AGRICULTURAL IMPACT ASSESSMENT

CBM DANCE PIT EXPANSION

PART LOTS 14 & 15, CONCESSION 10 TOWNSHIP OF NORTH DUMFRIES REGION OF WATERLOO

<u>PREPARED FOR:</u> CBM Aggregates A Division of St. Marys Cement Inc. (Canada)

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Table of Contents

| 1.0 | Introduction | 4 |
|--------|---|---|
| 1.1 | 1 Purpose of the Study | 4 |
| 1.2 | 2 Location | 5 |
| 1.3 | 3 Description of the Proposal | 5 |
| 1.4 | 4 Review of Background Information | 5 |
| 1.4 | 4 Analysis of Impact | 6 |
| 1.6 | 6 Mitigation Measures and Net Impacts | 6 |
| 2.0 Ag | gricultural Policy Requirements | 7 |
| 2.1 | 1 Provincial Policy Statement (PPS 2020) | 7 |
| 2.2 | 2 Growth Plan for the Greater Golden Horseshoe | |
| 2.3 | 3 Region of Waterloo Official Plan (ROP) | 9 |
| 2.4 | 4 Township of North Dumfries Official Plan | |
| 2.5 | 5 Township of North Dumfries Zoning By-law | |
| 3.0 St | tudy Area and Methodology | |
| 3.1 | 1 Primary Study Area | |
| 3.2 | 2 Secondary Study Area | |
| 3.3 | 3 Study Methodology | |
| 4.0 DI | ESCRIPTION OF SOILS AND LANDS | |
| 4.1 | 1 Physiography | |
| 4.2 | 2 Surficial Geology | |
| 4.3 | 3 Surface Drainage Features | |
| 4.4 | 4 Soil Resources | |
| 4.5 | 5 Canada Land inventory (CLI) Agricultural Classification | |
| 4.6 | 6 OMAFRA Agricultural Systems Portal | |
| 4.7 | 7 Statistics Canada Census of Agriculture Review | |
| 4.8 | 8 Land Use Characteristics | |
| 4.9 | 9 Agricultural Investment | |
| 5.0 As | ssessment of Impacts to Agriculture | |
| 5.1 | 1 Loss of Agricultural Resources | |
| 5.2 | 2 Impacts to Agricultural Operations | |
| 5.3 | 3 Dust Impact | |
| 5.4 | 4 Water Resources | |
| 5.5 | 5 Traffic | |



| 5.6 Noise | 21 |
|--|---------|
| 5.0 Mitigation Measures2 | 21 |
| "A study that evaluates the potential impacts of non-agricultural development on agricultural operations and the Agricultural System and recommends ways to avoid or, if avoidance is not possible, minimize and mitigate adverse impacts. (Greenbelt Plan)" | ! 21 |
| 6.1 Avoidance2 | 21 |
| 6.2 Minimizing Impacts | 21 |
| 6.3 Mitigating Impacts | 22 |
| 2.0 Rehabilitation | 22 |
| 7.1 Rehabilitation to Agriculture, Best Practices2 | 22 |
| A grass-legume cover crop should be established initially in order to maximize results. Crops should be plowed under annually in order to promote and increase organic matter. Crops should be monitored at least twice during the growing season to ensure success of cover crop and control of weed growth. Over seeding and reseeding may be necessary to control weeds and ensure successful crop establishment | 23 |
| 7.2 Site Plans: Rehabilitation | 23 |
| 3.0 Conclusions | 25 |

APPENDIX 1

Statistics Canada, Agricultural Census Data 2016, Regional Municipality of Waterlo0

REPORT FIGURES

| Figure 1 | Location |
|-----------|---|
| Figure 2 | Study Area |
| Figure 3 | Growth Plan Agricultural System |
| Figure 4 | Region of Waterloo Official Plan, Countryside |
| Figure 5 | Region of Waterloo, Mineral Aggregate Resources |
| Figure 6 | Township of North Dumfries Official Plan, Land Use |
| Figure 7 | Township of North Dumfries Official Plan, Prime Agricultural Area |
| Figure 8 | Township of North Dumfries Official Plan, Mineral Aggregate Resources |
| Figure 9 | Soil Resources |
| Figure 10 | Crop Mapping |
| Figure 11 | CLI Map |
| | |

Figure 12 Agri Food Resources



1.0 Introduction

CBM Aggregates (CBM), a division of St. Marys Cement Inc. (Canada), is submitting an application to amend the Zoning by-law for the Township of North Dumfries, to permit the expansion of a sand and gravel pit operation ("Dance Pit Expansion"). In addition to the municipal Planning Act application, the proponent submitted an application to the Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF) under the *Aggregate Resources Act* (ARA) for Class A pit above the water table.

This Agricultural Impact Assessment (AIA) has been prepared as part of the Zoning By-law amendment application submission, at the request of the Township of North Dumfries. The report was prepared in accordance with the Agricultural Impact Assessment (AIA) Guidance Document (2018) prepared by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). It addresses the applicable provincial and municipal policies for locating new aggregate operations in agricultural areas.

The Official Plan for the Region of Waterloo (ROP) designates the subject property as 'Prime Agricultural Area'. The subject property is also identified as "Mineral Aggregate Resource Area' on OP Map No. 8. These designations are also reflected in the Official Plan for the Township of North Dumfries. Mineral Aggregate extraction is a permitted use in the Prime Agricultural Area, both within and outside the Mineral Aggregate Resource Area, subject to the policies of the Plan. The Provincial Policy Statement (PPS) permits aggregate extraction on prime agricultural lands in prime agricultural areas; however, the PPS requires that alternative sites be investigated and impacts on surrounding agricultural operations and lands be assessed and mitigated to the extent feasible.

1.1 Purpose of the Study

This Agricultural Impact Assessment (AIA) has been prepared to identify and evaluate the potential impacts of the proposed CBM Dance Pit Expansion on agricultural operations and the Agricultural System. The report identifies and evaluates potential impacts of the proposed pit expansion on the local *Agricultural System* and recommends mitigation measures that avoid, minimize and/or eliminate identified potential adverse impacts to the extent feasible.

The AIA assesses both the Subject Lands and a broader Study Area, which was determined based on the recommendations provided in the Agricultural Impact Assessment (AIA) Guidance Document. The AIA characterizes the agricultural operations and agricultural resources within the Primary Study Area (i.e. Subject Lands and immediate adjacent area) and broader Secondary Study Area through review of available background information, field studies and discussions with the proponent.



The AIA provides an assessment of conformity to all applicable agricultural policies, the agricultural

resources, land uses in the Study Area, an investigation of agricultural investments and infrastructure, alternative locations considered, and an assessment of any potential conflicts with surrounding agricultural operations within the Study Area.

1.2 Location

The subject property is located in the Township of North Dumfries, on the south side of Cedar Creek Rd., just west of the City of Cambridge (see **Figure 1**). The westerly portion (45 ha) of the 74-ha property owned by the applicant, is currently zoned and licensed for aggregate extraction (CBM Dance Pit). The remaining 29 ha of the applicant's lands to the east are currently being actively farmed. The applicant is proposing to extend their existing aggregate operations to include the lands they own in Part Lots 14 and 15, Concession 10.

The property has direct access to a Regional Rd (Cedar Creek Rd.). Surrounding land uses include licensed gravel pits located to the west, north and south, and a residential subdivision located directly east of the site, within the City of Cambridge limits. There are several active farming operations in the area (see **Figure 2**)

1.3 Description of the Proposal

CBM is proposing the expansion of their existing sand and gravel operation, to add an additional licensed area of approximately 29 hectares, with extraction proposed on a portion (20.8 ha) of the subject lands. The expansion will extend the supply of aggregate reserves at this location allowing CBM to continue to supply sand and gravel products the local market.

Rehabilitation will be undertaken progressively, with the final land use plan implemented to restore the extracted area to an agricultural end use. The proposed rehabilitation will be compatible with the surrounding land uses. A complete description of the operation can be found in the ARA Summary Statement and is detailed on the ARA Site Plans.

1.4 Review of Background Information

The background review included:

- a review of the soils information from the provincial digital soil resource database for the Subject Lands and published reports (Soils of the Regional Municipality of Waterloo, Report No. 44)
- the Growth Plan for the Greater Golden Horseshoe, the Implementation Procedures for the Agricultural System in Ontario's Greater Golden Horseshoe (2020) and the draft Agricultural Impact Assessment Guidance Document (OMAFRA 2018);
- a review of Regional of Waterloo Official Plan and Township of North Dumfries Official Plan



policies and land use designations;

- a review of the parcel fabric in the Study Area to assess the level of fragmentation of agricultural lands;
- a review OMAFRA's Agricultural Information Atlas, the Greater Golden Horseshoe Agricultural Systems Portal mapping to obtain agricultural resources information; anda review aerial photographic imagery to review the type and extent of agricultural operations on Site and in the surrounding area and to identify potential sources of conflict.

1.4 Analysis of Impact

As outlined in the AIA Guidance Document (draft), the potential negative effects of the proposed aggregate extraction operation on agriculture was evaluated through an assessment of:

- The quality and quantity of agricultural land impacted;
- Fragmentation of agricultural lands and operations;
- The type of agricultural, agriculture-related or on-farm diversified uses being impacted and their significance for supporting other agricultural production in the surrounding area;
- The infrastructure, services or assets important to the surrounding agricultural community and agri-food sector;
- The disruption or loss of function to artificial drainage and irrigation installations;
- Changes to surface drainage features which could have an effect on adjacent lands;
- Changes to landforms, elevations and slope that could alter microclimatic conditions (e.g. modification to slopes that may reduce or improve cold air drainage opportunities and changes to elevation may have an impact on diurnal temperatures);
- Changes to hydrogeological conditions that could affect neighboring municipal or private wells, sources of irrigation water and sources of water for livestock; and
- 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).

1.6 Mitigation Measures and Net Impacts

As outlined in the AIA Guidance Document and Growth Plan policies, whenever possible, development should avoid impacts on the agricultural system. When impacts cannot be avoided, mitigation measures will be prepared to minimize or mitigate potential impacts of the proposed aggregate operation. The net impacts will then be assessed based on the assumption that the proposed mitigation measures will be put in place. One means typically employed to reduce impacts related to loss of agricultural lands is to progressively rehabilitate the site and restore the agricultural capability of the affected lands. The proposed rehabilitation of the Dance Pit Expansion is discussed further in section 7 of this report.



2.0 Agricultural Policy Requirements

2.1 Provincial Policy Statement (PPS 2020)

The 2020 Provincial Policy Statement provides a policy-led planning approach that recognizes the complex inter-relationship among environmental, economic and social factors in land use planning. The PPS supports a comprehensive, integrated and long-term approach to planning and recognizes linkages among policy areas. (Part III)

The PPS recognizes that the Province's natural heritage resources, water, agricultural lands, mineral aggregate resources, cultural heritage and archaeological resources provide important environmental, economic and social benefits. The wise use and management of these resources over the long term is a key provincial interest. The province must ensure that its resources are managed in a sustainable way to conserve biodiversity, protect essential ecological processes and public health and safety, provide for the production of food and fiber, minimize environmental and social impacts and meet its long term economic needs. (PPS, Part IV)

The Dance Pit Expansion property contains resources that are considered to be of provincial significance: a high-quality aggregate resource, and prime agricultural land. The operations and progressive rehabilitation plans have been designed to achieve the balance required to manage these overlapping provincial interests.

The latest version of the PPS came into effect on May 1, 2020. Section 2.3 of the PPS addresses proposed development in prime agricultural area. The PPS 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.

Section 2.3.6 states that:

"Planning authorities may only permit non-agricultural uses in prime agricultural areas for:

a) extraction of minerals, petroleum resources and mineral aggregate resources, in accordance with policies 2.4 and 2.5; or

b) limited non-residential uses, provided that all of the following are demonstrated:

- 1. the land does not comprise a specialty crop area;
- 2. the proposed use complies with the minimum distance separation formulae;
- 3. there is an identified need within the planning horizon provided for in policy 1.1.2 for additional land to be designated to accommodate the proposed use; and

4. alternative locations have been evaluated, and

i. there are no reasonable alternative locations which avoid prime agricultural areas; and

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

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

The Subject Lands and most of the Study Area are in an area that consists of predominantlyprime agricultural land. Section 2.3.6 a) of the PPS states that mineral aggregate extraction is a permitted use in prime agricultural areas, in accordance with policies 2.4 and 2.5.

Section 2.5.4 deals specifically with mineral aggregate extraction in prime agricultural areas. Section 2.5.4.1 states:

"In prime agricultural areas, on prime agricultural land, extraction of mineral aggregate resources is permitted as an interim use provided that the site will be rehabilitated back to an agricultural condition."

The Rehabilitation Plans outline the details of the proposed rehabilitation to an agricultural condition with an objective to restore the lands to the same or better capability as pre-extraction.

2.2 Growth Plan for the Greater Golden Horseshoe

The Subject Lands are located within the Greater Golden Horseshoe Growth Plan Area and are within the Agricultural System (see **Figure 3**). The Growth Plan for the Greater Golden Horseshoe was prepared and approved under the Places to Grow Act, 2005 and the most recent version of the Plan took effect on August 28, 2020.

The Plan replaces the Growth Plan for the Greater Golden Horseshoe, 2017 that took effect on July 1, 2017. Like other provincial plans, this Plan builds upon the policy foundation provided by the PPS and provides additional and more specific land use planning policies to address issues facing specific geographic areas in Ontario. This Plan is intended to be read in conjunction with the PPS.

The Growth Plan recognizes the management or use of resources as a permitted use in rural areas (Sec 2.2.9.3a). The Plan provides for the identification and protection of a Natural Heritage System (Sec 4.1). The Dance Pit Expansion property is not within the Growth Plan Natural Heritage System.

The Plan also provides for identification and protection of an Agricultural System. The Dance Pit Expansion property is located within the Growth Plan Agricultural System and is identified as prime

agricultural area. The Growth Plan requires an Agricultural Impact Assessment (AIA) for new aggregate operation. There is no policy requirement to complete an AIA for an expansion to an existing pit operation. However, as described in this report, the proposed Dance Pit Expansion has considered the PPS requirements related to extraction and rehabilitation in prime agricultural areas. Although the Growth Plan does not specifically require an AIA for expansions to existing aggregate operations, this report has been prepared at the request of the Township of North Dumfries as part of the planning application.

The Growth Plan outlines the following policy for aggregate resources:

"Building compact communities and the infrastructure needed to support growth requires significant mineral aggregate resources. The Aggregate Resources Act establishes the overall process for the management of mineral aggregate operations, and this Plan works within this framework to provide guidance on where and how aggregate resource extraction can occur, while balancing other planning priorities. The GGH contains significant deposits of mineral aggregate resources, which require long-term management, including aggregate reuse and recycling. Ensuring mineral aggregate resources are available in proximity to demand can support the timely provision of infrastructure and reduce transportation-related greenhouse gas emissions."

Section 4.2.8 contains the policies for Mineral Aggregate Resources in the Growth Plan Area. The polices allow for expansion of an existing mineral aggregate operation in the Natural Heritage System, provided that the proposal is consistent with the PPS and satisfies the rehabilitation requirements in the Growth Plan (Section 4.2.8.2 c).

2.3 Region of Waterloo Official Plan (ROP)

The Regional Municipality of Waterloo Official Plan (ROP) was approved under Section 17 of the Planning Act and came into force on June 18, 2015. The policies and land use schedules contained in the ROP establish locational and development review requirements for various land uses (residential, commercial, industrial, institutional, parks, etc.), set out how agricultural land and other natural features and cultural heritage resources are to be protected and provide direction on how environmental constraints are to be addressed.

The Dance Pit Expansion property is currently designated as "Protected Countryside" and "Prime Agricultural Area" in the Regional Official Plan (see **Figure 4**). The property is also identified as a "Mineral Aggregate Resource Area" on Map 8 of the County Official Plan (see **Figure 5**). There are no Regional Greenland features identified. A portion of the property is identified as a Source Water Protection Area.

The Regional Plan recognizes the importance of mineral aggregate resources and provides for

resource extraction within the Countryside designation. Within the Agricultural Reserve designation, sand and gravel extraction and ancillary uses are permitted without an amendment to the OP, provided that the proposal complies with the policies related to resource extraction (OP Section 9).

The Dance Pit is within an area of agricultural and mineral extractive land uses. There are a number of other existing licensed sand and gravel pits also located in the area. The proposed pit expansion has been designed to minimize the impact to the community located to the east of the site. The phasing of extraction and progressive rehabilitation of the site, together with location of acoustic berms and visual screens around the perimeter of the site, are informed by the technical reports and are designed to minimize impacts of the proposed pit operations.

Chapter 6 of the ROP (Supporting the Countryside) sets out the following:

Overall Goal – Protect the rural character of the countryside while supporting the development of strong and prosperous rural communities.

Section 6.A.7 states "Mineral aggregate operations may be permitted as an interim use in the Prime Agricultural Area and Rural Area designations in accordance with the policies in Chapter 9."

Chapter 9 (Managing Aggregate Resources) sets out the detailed policies and approval requirements for new aggregate operations. The overall goal is to "Plan for the availability of mineral aggregate resources to support the region's economic and growth needs, while preventing or minimizing any potential impacts of mineral aggregate operations on surface water and groundwater resources, surrounding communities, cultural heritage resources, environmental features and ecological functions, and agricultural resources and operations".

Section 9.F outlines the ROP policies for rehabilitation of aggregate operations and The pit operation and rehabilitation has been designed to ensure a logical sequence of extraction and progressive rehabilitation (Section 9.F).

9.F.1 All proposals for new *mineral aggregate operations*, including *wayside pits and quarries*, will include a rehabilitation plan to the satisfaction of the Region and Area Municipalities that will ensure that:

(a) progressive rehabilitation will be carried out whenever feasible so that depleted areas are restored while extraction continues in other areas of the site;

(b) final rehabilitation will comply with the land use designations contained in this Plan and Area Municipal official plan, and be compatible with the character of surrounding land uses;

(c) within the Prime Agricultural Area and Rural Areas designations, rehabilitation to agriculture will be the first priority, as follows:

i) within the Prime Agricultural Area, substantially the same land area will be rehabilitated back to an agricultural condition to allow for the same range and productivity of crops common in the area; and

ii) within Rural Areas, rehabilitation of the site will be carried out so that substantially the same land area and same average soil quality for agriculture are restored.

(d) where mineral aggregate extraction has occurred below the water table, rehabilitation will be in accordance with Policy 9.D.1 (c) to protect groundwater quality.

Note that this policy is also found in the Township Official Plan, Section 5.2.8.3.

Extraction and rehabilitation of the Dance Pit Expansion will occur progressively in phases to ensure that as much of the site as possible remains in agricultural production. The final rehabilitation of the site will be to agriculture, with the same soil capability as pre-extraction. Rehabilitation details and sequence are outlined on the Site Plans.

The proposed CBM Dance Pit Expansion would permit the development of an expansion to an existing sand and gravel pit operation. An Amendment to the Regional Official Plan is not required.

2.4 Township of North Dumfries Official Plan

The CBM Dance Pit Expansion property is designated as 'Agricultural Area' on the Official Plan's Land Use Map (see **Figure 6**). It is also identified as "Prime Agricultural Area" on OP Map No. 7 (See **Figure 7**) and "Mineral Aggregate Resource Area' on OP Map No. 8 (see **Figure 8)**.

The OP states:

"New mineral aggregate extraction within the prime agricultural area and rural areas designation may be permitted as an interim use, subject to the policies of this Plan, provided that agricultural rehabilitation is maximized." (Section 5.2.3.4)

As noted above, Section 5.2.8.3 outlines the policies for rehabilitation planning for "new" aggregate operations. Although the CBM proposal is an expansion to an existing operation and not a "new" operation, the proposal satisfies the requirements of this section as it pertains to progressive and final rehabilitation planning.

2.5 Township of North Dumfries Zoning By-law

The Township implements its Official Plan policies and regulates land uses through its Zoning By-Law. Zoning By-law 689-83, as Amended, was consolidated in July 2012.

The current zoning of the property is Z1 (Rural) with a special exception (Sec 20.1.76) that allows for rental of campers, tents and camping equipment (see Figure 10). The proposed application is to change the zoning, for the proposed pit, to Gravel Pit Zone 14 (Z.14). This latter zone provides for the following permitted uses:

- the making, establishment or operations of a pit or quarry;
- buildings or structures which are incidental to and directly related to the extraction operation and which are shown on the site plan forming part of the licence approval; and
- nothing in the foregoing shall be deemed to permit any manufacturing, commercial or processing operation except for the screening, washing, crushing and storage of material mined on the site.

An application for a zoning by-law amendment is being submitted to the Township of North Dumfries Zoning By-law 689-83, to rezone the lands from "Rural" (Z1) to Gravel Pit (Z14) to permit the establishment of a Class A pit license, Category 3, above the water table.

3.0 Study Area and Methodology

The Study Area for the AIA includes a Primary Study Area, a Secondary Study Area and a broader study area for the Alternative Site Assessment.

3.1 Primary Study Area

The Primary Study Area includes all lands/properties which are potentially directly impacted by the proposed aggregate extraction operation. This includes the Subject Lands (e.g. the proposed licensed area) and any lands immediately adjacent (e.g. 120 m) to the licensed area which are potentially directly impacted by the operation (e.g. changes to surface drainage patterns).

3.2 Secondary Study Area

The Secondary Study Area includes the lands that could potentially be affected by indirect impacts of the proposed aggregate operation. For this study, the Secondary Study Area includes all lands within a minimum of 1.0 km of the Subject Lands. The Secondary Study Area also includes the haul route to assess whether changes to the proposed use of or upgrades to a local road may have an impact on agricultural operations.



3.3 Study Methodology

The study methodology involves a review of background information and site-specific information collected through field inventories. The background information includes information obtained through a review of planning documents and information provided by Study Team members; a review of existing published documents to obtain soil and climate resource and drainage information; a review of agricultural systems mapping; and a review of the lot fabric within the Study Area.

The field inventories included a reconnaissance level soil confirmation survey and a land use survey of the surrounding area to identify agricultural operations, relative levels of agricultural investment, cropping patterns and mix of land uses.

4.0 DESCRIPTION OF SOILS AND LANDS

4.1 Physiography

The northern part of the Site is within the physiographic region known as the Guelph Drumlin Field while the southern part of the Site is within the Horseshoe Moraines. The general landform pattern of the Guelph Drumlin Field consists of drumlins or groups of drumlins fringed by gravel terraces and separated by swampy valleys with tributaries flowing to the Grand River (Chapman and Putnam, 1984). The Horseshoe Moraines are comprised of irregular, stony knobs and ridges, composed mostly of till, with some sand and gravel deposits, and sand and gravel terraces with swampy valley floors.

4.2 Surficial Geology

Surficial geology mapping by the Ontario Geological Survey (OGS, 2003) shows surficial coarse grain deposits are underlain by the Maryhill or Port Stanley Till, which extends to the surface of the bedrock. In general, the overburden includes the outwash gravel and till sequences. Bedrock underlying the glacial deposits is comprised of Middle Silurian dolostone from the Guelph Formation, which dips regionally toward the southwest.

The Aggregate Resource Inventory Paper for the Regional Municipality of Waterloo (ARIP 161, 1998) identifies the Site as a sand and gravel resource area of primary significance, specially identified as Selected Area No. 32. The ice-contact stratified drift has an estimated depth greater that 6 m and gravel content greater than 35%.

4.3 Surface Drainage Features

There are no surface watercourses or waterbodies within the Site. According to the City of Cambridge interactive GIS mapping service, Devil's Creek, a tributary of the Grand River, is located approximately

80 m northeast of the Site. Additionally, tributaries and surface water bodies of Cedar Creek are located approximately 800 m west of the Site.

4.4 Soil Resources

The soil mapping in The Soils of the Region of Waterloo provide mapping at a scale of 1:25,000 covering the Study Area. According to the mapping, the Study Area consist mainly of Buford-Fox and Dumfries soils, with pockets of Freeport-Woolwich also found in the Study Area (see **Figure 9**).

The soils on the northern portion of the Site and extending across Cedar Creek Road are Dumfries type. The Dumfries soils are developed on the stony loam and loam tills of the Galt and Paris Moraines and almost 8,700 acres of these soils have been mapped in North Dumfries Township. The A horizons of Dumfries soils are usually developed in a thin layer of relatively stone-free loam that overlies the till. The B horizons are distinctively reddish brown. They contain varying contents of clay and gravel and range from clay loam to gravelly sandy loam in texture. The C horizons consist of calcareous materials of varied textures and degree of sorting. They range from loam till, with a high proportion of rounded dolomite boulders and cobbles, to well-sorted gravelly sandy loam. Land use limitations include relatively low water-holding capacity, relatively low fertility and some areas are very stony.

The soils on the southern part of the as property well as most of the surrounding lands are Burford-Fox. The Burford soils are well-drained soils developed on 12 inches or less of loam or sandy loam overlying gravelly soil materials. They occupy almost 7,500 acres in North Dumfries Township according to the Waterloo Soils Report. The dark brown surface horizons of Burford loam have relatively low organic matter contents, usually loam or sandy loam textures, and up to 20% gravel or cobbles.

The C horizons of Burford soils are highly calcareous, contain over 50% gravel, and frequently have lenses or layers of sand interbedded with the gravels. Burford soils found on the outwash plains and terraces have a high potential for producing aggregate products.

The main limitations to crop growth of the Burford soils are their low moisture-holding capacities and naturally low nutrient levels. The effects of these limitations are more severe with increasing slope steepness or gravel content. Plant nutrients must be supplied to these soils by fertilizers or manures. Organic matter levels must be maintained to hold the plant nutrients in available forms. They are generally used for growing forage crops, spring grains, winter wheat, and corn (See **Figure 10**).

4.5 Canada Land inventory (CLI) Agricultural Classification

The Soil Capability for Agriculture mapping for the area, indicates that Canada Land Inventory (CLI) for the site is class 2fm (see **Figure 11**). The subclass symbols indicate soil limitations which include low

natural fertility, and low moisture-holding capacity. The coarse-grained soils are well drained and during hot and dry conditions, crop yields are impacted by the lack of soil moisture.

Class 1-3 soils are associated with prime agricultural lands. This is consistent with the Regional and Township Official Plan mapping which identifies this site as being within a prime agricultural area. Provincial and local planning policies allow aggregate extraction within prime agricultural areas, as an interim land use.

The rehabilitation plans for the Dance Pit Expansion are designed to ensure that agricultural uses can continue areas of the property that are not actively being extracted and ensures that the progressive rehabilitation maximizes agricultural rehabilitation. The final rehabilitation of the pit will restore the site to the same agricultural capability that exists pre-extraction.

4.6 OMAFRA Agricultural Systems Portal

A review of the OMAFRA Agricultural System Portal noted that there were no farmers markets, pick your own, nurseries, specialty farms, frozen food manufacturing, refrigerated warehousing/storage, livestock assets or abattoirs within the Study Area.

The closest major roadway is Cedar Creek Road, and the closest major highway is the Highway 401 located approximately 2 km to the northwest of the Subject Lands (see **Figure 12**).

4.7 Statistics Canada Census of Agriculture Review

The information available on the Statistics Canada Census for Agriculture was reviewed to obtain a more complete picture of the agricultural landscape in North Dumfries. The most recent data available is for 2016 and data for 2011 and 1996 was reviewed to identify trends (See **Appendix 1** for data tables).

The majority of the farms in the Township are between 10 - 69 acres with a trend towards smaller (under 10 acre) farm parcels over the period from 2011 to 2016. The total number of farms decreased from 124 to 108 over the same period with a 36 percent decrease in total farm area. Major field crops according to the census data are corn, hay and soybeans. Livestock inventories of pigs increased by 30 percent over the 2011 to 2016 period and total cattle inventories saw a decline of nearly 20 percent.

The proposed pit expansion would introduce a temporary loss of farmland; however, the progressive and final rehabilitation will return the lands to an agricultural after use so there is no long term impact on the agricultural area.

4.8 Land Use Characteristics

The Primary Study Area consists of lands within 120 m of the proposed pit expansion. The land uses in the Primary Study Area consist mainly of row crop production, rotating between corn and soybeans.

Land use in the Secondary Study Area is characterised by agricultural and aggregate uses and urban residential uses to the immediate east of the Site in the City of Cambridge. There are active farm operations to the south and north of the proposed expansion. There are also a natural heritage features in the vicinity.

Directly across from the Dance pit, on the north side of Cedar Creek Road, there is a farm property with a barn that currently supports a pet grooming business ("Brushcuts Pet Grooming). Another pet grooming business ("Cambridge Grooming") is located on the south side of Cedar Creek Road, just west of the existing pit entrance. This is also the location of "Cambridge Veterinary Services".

Further to the west, also on the north side of Cedar Creek Road, there is a well established business that specializes in breeding and training of service dogs (National Service Dogs). All of these businesses have co-existed with the pit operations in the area for several years.

It is important to note the proximity of the Subject Lands to the urban boundary of the City of Cambridge. The Southwood subdivision is located along the eastern portion of the Secondary Study Area in the City of Cambridge. This results in increased land fragmentation in the Study area and decreases the agricultural priority of the lands for agriculture.

There are no specialty crops grown within the Study Area.



STUDY AREA PHOTOS



Brushcuts Pet Grooming, Cedar Creek Rd.



Veterinary Clinic, NSD service dogs training centre





4.9 Agricultural Investment

Investment in agricultural land improvements is common in prime agricultural areas. These land improvements often include investment in artificial tile drainage installations and major investments such as the construction of municipal drains which benefit the broader agricultural community. In areas with imperfectly and poorly drained soil such as those in the study area, the installation of artificial drainage can significantly improve the productivity of the soil.

According to OMAFRA's AgMaps there are no municipal drains or agricultural tile drainage areas are mapped in the Study area. The lack of investment in tile drainage reduces the agricultural priority of the lands within the Subject Lands and broader study area.

Agricultural facilities in the Study Area were identified through the Agricultural Systems Portal mapping, together with aerial photographic interpretation, and roadside evaluations. The Agricultural Systems Portal contains mapping information on agricultural production, land use, and the agri-food network. Based on the mapping there are no agri-food system facilities within the

Primary or Secondary Study Area. Aerial photography and roadside evaluation confirmed the presence of two barns within the Study Area (see **Figure 12**). Field investigations confirmed that these barns are not actively being used for livestock.

5.0 Assessment of Impacts to Agriculture

The PPS requires that impacts from any new or expanding non-agricultural uses on surrounding agricultural operations and lands be mitigated to the extent feasible. The Growth Plan requires that new mineral aggregate operations in prime agricultural areas be supported by an agricultural impact assessment; and that that where possible, new mineral aggregate operations should seek to maintain or improve connectivity of the Agricultural System. Where negative impacts on the agri-food network are unavoidable, the Growth Plan requires that they be assessed, minimized, and mitigated to the extent feasible.

5.1 Loss of Agricultural Resources

The rehabilitation to an agricultural after use ensures that there will be no loss of agricultural lands in the long term. In the short term, while extraction is being undertaken, the phasing of the operation will allow for agricultural uses to continue in areas that are not being extracted, minimizing the short term loss of agricultural lands. The site will be progressively rehabilitated as outlined on the Site Plans.

The Subject Lands are being leased to a local, custom farm operator who also farms several other properties in the areas. The harvest and sale of the commodities produced on these lands support his farm operation, which in turn supports the broader agri-food network in the Region. It is understood that CBM will continue to lease the land for agricultural purposes until it is required for extraction, and farming will continue on the portions of the property that are not actively being mined. This will minimize the impact of the eventual long-term loss of the agricultural lands for common field crop production and the impact on the local agricultural system.

The Agricultural System Portal mapping shows a relatively low level of agricultural investment and few components of the agri-food network within the study areas. As a result, the proposed pit expansion will have a low impact on agriculture and agri-food industry.

5.2 Impacts to Agricultural Operations

Farm operations can be adversely impacted by new non-farm development on adjacent lands. The Subject Lands are not located near other active agricultural operations which greatly reduces the potential for disruption to farm operations.

Extractive industrial uses have the potential for increases in noise, vibration, dust and truck haul traffic within the Study Area. These issues have been addressed in detail in separate reports by other consultants. Because there are few agricultural operations in close proximity to the proposed pit expansion, increases in noise, vibration, dust and truck traffic are not expected to have a significant impact on agriculture or agri-food businesses in the area.

Farm operators can be adversely affected by increases in the volume of trucks on roads commonly used to move farm implements. The proposed pit expansion will utilize an existing entrance and haul route and will not generate additional truck traffic. The tonnage limit for the proposed expansion will be combined with the limit for the existing pit operation with no corresponding increase in truck traffic. Cedar Creek Road is a county arterial road and is recognized as an existing truck haul route.

5.3 Dust Impact

There are a number of typical sources of fugitive dust emissions resulting from mineral aggregate operations including: on-site traffic on Internal roads, material stockpiles, loading / unloading areas, material conveyance system; crushing and screening equipment; and active pit faces.

The ARA sets provincial standards for dust control in pits and quarries. All new licences must adhere to the prescribed conditions as set out in the ARA provincial standards for a pit above water:

- Dust will be mitigated on site;
 Water or other provincially approved dust suppressants will be applied to internal haul roads and processing areas as often as required to mitigate dust;
- Processing equipment will be equipped with dust suppressing or collecting devices, where the equipment makes dust or is operated within 300 metres of a sensitive receptor; and
- If required, an environmental compliance approval (ECA) will be obtained from the processing
- equipment to be used on site.

The Site Plans for the proposed Dance Pit Extension have been designed to minimize the open areas which are potential dust sources. In addition, the Operations Plan requires that vegetation be installed on all berms to reduce dust on site. The haul roads within the pit are treated with dust suppressants when required. Only MECP approved dust suppressants are used, the most common of which is water.

Esher Planning Inc.

The proposed extension will not increase the processing capacity of the existing pit operations, and no new equipment will be added as a result of the pit extension. Sand and gravel will be extracted from the expansion area by front end loader and transferred to the processing plant, which will remain on the existing Dance Pit licence. No stockpiles will be located in the expansion area. A berm will be constructed along the eastern and northern boundaries, which will act as a wind break.

The Air Quality Report, prepared by Golder Associates, provides a number of recommendations to mitigate dust. These include a restriction on any processing or stockpiling within the extension area, and installation of a silt fence at the tow of the berm along the eastern boundary of the property (adjacent to the residential area). As a result of implementing these measures, it is not anticipated that dust will have an impact on surrounding local agricultural uses.

5.4 Water Resources

Management of water resources is an important consideration for farm operations, particularly for watering field crops and livestock. Changes to the hydrologic and/or hydrogeologic conditions in the area surrounding the subject lands could have a negative impact on farm operations and crop yields.

The proposed aggregate operations on the subject lands are above the water table. No water taking or below water extraction is proposed. A "Maximum Predicted Water Table Report" was prepared by Golder Associates and has concluded that there will be no impact on the water table elevations as a result of the extraction on the expansion lands. As a result, there will be no impact on the domestic water wells as a result of the proposed expansions.

Given the conclusions of the Golder report and the types of crops and livestock operations within the study area, it is not anticipated that the surrounding agricultural operation will be impacted from a groundwater or surface water resource perspective. No water taking or any significant changes to the local drainage patterns/features are proposed as a result of the proposed operation.

5.5 Traffic

The proposed tonnage limit for the expansion will be combined with the existing Dance pit tonnage limit and as a result the truck traffic volumes to and from the licensed areas is not proposed to change. The existing entrance and established haul route will also remain unchanged. The majority of the shipments from the expansion will be on existing haul routes which are designed to carry high volumes of traffic. The proposed expansion is not expected to have any additional impact on agricultural traffic or farm vehicle movement in the area.



5.6 Noise

Noise is an additional potential impact from aggregate operations. A Noise Impact Study has been prepared by Golder Associates and has confirmed that, with the implementation of mitigation measures, the noise from the proposed extraction operations on the subject lands will comply with the provincial guidelines. The Noise Study recommends a number of noise control measures, and it is not anticipated that surrounding agricultural uses would be impacted by noise.

6.0 Mitigation Measures

The Growth Plan for the Greater Golden Horseshoe defines an Agricultural Impact Assessment as:

"A study that evaluates the potential impacts of non-agricultural development on agricultural operations and the Agricultural System and recommends ways to avoid or, if avoidance is not possible, minimize and mitigate adverse impacts. (Greenbelt Plan)".

6.1 Avoidance

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

The first method of addressing potential impacts is to avoid the potential impact. In this study, the proposed aggregate pit will be an interim use of agricultural lands in an agricultural area. The lands will be returned to agriculture in a phased rehabilitation plan. The type of change in land use, an operational aggregate pit, does not allow for an avoidance of Prime Agricultural Lands.

6.2 Minimizing Impacts

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

In the short term, the Subject Lands will continue to be used for agriculture until such time as the aggregate extraction commences. The phasing of the pit will maintain lands in agricultural use during pit operations as much as possible.

In the long term, the Subject Lands will maintain the agricultural designation and be returned to active agricultural use. In this way, the long-term use of the lands has been maintained, resulting in a minimization of the impact of the short-term loss of agricultural land use.

6.3 Mitigating Impacts

When avoidance techniques and minimizing impacts potential impacts to agriculture have not achieved the desired effect the next priority is to mitigate any further impact. With respect to this study and the Subject Lands, Mitigation Measures will include the use of berms and fencing to provide separation and physical barriers to reduce trespassing and potential vandalism, and for sound attenuation.

7.0 Rehabilitation

The proposed pit expansion will be rehabilitated back to an agricultural use. Rehabilitation will be coordinated with the adjacent Dance Pit, which is also being progressively rehabilitated back to an agricultural use.

7.1 Rehabilitation to Agriculture, Best Practices

Progressive rehabilitation is a requirement of the Aggregate Resources Act. It is also best practice that will contribute to successful agricultural rehabilitation. In the early stages of the operation, stripped soils and overburden will be stored separately in the berms that have been designed to provide acoustic and visual screening. As the operation progresses, stripped soils may be moved directly to depleted areas where they can immediately be used for agricultural rehabilitation. Stripping will be limited to what is required for a season of operations. This practice reduces the area that is disturbed at any one time and reduces the time that land is out of agricultural production. It also reduces double handling of soil materials.

In order to avoid impacts on soil structure as a result of compaction, it is also recommended that soils be handled under dry (not saturated) conditions. Stripping when the soil is frozen is generally not recommended as the potential of mixing of topsoil and subsoil increases under frozen conditions. To the extent possible, travel over soils and rehabilitated areas should be minimized. After spreading each layer of topsoil / subsoil, compaction should be remediated by ripping or tilling the soils. Any ripping / tilling during this process should avoid mixing of soil materials / layers.

When replacing and handling topsoil, subsoil or overburden these materials should be handled separately and under dry (unsaturated) conditions. Replaced soil should be free of stones, debris and deleterious materials. Soil testing should be completed to confirm soil fertility and nutrient content in order to determine the appropriate amount and type of soil amendments and / or fertilizer required.

A grass-legume cover crop should be established initially in order to maximize results. Crops should be plowed under annually in order to promote and increase organic matter. Crops should be monitored at least twice during the growing season to ensure success of cover crop and control of weed growth. Over seeding and reseeding may be necessary to control weeds and ensure successful crop establishment.

7.2 Site Plans: Rehabilitation

The ARA outlines the information that must be provided on the Site Plans for a pit proposing to extract above the water table.

The maximum permitted side slopes in accordance with the ARA provincial standards is 3:1 (33%). The side slopes will be graded to the desired slope prior to the replacement of topsoil and subsoil. Subject to availability of the material, flatter side slopes of 10:1 or greater may be created where possible to allow for agricultural use of the side slopes. This, however, would require a Site Plan amendment before being completed. Replacement of soil resources should be minimized on non-agricultural side slopes Slope contours on the pit floor will be as uniform as possible and grading should ensure there are no irregular undulations or depression areas on the rehabilitated pit floor. Slopes to be created will be in the range of 2% to 5% to provide for adequate surface drainage toward an outlet or infiltration or on-site surface water features.

PROGRESSIVE REHABILITATION PHOTOS



CBM DANCE PIT:

PROGRESSIVE REHABILITATION, FIELD HAS BEEN DEEP RIPPED, READY FOR STONE PICKING



CBM BROWN PIT: FIELD HAS BEEN GRADED AND COVER CROP PLANTED

The Rehabilitation Plans for the Dance Pit Expansion include the following information:

- Rehabilitated sloes within the licensed area will be constructed as shown on the cross sections. Slopes shall be rehabilitated by backfilling (minimum 3:1) and/or cut and fill method using available on-site overburden and topsoil and/or clean inert imported fill per operational note 20, page 2. Sideslopes may be flattened to increase agricultural variability, subject to a Site Plan amendment.
- All available topsoil on the site will remain to be used for rehabilitation of this site
- Topsoil shall be seeded with a mixture of grasses and legumes that may include the following at a rate of approximately 125kg/ha: buckwheat, tall fescue, red clover, annual rye, white clover
- Areas shall be rehabilitated back to agriculture as follows:
- deep ripping of area to eliminate compaction (where required)
- Spreading of approximately 200mm of overburden and rough grading
- Seed areas with seed mixture noted above. All vegetation planted during this license will be maintained in a healthy, vigorous growing condition
- Use of accepted farming practices to restore and maintain vegetation

8.0 Conclusions

The purpose of the AIA is to characterize the agricultural features of the Study Area, identify potential impacts to those features, and recommend mitigation measures to eliminate, reduce or mitigate identified impacts. This AIA has described the land uses, agricultural investments, and activities, and components of the agri-food system within the Subject Lands and the broader Study Area.

The Subject Lands are located on lands which are considered to be prime agricultural lands, and the goal of the progressive and final rehabilitation of the site is to return the lands to the same agricultural capability that exists on the site today. The proposed pit expansion will not have a direct impact on any farm operations, retire any agricultural infrastructure or other agricultural related facilities, or result in the loss of investment in land improvements, such as tile drainage installations.

The subject lands are currently in common field crop production and are leased by a single farmer who will continue to farm the lands until required for extraction purposes. No active livestock operations were identified in either the Primary Study Area (i.e., the Subject Lands) or within the Secondary Study Area. There are some farm operations and some agriculture-related uses such as a veterinary clinic, pet grooming and service dog training facilities in the Study Area.

Overall, although the lands are prime agricultural lands in a prime agricultural area, there is minimal agricultural activity within the Study Area other than the production of common field crops.

The proposed Dance Pit Expansion will not result in a significant negative impact on the longterm agricultural uses and operations on the subject lands and within the study areas. This opinion recognizes the following:

- Mineral aggregate extraction is a permitted use within prime agricultural areas in accordance with provincial policy.
- The subject lands are not within a specialty crop area.
- Although the subject properties are within a prime agricultural area, the properties will be rehabilitated back to agriculture with the same average soil capability that currently exists.
- The proposed expansion of the existing pit is within an area of established and concentrated mineral aggregate operations.
- No new haul routes are being created and existing truck traffic to/from the existing aggregate operations is not changing as a result of the proposed expansion.
- Extraction will be above the water table and no water taking is proposed. As a result, no impacts are anticipated on the availability of groundwater resources for the continued operation of surrounding agricultural uses.
- Impacts from dust, noise and visibility will be mitigated through implementation of prescribed conditions and technical requirements / recommendations and berming.
- The rehabilitation plan is designed to ensure a successful agricultural rehabilitation process.

The proposed Dance Pit Expansion is consistent with the Provincial and municipal agricultural policies.

APPENDIX 1



North Dumfries Township at a Glance - 2016

North Dumfries Township at a Glance - 2011

| Item | North Dumfries | Province | Percent of province | Percent from 2011 | Item | North Dumfries | Province | Percent of province | Percent from 2011 | Item | North Dumfries | Province | Percent of province | Item | North Dumfries | Province | Percent of province |
|-----------------------------|-------------------|---------------|--|----------------------|-----------------|-------------------|--|---------------------|----------------------|---------------------------|-------------------|---------------|----------------------|-----------------|-------------------|--------------|---------------------|
| Farms, 2016 Census (number) | | | Major Field Crops, 2016 Census (acres) | | | | Farms 2011 Census (number) Major Field Crops 2011 Census (acres) | | | | | | | | | | |
| Total | 108 | 49,600 | 0.22 | -12.90 | Winter wheat | • / 0 | 1,080,378 | , 0.00 | -100.00 | Total | 124 | , 51,950 | 0.24 | Winter wheat | 2,976 | 1,100,003 | , 0.27 |
| Under 10 acı | 10 | 3,051 | 0.33 | 66.67 | Oats for grain | 67 | 82,206 | 0.08 | -14.10 | Under 10 acı | 6 | 2,741 | 0.22 | Oats for grain | 78 | 71,040 | 0.11 |
| 10 to 69 acre | 35 | 12,625 | 0.28 | 9.38 | Barley for gra | 0 | 103,717 | 0.00 | -100.00 | 10 to 69 acre | 32 | 12,681 | 0.25 | Barley for gra | 129 | 126,881 | 0.10 |
| 70 to 129 ac | 27 | 10,742 | 0.25 | -28.95 | Mixed grains | 0 | 92,837 | 0.00 | -100.00 | 70 to 129 ac | 38 | 11,779 | 0.32 | Mixed grains | 168 | 106,162 | 0.16 |
| 130 to 179 a | 7 | 4,592 | 0.15 | -22.22 | Corn for grain | 4,918 | 2,162,004 | 0.23 | -47.41 | 130 to 179 a | 9 | 4,969 | 0.18 | Corn for grair | 9,351 | 2,032,356 | 0.46 |
| 180 to 239 a | 6 | 4,282 | 0.14 | -25.00 | Corn for silag | 662 | 295,660 | 0.22 | -13.01 | 180 to 239 a | 8 | 4,801 | 0.17 | Corn for silag | 761 | 271,701 | 0.28 |
| 240 to 399 a | 9 | 6,008 | 0.15 | -30.77 | Hay | 2,356 | 1,721,214 | 0.14 | -33.43 | 240 to 399 a | 13 | 6,460 | 0.20 | Hay | 3,539 | 2,077,911 | 0.17 |
| 400 to 559 a | 7 | 3,093 | 0.23 | 0.00 | Soybeans | 4,143 | 2,783,443 | 0.15 | -28.90 | 400 to 559 a | 7 | 3,359 | 0.21 | Soybeans | 5,827 | 2,464,870 | 0.24 |
| 560 to 759 a | 2 | 1,990 | 0.10 | -50.00 | Potatoes | 0 | 34,685 | 0.00 | - | 560 to 759 a | 4 | 2,026 | 0.20 | Potatoes | 0 | 37,384 | 0.00 |
| 760 to 1,119 | 3 | 1,593 | 0.19 | -25.00 | | | | | | 760 to 1,119 | 4 | 1,587 | 0.25 | | | | |
| 1,120 to 1,5§ | 2 | 801 | 0.25 | 0.00 | Major Fruit C | rops, 2016 C | ensus (acres |) | | 1,120 to 1,5§ | 2 | 788 | 0.25 | Major Fruit C | rops, 2011 C | ensus (acres | 3) |
| 1,600 to 2,23 | 0 | 457 | 0.00 | - | Total fruit cro | х | 51,192 | - | - | 1,600 to 2,23 | 0 | 436 | 0.00 | Total fruit cro | x | 52,740 | - |
| 2,240 to 2,87 | 0 | 168 | 0.00 | - | Apples | х | 15,893 | - | - | 2,240 to 2,87 | 0 | 152 | 0.00 | Apples | x | 15,830 | - |
| 2,880 to 3,51 | 0 | 88 | 0.00 | - | Sour Cherries | 0 | 2,121 | 0.00 | - | 2,880 to 3,51 | 0 | 79 | 0.00 | Sour Cherries | 0 | 2,342 | 0.00 |
| 3,520 acres | 0 | 110 | 0.00 | -100.00 | Peaches | х | 5,232 | - | - | 3,520 acres | 1 | 92 | 1.09 | Peaches | 0 | 6,455 | 0.00 |
| | | | | | Grapes | 0 | 18,718 | 0.00 | - | | | | | Grapes | 0 | 18,383 | 0.00 |
| Land Use, 20 | 16 Census (a | acres) | | | Strawberries | х | 2,915 | - | - | Land Use, 20 ⁴ | 11 Census (a | acres) | | Strawberries | x | 3,283 | - |
| Land in crops | 15,431 | 9,021,298 | 0.17 | -34.22 | Raspberries | х | 680 | - | - | Land in crops | 23,457 | 8,929,947 | 0.26 | Raspberries | x | 902 | - |
| Summerfallov | х | 15,885 | - | - | | | | | | Summerfallov | 36 | 23,450 | 0.15 | | | | |
| Tame or seec | х | 514,168 | - | - | Major Vegeta | ble Crops, 2 | 016 Census (a | acres) | | Tame or seec | 745 | 648,758 | 0.11 | Major Vegeta | ble Crops, 2 | 011 Census (| acres) |
| Natural land f | 701 | 783,566 | 0.09 | -23.80 | Total vegetab | х | 135,420 | - | - | Natural land f | 920 | 984,809 | 0.09 | Total vegetab | 75 | 129,595 | 0.06 |
| Christmas tre | 1,698 | 1,542,637 | 0.11 | -50.28 | Sweet corn | х | 22,910 | - | - | Christmas tre | 3,415 | 1,612,444 | 0.21 | Sweet corn | х | 25,540 | - |
| All other land | 913 | 470,909 | 0.19 | -40.94 | Tomatoes | х | 15,744 | - | - | All other land | 1,546 | 468,828 | 0.33 | Tomatoes | 0 | 16,558 | 0.00 |
| Total area of | 19,072 | 12,348,463 | 0.15 | -36.68 | Green peas | х | 16,268 | - | - | Total area of | 30,119 | 12,668,236 | 0.24 | Green peas | х | 15,121 | - |
| | | | | | Green or wax | 2 | 9,732 | 0.02 | - | | | | | Green or wax | х | 9,186 | - |
| Greenhouse | Area, 2016 C | ensus (squai | re feet) | | | | | | | Greenhouse / | Area, 2011 C | ensus (squar | e feet) | | | | |
| Total area in I | х | 158,511,328 | - | - | Livestock Inv | entories, 20 | 16 Census (ni | umber) | | Total area in | x | 133,520,541 | - | Livestock Inv | entories, 20 | 11 Census (n | umber) |
| | | | | | Total cattle ar | 3,311 | 1,623,710 | 0.20 | -18.71 | | | | | Total cattle ar | 4,073 | 1,741,381 | 0.23 |
| Farm Capital | Value, 2016 | Census (farm | ns reporting) | | Steers | х | 305,514 | - | - | Farm Capital | Value, 2011 | Census (farm | is reporting) | Steers | х | 291,263 | - |
| Under \$200,0 | 5 | 2,142 | 0.23 | 150.00 | Beef cows | 209 | 236,253 | 0.09 | - | Under \$200,0 | 2 | 2,562 | 0.08 | Beef cows | х | 282,062 | - |
| \$200,000 to \$ | 7 | 7,433 | 0.09 | -46.15 | Dairy cows | 1,090 | 311,960 | 0.35 | - | \$200,000 to \$ | 13 | 12,994 | 0.10 | Dairy cows | х | 318,158 | - |
| \$500,000 to \$ | 21 | 12,500 | 0.17 | -47.50 | Total pigs | 8,053 | 3,534,104 | 0.23 | 29.74 | \$500,000 to \$ | 40 | 15,276 | 0.26 | Total pigs | 6,207 | 3,088,646 | 0.20 |
| \$1,000,000 a | 75 | 27,525 | 0.27 | 8.70 | Total sheep a | х | 321,495 | - | - | \$1,000,000 a | 69 | 21,118 | 0.33 | Total sheep a | 454 | 352,807 | 0.13 |
| Total Gross F | arm Receipt | ts, 2016 Cens | us (farms repo | orting) | Poultry Inven | tories, 2016 | Census (num | ber) | | Total Gross F | arm Receip | ts, 2011 Cens | us (farms reporting) | Poultry Inven | tories, 2011 | Census (num | nber) |
| Under \$10,00 | 23 | 9,536 | 0.24 | 4.55 | Total hens an | 506,665 | 50,759,994 | 1.00 | - | Under \$10,00 | 22 | 12,263 | 0.18 | Total hens an | x | 46,902,316 | - |
| \$10,000 to \$2 | 25 | 8,376 | 0.30 | -10.71 | Total turkeys | x | 3,772,146 | - | - | \$10,000 to \$2 | 28 | 9,098 | 0.31 | Total turkeys | х | 3,483,828 | - |
| \$25,000 to \$4 | 11 | 6,755 | 0.16 | -35.29 | , | | | | | \$25,000 to \$4 | 17 | 6,720 | 0.25 | , | | | |
| \$50,000 to \$§ | 11 | 6,263 | 0.18 | -8.33 | | | | | | \$50,000 to \$§ | 12 | 6,189 | 0.19 | | | | |
| \$100,000 to \$ | 17 | 7,022 | 0.24 | 13.33 | | | | | | \$100,000 to \$ | 15 | 6,985 | 0.21 | | | | |
| \$250,000 to \$ | 8 | 4,707 | 0.17 | -42.86 | | | | | | \$250,000 to \$ | 14 | 5,086 | 0.28 | | | | |
| \$500,000 to \$ | 4 | 3,689 | 0.11 | -50.00 | | | | | | \$500,000 to \$ | 8 | 3,248 | 0.25 | | | | |
| \$1,000,000 tc | 6 | 2,019 | 0.30 | 50.00 | | | | | | \$1,000,000 tc | 4 | 1,558 | 0.26 | | | | |
| \$2,000,000 a | 3 | 1,233 | 0.24 | -25.00 | | | | | | \$2,000,000 a | 4 | 803 | 0.50 | | | | |
| Farms by Ind | ustry Group, | 2016 Census | s (number of fa | rms) | | | | | | Farms by Ind | ustry Group, | , 2011 Census | (number of farms) | | | | |
| Beef cattle ra | 15 | 6,786 | 0.22 | -6.25 | | | | | | Beef cattle ra | 16 | 7,105 | 0.23 | | | | |
| Dairy cattle a | 8 | 3,439 | 0.23 | 0.00 | | | | | | Dairy cattle ar | 8 | 4,036 | 0.20 | | | | |
| Hog and pig f | 2 | 1,229 | 0.16 | 0.00 | | | | | | Hog and pig f | 2 | 1,235 | 0.16 | | | | |
| Poultry and e | 6 | 1,816 | 0.33 | -25.00 | | | | | | Poultry and e | 8 | 1,619 | 0.49 | | | | |
| Sheep and go | 2 | 1,097 | 0.18 | -33.33 | | | | | | Sheep and gc | 3 | 1,446 | 0.21 | | | | |
| Other animal | 15 | 5,902 | 0.25 | -34.78 | | | | | | Other animal | 23 | 6,966 | 0.33 | | | | |
| Oilseed and ç | 39 | 16,876 | 0.23 | -7.14 | | | | | | Oilseed and g | 42 | 15,818 | 0.27 | | | | |
| Vegetable and | 1 | 1,856 | 0.05 | -50.00 | | | | | | Vegetable and | 2 | 1,531 | 0.13 | | | | |
| Fruit and tree | 1 | 1,362 | 0.07 | -50.00 | | | | | | Fruit and tree | 2 | 1,548 | 0.13 | | | | |
| Greenhouse, | 1 | 2,050 | 0.05 | -80.00 | | | | | | Greenhouse, | 5 | 2,372 | 0.21 | | | | |
| Other crop fa | 18 | 7,187 | 0.25 | 38.46 | | | | | | Other crop fa | 13 | 8,274 | 0.16 | | | | |

FIGURES





Figure 2: Study Area GoogleMaps, 2019



Dance Pit Expansion











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Dance Pit Expansion











Township of North Dumfries Regional Municipality of Waterloo



Figure 9: Soil Class - Canada Land Inventory, Soil Research Institute, Research Branch, Canada Department of Agriculture with the support of ARDA, Canada Department of Forestry and Rural Development, 1968 - Soil Capability for Agriculture Map



Legend

- CLASS 1 No significant limitations in use for crops
- CLASS 2 Moderate limitations that restrict the range of crops or require moderate conservation practices
- CLASS 3 Moderately severe limitations that restrict the range of crops or require special conservation practices
- CLASS 4 Severe limitations that restrict the range of crops or require special conservation practices, or both
- CLASS 5 Very severe limitations that restrict their capability to producing perennials forage for crops, and improvement practices are feasible



0

- 6 Capable only of producing perennial forage crops, and improvement practices are not feasible
- No capability for arable culture or permanent pasture

Organic Soils

Pattern is overprinted on the colours in complex areas, except those having ratios of 8:2, 8:1:1 and 9:1

Dance Pit Expansion

Part Lot 14 & 15, Concession 10 Township of North Dumfries Regional Municipality of Waterloo





355T



Dance Pit Expansion









Dance Pit Expansion





