Gower association is made up of soils developed in moderately fine-textured, modified marine parent materials. The soil is permeable, free of stones, and has a high moisture holding capacity. They are comprised of the imperfectly drained Carp and the poorly drained North Gower soils. They are typically found on level to very gently sloping plains. The poorly drained North Gower soil series is the dominant soil in this association, accounting for approximately 80% of this association in the City of Ottawa.

Dalhousie Association

The Dalhousie – Brandon complex is derived from moderately fine textured sediments of marine origin. The parent material consists of unconsolidated deposits of clay, silt, sand, or gravel material. In the City of Ottawa, approximately 90% of the Dalhousie Association consists of the poorly drained Brandon soil series. The poor drainage is the result of a combination of factors including a high water table, collection of surface waters from adjacent uplands, slow surface water drainage, a high water holding capacity, and slow internal drainage especially when the soils are compacted by heavy farm machinery. Poor drainage is the main limitation for these soils although degradation of soil structure from soil compaction can become a problem if these soils are not managed properly.

Osgoode Association

The soils of the Osgoode Association are mapped in association with the Dalhousie – Brandon soil complex, and typically flank the marine clay plains. Although the *soil textures* of Osgoode soils commonly vary between very fine sandy loam, loam, and silt loam, it is not uncommon to find sandier and heavier textures within the *soil profile*. The majority of the Osgoode association is comprised of the poorly drained Osgoode soils. The poorly drained Osgoode soils are found on level to nearly-level topography, or in depressional areas.

Castor Association

The Castor association is similar to the Osgoode association with the exception of the thickness of the medium textured materials that overlie the underlying heavy textured lacustrine and marine sediments. Castor soils have developed on a 40 to 100 cm thick veneer of medium-textured material. This lies above the moderately fine to fine textured sediments from which of the North Gower and Dalhousie soils have developed. Similar to the Osgoode association, these soils are most often found on level or nearly-level topography, although on better drained sites very gentle slopes ranging from 2 to 5% occasionally occur.

Most of the soils of the Castor association are found on level or nearly-level landscapes where surface runoff is slow to very slow or where the water table is near the surface for long periods during the growing season. As a result, the majority of Castor association (approximately 90%) are mapped as poorly drained.

5.5.2 CLI Agricultural Land Classification

The Canada Land Inventory (CLI) is an interpretative system that assesses the limitations of land for growing *common field crops* based on soil, topographic and climatic characteristics. The CLI system has seven soil classes that descend in quality from Class 1, which has few limitations, to Class 7 soils which have no agricultural capability for *common field crops*. Class 2 through 7 soils have one or more significant limitations, and each of these are denoted by a capability subclass. There are thirteen subclasses described in CLI Report No. 2 (1971). Eleven of these subclasses have been adapted to Ontario soils. More information regarding the CLI Classification system is provided in Appendix D.

The Subject Lands are mapped as the Dalhousie association (Brandon) which are rated as CLI Class 3W, and North Gower and Castor (Bainsville) associations, which are rated CLI Class 2W. The area along the eastern boundary is mapped as Eroded Channel and has a CLI Class 7T rating. The majority of the Subject Lands consist of lands considered to be *prime agricultural lands*.

5.6 Refined Soil Resources

5.6.1 Detailed Soil Survey

To confirm and revise the county-level soil mapping where necessary, a soil survey of the Subject Lands was completed on August 13, 2020. As described in the methodologies section of this report, the Subject Lands were traversed on foot and the *soil profile* was exposed at fifteen locations using a hand-held Dutch auger. The physical properties of the soil, such as the mode of deposition, *soil horizons* and horizon depths, depth to bedrock, *soil texture*, drainage, and stoniness, were described and recorded on field data sheets. The slope percentage within the soil polygons was measured using a hand-held clinometer.

In addition to the information obtained through the detailed soil survey, the floodplain mapping for the Carp River watershed was also reviewed. Situated within the jurisdiction of the Mississippi Valley Conservation Authority (MVCA), the Carp River has been identified as one of the Authority's highest flood risk areas, as outlined in the 2022 *Flood Risk Assessment Study*. Updated watershed mapping was completed by MVCA in March 2024 and delineates the calculated extent of 1 in 5-year flood events.

OMAFA's *Soil Capability for Agriculture in Ontario* provides the framework for the application of the Canada Land Inventory (CLI) to mineral soils and landscapes in Ontario. The following excerpt from this document outlines the definition of CLI Class 5I lands:

Class 5I	Very frequent inundation with some crop damage; estimated frequency of flooding is at least once every 5 years (floodplain); includes active floodplain areas on which forage crops can be grown primarily for pasture.

Based on the MVCA's updated floodplain mapping, the 1 in 5-year flood event extends into the eastern portion of the Subject Lands. This portion of the Subject Lands has never been cultivated, and the soils were determined to be very poorly drained during the detailed soil survey. As such, the portion of the Subject Lands affected by the 1 in 5-year flood event of the Carp River watershed was determined to be CLI Class 5IW lands. It is mapped as Recent Alluvium and occupies approximately 2.94 ha of the Subject Lands.

The *Soils of the Regional Municipality of Ottawa-Carleton County* provides a description of Recent Alluvium soils. These soils have developed on recent alluvial deposits and primarily occur on floodplains or river bars, which are subject to periodic inundation. The alluvial deposits vary considerably in material and profile characteristics, which made separation into well defined map units difficult. The Recent Alluvium soils identified on the Subject Lands were determined to be AR1 soils, which are defined as being comprised primarily of moderately fine to fine textured material, most often found on floodplains where slopes are generally 2% or less.

The detailed soil survey identified many of the soils previously mapped on site. Table 2 summarizes the area and percentage of the soils mapped on the Subject Lands and the interpreted CLI Classes (Note: CLI Classes assume that drainage is feasible). Figure 2 shows the revised soil mapping for the Subject Lands, along with the 1 in 5-year flood limit of the Carp River watershed.

Table 2. Revised Soil and CLI Capability

Soil Series	CLI Class	Area (Ha)	% of Subject Lands
Brandon – D2	2W	7.98	25.40%
Bainsville – C4	3WF	10.08	32.11%
North Gower – NG2	3W	10.40	33.12%
Recent Alluvium – AR1	5IW	2.94	9.37%
Totals		**31.40**	**100.00%**

Legend

Soil Symbol

Soil Name → D2
B>C (70 / 30) ← Percent, ← Slope Class

SLOPE CLASSES (%)

Aa Levelslopes(0.0 - 0.5%)
B b Nearly level slopes(0.5 -2.0%)
Cc Very Gentle slopes (2.0 -5.0%)
D d Gentle slopes (5 -9%)
Ee Moderateslopes(9 - 15%)
F f Strongslopes (15- 30%)
Gg Steep slopes (30 -45%)
Simple Slopes (uniform, lengths>50metres) denoted inupper case
ComplexSlopes(short,irregular slopes) denotedinlower case

Soil Series

AR1 Recent Alluvium - Soils developed on recent alluvial deposits which occur primarily as floodplains or river bars and are subject to periodic inundation.

D2 Dalhousie - Brandon Complex - Dominantly imperfectly drained with significant areas of poorly drained, fine textured, non-calcareous soils found on nearly level to very gently sloping topography.

NG2 North Gower - Poorly drained, fine textured lacustrine or marine sediments found predominantly on nearly level to very gentle slopes.

C4 Bainsville - Castor Complex - Dominantly poorly drained, 40 to 100 cm of medium textured soil overlying lacustrine or marine clayey sediments in combination with significant areas of imperfectly drained 40 to 100 cm of medium textured soil overlying lacustrine or marine clayey sediments on nearly level topography.

CLI AGRICULTURAL CAPABILITY CLASSES

CLI Class → 2D ← CLI Subclass

Class 2 -Soils in this class have moderate limitations that restrict the range of crops or require moderate conservation practices.

Class 3 - Moderately severe limitations that reduce the choice of crops, or require special conservation practices.

Class 5 - Very severe limitations that restrict their capability to producing perennial forage crops, and improvement practices are feasible.

CLI AGRICULTURAL CAPABILITY SUBCLASSES

W Excess Water - limitations for agriculture due to poor drainage
F Low Natural Fertility - limitations for agriculture due to low fertility
I Inundation - limitations for agriculture due to periodic flooding by streams or lakes

Subject Lands
Soil Boundary
(1) Site Location
Carp River Watershed 1 in 5-year Flood Event (MVCA)

Figure 2
Refined Soil & CLI Mapping

Agricultural Impact Assessment for
1700 Richardson Side Road, City of Ottawa

Prepared for: **MINTO COMMUNITIES INC.**
Prepared by: COLVILLE CONSULTING INC.

0 100 Meters
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Date: June 2025
File: C20061

5.6.2 Agricultural Capability/Productivity

The results of the detailed soil survey were used to refine the CLI capability ratings for the Subject Lands. The agricultural capability for *common field crops* was interpreted using OMAFA's Soil Capability for Agriculture in Ontario. The Soils of the Regional Municipality of Ottawa-Carleton County, Report No. 58 of the Ontario Institute of Pedology (1987) was also consulted when assigning CLI Capability classes.

The detailed soil survey determined that the Subject Lands consist primarily of *prime agricultural lands* (90.63%), with a smaller portion of non-prime agricultural lands (9.37%). The assigned CLI capability ratings assumes that drainage improvements are feasible, as there are installations of agricultural tile drainage on several parcels within the *Study Area.*

5.7 Land Evaluation and Area Review

5.7.1 City of Ottawa LEAR

The Province's Land Evaluation and Area Review (LEAR) methodology is used by several municipalities across Ontario to identify their potential *prime agricultural areas*. The LEAR methodology is generally customized by municipalities to reflect the agricultural priorities of and characteristics most important to the municipality. A LEAR score is calculated based on a combination of the Land Evaluation (LE) factor and the Area Review (AR) factors.

The City of Ottawa first employed the Ottawa-Carleton Land Evaluation and Area Review for Agriculture (O-C LEAR) in 1998 to identify lands as Potential Agricultural Resource Area. In 2016, the City updated and modified the methodology used to identify its *prime agricultural areas* and designated it as Agricultural Resource Areas.

LEAR Components

LEAR values, or scores, are determined for each evaluation unit (i.e., property) in the rural and agricultural areas of the City. Each property is assigned a LEAR score based on a combination of the LE and AR factors. Land in the LEAR system can range from 0 to 200. Blocks of agricultural lands that exceed the predetermined LEAR threshold value are candidates for inclusion within the City's Agricultural Resource Area designation.

The LE factor is determined by calculating the soil capability points (i.e., the points assigned using the Canada Land Inventory (CLI) classification system, which are then multiplied by the percentage of each CLI Class on the property). The LE component represents 70% of the LEAR score.

The AR factors used in the City of Ottawa's LEAR are:

- AR1 – the percentage of parcel in *agricultural use*;
- AR2 – the percentage of non-conflicting land use; and,
- AR3 – parcel size.

LEAR Threshold Value

The 2016 LEAR uses a threshold value of 125 and above to identify potential lands for inclusion within the Agricultural Resource Area. Those parcels which score 125 or above the threshold value are considered to be candidates for inclusion within the Agricultural Resource Area designation.

City of Ottawa 2016 LEAR Score

The 2016 LEAR score for the Subject Lands was 157. The parcel received 101/140 points for soil capability, 30/30 points for agriculture, 18/20 points for parcel size, and 8/10 points for non-conflicting land uses.

LEAR Update

A detailed soil survey of the Subject Lands was completed on August 13, 2020, in order to refine the County-level soil mapping and interpret the CLI Capability of the land for the production of *common field crops.* Figure 2 shows the results of this soil survey. The area of each soil polygon was measured to determine the percentage of the CLI Classes mapped.

The LEAR score of the Subject Lands was reevaluated using the City of Ottawa's 2016 LEAR methodology. The information used to update the LEAR score is based on:

- The refined soil data for the Subject Lands and the interpretation of the agricultural capability of the soils to calculate the LE component; and,
- The updated land use information to calculate the land use, parcel size, and non-conflicting land use AR factors.

5.7.2 Methodology

Determination of LE Components

The results of the detailed soil survey were used to refine the CLI capability rating of the Subject Lands. The LE component makes up 70% of the overall LEAR score and is based on the percent distribution of each CLI Class on the evaluation unit (i.e., the Subject Lands). The LE score of the Subject Lands was calculated based on the results of the detailed soil survey and the subsequent evaluation of the CLI soil capability was assessed using the Canada Land Inventory (CLI) classification system for agricultural lands. The percentages of each CLI capability class of the Subject Lands were mapped and measured, and the LE score was calculated with the method shown in Table 3.

Table 3. Land Evaluation Scoring

CLI Class	Capability Points	% of Parcel	Parcel Points
1	10	%	*Parcel Points = (Capability Points x %Parcel) x (14/100)*
2	8	%	
3	6.5	%	
4	5.5	%	
5	5	%	
6	4	%	
7, Organic (O) & Disturbed	0	%	
LE Score			*Add Parcel Points to get LE Score*

Determination of AR Factors

AR1 – Land Use

The land use observed on the Subject Lands during the site visit was recorded to enable the calculation of the percentage of land in *agricultural use* (as defined in the City of Ottawa LEAR). The percentage of the Subject Lands in *agricultural use* is used to determine the AR1 – Agricultural Land Use Factor. *Agricultural uses* include areas that have been under active cultivation as well as *pasture*, fences, streams, hedgerows, woodlots that are <2 ha in size, and buildings. It does not include *idle agricultural lands* that have regenerated to early successional old field/shrub vegetation communities (i.e., *scrub land*) or lands that are *wooded* (>2 ha). These lands are not considered to be under active cultivation.

The scoring for this factor is shown in Table 4 below. The points shown in the second column are multiplied by the weight. For parcels that are 85-100% in *agricultural use*, the parcel receives 10 points multiplied by 3 for a total AR1 score of 30. At the other end of the scale, for parcels which have no more than 10% of the land in agricultural production, the AR1 score would be 3 (1 point x 3 weight).

When the LEAR score for the Subject Lands was originally calculated, they were *cultivated* for the production of *common field crops*, however, the landowner has since terminated contracts with tenant farmers, and the Subject Lands are now idle. This is reflected in the recalculation of the LEAR score of the Subject Lands.

Table 4. AR1 - Agricultural Land Use Factor

Percentage of Land in Agricultural Use	Points	Weight	AR1 Score
85 - 100%	10	3	*Points x 3*
70 - <85%	9		
55 - <70%	8		
40 - <55%	7		
25 - <40%	4		
10 - <25%	2		
0 - <10%	1		

AR2 – Non-Conflicting Land Uses

The AR2 factor measures the proportion of non-conflicting land uses within 500 m of the Subject Lands. Non-conflicting land uses include all non-farm land uses with the exception of residential lots, and rural residential subdivisions. This value represents the proportion of land uses surrounding the evaluation unit which are considered "non-conflicting" land uses, and therefore are not considered to be a detriment to agricultural operations within the area. The larger the percentage, the higher the points assigned to the parcel. The scoring method for non-conflicting land use value is shown in Table 5.

The City of Ottawa LEAR report states that "a decision was made to not include urban and village settlement areas as part of the study area." It also states that "All uses identified in the city's land use survey, with the exception of vacant and developed residential lots (severance or subdivision) were considered to be non-conflicting with agriculture." There does not appear to have been any changes in the

percentage of non-conflicting land uses since the City of Ottawa LEAR was created, therefore, there is no difference between the City of Ottawa's AR2 score, and the updated AR2 score.

Table 5. AR2 - Non-conflicting Land Use Scoring

Percentage of 500 m Area in Non-conflicting Land Use	Points	Weight	AR2 Score
100%	10	1	*Points x 1*
85 - 99%	8		
50 - <85%	4		
0 - 50%	0		

AR3 – Parcel Size

Parcel size influences the agricultural potential of a given unit due to the general decrease in viability of farming on smaller parcels. A shown in Table 6, the larger the parcel, the greater the score. The parcel size of the Subject Lands was obtained using the City of Ottawa's LEAR PINs. There does not appear to have been any changes in the parcel size since the City of Ottawa LEAR was created, therefore, there is no difference between the City of Ottawa's AR3 score, and the updated AR3 score. The AR3 points were assigned as shown in Table 6. The points for parcel size are multiplied by the weight (2) which provides the parcel size factor score (parcel size points x weight 2 = parcel size score).

Table 6. Parcel Size Scoring

Parcel Size (ha)	Points	Weight	AR3 Score
>36.4	10	2	*Points x 2*
20.2-36.4	9		
10.1-20.2	6		
4.5-10.1	4		
<4.5	1		

5.7.3 LEAR Results

The LEAR score of the Subject Lands was determined using the 2016 LEAR methodology and is based on the information collected in this study. This includes the refined soils data collected through a detailed soil survey, reconnaissance level land use surveys supplemented with a review of digital aerial photography, and land use management information provided by landowners.

Table 7 summarizes the LE and AR factor scores for the Subject Lands using two different scenarios. The Original Score (Scenario 1) represents the City of Ottawa's score. The Revised Score (Scenario 2) is based on the updated soil survey data collected in this study. This scenario assumes that the lands can be feasibly drained, and that they are no longer in *agricultural use*. Appendix E summarizes the LEAR calculations for Scenarios 1 and 2.

Table 7. LEAR Evaluation Scenario Summary				
Scenario	**Score**	**LE**	**AE**	**LEAR**
1	Original	101.14	56	157.14
2	Revised	94.37	29	123.37

Scenarios 1 & 2

As shown in Table 7, the revised LEAR has decreased the score of the Subject Lands by 33.77; from 157.14 in the 2016 City of Ottawa LEAR to 123.37 with the updated LEAR evaluation. This brings the LEAR score of the Subject Lands below the 125-point threshold used by the City of Ottawa to identify the Agricultural Resource Area.

5.8 Land Use

A reconnaissance level land use survey was completed on August 13, 2020. The land use survey identified the number and type of agricultural operations (both active and *retired*), *agriculture-related uses, on-farm diversified uses*, and the extent and type of *non-agricultural lands uses* within the *Study Area.* The crop types observed within the *Study Area* were recorded and mapped.

The purpose of the land use survey is to document the mix of *agricultural* and *non-agricultural uses* in the Subject Lands and *Study Area*; identify agricultural operations that may be sensitive to the introduction of new land uses; and identify *livestock facilities* to calculate the *MDS* setback requirements. Figure 3 shows land uses and crop types observed. All observed land uses are numbered, and short descriptions of these operations are included in the land use survey notes in Appendix F.

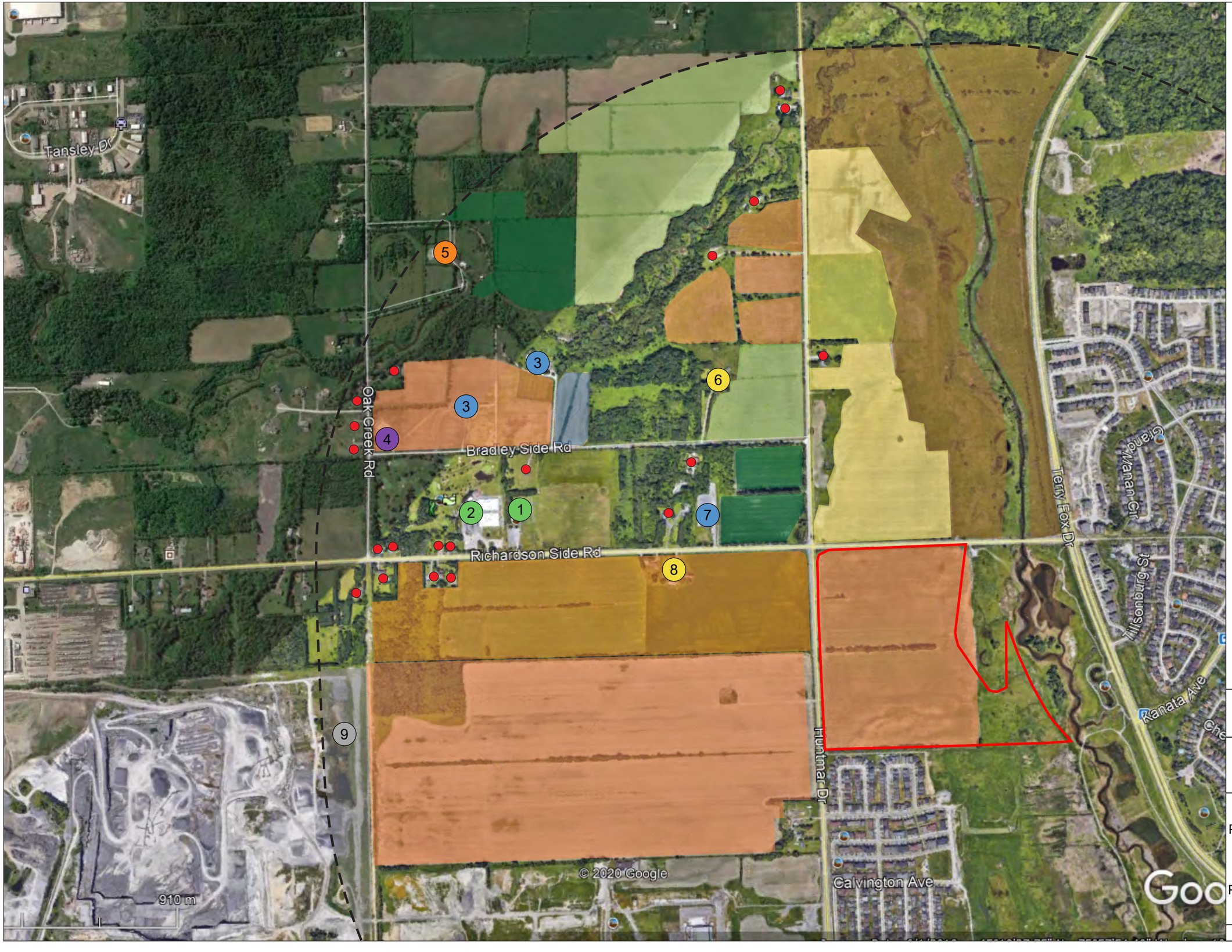
Three *agricultural uses* were identified during the land use survey. These included one *unoccupied livestock facility*, and two *remnant* farms.

No *agriculture-related* or *on-farm diversified uses* were identified during the land use survey or desktop review.

In addition to approximately 20 *non-farm residences* observed, six *non-agricultural uses* were identified within the *Study Area.* These uses include two recreational uses, two institutional uses, one quarry operation, and one utility.

5.8.1 Agricultural Uses

The *PPS* defines *agricultural uses* as "the growing of crops, including nursery, biomass and horticultural crops; raising of livestock; raising of other animals for food, fur, or fibre, including poultry of fish; aquaculture,; apiaries; agro-forestry; maple syrup production; and associated on-farm buildings and structures, including but not limited to livestock facilities, manure storages, value-retaining facilities and accommodations for full-time farm labour when the size and nature of the operation requires additional employment."



Legend

Subject Lands

1500 M Study Area

Crop Pattern

- Winter Wheat
- Corn
- Soybean
- Cultivated
- Idle
- Scrub
- Disturbed

Agricultural Uses

- Unoccupied Livestock Facility
- Remnant Farm

Non-Agricultural Uses

- Recreational
- Institutional
- Utility
- Quarry
- Non-farm Residence

0 250 M 500 M

1:10,350

Figure 3 - Land Use

Agricultural Impact Assessment for Kanata West Lands, City of Ottawa

Prepared for: **MINTO COMMUNITIES INC.**

Prepared by: COLVILLE CONSULTING INC.

DATE: June 2025

FILE:C20061

Farn types were noted and identified as either active or *retired* (e.g., *unoccupied livestock facilities*) *livestock facilities*, *cash crop* operations, or *hobby farms. Retired farm operations* were evaluated to determined whether they should be considered an *unoccupied livestock facility* or a *remnant* farm. *Remnant* farms have no infrastructure that is suitable for housing *livestock* and the *MDS formulae* is not applied. The infrastructure for an *unoccupied livestock facility* is suitable for housing *livestock,* and as such, the *MDS formulae* applies to these facilities.

Three *agricultural uses* were identified within the *Study Area*. These include one *unoccupied livestock facility* (#5), and two *remnant* farms (#6 and #8).

No *agricultural uses* were identified on the Subject Lands during the land use survey, or desktop review.

5.8.2 Agriculture-Related Uses

Agriculture-related uses are farm-related commercial and industrial uses. As defined in the *PPS*, these are uses "that are directly related to farm operations in the area, support agriculture, benefit from being in close proximity to farm operations, and provide direct products and/or services to farm operations as a primary activity." These uses may include uses such as:

- retailing of agriculture-related products (e.g., farm supply co-ops, farmers' markets, and retailers of value-added products like wine or cider made from produce grown in the area);
- *livestock* assembly yards;
- farm equipment repair shops;
- industrial operations that process farm commodities from the area such as abattoirs, feed mills, grain dryers, cold/dry storage facilities and fertilizer storage facilities, which service agricultural area;
- distribution facilities;
- food and beverage processors (e.g., wineries and cheese factories); and
- agricultural biomass pelletizers.

No *agriculture-related uses* were identified within the Subject Lands, nor within the *Study Area*.

5.8.3 On-Farm Diversified Uses

The *PPS* defines *on-farm diversified uses* as "uses that are secondary to the principal agricultural use of the property and are limited in area. On-farm diversified uses include, but are not limited to, home occupations, home industries, Agri-tourism uses, uses that produce value-added agricultural products, and electricity generation facilities and transmission systems, and energy storage systems."

No *on-farm diversified uses* were identified within the Subject Lands, nor within the *Study Area*.

5.8.4 Non-Agricultural Uses

Non-agricultural uses include *non-farm residences*, residential clusters, hamlets and *settlement areas*, municipal utilities, commercial and industrial operations, recreational uses, and institutional uses. Approximately 20 *non-farm residences* were observed within the *Study Area*.

Excluding the *non-farm residences*, six *non-agricultural uses* were identified. These include two recreational uses (#1 and #2), two institutional uses (#3 and #7), one quarry operation (#9), and one utility (#4).

No *non-agricultural uses* were identified on the Subject Lands during the land use survey, or desktop review.

5.8.5 Land Use Summary

Table 8 below summarizes the types of land uses observed within the Subject Lands and *Study Area*.

Table 8. Summary of Observed Land Uses

	Total Number	Active	Empty or Remnant
Agricultural	2	0	1 – Unoccupied Livestock Facility 2 – Remnant Farm
Agriculture-Related	0	0	0
On-farm Diversified	0	0	0
	Total Number	**Type**	
Non-Agricultural	26	2 – Recreational 2 – Institutional 1 – Quarry Operation 1 – Utility 20 – Non-farm Residential	

5.8.6 Cropping Pattern

The land use survey completed on August 13, 2020, identified crops based on observations of crop stubble and other identifying features. As shown in Figure 3, the crops grown in the *Study Area* are predominantly a mix of corn, soy and winter wheat, as well as *cultivated* lands where land is being used for agricultural crops, but specific crops being grown were not readily apparent. There are also areas of *scrub land, wooded* areas, disturbed lands, and natural heritage features. The Subject Lands are idle and are not being used for agricultural production.

5.9 Land Improvements

OMAFA's Agricultural Information Atlas (AgMaps) provides artificial drainage mapping for the Province. This online tool was accessed to obtain drainage mapping for the Subject Lands and *Study Area*. Figure 4 shows the drainage improvements within the Subject Lands and *Study Area.*

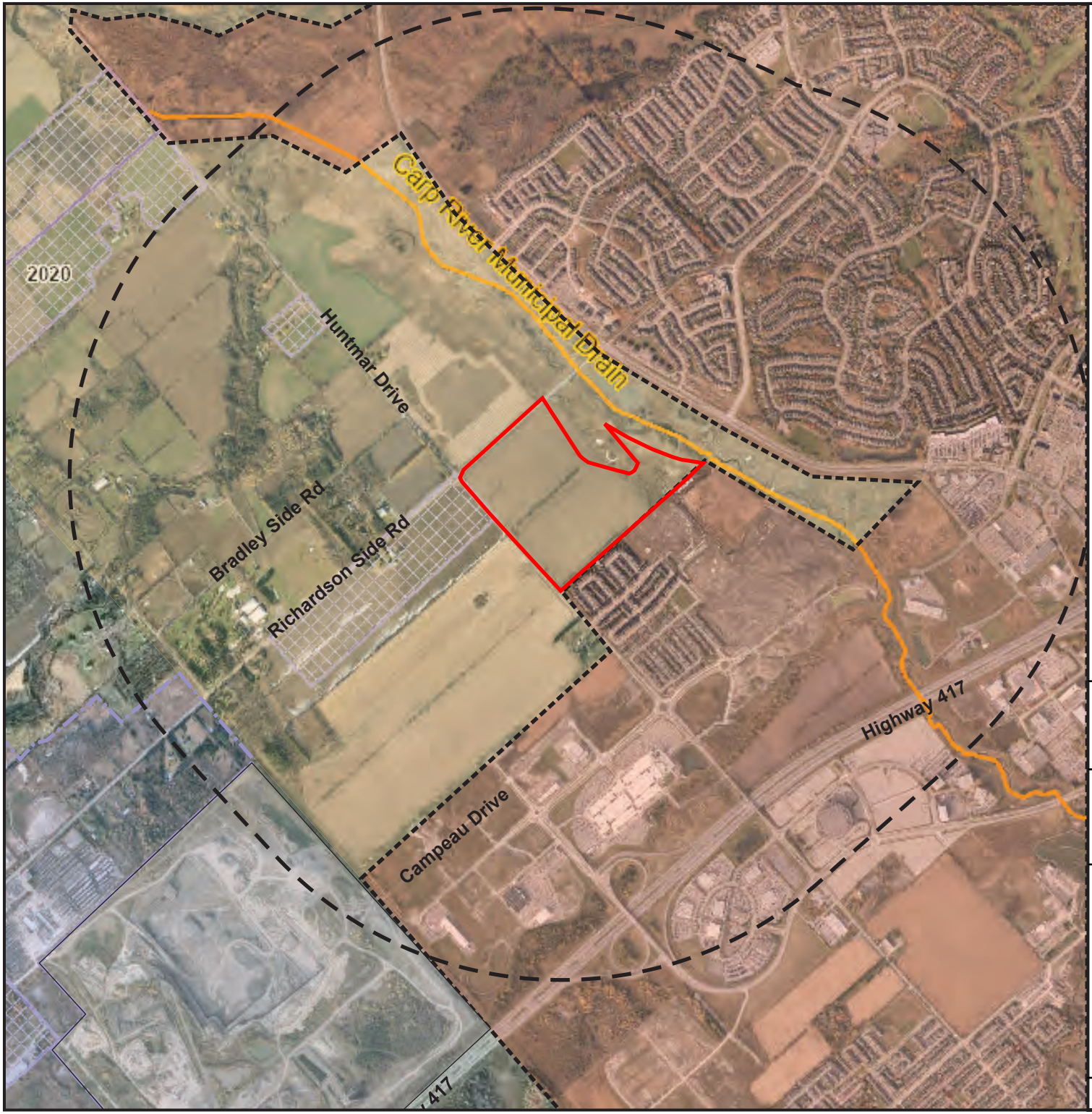
5.9.1 Drainage Improvements on Subject Lands

According to OMAFRA's online mapping tool AgMaps, there are no investments in tile drainage on the Subject Lands and there are no constructed drains on or adjacent to the property.

5.9.2 Drainage Improvements in Study Area

According to OMAFA's online mapping tool, AgMaps, the *Study Area* contains two areas of systemic tile drainage. One installation is located southwest of the Subject Lands and is approximately 25.02 ha in size. A smaller area of systemic tile drainage is present northwest of the Subject Lands and is approximately 3.28 ha.

According to the AgMaps database, there is one constructed drain within the *Study Area.* The Carp River Municipal Drain is located northeast of the Subject Lands, and follows the Carp River.



Legend

- Subject Lands
- 1500 Meter Study Area
- Urban Boundary
- Agricultural Resource Area
- Rural Employment Area
- Bedrock Resource Area

Agricultural Tile Drainage

- Random
- Systematic

Figure 4
Land Improvements

Agricultural Impact Assessment for
1700 Richardson Side Road, City of Ottawa

Prepared for:

MINTO COMMUNITIES INC.

Prepared by:

COLVILLE CONSULTING INC.

DATE: June 2025

FILE: C20061

5.9.3 Other Land Improvements

No other investments in land improvements within the Subject Lands nor *Study Area* were identified using the AgMaps portal or observed during the land use survey.

5.10 Fragmentation of Agricultural Lands

Fragmentation of agricultural lands can have a negative impact on the viability of agricultural lands and their long-term preservation for agricultural purposes. Fragmentation of farmlands can diminish the economic viability of the agricultural area by reducing farming efficiency and increasing operating costs for farmers who must manage multiple small, separated parcels. Larger farm parcels can accommodate a wider range of agricultural activities and ensure long term viability of the property. In contrast, smaller farm parcels cannot offer the same flexibility and may not be viable as standalone parcels. Generally, smaller farm parcels cannot sustain a family farm without a secondary source of income (off farm) to maintain the agricultural operation.

Additionally, agricultural areas which have been fragmented often have a higher occurrence of *non-agricultural land uses*, which in turn can result in more frequent occurrences of conflict arising between *agricultural* and *non-agricultural land uses*. Agricultural areas with lower levels of fragmentation are considered to be more viable economically for *agricultural uses* and generally have fewer sources of *non-agricultural land use* conflicts. In most cases, these areas have a higher priority for protection. High levels of fragmentation in an agricultural area lowers the area's agricultural priority.

The *PPS* planning policies recognize the impact of fragmentation on agricultural lands and try to minimize the fragmentation of agricultural lands for *non-agricultural uses*. For example, the *PPS* policies do not permit lot creation in *prime agricultural areas* for residential purposes. New permitted *development* in *prime agricultural areas* should avoid further fragmentation of the agricultural land base whenever possible.

OMAFRA typically uses 250 hectares as a basis for delineating a minimum area that would be included within a prime agricultural area or rural land use designation. The City of Ottawa's 2016 LEAR also uses a land area of 250 hectare as a minimum block for the Agricultural Resource Area designation.

The Subject Lands are a moderately sized agricultural parcel that is not currently in *agricultural use*. The Subject Lands are located immediately north of the City of Ottawa settlement area and immediately west of the Carp River and floodplain lands owned by the City. The lands owned by the City extend north of the Subject Lands, creating smaller, fragmented agricultural parcels. To the west of the Subject Lands, there is a mix of large agricultural sized parcels (>40 ha) and smaller, non-agricultural parcels which are predominately wooded or developed for non-agricultural uses, with a smaller portion being used for agriculture.

Lands within the Study Area are considered to be highly fragmented, particularly those located east of Huntmar Drive. Fragmentation has primarily occurred through severance of agricultural parcels, the Carp River, and the floodplain lands owned by the City. As a result, the level of fragmentation reduces the agricultural priority of the lands and increases the potential for conflict increases with non-agricultural practices.

5.11 Minimum Distance Separation

5.11.1 Application of MDS

The *Minimum Distance Separation* is a tool used to minimize potential impacts and conflicts between *non-agricultural* and *agricultural land uses*. In areas outside of approved *settlement areas*, new *non-agricultural land uses* are required to meet the *Minimum Distance Separation I formula* as contained in OMAFRA's The Minimum Distance Separation Implementation Document: Formulae and Guidelines for Livestock Facility and Anaerobic Digester Setbacks, Publication 853 (2016) document. It is applied to all farm operations that have infrastructure that is in a condition that is capable of housing *livestock,* and/or have an *anaerobic digester* on-site.

The *MDS I formula* provides the *minimum separation distance* between existing *livestock facilities* (including *unoccupied livestock facilities*) and new *non-agricultural land uses* proposed in a rural or agricultural land use designation. It deals specifically with odour, and does not account for noise, dust, or other farm-generated products. An *unoccupied livestock facility* is one that may be *retired* or no longer used to house *livestock*; however, it appears to be capable of housing *livestock*. The *MDS* is not applied to *remnant* farms with barns that are in poor condition and not suitable for housing *livestock.*

As previously stated, although the application of the *MDS I formula* is not required through policy, it has been applied to all *livestock facilities* capable of housing *livestock* observed within 1,500 m of the Subject Lands in order to contribute to the evaluation of the agricultural priority of the Subject Lands.

5.11.2 MDS Results

The *MDS I formula* was applied to one *livestock facility* (#5) within 1.5 km of the Subject Lands. The *MDS I formula* was not applied to farm operations with barns that did not appear to be structurally sound and capable of housing *livestock,* nor *livestock facilities* outside of the 1.5 km *Study Area.*

Figure 5 shows the *MDS I* setback requirements for the identified *livestock facility.* As shown in Figure 5, no *MDS I* setbacks encroach into the Subject Lands. The *MDS I* setback requirement generated by Operation #5 is 182 m; the *livestock facility* is located approximately 1,447 m west of the Subject Lands. Therefore, the Subject Lands are able to comply with the MDS I formula. The *MDS I* report generated by OMAFA's AgriSuite software can be found in Appendix G.

5.12 Economic and Community Benefits of Agriculture

Identifying the economic and community benefits associated with agriculture in the *Study Area* is an important consideration and informs the impacts associated with the proposed redesignation. The agriculture and agri-food sector is one of the largest primary goods producing sectors and at one time played a larger role in the City of Ottawa's economy. According to Census of Agriculture data, the total number of farms in the City of Ottawa decreased from 1128 in 2011, to 1045 in 2016, and 906 farms in 2021. These farms employ residents from the City of Ottawa, contributing economically to the area and supporting the *agri-food network*. According to the City's Q2 2024 Economic Development Update, the agriculture sector employed the second fewest members of the population compared to all other labour sectors. The sector which employed the fewest number of individuals was the forestry, fishing, mining, quarrying, oil and gas sector.

Legend

- Subject Lands
- 1500 M Study Area

Agricultural Uses

- Unoccupied Livestock Facility
- Remnant Farm

Non-Agricultural Uses

- Recreational
- Institutional
- Utility
- Quarry
- Non-farm Residence

MDS I Setbacks

- Livestock Barn
- Manure Storage

N
W E
S

0 250 M 500 M

1:10,350

Figure 5 - MDS

Agricultural Impact Assessment for
1700 Richardson Side Road, City of Ottawa

Prepared for: **MINTO COMMUNITIES INC.**

Prepared by: COLVILLE CONSULTING INC.

DATE: June 2025 | FILE:C20061

As of 2021, the agriculture, forestry, fishing and hunting industry employed 2,205 individuals within the City of Ottawa, which is an increase from the 2,090 individuals employed in 2016. There were approximately 4,630 agri-food businesses in 2021, which is a slight decrease from the 4,682 agri-food businesses in 2016.

As of 2021, of the 906 total farms within the City of Ottawa, 24 farms were valued under $200,000, 72 farms were valued between $200,000 and $499,999, 220 farms were valued between $500,000 and $999,999, and 590 farms were valued $1,000,000 and over. Over the past three census periods, the number of farms valued at $1,000,000 and over has increased, with the number of farms valued under $1,000,000 decreasing.

The Subject Lands are located adjacent to the urban boundary of the City of Ottawa, and while agriculture in the area still provides some economic and community benefits, it is overshadowed by the economic benefits provided by the various industrial and commercial land uses in the area within the urban boundary.

The Subject Lands are not currently *cultivated*, and do not contribute to the City's agricultural economy. The proposed redesignation of the Subject Lands would maintain the Subject Lands' ability to be used for agricultural purposes. Therefore, it is expected that the proposed redesignation will have no impact on the City's agricultural economy.

6. ASSESSMENT OF AGRICULTURAL PRIORITY

The Subject Lands are located within a *prime agricultural area*; therefore, an assessment of the agricultural priority of the Subject Lands is required in order to be consistent with OMAFRA's Draft Agricultural Impact Assessment Guidance Document. This analysis involves an assessment of whether the lands are part of a *specialty crop area*, the soil capability relative to other lands within the *Study Area*, the level of investment in agricultural infrastructure and land improvements, the parcel size, presence of existing *non-agricultural uses*, ability to minimize potential conflict (e.g., meeting the *MDS I* setback requirements), and the zoning of the parcel.

Factors that increase the agricultural priority of the Subject Lands include the moderately high agricultural capability of the lands (CLI Class 2 and Class 3), and the large size of some of the neighbouring inactive agricultural lots.

However, we have concluded that the Subject Lands are lower priority agricultural lands for the following reasons:

1. The Subject Lands are idle lands and are not used for agricultural production;
2. There are no investments in agricultural infrastructure or land improvement within the Subject Lands;
3. The Subject Lands are located in close proximity to *non-agricultural land uses* within the City of Ottawa's Urban Area to the south and east. The close proximity of the *non-agricultural uses* significantly increases the potential for conflicts with agriculture, and makes these lands less desirable to farm than other lands further removed from these non-agricultural influences;
4. The Subject Lands are located adjacent to the Carp River and floodplain lands owned by the City which cannot be used for agricultural production. The Subject Lands are also partially located within the floodplain of the Carp River, which has historically been unfeasible to cultivate;
5. The Subject Lands are located at the intersection of Huntmar Drive and Richardson Side Road, both of which receive high volumes of non-farm traffic. High traffic volumes make moving farm machinery difficult and dangerous at times. Traffic volumes are expected to increase as *development* within the *Study Area* continues;
6. The lands north of Richardson Side Road are highly fragmented, primarily due to the presence of the Carp River;
7. There are no active agricultural operations located within 1.5 km of the Subject Lands. The Subject Lands are able to comply with the MDS I setback calculated for the one livestock facility capable of housing livestock in the Study Area; and
8. The close proximity to the City of Ottawa *settlement area* boundary and *non-agricultural uses* creates potential *MDS II* setback constrains that limit the use of the Subject Lands for housing *livestock* and *manure storage.*

7. ASSESSMENT OF IMPACTS TO AGRICULTURE

Farm operations can be adversely impacted by expanding settlement areas or new non-agricultural *development* on adjacent lands. Non-agricultural *development* adjacent to agricultural lands can cause disruptions to existing farm practices as a result of construction activity, an increase in non-farm traffic, incidence of trespass and vandalism, and increased levels of noise, dust, and lighting. Farmers may also experience an increase in nuisance complaints from residents and/or patrons of non-agricultural facilities. These complaints are often related to issues such as odour, light, dust, and noise generated through *normal farm practices*.

7.1 Direct Impacts

7.1.1 Prime Agricultural Lands

The Subject Lands are approximately 31.4 ha in size and are designated Agricultural Resource Area in the City of Ottawa Official Plan. The Subject Lands are comprised entirely of *prime agricultural lands.* No *development* is currently proposed on the Subject Lands; therefore, there will be no loss of *prime agricultural lands* as a result of the proposed redesignation.

7.1.2 Agricultural Infrastructure

There is no agricultural infrastructure present on the Subject Lands. Therefore, there will be no loss of agricultural infrastructure as a result of the proposal.

7.1.3 Agricultural Land Improvements

No agricultural land improvements such as tile drainage have been identified on the Subject Lands. Therefore, there will be no loss of agricultural improvements associated with the proposal.

7.1.4 Loss of Crop Land

No portion of the Subject Lands are currently *cultivated.* The retirement of lands from agricultural production is not uncommon in this area. The redesignation of the Subject Lands to Rural Countryside would maintain the lands' ability to be *cultivated*. Therefore, the proposed redesignation will have no impact associated with the loss of crop land.

7.2 Indirect Impacts

Potential impacts to adjacent farm operations and farm practices are considered to be indirect impacts. These would include changes to the surface drainage that could impact adjacent lands, disruption to farm traffic and access to adjacent agricultural fields, instances of trespass and vandalism, and conflicts arising from farm odour and other nuisance complaints often received by farmers in close proximity to *non-agricultural uses*.

7.2.1 Disruption to Groundwater and Surficial Drainage Features

Although no surficial drainage features were observed on the Subject Lands, the Carp River is located immediately to the east of the Subject Lands. There is no *development* proposed on the Subject Lands. Redesignation of the Subject Lands to Rural Countryside will not result in changes to surficial drainage. Therefore, there will be no impact to groundwater or surficial drainage features.

7.2.2 Disruption to Farm Operations

No *development* has been proposed on the Subject Lands at this time. There will be no negative impact on farm operations due to the proposed redesignation of the Subject Lands.

The proposal will have no impact on the flexibility of surrounding lands to accommodate changes in types of farming. The adjacent lands will not be affected and will still be able to continue *normal farm practices* without limitation. There will be no impact on existing farm wells, irrigation ponds, or ponds and other waterbodies used to provide *livestock* with sources of water in the surrounding area. No impacts related to noise, dust, and light, will be generated by the proposal.

7.2.3 Transportation Impacts

Within the *Study Area*, Huntmar Drive and Richardson Side Road already experience a substantial amount of non-farm traffic. Redesignation of the Subject Lands will not result in an increase traffic volume to the surrounding area.

7.2.4 Trespass and Vandalism

Farm operations within the *Study Area* may already have to deal with the potential for trespass and vandalism due to the proximity of the City of Ottawa *settlement area* and the abundance of *non-agricultural uses* in the surrounding area. People walking their pets in farmer's fields, crossing and damaging fences, rutting fields with dirt bikes and all-terrain vehicles, and pets wandering away and straying onto neighbouring farm properties and chasing or bother *livestock*, are all examples of trespass and vandalism that may occur. There is also a chance that debris (litter) can end up in farmer's fields from adjacent *non-agricultural uses*. No *development* has been proposed on the Subject Lands at this time. As a result, the proposal will not generate impacts associated with trespass or vandalism.

7.2.5 Minimum Distance Separation

MDS I setbacks have been calculated for all *manure storage* systems, *anaerobic digesters*, and *livestock facilities* capable of housing *livestock* in the *Study Area*. Although *MDS I* setbacks do not apply to the proposed redesignation, no *MDS* setbacks encroach into the Subject Lands.

7.2.6 Economic and Community Impacts

Local and regional economies and agricultural communities can be adversely impacted by the introduction of new *development* on agricultural lands as a result of the loss of farmland, fragmentation, removal of agricultural investments, commodities, services, and impacts to other farming opportunities.

The influence of agriculture is waning in the *Study Area*, and there is no *development* proposed on the Subject Lands at this time. Additionally, the Subject Lands are not being used for agricultural production. Therefore, the proposed redesignation will have no impact on the agricultural economy.

7.2.7 Land Use Compatibility

The proposed redesignation of the Subject Lands to Rural Countryside will not create an potential impacts associated with land use compatibility. The Rural Countryside designation will maintain the Subject Lands' ability to be used for agriculture and no non-agricultural *development* is being proposed at this time.

7.3 Summary of Impacts

The potential direct and indirect impacts identified are summarized in Table 9 along with the potential degree of impact, mitigation measures to avoid or minimize the potential impact and the resulting anticipated net impact.

Table 9. Summary of Impacts

Potential Impact	Potential Degree of Impact	Mitigation Measure	Anticipated Net Impact
Direct Impacts			
Loss of *prime agricultural land*	Low	• None required • There is no *development* currently proposed on the Subject Lands	No impact
Loss of agricultural infrastructure	Low	• None required • There is no agricultural infrastructure present on the Subject Lands	No impact
Loss of agricultural land improvements	Low	• None required • No agricultural land improvements present on the Subject Lands	No impact
Loss of cropland	Low	• None required • Lands are idle and no *development* is currently proposed	No impact
Indirect Impacts			
Surficial Drainage	Low	• None required	No impact
Disruption to Farm Operations	Low	• None required	No impact
Non-farm traffic	Low	• None required	No impact
Trespass, Vandalism, and Stray Pets	Low	• None required	No impact
Noise, Dust & Light	Low	• None required	No impact
Land Use Compatibility	Low	• None required	No impact
Changes to Microclimatic Conditions	Low	• None required • No change in microclimatic conditions	No impact
Conflict with MDS formula	Low	• None required	No impact
Economic	Low	• None required	No impact
Wells, Irrigation, water bodies	Low	• None required	No impact

8. CONSISTENCY WITH AGRICULTURAL POLICIES

8.1 Provincial Planning Statement

Section 4.3.4.1 of the *Provincial Planning Statement* states that "Planning authorities may only exclude land from prime agricultural areas for expansions of or identification of settlement areas in accordance with policy 2.3.2." The *PPS* also requires an *Agricultural System* approach for municipalities to maintain the agricultural land base, which includes *prime agricultural areas*, *specialty crop areas*, and *rural lands.*

The Province approved the updated City of Ottawa Official Plan in November of 2022, which allows for the City to redesignate Agricultural Resource Areas to Rural Countryside outside of a municipal comprehensive review if certain criteria can be met. Re-designating land as Rural Countryside would not exclude it from the *Agricultural System.*

Although the *PPS* does not provide a mechanism for removing lands from a *prime agricultural area*, with the exception of *settlement area* boundary expansion, the Province approved the City of Ottawa Official Plan, which does provide this mechanism. In this case, the policies of the City of Ottawa Official Plan take precedent.

8.2 City of Ottawa Official Plan

The City of Ottawa Official Plan recognizes the Rural Transect, which includes lands designated as Agricultural Resource Area and Rural Countryside. The entirety of the Subject Lands are located within the Rural Transect and are designated Agricultural Resource Area.

The City of Ottawa Official Plan (Section 9.1.1.3.b) allows for an Official Plan Amendment to remove land from an Agricultural Resource Area designation if it can be demonstrated that the land does not meet the requirements of an Agricultural Resource Area through an area-specific assessment (with agreement by the City for sites under 250 ha). The area-specific assessment needs to demonstrate that the lands are not part of a *prime agricultural area* by using new information that alters the LEAR score, and that any redesignation avoids adverse impacts to adjacent agricultural land and operations.

This AIA has assessed the potential impacts of the proposed redesignation and the recalculated the LEAR score of the Subject Lands. The proposed redesignation will have no impacts of surrounding agricultural lands or agricultural operations.

The updated LEAR evaluation of the Subject Lands has resulted in a substantial change in the LEAR score. Prior to the update, the City of Ottawa calculated the LEAR score of the Subject Lands to be 157.14. Using new information collected during the detailed soil survey and land use survey, the LEAR score of the Subject Lands was calculated to be 123.37; a decrease of 33.77 points. The LEAR score of the Subject Lands is below the 125-point threshold identified by the City of Ottawa for inclusion in the Agricultural Resource Area designation.

The Subject Lands are <250 ha in size, therefore, the City of Ottawa must agree to the size of the proposed redesignation. However, the City of Ottawa may consider redesignating additional lands located along the Carp River, as these lands would likely be good candidates for inclusion in the Rural Countryside and would allow for a logical transition to the Agricultural Resource Area to the west of the Subject Lands.

9. CONCLUSION

The Subject Lands are designated Agricultural Resource Area in the City of Ottawa Official Plan. The LEAR score of the Subject Lands was recalculated to be 123.37, which is below the 125-point threshold value used by the City of Ottawa to identify its Agricultural Resource Area designation. In addition to the factors used to determine the LEAR score of the Subject Lands, there are a number of factors which reduce the agricultural priority of the Subject Lands.

The Subject Lands are not used for agricultural production, they are located in close proximity to a significant number of non-agricultural uses and the City of Ottawa *settlement area* boundary, there are no investments in agricultural infrastructure or agricultural land improvements, and they are located at the intersection of Huntmar Drive and Richardson Side Road, which experience high volumes of non-agricultural traffic.

In addition to being located in close proximity to the City of Ottawa *settlement area* boundary, the Subject Lands are located west of the Carp River and partially located within its floodplain. The lands located between the eastern and southern boundaries of the Subject Lands and the existing City of Ottawa *settlement area* boundary are also designated Agricultural Resources Area but cannot be cultivated for agricultural production. North of the Subject Lands, small agricultural parcels were identified, which have been fragmented by the Carp River.

The City could consider lands additional to the Subject Lands for inclusion within the Rural Countryside designation to provide a logical transition from urban lands to Agricultural Resource Area lands. This could include lands located along the Carp River and the smaller agricultural parcels located north of Richardson Side Road. Given that the Subject Lands have a LEAR score that is below the 125-point threshold value used by the City of Ottawa LEAR to identify its Agricultural Resource Area designation, along with the additional factors which reduce the Subject Lands' agricultural priority, it is our opinion, from an agricultural perspective, that the redesignation of the Subject Lands to Rural Countryside is a reasonable consideration.

Respectfully submitted by:

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10. GLOSSARY OF TERMS

Agricultural uses:* - the growing of crops, including nursery, biomass, and horticultural crops; raising of *livestock*; raising of other animals for food, fur or fibre, including poultry and fish; aquaculture; apiaries; agro-forestry; maple syrup production; and associated on-farm buildings and structures, including, but not limited to livestock facilities, manure storages, value-retaining facilities, and housing for farm workers, when the size and nature of the operation requires additional employment.

Agriculture-related uses:* - those farm-related commercial and farm-related industrial uses that are directly related to farm operations in the area, support agriculture, benefit from being in close proximity to farm operations, and provide direct products and/or services to farm operations as a primary activity.

Agricultural system: - means a system comprised of a group of inter-connected elements that collectively create a viable, thriving agri-food sector. It has two components:

- An agricultural land base comprised of *prime agricultural areas*, including *specialty crop* areas. It may also include *rural lands* that help to create a continuous productive land base for agriculture.
- An *agri-food network* which includes agricultural operations, *infrastructure*, services, and assets important to the viability of the agri-food sector.

Agri-food network:* - a network within the *agricultural system* that includes elements important to the viability of the agri-food sector such as regional *infrastructure* and transportation networks; agricultural operations including on-farm buildings and primary processing; infrastructure; agricultural services, farm markets, and distributors; and vibrant, agriculture-supportive communities.

Agri-tourism uses:* - means those farm-related tourism uses, including limited accommodation such as a bed and breakfast, that promote the enjoyment, education or activities related to the farm operation.

Anaerobic digester:* - A permanent structure designed for the decomposition of organic matter by bacteria in an oxygen-limiting environment.

Cash crop: - means a crop being produced for income purposes and not to supplement a livestock operation by contributing to feed requirements.

Common Field Crops: - Common field crops in Ontario include corn; soybeans; small grains and perennial forages (e.g., hay & pasture).

Cultivated: - means lands that have recently been under active agricultural production, however, depending on the season or growth stage of the crop during the land use survey or through aerial photographic interpretation the crop type could not be determined.

Development: - means the creation of a new lot, a change in land use, or the construction of buildings and structures, requiring approval under the Planning Act; but does not include activities that create or maintain infrastructure authorized under an environmental assessment process; or works subject to the Drainage Act.

Dwelling:* - Any permanent building that is used, or intended to be used, continuously or seasonally, as a domicile by one or more persons and usually containing cooking, eating, living, sleeping, and sanitary facilities.

Forage/Pasture: - means a crop that consists of either pastureland, including rough grazing, or hay crops including silage and haylage.

Hobby farm: - A residential dwelling, with or without accessory buildings, which may include some crop production for personal consumption or limited sale; and/or small numbers of livestock raised for personal consumption, pleasure, or limited sale. A hobby farm normally will generate little or no income and as such may not have a Farm Business Registration Number.

Idle agricultural lands: - means lands that have not been used for agricultural production for at least five years (estimated).

Livestock:* - includes dairy, beef, swine, poultry, horses, goats, sheep, ratites, fur-bearing animals, deer & elk, game animals, birds, and other animals.

Livestock facility:* - means one or more barns or permanent structures with livestock-occupied portions, intended for keeping or housing livestock. A livestock facility also includes all manure or material storages and anaerobic digesters.

Manure Storage*: - A permanent storage which is structurally sound and reasonable capable of storing manure and which typically contains liquid manure (<18% dry matter) or solid manure ((≥18% dry matter), and may exist in a variety of:

- Locations (under, within, nearby, or remote from barn);
- Materials (concrete, earthen, steel, wood);
- Coverings (open top, roof, tarp, or other materials);
- Configurations (rectangle, circular); and,
- Elevations (above, below, or partially above grade).

Minimum Distance Separation (MDS) formulae: - formulae and guidelines developed by the province, as amended rom time to time, to separate uses so as to reduce incompatibility concerns about odour from livestock facilities.

Minimum Distance Separation (MDS) I formulae: - used to determine the minimum distance separation for new development from any existing and some former livestock facilities.

Minimum Distance Separation (MDS) II formulae: - used to determine the minimum distance separation for new or expanding livestock facilities from existing non-farm land uses.

Morainal till: - generally a compact, poorly sorted, and poorly stratified material deposited by glacial action.

Non-agricultural uses:* - Buildings designed or intended for a purpose other than an *agricultural use*; as well as land, vacant or otherwise not yet fully developed, which is zoned or designated such that the principal or long-term use is not intended to be an *agricultural use*, including, but not limited to: commercial, future urban development, industrial, institutional, *open space uses*, *recreational uses*, *settlement area*, *urban reserve*, etc.

Non-farm residential (NFR): - means residential buildings and lots not associated with a farm operation such as farm retirement lots/severances and/or other residences in the Agricultural and Rural Area. Second farm residences for farm help would be considered a farm residence if it is on an existing farm operation.

Normal farm practices:* - means a practice, as defined in the *Farming and Food Production Protection Act, 1998*, that is conducted in a manner consistent with proper and acceptable customs and standards as established and followed by similar agricultural operations under similar circumstances; or makes use of innovative technology in a manner consistent with proper advanced farm management practices. *Normal farm practices* shall be consistent with the *Nutrient Management Act, 2002* and regulations made under that Act.

Prime agricultural area:* - means an area where *prime agricultural land* predominates. Prime agricultural areas may also be identified through an alternative agricultural land evaluation system approved by the Province.

Prime agricultural land:* - means land that includes *specialty crop lands* and/or Canada Land Inventory Class 1, 2 and 3 soils, in this order of priority for protection.

Provincial Planning Statement, 2024: - the Provincial Planning Statement (PPS), 2024 is a streamlined province-wide land use planning policy framework that replaces both the *Provincial Policy Statement, 2020* and *A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019* while building upon housing-supportive policies from both documents. The PPS 2024 provides municipalities with the tools and flexibility they need to build more homes. It enables municipalities to:

- plan for support development, and increase the housing supply across the province;
- align development with infrastructure to build a strong and competitive economy that is investment-ready;
- foster the long-term viability of rural areas; and
- protect agricultural lands, the environment, public health and safety.

Remnant: - means a location where one or more farm buildings once stood. All or some of the buildings have fallen, are severely structurally unsound and/or been removed. No MDS would be applied to a remnant farm operation.

Retired farm operation: - means a former farm operation whose buildings or farm related structures remain; however, it has either been converted to a non-agricultural use; would require significant upgrades and investment to modernize; or it is in poor condition and not suitable for agricultural uses. The MDS may still apply if it is a former livestock facility.

Rural lands:* - means lands which are located outside *settlement areas,* and which are outside *prime agricultural areas*.

Scrub land: - means lands that are no longer farmed and woody species (young trees and shrubs) have begun regenerating and/or sparsely treed areas.

Settlement areas:* - means urban areas and rural settlement areas within municipalities (such as cities, towns, villages, and hamlets). Ontario's *settlement areas* vary significantly in terms of size, density, population, economic activity, diversity and intensity of land uses, service levels, and types of infrastructure available. Settlement areas are:

a) built up areas where development is concentrated, and which have a mix of land uses; and

b) lands which have been designated in an official plan for development over the long term.

Soil horizon: - a layer of soil, approximately parallel to the land surface, which differs from adjacent layers in properties such as texture, colour, structure, etc. As an example, the surface horizon of a mineral soil is recorded as the "A" horizon. If the surface is ploughed then the suffix p is used (i.e., Ap) if the surface has not been ploughed, as in a forest soil, a humic layer generally develops and an eluviated light coloured soil horizon often forms immediately below. These horizons are identified with the suffix h is used (i.e., Ah) and e (i.e., Ae), respectively. The weathered portion of the profile below the A horizons is identified as the "B" horizon and the unweathered, parent material is the "C" horizon.

Soil profile: - a vertical section of the soil through all its horizons and extending into the soil parent material.

Soil texture: - the relative portion of particle sizes in soil (i.e., sand, silt, and clay) that are used to describe the soil textural class (e.g., clay, sandy clay loam, sandy loam, loam, clay loam, sand, loamy sand, etc.).

Specialty crop area:* - means areas within the agricultural land base designated based on provincial guidance. In these areas, specialty crops are predominantly grown such as tender fruits (peaches, cherries, plums), grapes, other fruit crops, vegetable crops, greenhouse crops and crops from agriculturally developed organic soil., usually resulting from:

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

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

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

Tender fruit: - a term applied to tree fruits such as peaches, apricots, and nectarines which are particularly sensitive to low winter and/or spring temperatures.

Unoccupied livestock facility: - A livestock facility that does not currently house any livestock, but that housed livestock in the past and continues to be structurally sound and reasonably capable of housing livestock. The MDS formula is applied to these facilities.

Wooded: - Forested areas of various age composition and size.

** Indicates that the definition is essentially derived from OMAFRA publications.*

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APPENDIX A

Curriculum Vitae

SEAN M. COLVILLE, B.Sc., P.Ag.

432 Niagara St., Unit 2, St. Catharines, ON L2M 4W3
Tel: (905) 935-2161 | Email: sean@colvilleconsultinginc.com

EDUCATION

B.Sc.Geology, Acadia University, 1986
Soil Science, University of Guelph, 1984

PROFESSIONAL AFFILIATIONS

Ontario Institute of Agrology
Agricultural Institute of Canada

POSITIONS HELD

2003 – Present	**President** - Colville Consulting Inc., St. Catharines, Ontario
2001 – 2003	**Senior Project Manager** - ESG International Inc., St. Catharines, Ontario
1998 – 2001	**Senior Project Manager** - ESG International Inc., Guelph, Ontario
1988 – 1998	**Project Manager** - ESG International Inc., Guelph, Ontario
1984 – 1988	**Soil Scientist –** MacLaren Plansearch Ltd., Halifax, Nova Scotia
1982 – 1983	**Assistant Soil Scientist** – Nova Scotia Department of Agriculture and Marketing

EXPERIENCE

Colville Consulting Inc. (CCI) was established in June of 2003 by Sean Colville. CCI offers agricultural and environmental consulting services to clients across Ontario, catering to both public and private sectors. Sean has over 35 years of agricultural consulting experience, which includes agricultural resource evaluation studies, soil surveys, interpretations of agricultural capability, agricultural impact assessments, alternative site assessments, and soil and microclimatic rehabilitation/restoration projects. Sean has extensive experience interpreting agricultural land use policies for a wide variety of development applications.

Sean is a Professional Agrologist (P.Ag.), and a member of both the Ontario Institute of Agrology and the Agricultural Institute of Canada. Sean has been recognized by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) as an expert in the identification of Prime Agricultural Areas and in the interpretation of the Minimum Distance Separation requirements for livestock operations.

Sean has presented expert testimony before the Ontario Land Tribunal (formerly OMB, LPAT), Consolidated Joint Board, Assessment Review Board, Ontario Superior Court, and the Normal Farm Practices Protection Board. Sean's testimonies have involved land use planning matters as they relate to agriculture, impact assessments, resource evaluations, soil science, and normal farm practices.

Agricultural Impact Assessments and Alternative Site Studies

Colville Consulting Inc. specializes in agricultural impact assessment and alternative site studies for development applications in Prime Agricultural Areas. Sean has prepared over 200 agricultural impact assessments for a wide variety of development projects, including settlement area boundary expansions, linear facilities (Class EAs), new and expanding aggregate operations, and residential, commercial, recreational, industrial, and institutional developments. The majority of these projects required the interpretation of agricultural land use policies, an inventory and assessment of the agricultural resources,

land use, land tenure, an assessment of conflict potential including determination of minimum distance separation requirements, interpretation of the agricultural priority, and development of mitigation measures to avoid or minimize potential impacts. Justification of the location for development proposals in agricultural areas is required by the Provincial Policy Statement and can often be addressed by an alternative site study.

Recent examples of Sean Colville's agricultural work include:

- Agricultural Impact Assessment for Stubbes New Durham Precast Plant (2021)
- Agricultural Impact Assessment for New Tecumseth Community Builders Inc., County of Simcoe (2021)
- Agricultural Impact Assessment for Caledon Costco (2021)
- Agricultural Impact Assessment for Walker Industries' Redford Pit Expansion, West Grey (2022)
- Agricultural Impact Assessment for Milton Business Park (2022)
- Minimum Distance Separation for Mono Hills Corporation (2022)
- Land Evaluation and Area Review for Norfolk County (2022)

Publications

Rees, H.W.; Duff, J.P.; Colville, S.; Soley, T and Chow T.L. 1995. Soils of selected agricultural areas of Moncton Parish, Westmoreland County, New Brunswick. New Brunswick. Soil Survey Report No. 15. CLBRR Contribution No. 95-13, Research Branch, Agriculture AND Agri-Food Canada, Ottawa, Ontario

Rees, H.W.; Duff, J.P.; Colville, S.; Soley, T and Chow T.L. 1996. Soils of selected agricultural areas of Shediac and Botsford Parishes, Westmoreland County, New Brunswick. New Brunswick. Soil Survey Report No. 16. CLBRR Contribution No. 95-13, Research Branch, Agriculture and Agri-Food Canada, Ottawa, Ontario. 127 pp. with maps.

JOHN LIOTTA, B.Sc. (Env.), EMA, P.Ag.

432 Niagara St., Unit 2, St. Catharines, ON L2M 4W3
Tel: (905) 935-2161 | Email: john@colvilleconsultinginc.ca

EDUCATION

Bachelor of Science in Environmental Sciences, University of Guelph, 2018
Environmental Management and Assessment Graduate Certificate, Niagara College, 2022

PROFESSIONAL AFFILIATIONS

Eco Canada – Environmental Professional in Training
Ontario Institute of Agrologists – Professional Agrologist

POSITIONS HELD

2022 – Present – Colville Consulting Inc., St. Catharines, Agrologist/Ecologist

EXPERIENCE

John Liotta, Agrologist and Ecologist at Colville Consulting Inc., has over 5 years of formal educational training and experience in Environmental and Agricultural Planning. John has completed Agricultural Impact Assessments, Minimum Distance Separation (MDS) Requirements, and Agricultural Characterization Reports in his role as at Colville Consulting Inc.

Through his education at the University of Guelph and Niagara College, John has gained a broad base knowledge of Environmental and Agricultural Planning and Management, which he has applied in his current role at Colville Consulting Inc. His work at Colville Consulting Inc. includes the interpretation of provincial, regional, and local land use policies, creation and interpretation of land use maps, regional soils mapping, and agricultural protection policies. He has participated in the completion of Agricultural Impact Assessments, Minimum Distance Separation Assessments, and Agricultural Characterization Reports. His field work activities include land use surveys and post-construction avian and bat mortality monitoring for wind turbines in the County of Haldimand, Ontario.

A selection of projects John has been involved with at Colville Consulting Inc. include:

- Post-Construction Avian and Bat Mortality Monitoring for Pattern Energy, Korea Electric Power Corporation, and Samsung Renewable Energy Inc., Grand Renewable Energy Park, County of Haldimand, Ontario
- Agricultural Impact Assessment for landowner group, City of Pickering
- Agricultural Impact Assessment for landowner, Township of North Dumfries, Ontario
- Agricultural Characterization Report for landowner, Township of Beckwith, Ontario
- Agricultural Characterization Report for landowner, Town of Carleton Place, Ontario
- Minimum Distance Separation Report for landowner, Town of Caledon, Ontario
- Agricultural and Rural Lands Discussion Paper for municipality, Town of Blue Mountain, Ontario
- Agricultural Impact Assessment for Wildfield Village, Town of Caledon
- Agricultural Impact Assessment for Redford Pit Expansion, West Grey

ADDITIONAL TRAINING AND WORKSHOPS

Standard First Aid, CPR C, AED – St. John's Ambulance (2023)
Workplace Hazardous Materials Information System
Natural Gas Pipeline Safety Training – TC Energy (2022)
Excavation Safety Training – TC Energy (2022)
Supervisor (Level 2) Ground Disturbance Training (2022)

APPENDIX B

Climate Normal Data

LOCATION_NAME	OTTAWA (AIRPORT)																
PROVINCE	ON																
PERIOD_OF_RECORD	**ELEMENT_GROUP**	**NORMALS_ELEMENT**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Year**	**Code**	
Normal	Temperature	Daily Average (°C)	-10	-8.5	-2.4	5.9	13.6	18.7	21.2	20.1	15.3	8.2	1.7	-5.8	6.5	B	
Normal	Temperature	StdDev Mean Monthly Temperature (°C)	3.2	2.7	2.5	1.7	1.8	1.2	1.3	1.1	1.5	1.4	2.1	2.4	1.3	B	
Normal	Temperature	Daily Maximum (°C)	-5.5	-3.6	2.4	11.3	19.6	24.4	27	25.8	21	13	5.8	-1.9	11.6	B	
Normal	Temperature	Daily Minimum (°C)	-14.3	-13.2	-7.1	0.5	7.5	12.9	15.4	14.3	9.6	3.4	-2.4	-9.6	1.4	B	
Normal	Temperature	Maximum Daily Mean (°C)	8.2	6.9	17.3	23.3	27.3	29	30	29.7	26.9	21.8	16.2	10.6			
Normal	Temperature	Maximum Daily Mean (°C) Date (yyyy/mm/dd)	2007-01-05	1994-02-20	2012-03-22	2002-04-17	2010-05-26	1994-06-18	2011-07-21	2001-08-09	2007-09-07	2005-10-04	2020-11-10	2015-12-11			
Normal	Temperature	Minimum Daily Mean (°C)	-28.3	-25.4	-23.2	-9.5	1.2	8.5	12.9	10.3	2.9	-2.3	-14.5	-28.4			
Normal	Temperature	Minimum Daily Mean (°C) Date (yyyy/mm/dd)	1994-01-15	1995-02-06	2003-03-03	1995-04-05	2020-05-09	1993-06-01	1992-07-21	2017-08-31	1991-09-30	2015-10-18	2018-11-22	1993-12-27			
Normal	Temperature	Extreme Maximum (°C)	12.9	12.4	27.4	31	35.8	35.1	36.9	36.9	35.1	27.7	23.4	17.9			
Normal	Temperature	Extreme Maximum (°C) Date (yyyy/mm/dd)	2005-01-13	2000-02-27	2012-03-21	2009-04-27	2010-05-26	1999-06-07	2020-07-10	2001-08-09	2002-09-09	2005-10-04	2020-11-10	2012-12-04			
Normal	Temperature	Minimum Daily Maximum (°C)	-25.9	-21.8	-17.4	-4.8	4.4	12	15.6	14.4	5.8	0.7	-10.2	-25			
Normal	Temperature	Minimum Daily Maximum (°C) Date (yyyy/mm/dd)	1992-01-16	1995-02-06	2003-03-03	1995-04-05	2010-05-09	1993-06-01	1992-07-03	1994-08-31	1992-09-30	2008-10-29	2018-11-22	1993-12-27			
Normal	Temperature	Maximum Daily Minimum (°C)	6.3	4	9.7	16.3	19.4	22.9	23.6	22.5	21.6	16.1	11	7.4			
Normal	Temperature	Maximum Daily Minimum (°C) Date (yyyy/mm/dd)	2007-01-05	1994-02-20	2012-03-22	2002-04-17	1991-05-24	1994-06-18	2011-07-21	2001-08-09	2007-09-07	2002-10-01	1999-11-02	2015-12-11			
Normal	Temperature	Extreme Minimum (°C)	-33.1	-30	-29	-14.2	-4.6	0.7	7.8	5.3	-2.3	-8.4	-21.2	-31.7			
Normal	Temperature	Extreme Minimum (°C) Date (yyyy/mm/dd)	1996-01-31	1993-02-07	2003-03-03	1995-04-05	2020-05-12	2020-06-01	1992-07-21	2017-08-31	1991-09-30	2020-10-31	2018-11-23	1993-12-27			
Long-Term	Temperature	Maximum Daily Mean (°C)	8.4	8.2	17.3	23.8	27.3	29.5	30	29.8	27	21.8	16.2	10.6			
Long-Term	Temperature	Maximum Daily Mean (°C) Date (yyyy/mm/dd)	1950-01-04	1981-02-22	2012-03-22	1990-04-27	2010-05-26	1959-06-29	1955-07-09	1955-08-01	1953-09-02	2005-10-04	2020-11-10	1982-12-03			
Long-Term	Temperature	Minimum Daily Mean (°C)	-31.3	-30.3	-24.5	-11.7	-0.6	5.4	11.4	7.2	2.8	-2.8	-15.6	-30			
Long-Term	Temperature	Minimum Daily Mean (°C) Date (yyyy/mm/dd)	1981-01-03	1943-02-15	1950-03-03	1954-04-03	1978-05-01	1980-06-09	1963-07-08	1965-08-31	1951-09-30	1969-10-23	1958-11-30	1942-12-20			
Long-Term	Temperature	Extreme Maximum (°C)	12.9	12.4	27.4	31.1	35.8	36.1	36.9	37.8	35.1	27.8	23.9	17.9			
Long-Term	Temperature	Extreme Maximum (°C) Date (yyyy/mm/dd)	2005-01-13	2000-02-27	2012-03-21	1990-04-27	2010-05-26	1941-06-27	2020-07-10	1944-08-11	2002-09-09	1946-10-07	1938-11-06	2012-12-04			
Long-Term	Temperature	Minimum Daily Maximum (°C)	-28.1	-24.4	-18.3	-7.2	2.1	10.6	14.4	11.1	4.4	0	-13.3	-25.6			
Long-Term	Temperature	Minimum Daily Maximum (°C) Date (yyyy/mm/dd)	1981-01-03	1943-02-15	1950-03-03	1954-04-03	1978-05-01	1947-06-08	1958-07-05	1965-08-31	1944-09-27	1962-10-29	1958-11-30	1942-12-20			
Long-Term	Temperature	Maximum Daily Minimum (°C)	6.3	4.5	10.6	16.5	20.6	23.9	25	23.9	22.2	16.7	12.8	7.4			
Long-Term	Temperature	Maximum Daily Minimum (°C) Date (yyyy/mm/dd)	2007-01-05	1981-02-21	1945-03-29	1990-04-27	1962-05-18	1959-06-29	1955-07-09	1975-08-03	1953-09-02	1954-10-01	1956-11-01	2015-12-11			
Long-Term	Temperature	Extreme Minimum (°C)	-35.6	-36.1	-30.6	-16.7	-5.6	-0.1	5	2.6	-3	-8.4	-21.7	-34.4			
Long-Term	Temperature	Extreme Minimum (°C) Date (yyyy/mm/dd)	1957-01-15	1943-02-15	1950-03-03	1954-04-04	1966-05-07	1980-06-09	1946-07-15	1986-08-29	1980-09-29	2020-10-31	1940-11-29	1942-12-20			
Normal	Precipitation	Rainfall (mm)	29.3	14.5	34.6	69.6	74.5	96.8	88.5	79	90.6	84.7	60.5	34.7	757.2	C	
Normal	Precipitation	Snowfall (cm)	59.2	48.5	38.8	12.2	0.2	0	0	0	0	2.7	20.7	49.6	231.9	C	
Normal	Precipitation	Precipitation (mm)	70.4	49.5	66.3	81.3	74.8	96.8	88.5	79	89.6	87.4	73.9	72.4	929.8	C	
Normal	Precipitation	Average Snow Depth (cm)	25	30	21	1	0	0	0	0	0	0	2	14	8	C	
Normal	Precipitation	Median Snow Depth (cm)	24	29	21	0	0	0	0	0	0	0	1	13	7	C	
Normal	Precipitation	Snow Depth at Month-end (cm)	28	28	7	0	0	0	0	0	0	0	5	20	7	C	
Normal	Precipitation	Extreme Daily Rainfall (mm)	43.6	40.4	38	46.2	47.8	90.4	79	67	135.4	76	46.2	30			
Normal	Precipitation	Extreme Daily Rainfall (mm) Date (yyyy/mm/dd)	2010-01-25	1997-02-21	1992-03-27	2005-04-02	2008-05-31	2011-06-24	2017-07-24	2004-08-10	2004-09-09	1995-10-06	2000-11-26	2010-12-01			
Normal	Precipitation	Extreme Daily Snowfall (cm)	29	34.4	33.6	29.8	4.6	0	0	0	0	16	19.6	35.6			
Normal	Precipitation	Extreme Daily Snowfall (cm) Date (yyyy/mm/dd)	1993-01-13	1993-02-13	2008-03-08	1993-04-01	1996-05-12	1991-06-01	1991-07-01	1991-08-01	1991-09-30	1997-10-27	2002-11-17	2007-12-16			
Normal	Precipitation	Extreme Daily Precipitation (mm)	43.6	40.4	38.4	46.2	47.8	90.4	79	67	135.4	76	46.2	33.6			
Normal	Precipitation	Extreme Daily Precipitation (mm) Date (yyyy/mm/dd)	2010-01-25	1997-02-21	2000-03-28	2005-04-02	2008-05-31	2011-06-24	2017-07-24	2004-08-10	2004-09-09	1995-10-06	2000-11-26	2012-12-21			
Normal	Precipitation	Extreme Snow Depth (cm)	76	97	135	47	0	0	0	0	0	20	42	75			
Normal	Precipitation	Extreme Snow Depth (cm) Date (yyyy/mm/dd)	2013-01-07	1993-02-23	1993-03-14	2008-04-01	1991-05-01	1991-06-01	1991-07-01	1991-08-01	1991-09-01	1997-10-27	1995-11-29	2007-12-17			
Long-Term	Precipitation	Extreme Daily Rainfall (mm)	43.6	40.4	44.2	46.2	47.8	90.4	79	67	135.4	76	46.2	36.3			
Long-Term	Precipitation	Extreme Daily Rainfall (mm) Date (yyyy/mm/dd)	2010-01-25	1997-02-21	1980-03-21	2005-04-02	2008-05-31	2011-06-24	2017-07-24	2004-08-10	2004-09-09	1995-10-06	2000-11-26	1941-12-24			
Long-Term	Precipitation	Extreme Daily Snowfall (cm)	38.6	39.6	40.6	29.8	15	0	0	0	1.5	29.2	28.2	35.6			
Long-Term	Precipitation	Extreme Daily Snowfall (cm) Date (yyyy/mm/dd)	1966-01-30	1954-02-16	1947-03-02	1993-04-01	1963-05-10	1939-06-01	1939-07-01	1939-08-01	1946-09-30	1988-10-22	1987-11-25	2007-12-16			
Long-Term	Precipitation	Extreme Daily Precipitation (mm)	43.6	40.4	44.2	46.2	47.8	90.4	79	67	135.4	76	46.2	43.7			
Long-Term	Precipitation	Extreme Daily Precipitation (mm) Date (yyyy/mm/dd)	2010-01-25	1997-02-21	1980-03-21	2005-04-02	2008-05-31	2011-06-24	2017-07-24	2004-08-10	2004-09-09	1995-10-06	2000-11-26	1973-12-09			
Long-Term	Precipitation	Extreme Snow Depth (cm)	77	119	135	58	10	0	0	0	0	20	42	75			
Long-Term	Precipitation	Extreme Snow Depth (cm) Date (yyyy/mm/dd)	1979-01-26	1971-02-24	1993-03-14	1971-04-01	1963-05-11	1955-06-01	1955-07-01	1955-08-01	1955-09-01	1997-10-27	1995-11-29	2007-12-17			
Normal	Days With ...	Freezing Rain or Freezing Drizzle	3.8	2.6	2	0.6	0	0	0	0	0	0.03	1.4	3.6	14	A	
Normal	Days With ...	Thunderstorms	0.07	0.13	0.3	1.1	2.5	4.5	6.1	4.8	2.1	0.97	0.2	0.13	23	A	
Normal	Days With ...	Hail	0	0.03	0.03	0.07	0.07	0.13	0.07	0	0	0.03	0	0	0.43	A	
Normal	Days With ...	Fog, Ice Fog, or Freezing Fog	2.3	1.6	2	1.4	1.1	1.5	1.2	1.9	2.1	2.5	2.2	2.8	22.8	A	
Normal	Days With ...	Smoke or Haze	0.7	0.83	0.83	0.67	1.2	2.7	3.6	3	1.6	0.9	1.1	0.77	17.9	A	
Normal	Days with Maximum Temperature	Days with Maximum Temperature <= -30 °C	0	0	0	0	0	0	0	0	0	0	0	0	0	C	
Normal	Days with Maximum Temperature	Days with Maximum Temperature <= -20 °C	0.88	0.08	0	0	0	0	0	0	0	0	0	0.13	1.1	C	
Normal	Days with Maximum Temperature	Days with Maximum Temperature <= -10 °C	8.4	4.7	0.5	0	0	0	0	0	0	0	0.04	3.4	17	C	
Normal	Days with Maximum Temperature	Days with Maximum Temperature <= 0 °C	23.7	19.7	9.8	0.74	0	0	0	0	0	0	4.5	18	76.4	C	
Normal	Days with Maximum Temperature	Days with Maximum Temperature > 0 °C	7.3	8.5	21.3	29.3	31	30	31	31	30	31	25.5	13	288.9	C	
Normal	Days with Maximum Temperature	Days with Maximum Temperature > 10 °C	0.24	0.08	3.7	17.5	30	30	31	31	29.6	21.2	6.6	0.61	201.4	C	
Normal	Days with Maximum Temperature	Days with Maximum Temperature > 20 °C	0	0	0.33	3	13	24.5	29.7	29	16.7	3.4	0.21	0	119.6	C	
Normal	Days with Maximum Temperature	Days with Maximum Temperature > 30 °C	0	0	0	0.09	0.74	3.3	6.1	3.6	0.96	0	0	0	14.8	C	
Normal	Days with Maximum Temperature	Days with Maximum Temperature > 35 °C	0	0	0	0	0.04	0.04	0.32	0.23	0.04	0	0	0	0.67	C	
Normal	Days with Maximum Temperature	Days with Maximum Temperature > 40 °C	0	0	0	0	0	0	0	0	0	0	0	0	0	C	
Normal	Days with Minimum Temperature	Days with Minimum Temperature > 20 °C	0	0	0	0	0	0.7	2	0.62	0.27	0	0	0	3.6	C	
Normal	Days with Minimum Temperature	Days with Minimum Temperature > 10 °C	0	0	0	0.39	8.5	24	30.2	27.9	14.8	2	0.08	0	108	C	
Normal	Days with Minimum Temperature	Days with Minimum Temperature > 0 °C	1	0.77	4.4	17.1	30.6	30	31	31	29.8	24.4	9.7	1.6	211.3	C	
Normal	Days with Minimum Temperature	Days with Minimum Temperature <= 2 °C	30.7	28.2	29.7	18.6	2.4	0.04	0	0	0.96	12.4	25.1	30.7	178.8	C	
Normal	Days with Minimum Temperature	Days with Minimum Temperature <= 0 °C	30	27.5	26.6	12.9	0.43	0	0	0	0.23	6.6	20.3	29.4	154	C	
Normal	Days with Minimum Temperature	Days with Minimum Temperature < -2 °C	28.9	26.3	23	6.7	0	0	0	0	0.04	2.7	14.3	26.5	128.6	C	
Normal	Days with Minimum Temperature	Days with Minimum Temperature < -10 °C	22.3	19.7	9.1	0.3	0	0	0	0	0	0	2	14.3	67.6	C	
Normal	Days with Minimum Temperature	Days with Minimum Temperature < -20 °C	8.1	4.8	0.58	0	0	0	0	0	0	0	0.04	2	15.6	C	
Normal	Days with Minimum Temperature	Days with Minimum Temperature < -30 °C	0.36	0	0	0	0	0	0	0	0	0	0	0.09	0.45	C	
Normal	Days with Minimum Temperature	Days with Minimum Temperature < -40 °C	0	0	0	0	0	0	0	0	0	0	0	0	0	C	
Normal	Days with Rainfall	Days with Rainfall >= 0.2 mm	4.9	3.7	6.8	11	13.4	13.9	12.1	11.2	12.3	13.6	10.5	6.6	120	C	
Normal	Days with Rainfall	Days with Rainfall >= 5 mm	1.8	1	2.5	4.5	4.7	6	5.3	4.5	5.3	4.9	3.8	2.3	46.6	C	
Normal	Days with Rainfall	Days with Rainfall >= 10 mm	1	0.4	1	2.5	2.4	2.8	3.2	2.5	3.3	2.8	2	1.2	25.2	C	
Normal	Days with Rainfall	Days with Rainfall >= 25 mm	0.17	0.04	0.13	0.29	0.35	0.67	0.63	0.54	0.46	0.61	0.46	0.22	4.6	C	
Normal	Days with Rainfall	Days with Rainfall >= 50 mm	0	0	0	0	0	0.21	0.08	0.04	0.04	0.09	0	0	0.46	C	

PERIOD_OF_RECORD	ELEMENT_GROUP	NORMALS_ELEMENT	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Code
Normal	Days with Rainfall	Days with Rainfall >= 100 mm	0	0	0	0	0	0	0	0	0.04	0	0	0	0.04	C
Normal	Days with Snowfall	Days with Snowfall >= 0.2 cm	16.4	12.9	8.6	3.2	0.13	0	0	0	0	0.87	6.5	13.9	62.3	C
Normal	Days with Snowfall	Days with Snowfall >= 5 cm	4.4	3.4	2.6	0.71	0	0	0	0	0	0.22	1.3	3.4	16	C
Normal	Days with Snowfall	Days with Snowfall >= 10 cm	1.3	1.2	1.2	0.33	0	0	0	0	0	0.09	0.54	1.2	5.9	C
Normal	Days with Snowfall	Days with Snowfall >= 25 cm	0.08	0.12	0.12	0.04	0	0	0	0	0	0	0	0.04	0.4	C
Normal	Days with Snowfall	Days with Snowfall >= 40 cm	0	0	0	0	0	0	0	0	0	0	0	0	0	C
Normal	Days with Precipitation	Days with Precipitation >= 0.2 mm	16.7	13	12.6	12.1	13.4	13.9	12.1	11.2	12.4	14.1	14.4	16.7	162.7	C
Normal	Days with Precipitation	Days with Precipitation >= 1 mm	11.2	8.8	9.1	9.8	9.9	10.3	9.5	8.7	9.8	10.4	9.9	11.1	118.4	C
Normal	Days with Precipitation	Days with Precipitation >= 5 mm	4.6	3.2	4.5	5.1	4.8	6	5.3	4.5	5.3	5.1	4.7	4.5	57.7	C
Normal	Days with Precipitation	Days with Precipitation >= 10 mm	2	1.4	1.9	2.8	2.4	2.8	3.2	2.5	3.3	2.9	2.2	2.1	29.6	C
Normal	Days with Precipitation	Days with Precipitation >= 25 mm	0.24	0.12	0.29	0.38	0.35	0.67	0.63	0.54	0.44	0.61	0.44	0.29	5	C
Normal	Days with Precipitation	Days with Precipitation >= 50 mm	0	0	0	0	0	0.21	0.08	0.04	0.04	0.09	0	0	0.46	C
Normal	Days with Precipitation	Days with Precipitation >= 100 mm	0	0	0	0	0	0	0	0	0.04	0	0	0	0.04	C
Normal	Days with Snow Depth	Days with Snow Depth >= 1 cm	30.3	28.1	24.2	4.9	0	0	0	0	0	0.6	5.6	24.2	117.9	C
Normal	Days with Snow Depth	Days with Snow Depth >= 5 cm	28.7	27.9	20	2.4	0	0	0	0	0	0.35	3.3	19	101.6	C
Normal	Days with Snow Depth	Days with Snow Depth >= 10 cm	24.9	25.7	16.5	1.6	0	0	0	0	0	0.05	1.7	13.5	83.9	C
Normal	Days with Snow Depth	Days with Snow Depth >= 20 cm	15.4	17.1	13	0.57	0	0	0	0	0	0.05	0.5	7.5	54.1	C
Normal	Days with Snow Depth	Days with Snow Depth >= 30 cm	9.7	11.3	9.4	0.19	0	0	0	0	0	0	0.15	4.2	34.9	C
Normal	Days with Snow Depth	Days with Snow Depth >= 50 cm	3.7	5.6	5.6	0	0	0	0	0	0	0	0	2.1	17	C
Normal	Days with Snow Depth	Days with Snow Depth >= 100 cm	0	0	0.26	0	0	0	0	0	0	0	0	0	0.26	C
Normal	Wind	Wind Speed (km/h)	14.9	14.9	15.2	15.6	13.8	11.9	11.4	10.9	11.6	13.4	14.1	14.5	13.5	A
Normal	Wind	Most Frequent Wind Direction	W	W	W	W	W	W	W	S	S	W	W	W	W	A
Normal	Wind	Days with Winds >= 52 km/h	0.75	0.95	0.85	0.76	0.4	0.48	0.58	0.3	0.2	0.55	1.1	1.2	8	D
Normal	Wind	Days with Winds >= 63 km/h	0.2	0.1	0	0.14	0.15	0.05	0.16	0.1	0.05	0.15	0.19	0.1	1.4	D
Normal	Wind	Days with Gusts >= 90 km/h	0.06	0	0	0.05	0.05	0	0.1	0	0	0	0	0	0.26	D
Normal	Wind	Extreme Wind Speed (km/h)	65	57	58	61	57	52	50	57	50	57	63	59		
Normal	Wind	Extreme Wind Speed (km/h) Date (yyyy/mm/dd hh:mi)	1996-01-27 12:00	2016-02-29 20:00	2015-03-17 11:00	1995-04-04 12:00	2018-05-04 22:00	2007-06-29 18:00	1995-07-28 22:00	2010-08-04 15:00	2006-09-24 13:00	2019-10-31 23:00	1994-11-06 19:00	2009-12-29 3:00		
Normal	Wind	Direction of Extreme Wind Speed	S	W	NW	W	W	NW	SW	N	W	SW	W	NW		
Normal	Wind	Direction of Extreme Wind Speed Date (yyyy/mm/dd hh:mi)	1996-01-27 12:00	2016-02-29 20:00	2015-03-17 11:00	1995-04-04 12:00	2018-05-04 22:00	2007-06-29 18:00	1995-07-28 22:00	2010-08-04 15:00	2006-09-24 13:00	2019-10-31 23:00	1994-11-06 19:00	2009-12-29 3:00		
Normal	Wind	Extreme Gust Speed (km/h)	100	89	78	95	91	80	96	82	82	82	89	85		
Normal	Wind	Extreme Gust Speed (km/h) Date (yyyy/mm/dd)	1996-01-27	2019-02-25	2015-03-17	2011-04-28	1994-05-31	2015-06-23	2011-07-17	1995-08-01	1992-09-27	1995-10-16	1994-11-06	2000-12-18		
Normal	Wind	Direction of Extreme Gust Speed	SW	W	NW	SW	W	W	W	NW	W	W	W	W		
Normal	Wind	Direction of Extreme Gust Speed Date (yyyy/mm/dd)	1996-01-27	2019-02-25	2015-03-17	2011-04-28	1994-05-31	2015-06-23	2011-07-17	1995-08-01	1992-09-27	1995-10-16	1994-11-06	2000-12-18		
Long-Term	Wind	Extreme Wind Speed (km/h)	72	72	72	67	64	67	54	69	64	80	66	61		
Long-Term	Wind	Extreme Wind Speed (km/h) Date (yyyy/mm/dd hh:mi)	1962-01-07 3:00	1965-02-25 17:00	1956-03-11 16:00	1985-04-07 1:00	1964-05-09 16:00	1985-06-23 22:00	1986-07-29 14:00	1961-08-11 17:00	1955-09-10 13:00	1954-10-15 23:00	1963-11-30 15:00	1982-12-28 21:00		
Long-Term	Wind	Direction of Extreme Wind Speed	E	E	W	W	W	W	NW	W	SW	E	NW	SW		
Long-Term	Wind	Direction of Extreme Wind Speed Date (yyyy/mm/dd hh:mi)	1962-01-07 3:00	1965-02-25 17:00	1956-03-11 16:00	1985-04-07 1:00	1964-05-09 16:00	1985-06-23 22:00	1986-07-29 14:00	1961-08-11 17:00	1955-09-10 13:00	1954-10-15 23:00	1963-11-30 15:00	1982-12-28 21:00		
Long-Term	Wind	Extreme Gust Speed (km/h)	100	122	116	95	135	106	129	100	85	100	103	94		
Long-Term	Wind	Extreme Gust Speed (km/h) Date (yyyy/mm/dd)	1996-01-27	1956-02-25	1964-03-05	2011-04-28	1959-05-11	1957-06-23	1962-07-09	1957-08-03	1955-09-10	1955-10-14	1956-11-16	1982-12-28		
Long-Term	Wind	Direction of Extreme Gust Speed	SW	W	W	SW	SW	W	SW	SW	SW	E	W	SW		
Long-Term	Wind	Direction of Extreme Gust Speed Date (yyyy/mm/dd)	1996-01-27	1956-02-25	1964-03-05	2011-04-28	1959-05-11	1957-06-23	1962-07-09	1957-08-03	1955-09-10	1955-10-14	1956-11-16	1982-12-28		
Normal	Degree Days	Degree Days Above 24 °C	0	0	0	0	0.3	4.5	9.2	3.7	1	0	0	0	18.7	C
Normal	Degree Days	Degree Days Above 18 °C	0	0	0	0.9	11.5	60.2	106.6	75.5	21.2	0.7	0	0	276.6	C
Normal	Degree Days	Degree Days Above 15 °C	0	0	0.3	2.9	33.1	125.7	194.7	154.5	56.9	4.9	0.1	0	572.9	C
Normal	Degree Days	Degree Days Above 10 °C	0	0	1.9	18.3	119.1	266	349.4	308.1	166.3	31.5	3	0	1263.5	C
Normal	Degree Days	Degree Days Above 5 °C	0.6	0.1	10.2	75.4	259.7	415.8	504.4	463.1	311.5	114.8	22.9	1.2	2179.7	C
Normal	Degree Days	Degree Days Above 0 °C	6.5	5.4	47.9	191.3	414.3	565.8	659.4	618.1	461.3	254.2	89	13.5	3326.7	C
Normal	Degree Days	Degree Days Below 0 °C	318	246	109.7	6.4	0	0	0	0	0	0.5	37.9	190.9	909.3	C
Normal	Degree Days	Degree Days Below 5 °C	467	382.1	227	40.5	0.5	0	0	0	0.2	16.1	121.8	333.5	1588.7	C
Normal	Degree Days	Degree Days Below 10 °C	621.4	523.3	373.7	133.4	14.8	0.2	0	0	5.1	87.8	251.9	487.3	2498.9	C
Normal	Degree Days	Degree Days Below 15 °C	776.4	664.7	527	268	83.8	9.9	0.3	1.4	45.6	216.2	398.9	642.3	3634.6	C
Normal	Degree Days	Degree Days Below 18 °C	869.4	749.5	619.8	356	155.2	34.4	5.2	15.5	99.9	305	488.9	735.3	4434.1	C
Normal	Quintiles	Quintile 1 (Lower Bound)	22.1	18.4	19.8	14	19.8	14	19.4	7.2	15	15.4	18	19.4		
Normal	Quintiles	Quintile 1 (Upper Bound)	39	32.9	33.2	48.7	49	61.7	49.6	52.2	61.2	57.6	40.9	54.7		
Normal	Quintiles	Quintile 2 (Upper Bound)	54	46.4	55.4	66.6	70.3	76.8	64.9	69.8	69.4	71.5	61.6	69.8		
Normal	Quintiles	Quintile 3 (Upper Bound)	68	53.7	72.9	87.5	79.1	105.6	91.9	77.9	78.9	88.9	79.4	75.6		
Normal	Quintiles	Quintile 4 (Upper Bound)	96.9	61.5	85.7	123.4	91.6	123.4	112.6	102.6	109.2	100.7	95.8	94.2		
Normal	Quintiles	Quintile 5 (Upper Bound)	146	101	122.6	167	147.8	224.8	243.6	173.4	170	188.8	105.2	124		
Normal	Humidex	Days with Humidex >= 30	0	0	0	0.19	2.6	9.2	17	14.3	5.5	0.39	0	0	49.1	A
Normal	Humidex	Days with Humidex >= 35	0	0	0	0.04	0.67	3.3	6.7	4.4	1.5	0.04	0	0	16.7	A
Normal	Humidex	Days with Humidex >= 40	0	0	0	0	0.04	0.57	1.6	0.75	0.07	0	0	0	3.1	A
Normal	Humidex	Extreme Humidex	13.9	12.2	27.2	35.1	41.8	44	47.2	47	41.7	35.2	25.3	17.3		
Normal	Humidex	Extreme Humidex Date (yyyy/mm/dd)	2005-01-13	2000-02-27	1998-03-30	2002-04-17	2010-05-26	1995-06-19	2018-07-01	2006-08-01	2018-09-05	2018-10-09	2020-11-10	2015-12-24		
Long-Term	Humidex	Extreme Humidex	13.9	12.7	27.2	35.1	41.8	44	47.2	47	42.5	35.2	26.1	18.4		
Long-Term	Humidex	Extreme Humidex Date (yyyy/mm/dd)	2005-01-13	1981-02-22	1998-03-30	2002-04-17	2010-05-26	1995-06-19	2018-07-01	2006-08-01	1953-09-04	2018-10-09	1961-11-03	1982-12-03		
Normal	Wind Chill	Days with Wind Chill < -20	17.2	14.4	5.4	0.19	0	0	0	0	0	0	0.61	8.7	46.5	A
Normal	Wind Chill	Days with Wind Chill < -30	6.2	3.4	0.44	0	0	0	0	0	0	0	0	1.2	11.2	A
Normal	Wind Chill	Days with Wind Chill < -40	0.59	0.15	0.07	0	0	0	0	0	0	0	0	0.11	0.92	A
Normal	Wind Chill	Days with Wind Chill < -50	0	0	0	0	0	0	0	0	0	0	0	0	0	A
Normal	Wind Chill	Extreme Wind Chill	-46.5	-44.7	-42.7	-25.2	-10	0	0	0	-4.5	-11.1	-28.7	-44.3		
Normal	Wind Chill	Extreme Wind Chill Date (yyyy/mm/dd)	1994-01-15	1995-02-06	2007-03-06	1995-04-05	2020-05-09	1991-06-01	1991-07-01	1991-08-01	2000-09-28	2020-10-31	2018-11-21	1993-12-27		
Long-Term	Wind Chill	Extreme Wind Chill	-47.8	-47.6	-42.7	-26.3	-10.9	0	0	0	-6.4	-13.3	-29.5	-44.6		
Long-Term	Wind Chill	Extreme Wind Chill Date (yyyy/mm/dd)	1968-01-08	1967-02-12	2007-03-06	1982-04-07	1966-05-07	1953-06-01	1953-07-01	1953-08-01	1980-09-29	1966-10-30	1958-11-30	1980-12-25		
Normal	Humidity	Average Vapour Pressure (kPa)	0.3	0.3	0.4	0.6	1	1.5	1.8	1.7	1.4	0.9	0.6	0.4	0.9	A
Normal	Humidity	Average Relative Humidity - 0600LST (%)	78.1	75.9	74.7	73.4	76.2	81.9	85.2	88.9	90.2	86.1	83.3	82.3	81.4	A
Normal	Humidity	Average Relative Humidity - 1500LST (%)	68.4	62	57	49.5	49.5	53.5	54.2	55.3	58.4	61.6	66.9	72.3	59.1	A
Normal	Pressure	Average Station Pressure (kPa)	100.3	100.2	100.3	100.1	100.1	100	100	100.2	100.3	100.3	100.3	100.3	100.2	A
Normal	Pressure	Average Sea Level Pressure (kPa)	101.7	101.7	101.7	101.5	101.5	101.3	101.3	101.5	101.7	101.7	101.7	101.7	101.6	A
Normal	Visibility	Visibility < 1 km (hours with)	11.6	10.7	11.1	4.4	2	3.4	2.6	4.3	4.9	8.1	11	14.1	88.2	A
Normal	Visibility	Visibility 1 to 9 km (hours with)	132.2	100.5	91.7	62.3	36.9	46.3	40.1	48.1	48.8	53.5	85.4	125	870.7	A
Normal	Visibility	Visibility > 9 km (hours with)	599.9	566.7	640.6	652.8	704.3	669.6	700.1	690.8	665.6	681.7	623	604.1	7799.2	A
Normal	Cloud Amount	Cloud Amount 0 to 2 tenths (hours with)	182.7	202.4		176.5		175.6		211.2	238.1	191.4	146.8			

PERIOD_OF_RECORD	ELEMENT_GROUP	NORMALS_ELEMENT	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Code
Normal	Cloud Amount	Cloud Amount 3 to 7 tenths (hours with)	96.2	105.8		130.1		191.1		222.6	169.7	144.5	108.9			
Normal	Cloud Amount	Cloud Amount 8 to 10 tenths (hours with)	465.1	369.5		413.4		353.3		310.2	312.2	408.1	464.3			
Normal	Frost-Free	Average Date of Last Spring Frost													29-Apr	C
Normal	Frost-Free	Average Date of First Fall Frost													07-Oct	C
Normal	Frost-Free	Average Length of Frost-Free Period													160 Days	C
Long-Term	Frost-Free	Probability of last temperature in spring <= 0°C, on or after indicated date (10%)													20-May	
Long-Term	Frost-Free	Probability of last temperature in spring <= 0°C, on or after indicated date (25%)													13-May	
Long-Term	Frost-Free	Probability of last temperature in spring <= 0°C, on or after indicated date (33%)													11-May	
Long-Term	Frost-Free	Probability of last temperature in spring <= 0°C, on or after indicated date (50%)													07-May	
Long-Term	Frost-Free	Probability of last temperature in spring <= 0°C, on or after indicated date (66%)													29-Apr	
Long-Term	Frost-Free	Probability of last temperature in spring <= 0°C, on or after indicated date (75%)													26-Apr	
Long-Term	Frost-Free	Probability of last temperature in spring <= 0°C, on or after indicated date (90%)													19-Apr	
Long-Term	Frost-Free	Probability of first temperature in fall <= 0°C, on or before indicated date (10%)													24-Sep	
Long-Term	Frost-Free	Probability of first temperature in fall <= 0°C, on or before indicated date (25%)													28-Sep	
Long-Term	Frost-Free	Probability of first temperature in fall <= 0°C, on or before indicated date (33%)													29-Sep	
Long-Term	Frost-Free	Probability of first temperature in fall <= 0°C, on or before indicated date (50%)													02-Oct	
Long-Term	Frost-Free	Probability of first temperature in fall <= 0°C, on or before indicated date (66%)													06-Oct	
Long-Term	Frost-Free	Probability of first temperature in fall <= 0°C, on or before indicated date (75%)													09-Oct	
Long-Term	Frost-Free	Probability of first temperature in fall <= 0°C, on or before indicated date (90%)													16-Oct	
Long-Term	Frost-Free	Probability of frost-free period equal to or less than indicated period (Days) (10%)													130	
Long-Term	Frost-Free	Probability of frost-free period equal to or less than indicated period (Days) (25%)													141	
Long-Term	Frost-Free	Probability of frost-free period equal to or less than indicated period (Days) (33%)													144	
Long-Term	Frost-Free	Probability of frost-free period equal to or less than indicated period (Days) (50%)													152	
Long-Term	Frost-Free	Probability of frost-free period equal to or less than indicated period (Days) (66%)													158	
Long-Term	Frost-Free	Probability of frost-free period equal to or less than indicated period (Days) (75%)													162	
Long-Term	Frost-Free	Probability of frost-free period equal to or less than indicated period (Days) (90%)													168	
Normal	Snow-Period	Average Date of Last Spring Snowfall													15-Apr	A
Normal	Snow-Period	Average Date of First Fall Snowfall													06-Nov	A

APPENDIX C

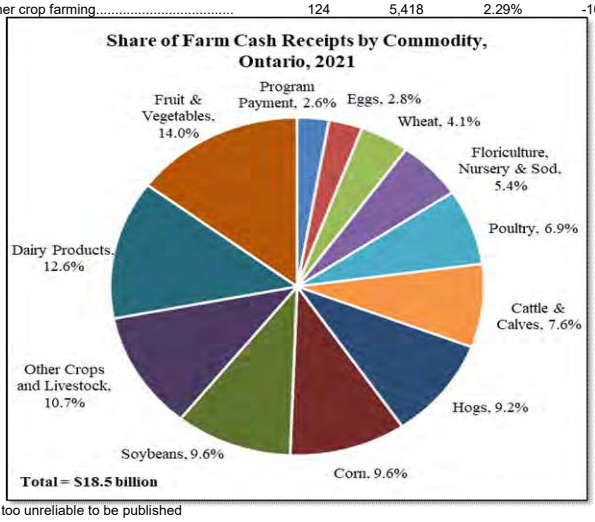
Agricultural Crop Statistics

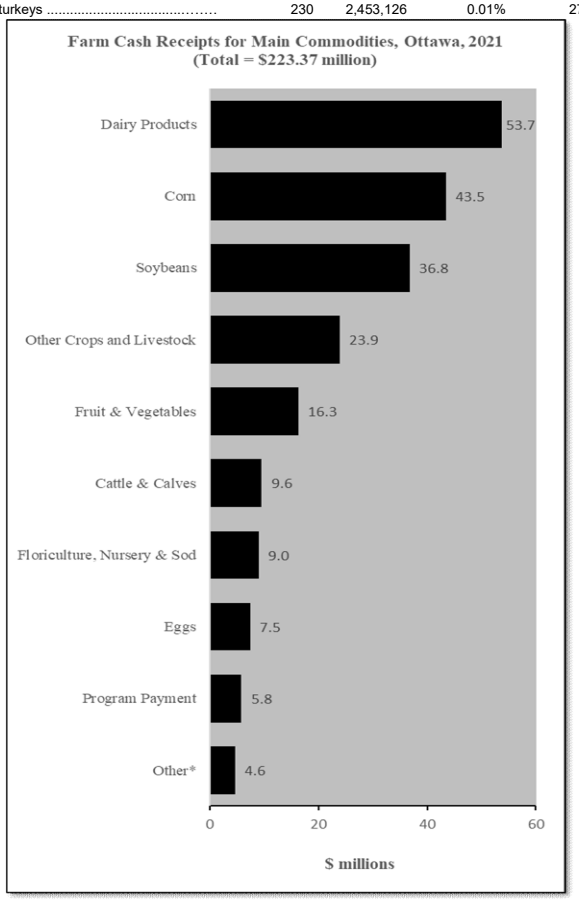
Ottawa Ag Profile

Ottawa Division at a Glance - 2021

Item	Ottawa	Province	Percent of province	Percent from 2016
Farms, 2021 Census (number)				
Total	906	48,346	1.87%	-13.30%
Under 10 acres	54	3,217	1.68%	-43.16%
10 to 69 acres	241	12,686	1.90%	-12.04%
70 to 129 acres	185	10,924	1.69%	-14.35%
130 to 179 acres	73	4,422	1.65%	-12.05%
180 to 239 acres	88	3,981	2.21%	4.76%
240 to 399 acres	102	5,396	1.89%	-16.39%
400 to 559 acres	61	2,865	2.13%	-6.15%
560 to 759 acres	42	1,698	2.47%	-14.29%
760 to 1,119 acres	27	1,600	1.69%	28.57%
1,120 to 1,599 acres	17	720	2.36%	6.25%
1,600 to 2,239 acres	7	451	1.55%	-41.67%
2,240 to 2,879 acres	5	173	2.89%	66.67%
2,880 to 3,519 acres	1	95	1.05%	-50.00%
3,520 acres and over	3	118	2.54%	0.00%
Land Use, 2021 Census (acres)				
Land in crops	186,608	9,051,011	2.06%	-2.53%
Summerfallow land	439	13,964	3.14%	-6.40%
Tame or seeded pasture	7,749	400,480	1.93%	2.50%
Natural land for pasture	9,325	626,366	1.49%	-43.02%
Christmas trees, woodland & wetland	22,385	1,269,535	1.76%	-17.37%
All other land	8,268	404,714	2.04%	-12.90%
Total area of farms	234,774	11,766,071	2.00%	-6.99%
Greenhouse Area, 2021 Census (square feet)				
Total area in use	461,766	201,055,888	0.23%	-61.40%
Farm Capital Value, 2021 Census (farms reporting)				
Under $200,000	24	1,212	1.98%	-63.64%
$200,000 to $499,999	72	3,223	2.23%	-52.94%
$500,000 to $999,999	220	8,699	2.53%	-28.10%
$1,000,000 and over	590	35,212	1.68%	13.46%
Total Gross Farm Receipts, 2021 Census (farms reporting)				
Under $10,000	173	7,277	2.38%	-34.22%
$10,000 to $24,999	135	7,429	1.82%	-25.41%
$25,000 to $49,999	124	6,263	1.98%	-13.29%
$50,000 to $99,999	115	6,093	1.89%	-16.06%
$100,000 to $249,999	119	6,817	1.75%	-7.03%
$250,000 to $499,999	58	4,448	1.30%	-13.43%
$500,000 to $999,999	61	3,954	1.54%	-10.29%
$1,000,000 to $1,999,999	40	2,452	1.63%	-4.76%
$2,000,000 and over	30	1,696	1.77%	87.50%
Farms by Industry Group, 2021 Census (number of farms)				
Beef cattle ranching and farming	119	7,986	1.49%	6.25%
Dairy cattle and milk production	80	3,188	2.51%	-13.04%
Hog and pig farming	1	1,189	0.08%	-50.00%
Poultry and egg production	19	2,061	0.92%	0.00%
Sheep and goat farming	18	1,309	1.38%	-5.26%
Other animal production	113	4,556	2.48%	-36.16%
Oilseed and grain farming	343	18,194	1.89%	0.29%
Vegetable and melon farming	29	1,562	1.86%	-50.00%
Fruit and tree nut farming	17	1,211	1.40%	-19.05%
Greenhouse, nursery and floriculture	43	1,672	2.57%	-20.37%
Other crop farming	124	5,418	2.29%	-16.78%

Item	Ottawa	Province	Percent of province	Percent from 2016
Major Field Crops, 2021 Census (acres)				
Winter wheat	4,152	1,144,406	0.36%	-33.38%
Oats for grain	1,243	84,320	1.47%	53.08%
Barley for grain	1,391	68,756	2.02%	-8.85%
Mixed grains	373	59,961	0.62%	-35.36%
Corn for grain	54,252	2,202,465	2.46%	-10.68%
Corn for silage	7,605	289,678	2.63%	8.10%
Hay	38,755	1,704,017	2.27%	1.58%
Soybeans	69,545	2,806,255	2.48%	2.17%
Potatoes	25	39,193	0.06%	-21.88%
Major Fruit Crops, 2021 Census (acres)				
Total fruit crops	290	48,661	0.60%	-15.70%
Apples	47	16,008	0.29%	-29.85%
Sour Cherries	0	1,383	0.00%	-
Peaches	0	4,608	0.00%	-
Grapes	30	18,432	0.16%	50.00%
Strawberries	171	2,633	6.49%	4.27%
Raspberries	23	438	5.25%	-50.00%
Major Vegetable Crops, 2021 Census (acres)				
Total vegetables	1,785	127,893	1.40%	-
Sweet corn	379	20,518	1.85%	-14.45%
Tomatoes	29	14,614	0.20%	-35.56%
Green peas	6	14,044	0.04%	-70.00%
Green or wax beans	122	8,709	1.40%	84.85%
Livestock Inventories, 2021 Census (number)				
Total cattle and calves	29,254	1,604,810	1.82%	1.71%
Steers	3,200	299,540	1.07%	114.33%
Beef cows	3,330	224,194	1.49%	-12.46%
Dairy cows	9,529	327,272	2.91%	2.29%
Total pigs	2,592	4,071,902	0.06%	-
Total sheep and lambs	3,541	322,508	1.10%	-16.98%
Poultry Inventories, 2021 Census (number)				
Total hens and chickens	190,885	53,802,772	0.35%	-34.06%
Total turkeys	230	2,453,126	0.01%	27.07%





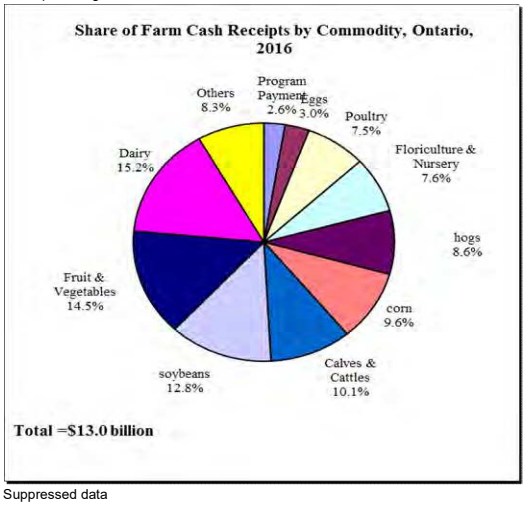
F - too unreliable to be published
Sources: 2021 & 2016 Census of Agriculture, OMAFRA
2022-06-21

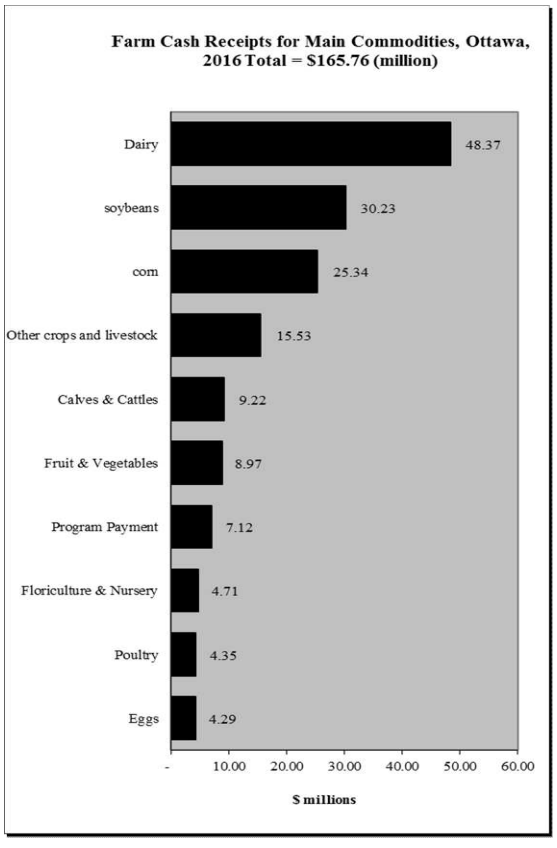
Ottawa Ag Profile

Ottawa Division at a Glance - 2016

Item	Ottawa	Province	Percent of province	Percent from 2011
Farms, 2016 Census (number)				
Total	1,045	49,600	2.11	-7.36
Under 10 acres	95	3,051	3.11	39.71
10 to 69 acres	274	12,625	2.17	-3.18
70 to 129 acres	216	10,742	2.01	-16.92
130 to 179 acres	83	4,592	1.81	-9.78
180 to 239 acres	84	4,282	1.96	-12.50
240 to 399 acres	122	6,008	2.03	-14.69
400 to 559 acres	65	3,093	2.10	-23.53
560 to 759 acres	49	1,990	2.46	19.51
760 to 1,119 acres	21	1,593	1.32	-27.59
1,120 to 1,599 acres	16	801	2.00	6.67
1,600 to 2,239 acres	12	457	2.63	100.00
2,240 to 2,879 acres	3	168	1.79	-50.00
2,880 to 3,519 acres	2	88	2.27	100.00
3,520 acres and over	3	110	2.73	0.00
Land Use, 2016 Census (acres)				
Land in crops	191,447	9,021,298	2.12	-1.50
Summerfallow land	469	15,885	2.95	-3.50
Tame or seeded pasture	7,560	514,168	1.47	-40.65
Natural land for pasture	16,364	783,566	2.09	-12.94
Christmas trees, woodland & wetland	27,090	1,542,637	1.76	-7.13
All other land	9,493	470,909	2.02	-25.67
Total area of farms	252,423	12,348,463	2.04	-5.93
Greenhouse Area, 2016 Census (square feet)				
Total area in use	1,196,192	158,511,328	0.75	-29.87
Farm Capital Value, 2016 Census (farms reporting)				
Under $200,000	66	2,142	3.08	57.14
$200,000 to $499,999	153	7,433	2.06	-43.54
$500,000 to $999,999	306	12,500	2.45	-13.80
$1,000,000 and over	520	27,525	1.89	13.04
Total Gross Farm Receipts, 2016 Census (farms reporting)				
Under $10,000	263	9,536	2.76	-21.26
$10,000 to $24,999	181	8,376	2.16	-12.56
$25,000 to $49,999	143	6,755	2.12	10.85
$50,000 to $99,999	137	6,263	2.19	0.00
$100,000 to $249,999	128	7,022	1.82	0.79
$250,000 to $499,999	67	4,707	1.42	-23.86
$500,000 to $999,999	68	3,689	1.84	1.49
$1,000,000 to $1,999,999	42	2,019	2.08	50.00
$2,000,000 and over	16	1,233	1.30	45.45
Farms by Industry Group, 2016 Census (number of farms)				
Beef cattle ranching and farming	112	6,786	1.65	-22.22
Dairy cattle and milk production	92	3,439	2.68	-22.69
Hog and pig farming	2	1,229	0.16	-33.33
Poultry and egg production	19	1,816	1.05	90.00
Sheep and goat farming	19	1,097	1.73	-17.39
Other animal production	177	5,902	3.00	-17.67
Oilseed and grain farming	342	16,876	2.03	20.85
Vegetable and melon farming	58	1,856	3.13	41.46
Fruit and tree nut farming	21	1,362	1.54	-8.70
Greenhouse, nursery and floriculture	54	2,050	2.63	-21.74
Other crop farming	149	7,187	2.07	-24.75

Item	Ottawa	Province	Percent of province	Percent from 2011
Major Field Crops, 2016 Census (acres)				
Winter wheat	6,232	1,080,378	0.58	207.00
Oats for grain	812	82,206	0.99	-43.57
Barley for grain	1,526	103,717	1.47	-32.89
Mixed grains	577	92,837	0.62	-54.78
Corn for grain	60,738	2,162,004	2.81	16.42
Corn for silage	7,035	295,660	2.38	-4.98
Hay	38,153	1,721,214	2.22	-33.39
Soybeans	68,067	2,783,443	2.45	18.95
Potatoes	32	34,685	0.09	-41.82
Major Fruit Crops, 2016 Census (acres)				
Total fruit crops	344	51,192	0.67	-4.44
Apples	67	15,893	0.42	1.52
Sour Cherries	x	2,121	-	-
Peaches	0	5,232	0.00	-
Grapes	20	18,718	0.11	5.26
Strawberries	164	2,915	5.63	-1.80
Raspberries	46	680	6.76	-25.81
Major Vegetable Crops, 2016 Census (acres)				
Total vegetables	x	135,420	-	-
Sweet corn	443	22,910	1.93	-14.64
Tomatoes	45	15,744	0.29	9.76
Green peas	20	16,268	0.12	-23.08
Green or wax beans	66	9,732	0.68	-21.43
Livestock Inventories, 2016 Census (number)				
Total cattle and calves	28,763	1,623,710	1.77	-20.35
Steers	1,493	305,514	0.49	17.47
Beef cows	3,804	236,253	1.61	-37.94
Dairy cows	9,316	311,960	2.99	-18.41
Total pigs	x	3,534,104	-	-
Total sheep and lambs	4,265	321,495	1.33	14.04
Poultry Inventories, 2016 Census (number)				
Total hens and chickens	289,489	50,759,994	0.57	51.83
Total turkeys	181	3,772,146	-	-32.21





x Suppressed data

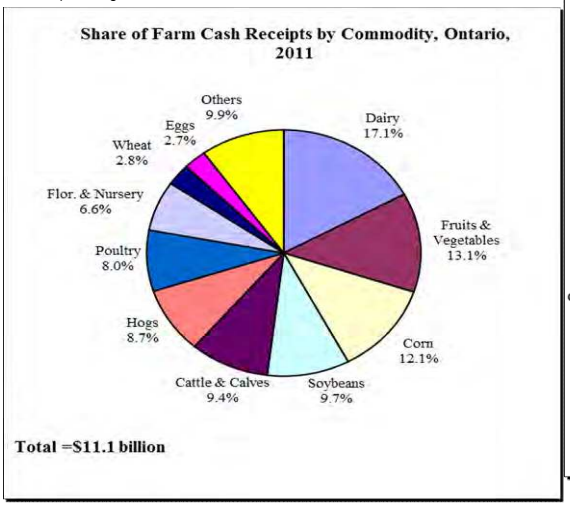
Sources: 2016 & 2011 Census of Agriculture and Strategic Policy Branch, OMAFRA

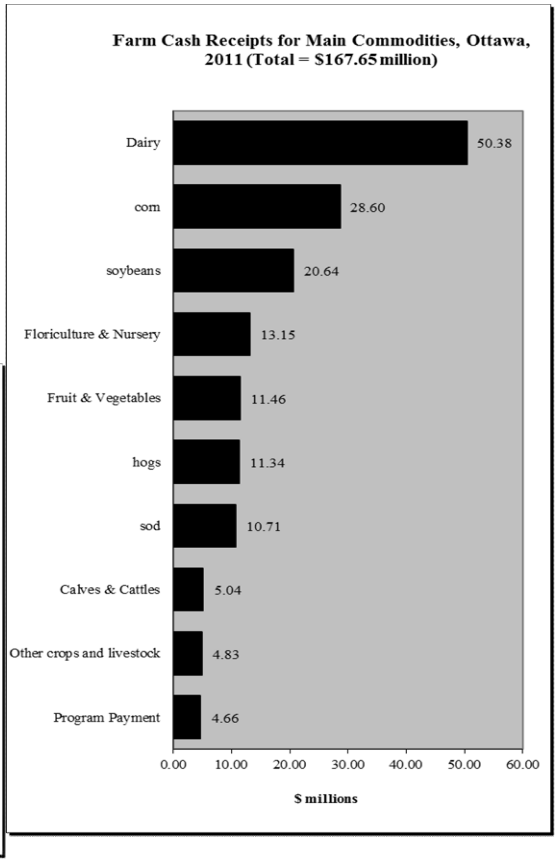
2017-06-02

Ottawa Division at a Glance - 2011

Item	Ottawa	Province	Percent of province
Farms, 2011 Census (number)			
Total	1,128	51,950	2.17
Under 10 acres	68	2,741	2.48
10 to 69 acres	283	12,681	2.23
70 to 129 acres	260	11,779	2.21
130 to 179 acres	92	4,969	1.85
180 to 239 acres	96	4,801	2.00
240 to 399 acres	143	6,460	2.21
400 to 559 acres	85	3,359	2.53
560 to 759 acres	41	2,026	2.02
760 to 1,119 acres	29	1,587	1.83
1,120 to 1,599 acres	15	788	1.90
1,600 to 2,239 acres	6	436	1.38
2,240 to 2,879 acres	6	152	3.95
2,880 to 3,519 acres	1	79	1.27
3,520 acres and over	3	92	3.26
Land Use, 2011 Census (acres)			
Land in crops	194,365	8,929,947	2.18
Summerfallow land	486	23,450	2.07
Tame or seeded pasture	12,737	648,758	1.96
Natural land for pasture	18,796	984,809	1.91
Christmas trees, woodland & wetland	29,170	1,612,444	1.81
All other land	12,771	468,828	2.72
Total area of farms	268,325	12,668,236	2.12
Greenhouse Area, 2011 Census (square feet)			
Total area in use	1,705,787	133,520,541	1.28
Farm Capital Value, 2011 Census (farms reporting)			
Under $200,000	42	2,562	1.64
$200,000 to $499,999	271	12,994	2.09
$500,000 to $999,999	355	15,276	2.32
$1,000,000 and over	460	21,118	2.18
Total Gross Farm Receipts, 2011 Census (farms reporting)			
Under $10,000	334	12,263	2.72
$10,000 to $24,999	207	9,098	2.28
$25,000 to $49,999	129	6,720	1.92
$50,000 to $99,999	137	6,189	2.21
$100,000 to $249,999	127	6,985	1.82
$250,000 to $499,999	88	5,086	1.73
$500,000 to $999,999	67	3,248	2.06
$1,000,000 to $1,999,999	28	1,558	1.80
$2,000,000 and over	11	803	1.37
Farms by Industry Group, 2016 Census (number of farms)			
Beef cattle ranching and farming	144	7,105	2.03
Dairy cattle and milk production	119	4,036	2.95
Hog and pig farming	3	1,235	0.24
Poultry and egg production	10	1,619	0.62
Sheep and goat farming	23	1,446	1.59
Other animal production	215	6,966	3.09
Oilseed and grain farming	283	15,818	1.79
Vegetable and melon farming	41	1,531	2.68
Fruit and tree nut farming	23	1,548	1.49
Greenhouse, nursery and floriculture	69	2,372	2.91
Other crop farming	198	8,274	2.39

Item	Ottawa	Province	Percent of province
Major Field Crops, 2011 Census (acres)			
Winter wheat	2,030	1,100,003	0.18
Oats for grain	1,439	71,040	2.03
Barley for grain	2,274	126,881	1.79
Mixed grains	1,276	106,162	1.20
Corn for grain	52,172	2,032,356	2.57
Corn for silage	7,404	271,701	2.73
Hay	57,276	2,077,911	2.76
Soybeans	57,224	2,464,870	2.32
Potatoes	55	37,384	0.15
Major Fruit Crops, 2011 Census (acres)			
Total fruit crops	360	52,740	0.68
Apples	66	15,830	0.42
Sour Cherries	x	2,342	-
Peaches	0	6,455	0.00
Grapes	19	18,383	0.10
Strawberries	167	3,283	5.09
Raspberries	62	902	6.87
Major Vegetable Crops, 2011 Census (acres)			
Total vegetables	1,481	129,595	1.14
Sweet corn	519	25,540	2.03
Tomatoes	41	16,558	0.25
Green peas	26	15,121	0.17
Green or wax beans	84	9,186	0.91
Livestock Inventories, 2011 Census (number)			
Total cattle and calves	36,112	1,741,381	2.07
Steers	1,271	291,263	0.44
Beef cows	6,130	282,062	2.17
Dairy cows	11,418	318,158	3.59
Total pigs	3,964	3,088,646	0.13
Total sheep and lambs	3,740	352,807	1.06
Poultry Inventories, 2011 Census (number)			
Total hens and chickens	190,662	46,902,316	0.41
Total turkeys	267	3,483,828	0.01





APPENDIX D

Canada Land Inventory Information

Canada Land Inventory Soil Capability Classification for Agriculture

The Canada Land Inventory (CLI) classification system was developed to classifying soil capability for agricultural use for use across Canada. CLI is an interpretative system which assesses the effects of climate and soil characteristics on the limitations of land for growing common field crops. It classifies soils into one of seven capability classes based on the severity of their inherent limitations to field crop production. Soils descend in quality from Class 1, which is highest, to Class 7 soils which have no agricultural capability for the common field crops. Class 1 soils have no significant limitations. Class 2 through 7 soils have one or more significant limitations, and each of these are denoted by a capability subclass.

In Ontario the document, "Classifying Prime and Marginal Agricultural Soils and Landscapes: Guidelines for Application of the Canada Land Inventory in Ontario" (OMAFRA, 2008) provides a Provincial interpretation of the CLI classification system. These guidelines are based on the "Canada Land Inventory, Soil Capability Classification for Agriculture" (ARDA Report No. 2, 1965) and have been modified for use in Ontario. In Ontario, CLI Classes 1 to 4 lands are generally considered to be arable lands and Classes 1 to 3 soils and specialty crop lands are considered to be prime agricultural lands.

The following definitions were taken from Classifying Prime and Marginal Agricultural Soils and Landscapes: Guidelines for Application of the Canada Land Inventory in Ontario (2008).

Definitions of the Capability Classes

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.

Definitions of the Prime and Non-prime Agricultural Lands

In Ontario, CLI Classes 1, 2 and 3 and specialty crop lands are considered prime agricultural lands. Non-prime agricultural lands are comprised of CLI Class 4-7 lands.

Organic soils (Muck) are not classified under the CLI system but are mapped and identified as O in the provincial mapping.

Definitions of the Capability Subclasses

Capability Subclasses indicate the kinds of limitations present for agricultural use. Thirteen Subclasses were described in CLI Report No. 2. Eleven of these Subclasses have been adapted to Ontario soils.

Subclass Definitions:

Subclass C - Adverse climate: This subclass denotes a significant adverse climate for crop production as compared to the "median" climate which is defined as one with sufficiently high growing-season temperatures to bring common field crops to maturity, and with sufficient precipitation to permit crops to be grown each year on the same land without a serious risk of partial or total crop failures. In Ontario this subclass is applied to land averaging less than 2300 Crop Heat Units.

Class	Crop Heat Units
1	>2300
2C	1900-2300
3C	1700-1900
4C	<1700

Subclass D - Undesirable soil structure and/or low permeability*:* This subclass is used for 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.

Class	Soil Characteristics
2D	The top of a clayey horizon >15 cm thick occurs within 40 cm of the soil surface. Clayey materials in this case must have >35% clay content.
3D	The top of a very fine clayey (clay content >60%) horizon >15 cm thick occurs within 40 cm of the soil surface

Subclass E - Erosion*:* Loss of topsoil and subsoil by erosion has reduced productivity and may in some cases cause difficulties in farming the land e.g. land with gullies.

Class	Soil Characteristics
2E	Loss of the original plough layer, incorporation of original B horizon material into the present plough layer, and general organic matter losses have resulted in moderate losses to soil productivity.
3E	Loss of original solum (A and B horizons) has resulted in a plough layer consisting mostly of

	Loamy or Clayey parent material. Organic matter content of the cultivated surface is less than 2%.
4E	Loss of original solum (A and B horizons) has resulted in a cultivated layer consisting mainly of Sandy parent material with an organic matter content of less than 2%; shallow gullies and occasionally deep gullies which cannot be crossed by machinery may also be present.
5E	The original solum (A and B horizons) has been removed exposing very gravelly material and/or frequent deep gullies are present which cannot be crossed by machinery.

Subclass F - Low natural fertility*:* This subclass is made up of soils having low fertility that is either correctable with careful management in the use of fertilizers and soil amendments or is difficult to correct in a feasible way. The limitation may be due to a lack of available plant nutrients, high acidity, low exchange capacity, or presence of toxic compounds.

Class	Upper Texture Group (>40 and <100 cm from surface)	Lower Texture Group (remaining materials to 100 cm depth)	Drainage Class	Additional Soil Characteristics[1]
2F	Sandy	Sandy or very gravelly	Rapid to imperfect	Neutral or alkaline parent material with a Bt horizon within 100 cm of the surface
3F	Sandy	Sandy or very gravelly	Any drainage class	Neutral or alkaline parent material with no Bt horizon present within 100 cm of surface
3F	Sandy	Loamy or Clayey	Any drainage class	Acid parent material
3F	Loamy or clayey	Any Texture Group	Any drainage class	Acid parent material
4F	Sandy	Sandy or very gravelly	Any drainage class	Acid parent material
4F	Very gravelly	Any texture	Rapid to imperfect	Neutral to alkaline parent material
5F	Very Gravelly	Any texture	All drainage classes	Acid parent material

[1] "Acid" means pH<5.5; "Neutral" pH 5.5 to 7.4; "Alkaline" pH>7.4 as measured in 0.01 M CaCl2 (CSSC, 1998). PH 's measured in distilled water tend to be slightly higher (up to 0.5 units).

Bt horizon should be fairly continuous and average more than 10cm thickness

Subclass I - Inundation by streams or lakes: Flooding by streams and lakes causes crop damage or restricts agricultural use.

Class	Soil Characteristics
3I	Frequent inundation with some crop damage; estimated frequency of flooding is less than once every 5 years (Floodplain); includes higher floodplain-terraces on which cultivated field crops can be grown.
5I	Very frequent inundation with some crop damage; estimated frequency of flooding is at least once every 5 years (Floodplain); includes active floodplain areas on which forage crops can be grown primarily for pasture.
7I	Land is inundated for most of the growing season; often permanently flooded (Marsh)

Subclass M – Moisture deficiency: Soils in this subclass have lower moisture holding capacities and are more prone to droughtiness.

Class	Soil Texture Groups		Drainage	Additional Soil Characteristics
	Upper materials1	Lower materials2		
2M	15 to 40 cm of loamy or finer materials	Sandy to Very Gravelly	Well	
2M	40 to < 100 cm of sandy to very gravelly material.	Loamy to Very Fine Clayey	Well	
2M	Sandy		Rapid to well	Well developed Bt3 horizon occurs within 100 cm of surface
3M	Sandy material to > 100cm		Rapid	Bt horizon absent within 100 cm of surface
4M	Very Gravelly to > 100 cm		Rapid	Bt horizon present within 100 cm of surface
5M	Very gravelly to > 100cm		Very rapid	Bt horizon absent within 100cm

Subclass P - Stoniness: This subclass indicates soils sufficiently stony to hinder tillage, planting, and harvesting operations.

Class	Soil Characteristics
2P	Surface stones cause some interference with tillage, planting and harvesting; stones are 15-60 cm in diameter, and occur in a range of 1-20 m apart, and occupy <3% of the surface area. Some stone removal is required to bring the land into production.
3P	Surface stones are a serious handicap to tillage, planting, and harvesting; stones are 15-60 cm in diameter, occur 0.5-1m apart (20-75 stones/100 m^2), and occupy 3-15% of the surface area. The occasional boulder >60 cm in diameter may also occur. Considerable stone removal is required to bring the land into production. Some annual removal is also required.
4P	Surface stones and many boulders occupy 3-15% of the surface. Considerable stone and boulder removal is needed to bring the land into tillable production. Considerable annual removal is also required for tillage and planting to take place.
5P	Surface stones 15-60 cm in diameter and/or boulders >60 cm in diameter occupy 15-50% of the surface area (>75 stones and/or boulders/100 m2).
6P	Surface stones 15-60 cm in diameter and/or boulders >60 cm in diameter occupy >50% of the surface area.

Subclass R - Shallowness to Consolidated Bedrock: This subclass is applied to soils where the depth of the rooting zone is restricted by consolidated bedrock. Consolidated bedrock, if it occurs within 100 cm of the surface, reduces available water holding capacity and rooting depth. Where physical soil data were available, the water retention model of McBride and Mackintosh was used to assist in developing the subclass criteria.

Class	Soil Characteristics
3R	Consolidated bedrock occurs at a depth of 50-100 cm from the surface causing moderately severe restriction of moisture holding capacity and/or rooting depth.
4R	Consolidated bedrock occurs at a depth of 20-50 cm from the surface causing severe restriction of moisture holding capacity and/or rooting depth.
5R	Consolidated bedrock occurs at a depth of 10 to 20 cm from the surface causing very severe restrictions for tillage, rooting depth and moisture holding capacity. Improvements such as tree removal, shallow tillage, and the seeding down and fertilizing of perennial forages for hay and grazing may be feasible.

6R	Consolidated bedrock occurs at a depth of 10-20 cm from the surface but improvements as in 5R are unfeasible. Open meadows may support grazing.
7R	Consolidated bedrock occurs at < 10cm from the surface.

Subclass S - Adverse soil characteristics: This subclass denotes a combination of limitations of equal severity. In Ontario it has often been used to denote a combination of F and M when these are present with a third limitation such as T, E or P.

Subclass T - Topography

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

Determination of Subclass T for Very Gravelly and Sandy Soils

Slope %	<2		2-5		5-9		9-15		15-30		30-60		>60	
Slope type	S	C	S	C	S	C	S	C	S	C	S	C	S	C
Class				2T	2T	3T	3T	4T	5T	5T	6T	6T	7T	7T

Slope %	<2		2-5		5-9		9-15		15-30		30-60		>60	
Slope type	S	C	S	C	S	C	S	C	S	C	S	C	S	C
Class				2T	3T	3T	4T	4T	5T	5T	6T	6T	7T	7T

S = Simple Slopes >50 m in length

C =Complex Slopes <50 m in length

Subclass W - Excess water:

The presence of excess soil moisture, other than that brought about by inundation, is a limitation to field crop agriculture. Excess water may result from inadequate soil drainage, a high water table, seepage or runoff from surrounding areas.

Soil Textures and Depths	**Depth to Bedrock** (cm)	**Soil Class** (Drainage in place or feasible)	**Soil Class** (Drainage not feasible)
Very gravelly, sandy, or loamy extending >40 cm from the surface, or, <40 cm of any other textures overlying very gravelly, sandy or loamy textures	>100	2W	4W, 5W
>40 cm depth of clayey or very fine clayey textures, or, <40 cm of any other texture overlying clayey or very fine clayey textures	>100	3W	5W
<40 cm of peaty material overlying any texture	>100	3W	5W
All textures	50-100	4W	5W
All textures	0-50	NA	5W

APPENDIX E

LEAR Calculation Summary

Scenario 1 - Original Score

Land Evaluation Scoring				Area Review Score							LEAR Score
CLI Rating	Points	% on property	LE Score	Parcel Size		Land Use (L)		Non-Conflicting (NC)Land Uses		AR Score	
1	10	0	0	Parcel Size	Points	% Parcel in Agricultural Use	Points	% Non-Conflicting Uses within 500m	Points	Parcel Size + Land Use + NC Land Use	LE Score + AR Score
2	8	54.77	61.3424	>36.4	10	**85-100%**	**10**	100%	10		
3	6.5	43.73	39.7943	**20.2-36.4**	**9**	70-<85%	9	**85-99%**	**8**		
4	5.5	0	0	10.1-20.2	6	55-<70%	8	50-<85%	4		
5	5	0	0	4.5-10.1	4	40-<55%	7	0-<50%	0		
6	4	0	0	<4.5	1	25-<40%	4	Weight	1		
7 or NM	0	1.5	0	Weight	2	10-<25%	2				
100.00						0-<10%	1				
						Weight	3				
LE Score			**101.14**	Score	**18**	Score	**30**	Score	**8**	**56**	**157.14**

Scenario 2 - Revised Score

Land Evaluation Scoring				Area Review Score							LEAR Score
CLI Rating	Points	% on property	LE Score	Parcel Size		Land Use (L)		Non-Conflicting (NC)Land Uses		AR Score	
1	10	0	0	Parcel Size	Points	% Parcel in Agricultural Use	Points	% Non-Conflicting Uses within 500m	Points	Parcel Size + Land Use + NC Land Use	LE Score + AR Score
2	8	25.4	28.448	>36.4	10	85-100%	10	100%	10		
3	6.5	65.23	59.3593	**20.2-36.4**	**9**	70-<85%	9	**85-99%**	**8**		
4	5.5	0	0	10.1-20.2	6	55-<70%	8	50-<85%	4		
5	5	9.37	6.559	4.5-10.1	4	40-<55%	7	0-<50%	0		
6	4	0	0	<4.5	1	25-<40%	4	Weight	1		
7 or NM	0	0	0	Weight	2	10-<25%	2				
100.00						**0-<10%**	**1**				
						Weight	3				
LE Score			**94.37**	Score	**18**	Score	**3**	Score	**8**	**29**	**123.37**

APPENDIX F

Land Use Notes

Land Use Survey Notes – AIA for Huntmar Drive Lands			
Weather	Sunny, 17km/h N winds	**Date (s)**	August 13, 2020
Temperature	30°C	**File**	C20061

Site No.	Type of Use	Type of Operation	MDS Calculation Required?	Description of Operation
1	Non-Agricultural	Recreational	No	Stan's Driving Range & Miniature Golf.
2	Non-Agricultural	Recreational	No	Thunderbird Sports Centre – Sports Complex.
3	Non-Agricultural	Institutional	No	Dave Smith Youth Treatment Centre – residential community-based treatment centre for youth, treating substance abuse issues. Old barn on site in fair condition, does not appear to be housing livestock. New construction underway on property, appears to be for expansion of existing use. https://davesmithcentre.org/
4	Non-Agricultural	Utility	No	Municipal utility, small flat-roofed structure.
5	Agricultural	Unoccupied Livestock Operation	Yes	Large steel-roofed equestrian barn in good condition. Overgrown horse track, paddocks in rear with field structures in fair condition.
6	Agricultural	Remnant Farm	No	No trespassing signs. Barn in poor condition, very overgrown, hole in roof. Several small structures in similar condition.
7	Non-Agricultural	Institutional	No	Trinity Presbyterian Church.
8	Agricultural	Remnant Farm	No	Barn and implement sheds in poor condition, barn appears overgrown. Gated entry.
9	Non-Agricultural	Quarry	No	Huntley Quarry – Green Infrastructure Partners Inc. Pit and quarry, maximum tonnage of 1,800,000, licensed area of 131.3 ha. ALPS ID: 4079.

	Total Number	Active	Retired or Remnant
Agricultural	3	0	1 – Unoccupied Livestock Operation 2 – Remnant Farm
Agriculture-related	0	0	0
On-farm Diversified	0	0	0
	Total Number	**Type**	
Non-Agricultural	6	2 – Recreational 2 – Institutional 1 – Quarry Operation 1 – Utility	

APPENDIX G

AgriSuite MDS Report

Ontario

AgriSuite

C20061

General information

Application date
May 22, 2025

Municipal file number

Proposed application
Other Type A land use

Applicant contact information

ON

Location of subject lands

City of Ottawa
City of Ottawa

Calculations

Operation 5

Farm contact information

ON

Location of existing livestock facility or anaerobic digestor

City of Ottawa
City of Ottawa
Roll number 0614

Total lot size

22.35 ha

Livestock/manure summary

Manure Form	Type of livestock/manure	Existing maximum number	Existing maximum number (NU)	Estimated livestock barn area
Solid	Horses, Medium-framed, mature; 227 - 680 kg (including unweaned offspring)	60	60 NU	1394 m²

Confirm Livestock/Manure Information (Operation 5)

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

Setback summary

Existing manure storage	- Not Specified -
Design capacity	60 NU
Potential design capacity	120 NU

Factor A (odour potential)	0.7	Factor B (design capacity)	336.55
Factor D (manure type)	0.7	Factor E (encroaching land use)	1.1

Building base distance 'F' (A x B x D x E) (minimum distance from livestock barn)	182 m (597 ft)
Actual distance from livestock barn	NA
Storage base distance 'S' (minimum distance from manure storage)	No existing manure storage
Actual distance from manure storage	NA

Preparer signoff & disclaimer

Preparer contact information

ON

Signature of preparer

05-29-2025

Date (mmm-dd-yyyy)

Note to the user

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