Agricultural Impact Assessment

PREPARED FOR:

Aggregate Resources Act Licence Application, Official Plan Amendment, & Zoning By-Law Amendment
Strada Aggregates Inc.
Part of Lots 11-14, Concession 3
Township of Melancthon

File no. Y349J

January 2025

Your Vision

Designed | Planned | Realized

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MHBC | PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE

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1.0 Introduction

MacNaughton Hermsen Britton Clarkson Planning Ltd. (MHBC) has been retained by Strada Aggregates Inc. ("Strada") to complete an Agricultural Impact Assessment for the proposed Strada Pit/Quarry, located at the site of the existing Melancthon Pit on Part of Lots 11 to 14, Concession 3, Township of Melancthon, County of Dufferin (herein referred to as 'the subject lands').

The existing Melancthon Pit is comprised of three active above water gravel pits: Licence No. 129167, Licence No. 625155, and Licence No. 626199. Strada intends to submit an application with the Ministry of Natural Resources (MNR) for a Class A Licence for a Pit and Quarry Below Water within the footprint of the currently Licenced pit. An Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) will also be submitted to the Township.

The proposed area to be licenced is 149.0 hectares, of which the proposed pit limit of extraction is approximately 123.7 hectares, and the proposed quarry limit of extraction area is approximately 65.79 hectares. The operation is proposed to operate above and below the water table. The subject lands are located on the east side of 4th Line, north of County Road 17 and south of Side Road 15 in the Township of Melancthon north of the Town of Shelburne in the County of Dufferin (see **Figure 1**). The lands are surrounded predominantly by agricultural land under crop production, with a pit located to the west (Duivenvoorden Haulage Ltd. – Licence No. 3726) and another to the east (St. Mary's Cement – Licence No. 3512).

This report is intended to satisfy the Provincial Planning Statement requirement for the submission of an Agricultural Impact Assessment (AIA) to accompany applications for mineral aggregate operations in prime agricultural areas. This report has been prepared to be consistent with the Province's Draft Agricultural Impact Assessment Guidelines, released in March 2018 by the Ministry of Agriculture, Food and Rural Affairs.

1.1 Data Collection and Review

In preparing this report, the following background materials at the provincial, upper tier and municipal levels were reviewed:

- Provincial Planning Statement (2024);
- The County of Dufferin Official Plan; and,
- The Township of Melancthon Official Plan

A number of plans and reports were prepared in support of the applications and below is a list of reports that were also reviewed as part of the preparation of this Agricultural Impact Assessment:

- Hydrogeological Assessment (Tatham Engineering and EarthFX);
- Natural Environment Report (NRSI);
- Blasting Assessment (Explotech);
- Stage 1 & 2 Archaeological Assessments (ASI);

- Cultural Heritage Evaluation Report (MHBC)
- Air Quality Assessment (RWDI);
- Noise Assessment (Aercoustics);
- Traffic Study (HDR)
- Planning Justification Report and ARA Summary Statement (MHBC)
- Aggregate Resources Act Site Plans (MHBC).

In addition to the plans and reports that were specifically prepared in support of the ARA and Planning Act applications, the following materials were also reviewed:

- 2021 and 2016 Census of Agriculture and OMAFRA's Ontario business, agri-food, and farm data profile for Dufferin County;
- Soil data resource information including Ontario Soil Survey reports and mapping, the provincial digital soil resource database, Canada Land Inventory Agricultural Capability mapping, Soil Suitability information and mapping (for specialty crops), and information from on-site investigations;
- Aerial photography (historic and recent) with effective user scale of 1:10,000 or smaller;
- OMAFRA's constructed and agricultural Artificial Drainage Mapping (OMAFRA Agricultural Information Atlas);
- Agricultural Systems data from OMAFRA's Agricultural System Portal; and
- Parcel mapping/fabric of the area.

A land use survey was also conducted with additional information gathered from Google Satellite Imagery to gain a better understanding of the agricultural operations and activities in both the Primary and Secondary Study Areas. The survey was updated based on a review of aerial photography and through use of the Agriculture and Agri-Food Canada 2021 Crop Inventory. A summary of the land use survey is provided in Section 2.0 of this report. The potential for impacts will vary and mitigation is dependent on the type and sensitivity of the agricultural activities identified in the Primary and Secondary Study Areas.

1.2 Proposed Aggregate Extraction Operation

The subject lands are located on the east side of 4th Line, north of County Road 17 and south of Side Road 15 in the Township of Melancthon north of the Town of Shelburne in the County of Dufferin. The lands are surrounded predominantly by agricultural land under crop production, with a pit located to the west (Duivenvoorden Haulage Ltd. – Licence No. 3726) and another to the east (St. Mary's Cement – Licence No. 3512).

Strada is applying for a new Aggregate Resource Act (ARA) licence for a Class A Licence for a Pit/Quarry Below Water on the subject lands. The proposed area to be licenced is 149.0 hectares, of which the proposed pit limit of extraction is approximately 123.7 hectares, and the proposed quarry limit of extraction area is approximately 65.7 hectares. The quarry operation is proposed to operate below the water table. The southern portion of the site is proposed to be used as a wash plant, stockpile area, and water management ponds. Extraction below the water table is not proposed in this area. Most of the lands are already disturbed from ongoing aggregate operations, with the exception of the northern portion which is currently under agricultural n (but approved for aggregate extraction). The portion of the site that is proposed to operate as a pit/quarry (65.7 hectares) is planned to be rehabilitated to a lake with natural features on surrounding slopes. The portion of the site that is proposed to be a pit,

wash plant, stockpile area, and water management area is planned to be rehabilitated to a mixture of agriculture land and natural features (wetland, woodland, and meadow). The proposed rehabilitation concept can be found on **Figure 2.**

The proposed Strada Pit/Quarry is requesting a maximum annual extraction limit of up to 2 million tonnes per year of aggregate. Two truck entrance/exits exist from 4th Line and are proposed to be maintained and utilized for the pit/quarry operation. The following hours of operation are proposed for the Strada Pit/Quarry:

- **Extraction and processing** are permitted Monday to Saturday from 7:00am to 7:00pm excluding statutory holidays.
- **Shipping** is permitted Monday to Friday from 6:00am to 7:00pm and Saturdays from 6:00am to 5:00pm excluding statutory holidays.
- **Site preparation and rehabilitation** is permitted Monday to Friday from 7:00am to 5:00pm excluding statutory holidays.
- **Blasting** is permitted Monday to Friday from 8:00am to 6:00pm only during daylight hours.
- No operations on Sundays and statutory holidays as defined in accordance with the Employment Standards Act.

1.3 Purpose of the Study

The purpose of this Agricultural Impact Assessment is to evaluate potential impacts on agriculture from the proposed aggregate operation and identify mitigation measures to abate these impacts to the extent feasible. Furthermore, this report is intended to provide recommendations for rehabilitation of the site, as a portion of the land will be rehabilitated to an agricultural condition.

As part of this AIA, surrounding agricultural land uses and structures on properties within one kilometre of the subject lands have been documented to assess the potential impact from the proposed aggregate operation on the agricultural uses/operations and determine the extent of mitigation that may be required.

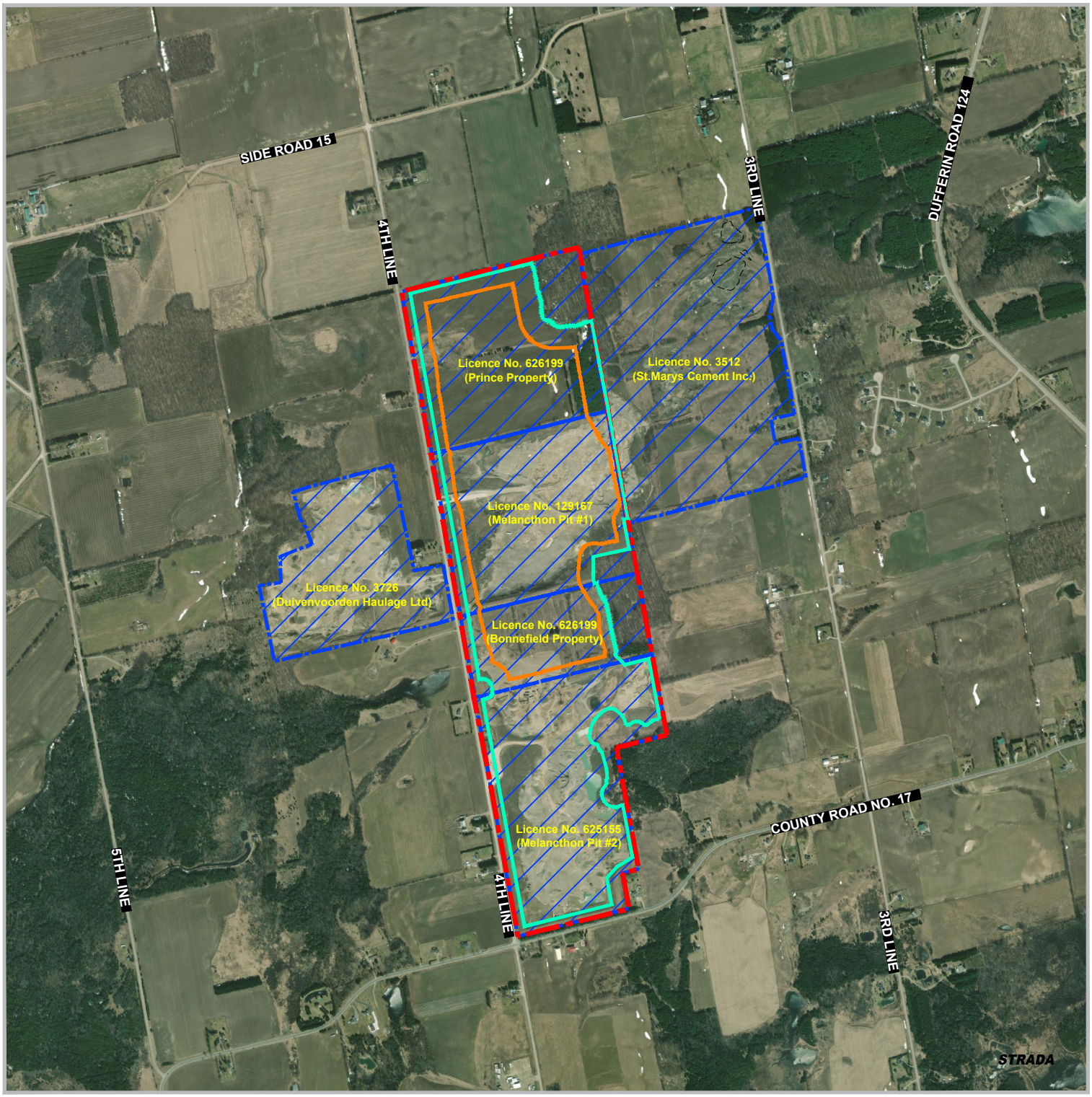

Figure 1
Location Plan

LEGEND

- Subject Lands
- Existing Licenced Aggregate Operations
- Limit of Extraction - Quarry
- Limit of Extraction - Pit

DATE: August, 2024

SCALE: 1:2,000

FILE: Y349J

DRAWN: GMC & CCF

north

K:\Y349J- STRADA\RPT\F1_CONSOLIDATED_LOCATION_PLAN_20AUG2024.DWG

Proposed Strada Pit and Quarry
Part of west half lot 11 and west half lots 12, 13, 14
Concession 3 O.S.
Township of Melancthon
County of Dufferin

Source:
Maxar Satellite imagery- Apr 5, 2020

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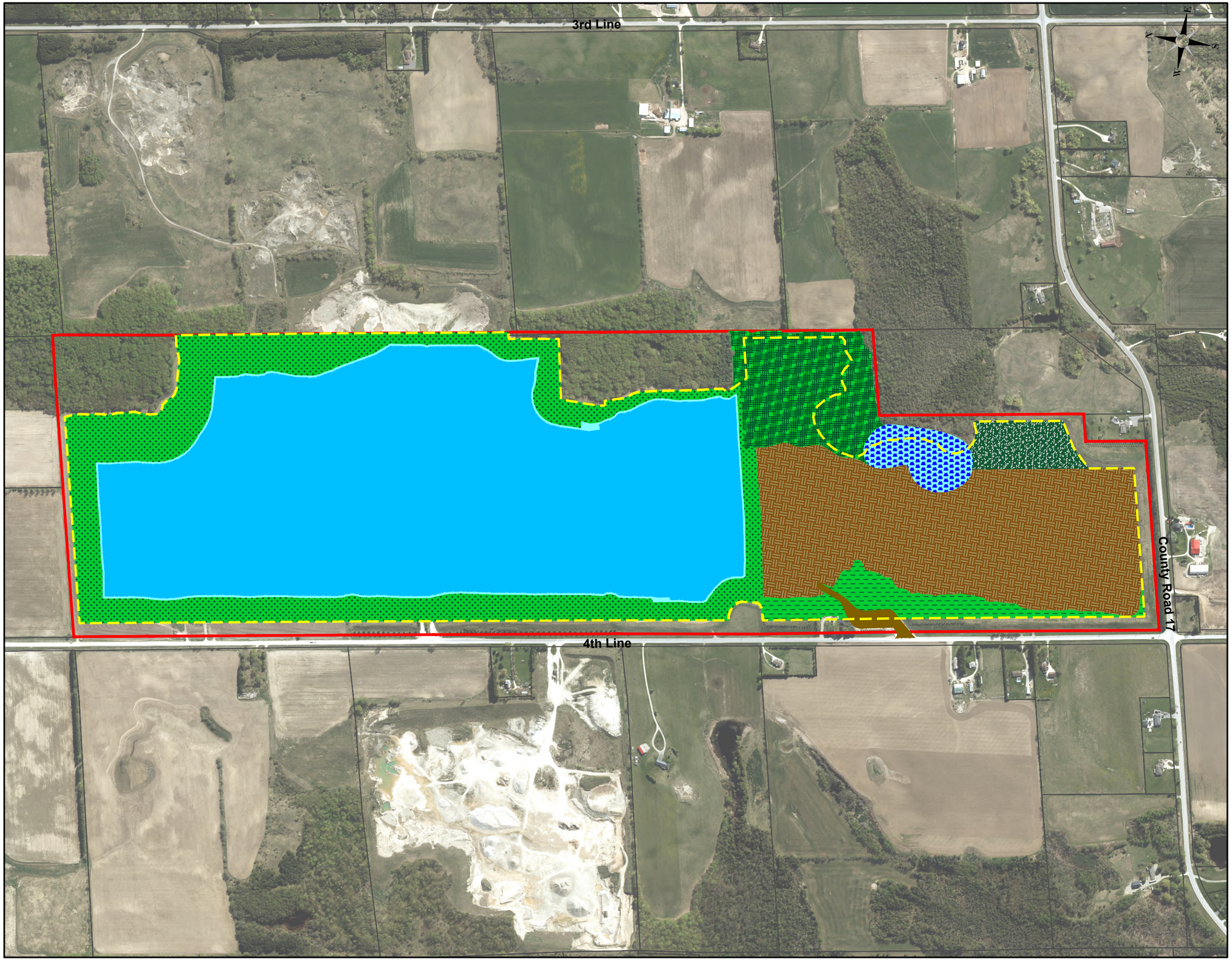

FIGURE 2
REHABILITATION SCHEMATIC

Strada Pit and Quarry
Part of Lots 11 to 14, Con. 3
Township of Melancthon
County of Dufferin

LEGEND

- Licence Boundary
- Pit Limit of Extraction
- Agricultural Land
- Meadow
- Woodland
- Vegetated Side Slope
- Existing Rehabilitated Area
- Quarry Lake Littoral Zone
- Wetland
- Lake
- Driveway

DATE: January 27, 2025

SOURCES: ESRI Aerial Imagery 2024

SCALE: 0 100 200 Meters

Y349I Strada- Melancthon KW File\Drawings\Figures

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2.0 Study Area

The agricultural land use assessment completed as part of this AIA was based on a study area comprised of a 'Primary Study Area' and 'Secondary Study Area'. The Primary Study Area is the area immediately adjacent to the subject lands that has the potential to be directly impacted by the aggregate extraction operation. The Primary Study Area encompasses a radius of 120 metres from the subject lands.

The Secondary Study Area includes the potential area that may be affected by indirect impacts of the proposed operations and can range considerably based on the size of the aggregate operation. For example, a small to medium sized gravel pit may only have a Secondary Study Area that includes nearby rural properties while a large limestone quarry will have a larger affected area which on average could encompass an area of approximately one kilometer. For the purposes of this assessment, we have assigned the more conservative Secondary Study Area of 1kilometer from the subject lands.

A plan identifying the adjacent properties, existing crops and existing barns and residential structures within the study area is included as **Figure 3** of this report. The inventory of existing agricultural land uses, cropping practices and structures is based on observations made during a site visit, review of air photography, review of Agriculture and Agri-Food Canada 2021 Crop Inventory, and input from the current landowner. A review of 2021, 2016, and 2011 Census of Agriculture data was also undertaken to confirm if the Study Areas are representative of agricultural production patterns and trends in the broader County.

2.1 Primary Study Area

Based on the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) 'Draft Agricultural Impact Assessment (AIA) Guidance Document' (herein referred to as 'OMAFRA AIA Guidelines'), the Primary Study Area for mineral aggregate resource extraction consists of the proposed Licence area and lands within 120 metres of the licenced area.

As shown in **Figure 3**, the predominant land use within the Primary Study Area is mineral aggregate operations. The subject lands themselves consist of Melancthon Pit #1 (Licence No. 129167), Melancthon Pit #2 (Licence No. 625155), and the Prince and Bonnefield properties (Licence No. 626199). Abutting the subject lands to the west is the Duivenvoorden Haulage Ltd. pit (Licence No. 3726) and to the east, the St. Mary's Cement pit (Licence No. 3512).

Mineral aggregate operations and agriculture are the most common uses of land within the Primary Study Area. Agricultural uses within this area consist of typical cash crops that are cultivated in a soybean/winter wheat/corn rotation. Current agricultural production includes corn and soybeans, assumedly in a corn-soy crop rotation. In terms of agricultural structures, there are no barn structures on the subject lands or within 120 metres. There is no visible sign of extensive agricultural improvements to the lands or structures (e.g. new fencing, tile drainage).

Existing southern entrance from 4th Line

Existing northern entrance from 4th Line

View North over subject lands (Google Earth Imagery, 2023)

Ongoing agricultural use on Prince property(Google Earth Imagery, 2023)

2.2 Secondary Study Area

According to the OMAFRA AIA Guidelines, the Secondary Study Area should include lands that will be potentially impacted by the development and should include, at a minimum, lands adjacent to the Primary Study Area. For mineral aggregate operations, the extent of the Secondary Study Area varies depending on the scale and extent of the proposed mineral aggregate operation and agriculture in the surrounding area. With larger proposed extraction sites, it is recommended that a 1 km radius from the proposed Licenced area be a starting point for the investigation area for the Secondary Study Area. The Secondary Study Area for this AIA includes lands within 1.0 kilometers of the proposed Licence boundary.

As shown on **Figure 3**, the predominant land use within the Secondary Study Area is agriculture (cash crops and livestock) to the north, south, and west. Surrounding crops include corn, wheat, soybeans, and potato. In addition, there is a berry farm to the southwest of the subject lands. Several livestock operations are within the Secondary Study Area including an equestrian farm (south), beef and sheep

operations (northeast), a beef and dairy operations (east). Appendix A includes a more detailed summary of the agricultural uses and structures within the Secondary Study Area observed through field observations and updated through a review of 2024 satellite imagery and the Agriculture and Agri-Food Canada 2021 Crop Inventory. Comments on the physical characteristics of existing farm structures are based solely on roadside observations and not supported by any formal structural assessment. When roadside visibility was limited due to visual obstruction, aerial photography has been used.

Based on the site visit, the agricultural lands within the Primary and Secondary Study Areas reflect typical agricultural cropping practices that are predominant throughout central Ontario (oilseed and grain farming and other crop farming). This is with the exception of the berry farm located at 436574 4th Line. Similarly, livestock production within the County is consistent with trends in central Ontario, with cattle ranching and farming dominating. No extensive land improvement investment such as tile drainage, irrigation or other specialized cropping practices or equipment were observed or are documented within the Primary or Secondary Study Areas.

As noted above, there are some small-scale livestock production to the north, east, and south of the subject lands; these operations are well setback and separated from the proposed area to be Licenced. Strada has undertaken consultation with the surrounding and adjacent landowners regarding the proposed pit and quarry operations.

As previously noted, the surrounding area also includes several aggregate pits. The Duivenvoorden Haulage Ltd. pit (Licence No. 3726) is located to the west of the subject lands and has a Licenced area of 28.35 hectares. The St. Mary's Cement pit (Licence No. 3512) is located to the east and has a Licenced area of 66.82 hectares.

In addition to the above referenced farm operations, there are several rural residential lots within the Secondary Study Area. A number of these lots were likely created as surplus farm dwellings. There is also a large concentration of rural residential lots including an estate residential subdivision (part of the Horning's Mills settlement area) located on the east side of the 3rd Line.

Overall, the Secondary Study Area is representative of normal/typical livestock and cropping practices for this area.

2.3 Census of Agriculture & Ontario Business, Agri-Food, and Farm Data Profile for Dufferin County

The 2021 and 2016 Census of Agriculture and OMAFRA's Ontario business, agri-food, and farm data profile for Dufferin County were reviewed to provide an overview of agricultural production patterns and parcel size in the County.

North American Industry Classification System (NAICS) data for 2006, 2011, 2016, and 2021 were utilized to determine trends in farm types within the County. In 2021, regarding crop production, Dufferin County crop farming was dominated by oilseed and grain farming (23.7% of all farms), predominantly soybean farming (38.2% of oilseed and grain farms), other grain farming (27.9 %), wheat farming (21.2%), and corn farming (11.5%)[1]. Oilseed and grain farming has increased in the

[1] Table 32-10-0231-01 Farms classified by farm type, Census of Agriculture, 2021

County over the last ten years (increase of 42.2% in number of oilseed and grain farms from 2011 to 2021). As of 2021, other crop farming (15.4%), which primarily includes hay (68.2% of other crop farming), was also common in the County. Other crop farming has seen declined over the last 10 years (decrease of 34.4% in number of other crop farms from 2011 to 2021). Oilseed and grain farming and other crop farming, primarily hay farming, are the most common crop type within the study area, which appears to be reflective of agricultural patterns throughout Dufferin County.

In terms of livestock, cattle ranching and farming comprised 27.8% of farms (of which 86% of farms were beef cattle and 14% dairy cattle) in Dufferin County. Cattle farming has exhibited subtle declines over the last 10 years (4.9% reduction in number of cattle farms from 2011 to 2021). Four cattle farming operations were observed within the study area. Other animal farming comprises 16% of farms within the County, primarily horse and other equine production 57.7%. No active equine farms were observed within the study area, though evidence of previous use of a property for horses was observed. Only one mixed animal operation (sheep and cattle) was observed within the study area.

In terms of parcel size, in 2021 most farms (30.1%) were within the 10 - 69-acre farm size, followed by 28.9% of farms falling in the 70 – 129-acre range[2]. The amount of lands in crop production has increased since 2011 from 48,949[3] acres to 49,501[4] acres, representing an increase in cropland of 1.1%.

Based on the site visits, the agricultural activities within the Primary Study Area appear to be indicative of broader agricultural trends in Dufferin County. The surrounding crops include typical cash crops such as soybeans and corn, as well as hay and other forage crops. Surrounding livestock includes dairy cattle, beef cattle, and horses.

Overall, both the Primary and Secondary Study Areas are representative of normal agricultural production for this area and do not consist of specialized farming practices or specialty crops. The proposed rehabilitation approach, discussed in further detail below, will return some of the lands to an agricultural condition that is consistent with the average parcel size and agricultural production found in Dufferin County.

[2] Table 32-10-0232-01 Farms classified by total farm area, Census of Agriculture, 2021

[3] Table 32-10-0406-01 Land use, Census of Agriculture, 2011 and 2016, inactive

[4] Table 32-10-0249-01 Land use, Census of Agriculture, 2021

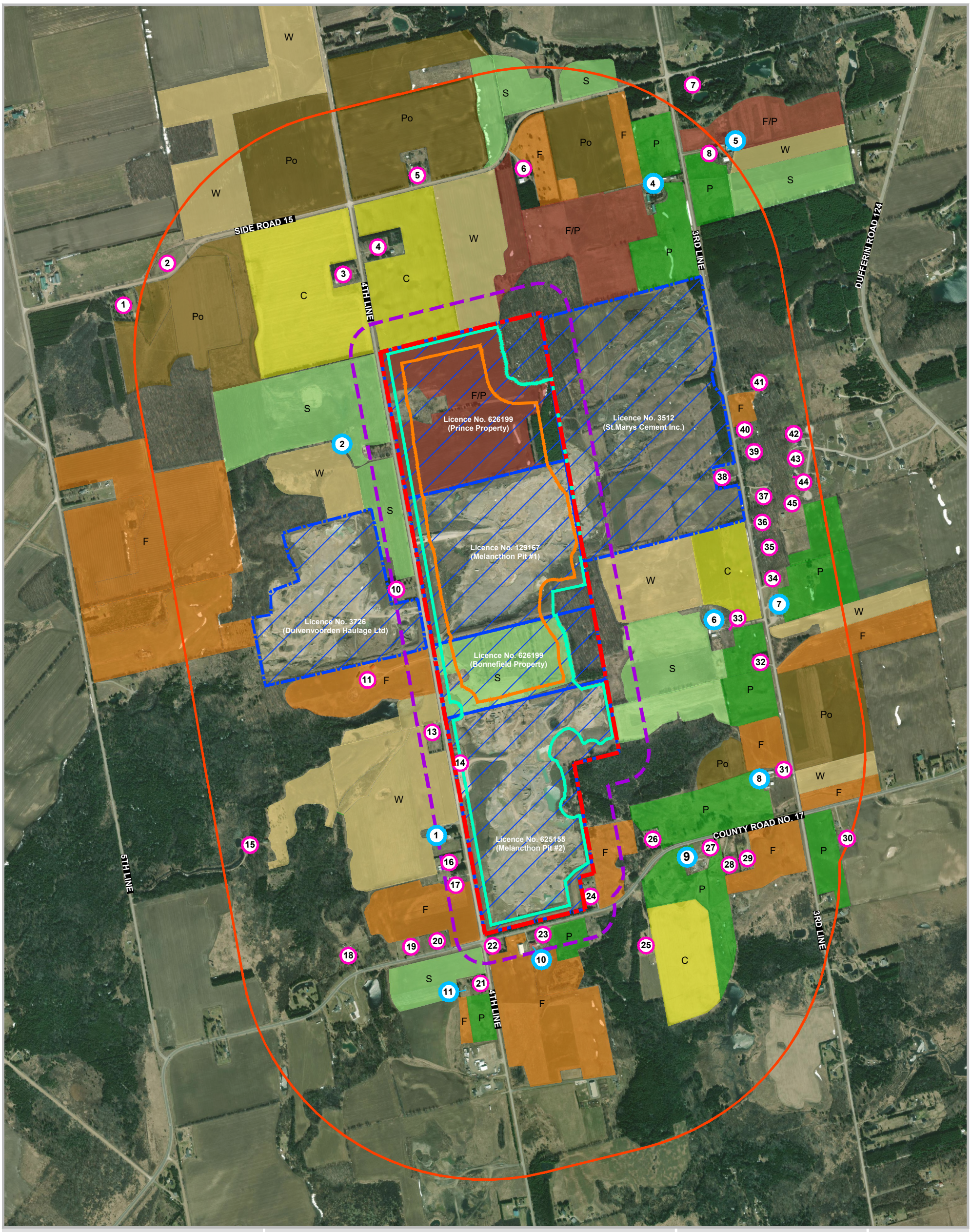

Figure 3

Agricultural Land Uses

Proposed Strada Pit and Quarry
Part of west half lot 11 and west half lots 12, 13, 14
Concession 3 O.S.
Township of Melancthon
County of Dufferin

LEGEND

- Subject Lands
- Limit of Extraction - Quarry
- Limit of Extraction - Pit
- Primary Study Area (120m)
- Secondary Study Area (1 km)
- Existing Licenced Aggregate Operations
- # Residential Structure
- # Barn Structure

CROPS*

C	Corn	Po	Potato
F	Forage	S	Soybean
P	Pasture	W	Winter Wheat
F/P	Forage/ Pasture		

DATE: August, 2024

FILE: Y349J

SCALE: ±1:15,000

DRAWN: GMC & CCF

north

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3.0 Field Data Collection

3.1 Soil and CLI Capability

The Canada Land Inventory (CLI) system uses soil attributes to create a seven-class system of land use capabilities. Class 1, 2, and 3 soils are capable of sustained common field crop production and are considered "prime agricultural land" by the Province. Class

4 soils are limited for sustained agriculture while Class 5 is capable for the use of permanent pasture and hay. Class 6 soils are best used for pasture and Class 7 denotes soils or landforms that are not capable for use for arable culture or permanent pasture.

According to the Canada Land Inventory Soils Map produced by the province, (see **Figure 4**), the subject lands are comprised of Classes 1 and 2 soils. These soil types are considered prime agricultural soils (see Section 4.1 of this report for further discussion on this matter).

To confirm the soil type and classification and to help inform the rehabilitation plans, a Soil Survey and Canada Land Inventory Classification was prepared by DBH Soil Services Inc. (DBH) for the portion of the subject lands that was not previously disturbed. A copy of this Soil Survey is included in Appendix B of this report.

On-site soil surveys were conducted to more accurately map and classify the soil resources of the soil materials on the subject lands. The soil survey included several tasks including:

- Completion of a review of published soil data;
- Review of published Canada Land Inventory (CLI) ratings for the soils in the area surrounding the subject lands;
- Review of aerial photography and interpretation of the soil polygons, disturbed soil areas and miscellaneous landscape units (i.e. streams, wayside pits);
- On-site soil survey; and
- Mapping to illustrate the location of the subject lands, the occurrence of soil polygons and appropriate CLI capability ratings.

A total of 48 soil inspection sites were examined on the portion of the subject lands that was not previously disturbed, and the information was then correlated with soil descriptions to produce the soils map. A soil map identifying the soil series present on the subject lands is shown on **Figure 5**.

The onsite soil survey identified two soil series and one miscellaneous landscape unit within the undisturbed portions of the subject lands. The soil series were identified as Honeywood Fine Sandy Loam and Caledon Fine Sandy Loam. The miscellaneous landscape unit was identified as Disturbed Soils. The Disturbed Soils are associated with the farm building complexes on the lands.

The DBH soil survey determined that the portion of the subject lands that was not previously disturbed is comprised of approximately 86.9 percent CLI Class 1-3 soils; these lands were determined to contain predominantly CLI Class 2 (46.2%) and Class 3 (40.7%) soils.

3.2 Microclimate for Specialty Crop Production

Climate data was obtained from the OMAFRA document titled "Agronomy Guide for Field Crops – Publication 811 (June 2009)". The subject lands are located within the 2700- 2900 average accumulated Crop Heat Units (CH-MI) available for corn production in Ontario. The Crop Heat Units (CHU) index was originally developed for field corn and has been in use in Ontario for 30 years. The CHU ratings are based on the total accumulated crop heat units for the frost-free growing season in each area of the province. CHU averages range between less than 2700 east of Parry Sound to over 3500 near Windsor. The higher the CHU value, the longer the growing season and greater are the opportunities for growing value crops.

The properties are located within the 2700-2900 average accumulated Crop Heat Units (CH-MI) and as such, the agricultural lands are not subject to special climatic conditions. Given the typical climatic conditions, there are limited opportunities for growing speciality crops. Therefore, the properties have not been identified as a specialty crop area in the Township of Melancthon Official Plan and do not meet the criteria as identified by the Province.

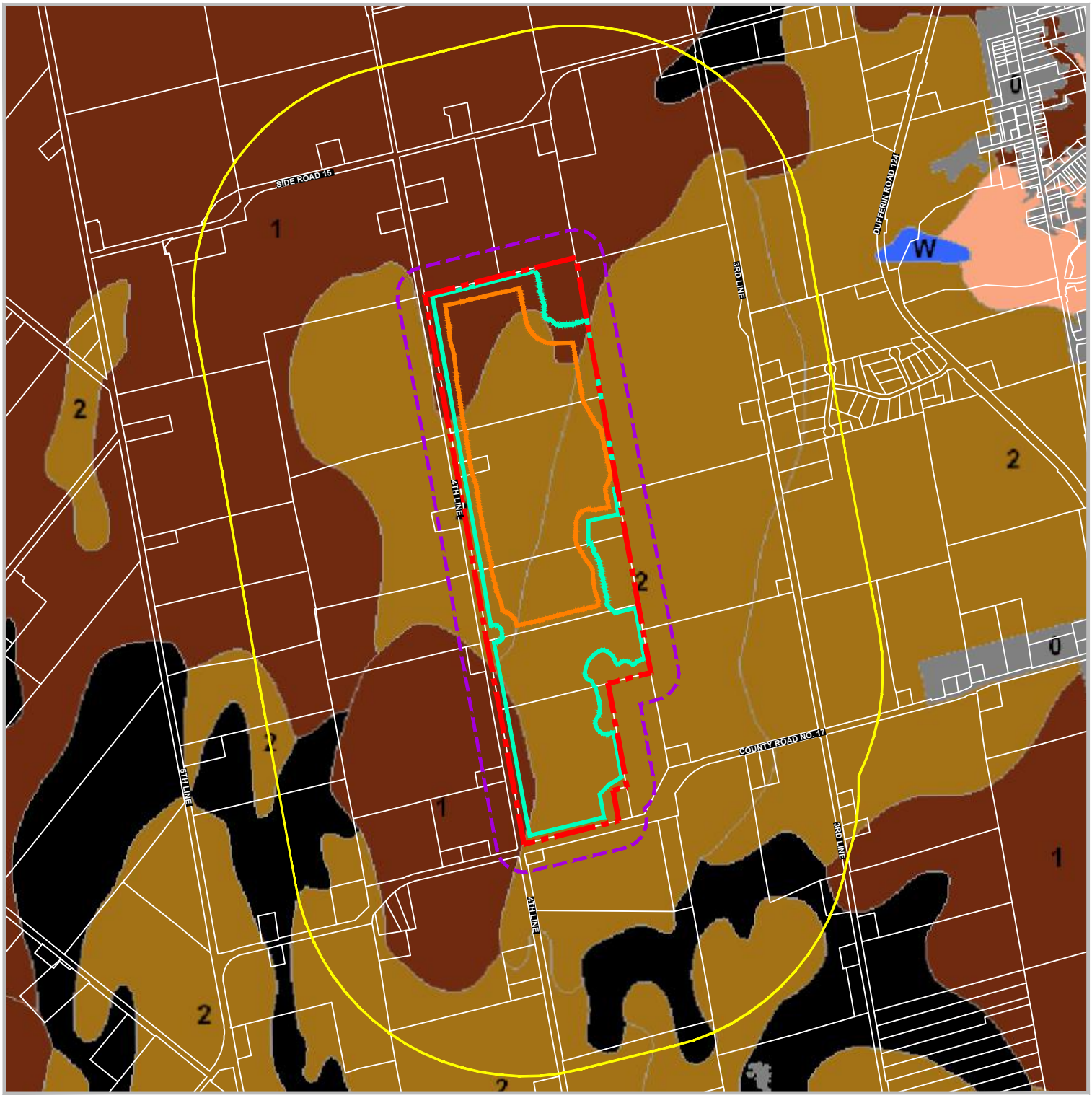

Figure 4

Canada Land Inventory Soils Map

LEGEND

- Subject Lands
- Limit of Extraction - Quarry
- Limit of Extraction - Pit
- Primary Study Area (120m)
- Secondary Study Area (1km)

SOILS - CLI

- Class 1
- Class 2
- Class 7
- Organic Soil
- Water

Source:
Ministry of Agriculture, Food and Rural Affairs- Agricultural Information Atlas

DATE: August, 2024

SCALE: NTS

FILE: Y349J

DRAWN: GMC & CCF

north

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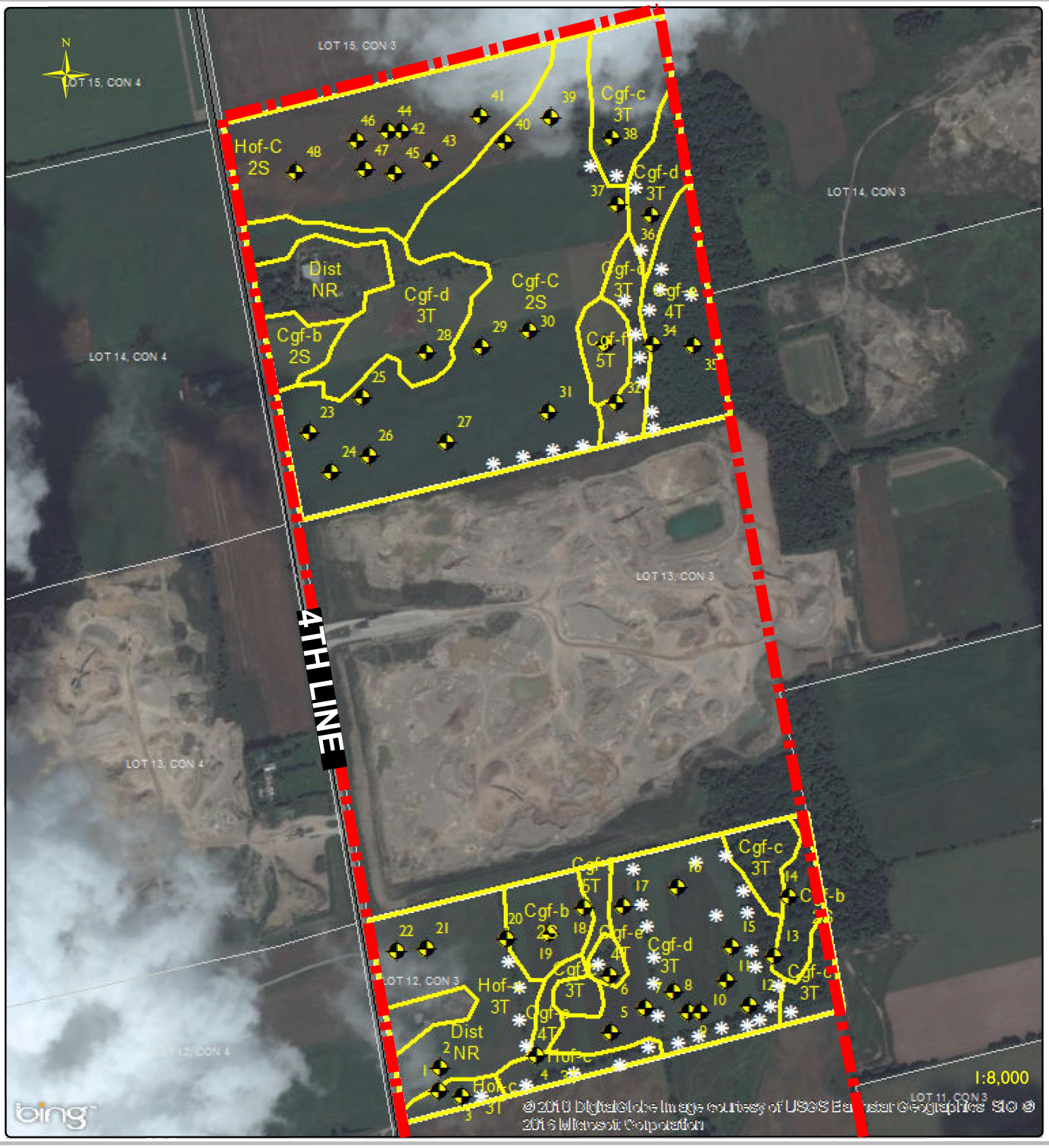

Figure 5
Detailed Soil Survey

LEGEND

Subject Lands

Stone Pile
Soil Inspection Site Location
Roads
Detailed Soil Survey Polygon
Lot Lines
Subject Lands

Soil Code
Dist = Disturbed
Cgf = Caledon Fine Sandy Loam
Hof = Honeywood Fine Sandy Loam

Slope Class
Aa = 0.0 - 0.5%
Bb = 0.5 - 2.0%
Cc = 2.0 - 5.0%
Dd = 5.0 - 9.0%
Ee = 9.0 - 15.0%
Ff = 15.0 - 30.0%
Slope length < 50 m
Slope length > 50 m

Soil Code / Slope Code
Cgf - e
CLI Class / 4T / CLI Subclass

CLI Subclass Limitation
D = Undesireable Structure
E = Erosion
F = Low Fertility
I = Inundation
M = Low Moisture
P = Stoniness
R = Shallow to Bedrock
S = Adverse Conditions (F, M, T or P)
T = Topography
W = Excess Water

DATE: August, 2024

SCALE: 1:8,500

FILE: Y349J

DRAWN: GMC & CCF

north

K:\Y349J- STRADA\RPT\F5_DETAILED_SOIL_SURVEY_20AUG2024.DWG

Proposed Strada Pit and Quarry
Part of west half lot 11 and west half lots 12, 13, 14
Concession 3 O.S.
Township of Melancthon
County of Dufferin

Source:
Maxar Satellite imagery (2024)
Soil Survey: DBH Soil Services Inc., November, 2016

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4.0 Planning Policy Framework

Several key documents were reviewed as part of this Agricultural Impact Assessment to provide a comprehensive assessment of the policy framework from an agricultural perspective regarding the proposed expansion of the existing aggregate extraction operation. The following policies were reviewed to provide the land use policy framework related to the subject lands:

- Provincial Planning Statement (2024)
- Dufferin County Official Plan (Consolidated 2017)
- Township of Melanchthon Official Plan (2014)

Note, the Planning Justification Report provides a more in-depth analysis of the applicable planning documents and policy. This AIA focuses primarily on planning policy that pertains to agriculture and agricultural rehabilitation.

4.1 Provincial Planning Statement 2024

The final version of the Provincial Policy Statement, 2024 (PPS) took effect on October 20th, 2024. The PPS, 2024 integrates the PPS and Growth Plan into a single planning document that will apply province wide.

The PPS defines "Prime agricultural areas" as:

> "*areas where prime agricultural lands predominate. This includes areas of prime agricultural lands in associated Canada Land Inventory Class 4 through 7 Lands, and additional areas where there is a local concentration of farms which exhibit characteristics of ongoing agriculture. Prime agricultural areas may be identified by the Ontario Ministry of Agriculture and Food using guidelines developed by the Province as amended from time to time. A prime agricultural area may also be identified through an alternative agricultural land evaluation system approved by the Province."*

Further, the PPS defines Prime agricultural land as:

> *"specialty crop areas and / or Canada Land Inventory Class 1, 2 and 3 lands, as amended from time to time, in this order of priority for protection."*

The PPS defines agricultural condition as:

> *in regard to prime agricultural land outside of specialty crop areas, a condition in which substantially the same areas and same average soil capability for agriculture will be maintained,* ***restored or enhanced*** (emphasis added to illustrate change)

Further, 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 the predominantly grown, such as tender fruits (peaches, cherries, and 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."

The Subject Lands are mapped as containing Canada Land Inventory (CLI) Class 1 and 2 soils. According to the Soil Survey prepared by DBH, the undisturbed portions of the lands contain CLI Class 2 and 3 soils. Overall, mapping and the soil survey confirm that the subject lands are prime agricultural land as defined by the Province. The study area does not contain specialty crop nor are there special climatic conditions that suggest that this area should be identified as a specialty crop area.

In prime agricultural areas, the PPS permits agriculture uses, agriculture-related uses and on-farm diversified uses. In accordance with the Provincial Policy all types, sizes and intensities of agricultural uses and normal farming practices are promoted and protected in prime agricultural areas.

Policy 4.3.5.1 of the PPS, 2024 permits the extraction of mineral aggregate resources as a non-agricultural use in prime agricultural areas. Policy 4.3.5.2 of the PPS requires that:

Impacts from any new or expanding non-agricultural uses on the agricultural system are to be avoided, or where avoidance is not possible, minimized and mitigated as determined through an agricultural impact assessment or equivalent analysis, based on provincial guidance.

Consistent with this policy, the anticipated impacts on the surrounding agricultural activities are discussed and addressed in **Section 5** of this Agricultural Impact Assessment.

Section 4.5 of the PPS provides policies for mineral aggregate resources within the Province. Policy 4.5.1 states that "mineral aggregate resources shall be protected for long-term use and, where provincial information is available, deposits of mineral aggregate resources shall be identified". The subject lands contain mineral aggregate resources consisting of high-quality sand, gravel, and bedrock resources that are identified in local and provincial mapping; these resources should be protected. Therefore, although the PPS recognizes the importance of prime agricultural lands, it also recognizes the importance of sustaining access to mineral resources for long-term use.

Further, relevant to the proposed pit/quarry, Policy 4.5.4 provides:

1. *In prime agricultural areas, on prime agricultural land, extraction of mineral aggregate resources is permitted as an interim use provided that:*
    a. *impacts to the prime agricultural areas are addressed, in accordance with policy 4.3.5.2; and*
    b. *the site will be rehabilitated back to an agricultural condition.*
2. *Despite policy 4.5.4.1.b), complete rehabilitation to an agricultural condition is not required if:*
    a. *the depth of planned extraction makes restoration of pre-extraction agricultural capability unfeasible; and*
    b. *agricultural rehabilitation in remaining areas is maximized.*

The Strada Pit/Quarry is proposed on lands designated 'Rural Lands' and 'Agricultural Area' in the County Official Plan. The Township Official Plan designates the lands primarily 'Extractive Industrial', with small portions along the eastern property line designated 'Agricultural' with the 'Environmental Conservation Overlay'.

The Strada Pit/Quarry proposes a mixture of above and below the water table extraction. The portion of the site that is proposed for the pit/quarry (65.7 hectares) is planned to be rehabilitated to a lake with natural features on surrounding slopes; 63.12 hectares are proposed to be rehabilitated to a lake with 1.79 hectares of lake littoral zones on surrounding slopes. The portion of the site that is proposed to be used for a wash plant, product stockpiles, and water management area is planned to be rehabilitated to a mixture of agriculture land (24.21 hectares) and natural features (2.48 hectares of wetland, and 2.48 hectares of woodland). Overall, complete rehabilitation of the areas designated agricultural to an agricultural condition is not possible due to the proposed depth of extraction on the proposed portion of the site to be quarried.

The proposed depth of extraction will allow for the extraction of a substantial quantity of high quality mineral aggregate resources below the water table. Geological investigations undertaken on the property indicate that there are substantial high quality aggregate resources located below the water table.

Further, the Strada Pit/Quarry is proposed on lands that are already Licenced, portions of which are already disturbed under aggregate operations. As such, the subject property is a logical choice for a new Licence that includes both above and below the water table extraction as it proposes operations on lands where aggregate extraction has already been approved and/or has occurred, rather than on agricultural land that has not previously been contemplated for aggregate extraction. This minimizes potential impacts to agriculture as the proposed operation prevents further fragmentation of the agricultural landscape and minimizes the introduction of new impacts through the efficient use of existing haul routes.

4.2 Dufferin County Official Plan

Schedule B (see **Figure 6**) of the Dufferin County Official Plan designates the subject lands as "Countryside Area" and Schedule C (see **Figure 7**) designates the subject lands as 'Rural Lands 'and 'Agricultural Area'.

The County Official Plan recognizes Rural lands as lands located outside settlement areas and do not comprise prime agricultural areas in the County. Rural lands are intended to protect the natural amenities and rural character of the County while providing opportunities for rural and other agricultural uses and resource-based activities, and recreational and tourism opportunities. Per Policy 4.3.2A)i. one of the primary uses of land permitted in rural lands is 'the management or use of resources, such as forestry and mineral aggregate operations'.

The Agricultural Area designation applies to prime agricultural lands, which are intended to be designated agricultural in local municipal official plans in accordance with Provincial guidelines. The Dufferin County Official Plan requires that lands within this designation are protected for agricultural uses unless appropriate justification is provided for alternative uses. Furthermore, non-agricultural uses may only be permitted in agricultural areas for the extraction of mineral aggregate resources in accordance with the policies of the Official Plan.

Policy 4.2.3.1 of the Dufferin County Official Plan provides that non-agricultural uses are permitted in agricultural areas for the extraction of mineral aggregate resources provided the operations are undertaken in accordance with the policies of the Plan. The extraction of minerals, petroleum resources and mineral aggregate resources in prime agricultural areas, is permitted in accordance with the policies of the Dufferin County Official Plan.

Policy 4.4.2.1 provides criteria on impacts that new or expanding mineral aggregate resource operations must address. The following are relevant to agricultural uses:

vii. noise, dust and vibration, in accordance with Provincial Standards; and

viii. demonstration that the final rehabilitation plan is consistent with the policies of this Plan and the local municipal official plan;

Section 4.4.2.2 of the Dufferin County Official Plan also includes policies with respect to rehabilitation. The policies in this section state that the extraction of mineral aggregate resources is permitted as an interim use in areas designated Agricultural Area provided the site will be rehabilitated back to an agricultural condition. Reflecting the policies of Section 2.5.4.1 of the PPS, the County Official Plan provides that complete rehabilitation back to an agricultural condition is not required if:

i. there is a substantial quantity of mineral aggregate resources below the water table warranting extraction, or the depth of planned extraction in a quarry makes restoration of pre-extraction agricultural capability unfeasible;

ii. other mineral aggregate resource extraction alternatives have been considered by the proponent and found unsuitable. The consideration of other mineral aggregate resource extraction alternatives will include mineral aggregate resources in areas of Canada Land Inventory Class 4 through 7 lands, resources on lands identified as settlement areas, and, resources on prime agricultural lands where rehabilitation is feasible. Where no other alternatives are found, prime agricultural lands will be protected in this order of priority: Canada Land Inventory Class 1, 2 and 3 lands; and

iii. agricultural rehabilitation in remaining areas is maximized.

As detailed in the PPS section of this report, the depth of extraction in the area of the site designated agricultural is not conducive to agricultural rehabilitation and agricultural rehabilitation is maximized in other areas of the proposed operation. Further, much of Dufferin County's aggregate resource correlates with prime agricultural land, making locating aggregate operations on alternative locations outside of prime agricultural land very difficult.

Overall, the proposed operation and rehabilitation plan conforms to the agricultural policies of the Dufferin County Official Plan.

4.3 Township of Melancthon Official Plan

Schedule A-5 'Land Use and Roads Plan' of the Township's Official Plan (**Figure 8**) designates the lands primarily 'Extractive Industrial', with small portions along the eastern property line designated 'Agricultural' with the 'Environmental Conservation Overlay'. The Official Plan schedule has not been updated but the portion of the site designated Agriculture is now designated Extractive Industrial since the approval of Melancthon Official Plan Amendment No. 2. Aggregate extraction is permitted within the 'Extractive Industrial' designation.

Figure 6

Dufferin County Official Plan
Schedule B:
Community Structure and Land Use

Proposed Strada Pit and Quarry
Part of west half lot 11 and west half lots 12, 13, 14
Concession 3 O.S.
Township of Melancthon
County of Dufferin

LEGEND

- Subject Lands
- Limit of Extraction - Quarry
- Limit of Extraction - Pit
- Urban Settlement Area
- Community Settlement Area
- Countryside Area
- Provincial Plan Area
- Provincially Significant Wetlands
- Provincial Highway

Source:
County of Dufferin Official Plan, (Schedule B, September, 2014)

DATE: August, 2024

SCALE: 1:60,000

FILE: Y349J

DRAWN: GMC & CCF

north

K:\Y349J- STRADA\RPT\F7_DUFFOP_SCHEDB_20AUG2024.DWG

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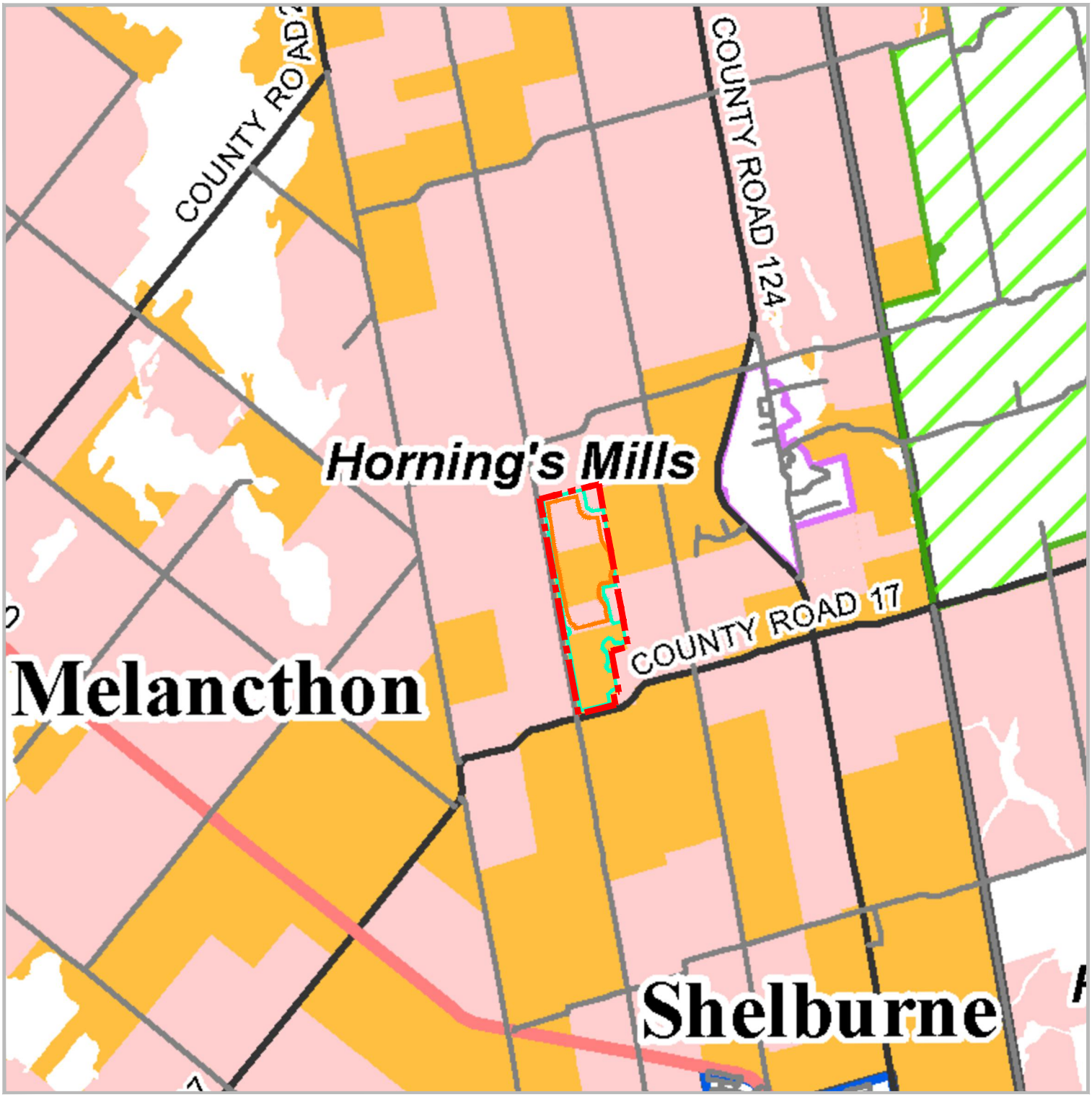

Figure 7

Dufferin County Official Plan
Schedule C:
Agricultural Area and Rural Lands

LEGEND

- Subject Lands
- Limit of Extraction - Quarry
- Limit of Extraction - Pit
- Urban Settlement Area
- Community Settlement Area
- Agricultural Area
- Rural Lands
- Provincial Plan Area
- Provincial Highway

Source:
County of Dufferin Official Plan, (Schedule C, September, 2014)

DATE: August, 2024

SCALE: 1:60,000

FILE: Y349J

DRAWN: GMC & CCF

north

K:\Y349J- STRADA\RPT\F8_DUFFOP_SCHEDC_20AUG2024.DWG

Proposed Strada Pit and Quarry
Part of west half lot 11 and west half lots 12, 13, 14
Concession 3 O.S.
Township of Melancthon
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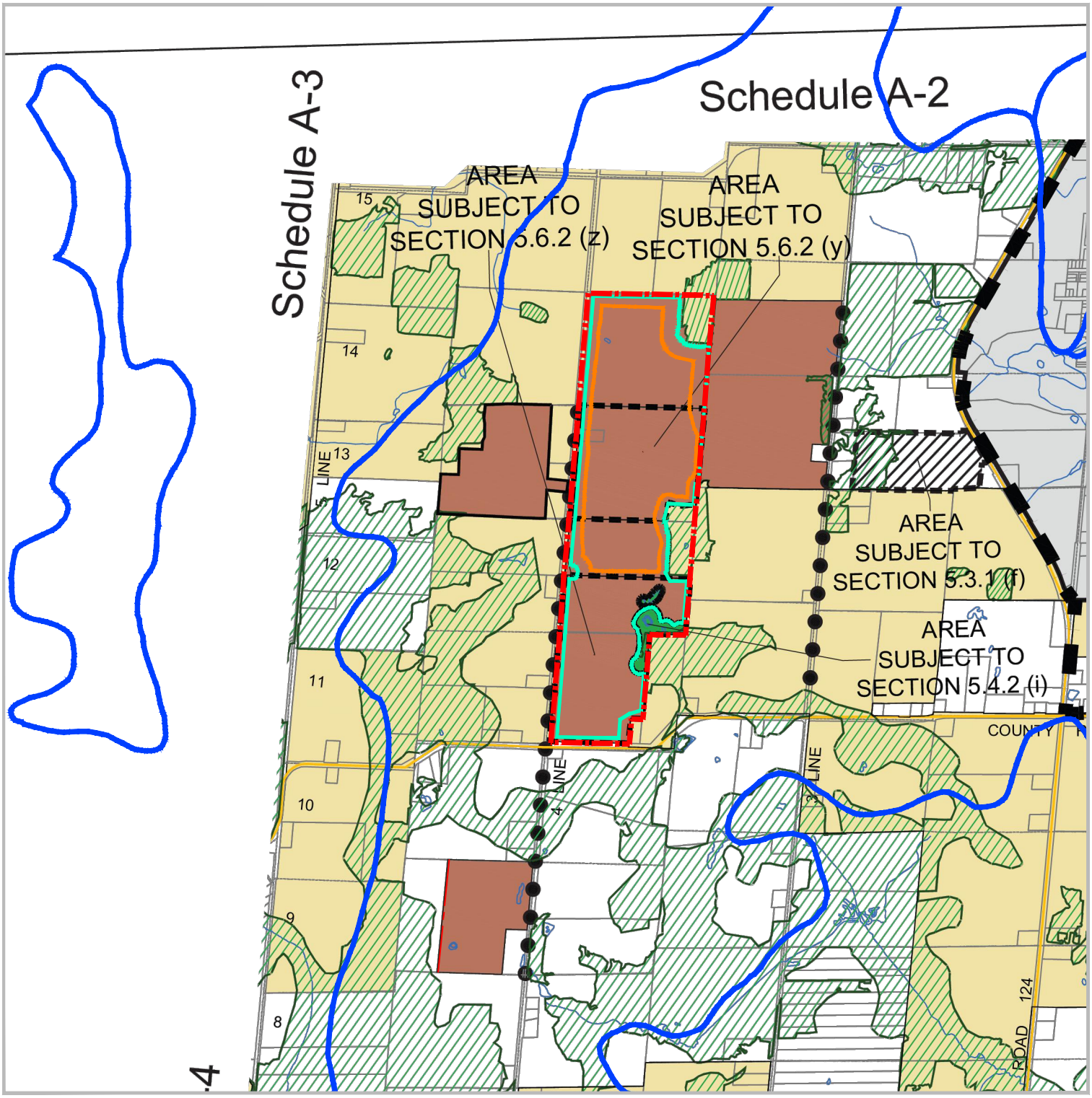

Figure 8

Township of Melancthon Official Plan

Land Use & Roads Plan, Schedule A-5 (revised with OPA2), with Primary Sand & Gravel Resource Area Overlay, Schedule H

Proposed Strada Pit and Quarry

Part of west half lot 11 and west half lots 12, 13, 14
Concession 3 O.S.
Township of Melancthon
County of Dufferin

LEGEND

- Subject Lands
- Limit of Extraction - Pit
- Limit of Extraction - Quarry
- Agricultural
- Extractive Industrial
- Environmental Conservation
- Environmental Protection
- Rural
- Existing Mineral Aggregate Haul Route
- Primary Sand & Gravel Area (Schedule H)

Source:
Township of Melancthon Official Plan, (Schedule A5, October, 2017), OPA2 (2018)

DATE: August, 2024

SCALE: NTS

FILE: Y349G

DRAWN: GMC & CCF

north

K:\Y349G STRADA DUFFERIN COUNTY PROPERTIES\RPT\FIG_AGGREGATE_LANDUSE_OVERLAY_16AUG2024.DWG

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5.0 Assessment of Impact

The following section provides an assessment of the potential impacts of the proposed pit on components of the Agricultural System. As previously noted, mineral aggregate extraction is considered a permitted use in prime agricultural areas in accordance with Provincial, County and local policy. Planning policies require that impacts on surrounding agricultural operations and lands be mitigated. Although resource uses such as mineral aggregate extraction have traditionally been considered part of the agricultural / rural landscape fabric, impacts from these land uses should be considered and mitigated to the extent feasible. Impacts associated with the reduction / loss of agricultural land and / or infrastructure, agricultural land fragmentation, dust, noise, road traffic, water resources and other agricultural operations as a result of the proposed mineral aggregate operation on the subject lands have been assessed and are reviewed in the following sections.

5.1 Reduction/Loss of Agricultural Land and Infrastructure

The proposed area to be licenced is 149.0 hectares, of which the proposed pit limit of extraction is approximately 123.7 hectares, and the proposed quarry limit of extraction area is approximately 65.7 hectares. The portion of the site that is proposed to operate as a pit/quarry is planned to be rehabilitated to a lake with natural features on surrounding slopes. The remaining southern portion of the site is planned to be rehabilitated to a mixture of agriculture land and natural features (wetland, woodland, and meadow). Overall, 24.21 hectares of the subject lands is proposed to be rehabilitated back to an agricultural condition and the remainder of the site will be rehabilitated to a lake and natural heritage features. There are no agricultural buildings or structures on site, and therefore there will be no loss of agricultural infrastructure. **Table 1** provides a break down of the land proposed to be rehabilitated within the limit of extraction.

Table 1: Land to be Rehabilitated

Total pit area to be extracted	123.7 ha
Total quarry area to be extracted	65.70 ha
Area to be rehabilitated to agricultural condition (including 10:1 slopes)	24.21 ha
Area to be rehabilitated to wetland	2.48 ha
Area to be rehabilitated to lake	63.12 ha
Area to be rehabilitated to quarry lake littoral zone	1.79 ha

Area to be rehabilitated to a woodland	7.63 ha
Existing rehabilitated area	3.70 ha

The current Site Plans for the existing Licences (Licence No. 129167, Licence No. 625155, and Licence No. 626199) propose a combined agricultural rehabilitation area of approximately 102.2 hectares. Under the new proposed Site Plan, 24.26 hectares of the site will be returned to an agricultural condition. This reduction in the proposed area to be rehabilitated to agriculture is the result of the unfeasibility of rehabilitating the proposed quarry area to an agricultural condition and the policy direction to also enhance the natural environment. Agricultural rehabilitation is maximized to the extent feasible while balancing agricultural rehabilitation priorities with other policy directions, including enhancing the ecological integrity of the site and the wise use and management of aggregate resources.

Overall, the proposed pit/quarry will result in a loss of agricultural land. As described in subsection 4.1 and 4.3 of this Report, the proposed pit/quarry meets the policy tests of Section 4.5.4.2 of the PPS and consequently Section 4.4.2.2 of the Dufferin County Official Plan and, as such, complete rehabilitation to an agricultural condition is not required. Agricultural rehabilitation is maximized in remaining areas (areas not proposed to undergo below the water table extraction) while also ensuring that the ecological integrity of the site is enhanced through provision of wetland, woodland, and meadow features.

5.2 Fragmentation of Agricultural Lands

Agriculture uses and activities benefit from being adjacent to the other agricultural operations and if lands are fragmented, there is potential to negatively impact farming practices on the isolated farm parcels. The subject property is currently Licenced for aggregate extraction – with the majority already disturbed under aggregate production – and located adjacent to an existing licenced pit. While the proposed area to be rehabilitated to agriculture is smaller than what the existing rehabilitation plans require, the area proposed to be rehabilitated will not be an isolated parcel from the surrounding agricultural landscape. This portion of the lands is contiguous with existing agricultural areas to the east, south, and west. Additionally, the proposal to rehabilitate portions of the lands to a lake, woodland, meadow, and wetland incorporate uses that can provide ecological functions that are supportive of agriculture.

Overall, the proposed Pit/Quarry will not result in the further fragmentation of agricultural lands. The land uses within the surrounding area, and more particularly within the Secondary Study Area, are cohesive and comprised of large and connected agricultural land parcels. There are existing aggregate extraction operations located in the secondary study area along 4th Line and 3rd Line. The proposed new licence will not create any isolated agricultural land uses.

5.3 Hydrogeology

Management of water resources is an important consideration for farm operations, particularly for watering field/ vegetable crops and hydrating 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.

A hydrogeological assessment has been completed and concludes that with the incorporation of the report recommendations, groundwater and surface water resources and their uses are not expected to be impacted by the proposed operations. As a result, it is not anticipated the proposed pit/quarry will have a negative impact on surrounding agricultural uses from a hydrogeological perspective. Please see the completed Hydrogeological Report for final recommendations.

5.4 Traffic

A Traffic Report was completed by HDR and concluded that the proposed pit/quarry operation will result in an increase in yearly tonnage and subsequently an increase in peak hour traffic volumes. The Traffic Report determined that all intersection and accesses will continue to operate acceptably under future total conditions.

With respect to the safety of farm operators, turning movement counts were conducted in November which is part of the fall harvest season and therefore should be representative of the combined impacts of peak farming operations and surrounding aggregate operation impacts at that time. As such, additional traffic generated by the proposed pit/quarry operation is not anticipated to have negative impacts on surrounding agricultural operations. This opinion recognizes that the existing established haul routes are not changing with this application, and agricultural traffic in the area is accustomed, and has adapted, to the traffic patterns associated with the aggregate operation.

5.5 Blasting

A Blast Impact Analysis was completed by Explotech and concluded that with the incorporation of report recommendations, blasting required for operations at the proposed Strada Pit/Quarry can be carried out safely and well within governing guidelines set be the Ministry of the Environment, Conservation, and Parks. Please see the Blast Impact Report for a list of recommendations.

5.6 Noise Impact

A Noise Impact Analysis was completed by Aercoustics and concluded that with the incorporation of recommended noise controls, the proposed pit/quarry operation is predicted to satisfy the MECP noise guidelines.

5.7 Air Quality

There are several typical sources of fugitive dust emissions resulting from mineral aggregate operations including:

- On-site traffic;
- Internal roads, paved and unpaved areas;
- Material stockpiles;

- Loading / unloading areas and loading / unloading techniques;
- Material conveyance system; and,
- Crushing and screening equipment.

The ARA sets provincial standards for dust control in pits and quarries. All new Licences must adhere to the following prescribed conditions as set out in the ARA provincial standards for a Quarry Below Water operation:

- 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.

Dust is required to be mitigated on site through the prescribed conditions of the ARA. Livestock operations were identified within the Primary Study Area to the west and south of the proposed Strada Pit/Quarry lands. However, it is important to note that the livestock operations are buffered by intervening sensitive receptors (residences) which were considered within the Air Quality Assessment. It is not anticipated that dust or emissions will have an impact on surrounding agricultural or livestock uses, subject to the recommendations of the Air Quality Assessment prepared by RWDI and the implementation of the Best Management Practices Plan for dust management.

5.8 Summary of Net Impacts

The following table is consistent with Table 3 (*Minimize and Mitigate Impacts*) found in section 3.2.2 of the Province's *Draft Agricultural Impact Assessment Guidelines*. The purpose of this table is to provide a summary of how the proposed pit/quarry minimizes or mitigates impacts on surrounding agricultural uses.

Table 2: Summary of Net Impacts

Objective	Mitigation Measure	Description
Minimize the loss of agricultural land	Select areas with less agricultural land and lower priority agricultural lands	According to the Soil Survey prepared by DBH, the subject lands are comprised of Classes 2 and 3 soils. The lands are primarily designated 'Extractive Industrial' in the Township of Melancthon Official Plan, with the exception of wooded areas to the east of the property, outside of the proposed extraction area, which are designated 'Agricultural'. The lands are designated as 'Rural Lands' and

Objective	Mitigation Measure	Description
		'Agricultural Area' within the Dufferin County Official Plan. Much of Dufferin County's aggregate resource correlates with prime agricultural land, making locating aggregate operations on alternative locations outside of prime agricultural land very difficult. The lands are also already licenced for aggregate extraction.
	Rehabilitate the land	The new licence is proposed to include below water table extraction and therefore rehabilitation to an agricultural use post-extraction is not feasible in these areas. The portion of the site used for below the water table extraction will be rehabilitated to a lake with naturalized side slopes, natural features, and agriculture. The southern portion of the site will be rehabilitated to an agricultural condition, meadow, woodland, and wetland. Overall, a total of 24.21 hectares will be rehabilitated back to an agricultural condition. The area to be rehabilitated to an agricultural condition is adjacent to agricultural uses and will form part of a contiguous block of agricultural lands.
	Phase Development	The proposed Pit and Quarry will be extracted in phases.
Minimize the fragmentation of agricultural land	Maintain farm parcels	The proposed Pit and Quarry will not result in creating isolated agricultural lands as it is proposed on lands already Licenced for aggregate operations.

Objective	Mitigation Measure	Description
Minimize impacts on farmland and agricultural operations	Minimum Distance Separation	MDS I and II setbacks are not required for new or expanding pits and quarries.
	Select compatible land uses; put lower impact development adjacent to farmland and operations	The proposed Pit and Quarry and the surrounding agricultural lands will be buffered through the implementation of physical barriers (ie. berms) and required setbacks to reduce conflicts between uses.
	Design to support agriculture (e.g. help farms to continue to operate; help prevent and reduce trespassing and vandalism)	Conflicts between the pit/quarry and the surrounding agricultural land uses will be minimized through the implementation of physical (vegetative berms), similar to what is currently in use at the existing pit. The haul route is not proposed to change from the existing route that accesses 4th Line. Processing facilities will be located in close proximity to the working face and operated in accordance with the Technical Report recommendations, best management practices, and MECP guidelines to mitigate noise and dust impacts.
Minimize and mitigate changes in water quality or quantity	Implement a groundwater monitoring program	A groundwater monitoring program is included on the Site Plan.
Mitigating impacts during construction or operations (e.g. mitigate dust, noise)	Adjust operational procedures to accommodate agriculture in the area	With the existing aggregate use of the licenced pit, surrounding agricultural uses are accustomed to the operational procedures associated with mineral resource extraction. Noise and dust will be mitigated from the subject lands in accordance with Provincial Standards.

Objective	Mitigation Measure	Description
		The proposed Pit and Quarry will operate at the following times: • **Extraction and processing** is permitted Monday to Saturday from 7:00am to 7:00pm excluding statutory holidays. • **Shipping** is permitted Monday to Friday from 6:00am to 7:00pm and Saturdays from 6:00am to 5:00pm excluding statutory holidays. • **Site preparation and rehabilitation** is permitted Monday to Friday from 7:00am to 5:00pm excluding statutory holidays. • **Blasting** is permitted Monday to Friday from 8:00am to 6:00pm only during daylight hours • No operations on Sundays and statutory holidays as defined in accordance with the Employment Standards Act.
	Vegetative berms	Acoustic berms will be used to minimize impacts to surrounding land uses.
	Maintain, restore or construct farm infrastructure	There is no identified farm infrastructure on the subject lands.
Mitigate ongoing impacts from new development	Implement measures that can be in place post development to support compatibility with agriculture	All measures associated with the operational berms and rehabilitated landform will be non-invasive species and will not impact

Objective	Mitigation Measure	Description
		agricultural production when the lands are rehabilitated.
Education to achieve greater compatibility between agricultural and non-agricultural uses	Education and awareness	Strada Aggregates will continue to engage and educate the public.

6.0 Recommendations

The following recommendations are made to reduce the impacts of the proposed new licence on the surrounding agricultural uses and operations in the Primary and Secondary Study Area. Recommendations are also made to ensure that the portion of the lands to be returned to agriculture is returned to the same average soil capabilities and agricultural production as pre-extraction:

1. All of the recommendations of the technical reports shall be implemented to minimize and prevent impacts to adjacent and surrounding agricultural uses and operations.
2. The Agricultural area shall be rehabilitated in accordance with the agricultural rehabilitation sequence schematic (see **Figure 9**) to ensure best practices are followed throughout the progressive rehabilitation of the pit/quarry.
3. Topsoil and subsoil shall be replaced in the Agricultural rehabilitation area at the following depths: 200 mm for Topsoil and 300 mm for Subsoil.
4. Soil shall be handled under suitable conditions. Travel over soils in the agricultural rehabilitation area shall be minimized to reduce compaction. Ripping / tilling the soil shall occur, where necessary, to alleviate soil compaction and shall avoid the mixing of soil materials / layers during the process.
5. Once grading is completed within the agricultural area, a vegetation cover (such as perennial crops) shall be immediately established within the agricultural rehabilitation area in order to reduce erosion, add organic matter to the soil and improve soil structure. A grass-legume cover crop shall be established throughout the agricultural rehabilitation area and maintained for up to five years and ploughed under annually in order to promote and increase organic matter. Alternatively, field crops (e.g. wheat, soy, corn, hay) shall be established immediately following rehabilitation grading in the agricultural area.
6. An Agricultural Rehabilitation Monitoring Program Report shall be submitted annually by a qualified professional once the final grades have been established in the agricultural rehabilitation area and will continue until it can be demonstrated that the agricultural area has been rehabilitated back to an agricultural condition. The report shall document the stages of the rehabilitation process and include details on matters such as the following:
    a. Evaluate the rehabilitated agricultural condition and soil capability;
    b. Documentation on the alleviation of any soil compaction, drainage provisions, erosion control, etc.;
    c. Description of how the soil has been replaced and any amendments added (fertilizer, organic matter)
    d. Description of any seeding or planting that has occurred;
    e. A review of previous rehabilitation management activities and observations regarding field conditions;
    f. Report of agricultural activity (crops grown, annual yields) and any anecdotal feedback from the farmer;
    g. Review of drainage issues and recommended mitigation measures as necessary;
    h. Summary of post rehabilitation soil capability; and
    i. Make recommendations on future agricultural rehabilitation activities and any needed adjustments to best management practices.

The report shall include observational documentation, records of activity and quantitative information on soil conditions. These reports will be appended as part of annual ARA Compliance Assessment Reports.

7. Best management practices shall be implemented with respect to the storage and application of organic material, fertilizers and pesticides.

Pit Floor Agricultural Rehabilitation Sequence

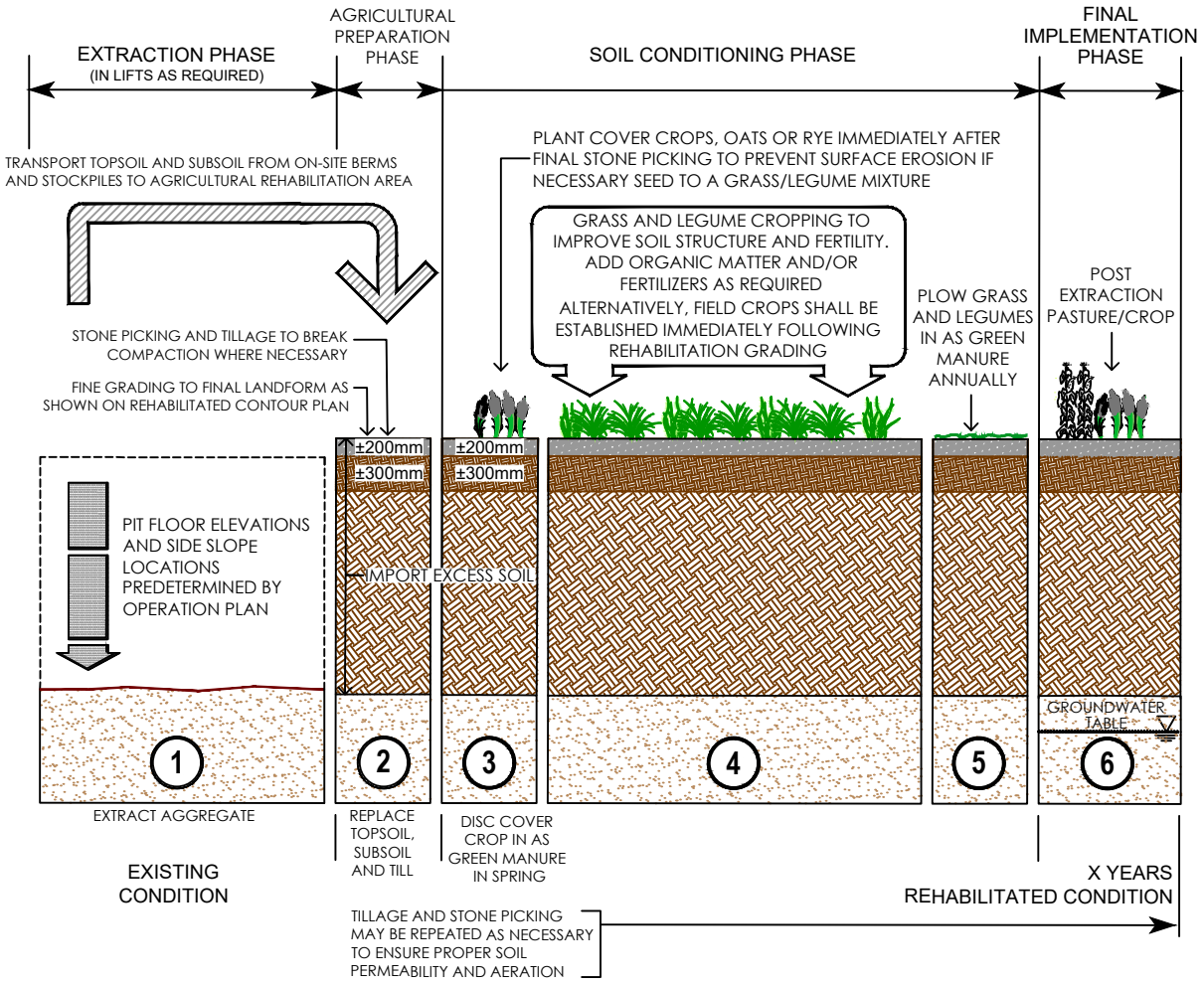

Figure 9:
Recommended Rehabilitation Sequence

Proposed Strada Pit and Quarry
Part of west half lot 11 and west half lots 12, 13, 14
Concession 3 O.S.
Township of Melancthon
County of Dufferin

DATE: August 2024
SCALE: NTS
FILE: Y349J
DRAWN: GC

K:\Y349J- STRADA\RPT\RECOMMENDED REHABILITATION SEQUENCE AUGUST22 2024.DWG

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7.0 Summary

In summary, the proposed mineral aggregate extraction on the subject lands is not anticipated to have a significant negative impact on the long term agricultural uses and operations on the subject lands and within the Primary / Secondary Study Areas. This opinion recognizes the following:

- Mineral aggregate extraction is a permitted use on prime agricultural land and within prime agricultural areas as well as rural lands in accordance with the PPS, Dufferin County Official Plan, and Township of Melancthon Official Plan.
- The subject property is not within a specialty crop area.
- The lands are designated Agricultural Area and Rural in the County of Dufferin Official Plan.
- The portion of the lands that are within the extraction limit are designated Extractive Industrial in the Township of Melancthon Official Plan.
- A portion of the lands will be rehabilitated to an agricultural condition.
- The existing haul route utilizes County Roads which are designed for heavy truck traffic. Additionally, agricultural traffic is accustomed to truck traffic from surrounding aggregate operations.
- Impacts from dust and noise/blasting will be mitigated through implementation of prescribed conditions and the technical report recommendations included on the Site Plan.
- There are no impacts to anticipated to the surrounding and adjacent agricultural uses or operations as a result of the proposed Licence.
- The proposal is located on lands that are currently licenced under the Aggregate Resource Act and actively being extracted.
- The final rehabilitated land-use is compatible with the surrounding agricultural uses and operations and will create landscape diversity.

Respectfully submitted by,

MHBC

Pierre Chauvin, BSc (Agr.) MA, MCIP, RPP
Partner

Chelsea Brooks, MA, MSc
Intermediate Planner

A

Appendix A: Secondary Study Area Review

The following properties are indicated on **Figure 3** of this Report.

Farm No. 1 – 43700 4th Line

This farm is located opposite the Melancthon Pit #2 and is occupied by a residential dwelling, a drive shed, a quonset shed and an older bank barn. All structures appear to be in relatively good condition but the existing bank barn is in need of some minor repairs (missing boards were observed on the side of the barn). There is no evidence of livestock or other facilities (e.g. fencing or manure storage) that would suggest the barn is used or occupied by livestock. Agricultural land surrounding the farmstead is in winter wheat production.

43700 4th Line

Farm No. 2 – 4th Line

This property is opposite the Prince property and the only structure on the property consists of an older unutilized drive shed. No livestock or farm machinery were present on the property. There are no other structures on the property with the exception of the former remains of a residential dwelling. The agricultural lands surrounding the former farmstead is in soybean production.

4th Line

Farm No. 4 – 477274 3rd Line

This farm is immediately located northeast of the Prince property and abuts the northern limit of the St. Marys Cement licenced pit. In addition to the existing farmhouse, the property is occupied by a number of structures including two quonsets/coverall sheds, two drive sheds and a large bank barn. Beef cattle were observed around the bank barn and the adjacent pastures. Agricultural lands surrounding the farmstead were in pasture or cropped in hay and potatoes.

477274 3rd Line

Farm No. 5 – 477285 3rd Line

This farm is located northeast of the Prince property and the existing St. Marys Cement licenced aggregate operation. The property is located on the east side of 3rd Line and is located opposite Farm No. 4. The property is occupied by a single detached dwelling and a number of agricultural structures including two drive sheds, a bank barn and a single storey barn with an associated livestock yard. Beef cattle and lambs were observed on the property. The agricultural lands surrounding the farmstead included pasture land and lands cropped in potato, hay and winter wheat.

477285 3rd Line

477285 3rd Line

Farm No. 6 – 477084 3rd Line

This farm is located immediately east of the Bonnefield property. The property is occupied by a single detached dwelling, a large bank barn, a coverall/quonset shed and two drive sheds. Dairy cattle were observed on the property and the surrounding agricultural lands were in corn, hay and soybean production as well as pasture.

477084 3rd Line

477084 3rd Line

Farm No. 7 – 477081 3rd Line

This farm is located on the east side of 3rd Line and opposite Farm No. 6. The property is occupied by a single detached dwelling and two drive sheds used for the storage of agricultural equipment and field crops (e.g. potatoes). No livestock were observed on the property nor were there any facilities/structures on the property to accommodate livestock. The agricultural lands surrounding the farmstead were either in pasture, winter wheat or hay production.

477081 3rd Line

Farm No. 8 – 477081 3rd Line

This property is located southwest of the Bonnefield property and abuts the eastern limit of the existing Melancthon Pit #2 licenced boundary. This property is occupied by a single detached dwelling and a number of agricultural structures including a large bank barn and three drive sheds. All structures appear to be in good repair with the exception of an older drive shed. The surrounding pastures were fenced and beef and dairy cattle were observed in the surrounding pastures. Agricultural lands surrounding the farmstead were either in pasture, hay or soybean production.

477081 3rd Line

Farm No. 9 – 585246 County Road 17

This property is located on the south side of County Road 17 southwest of Melancthon Pit #2 and the Bonnefield property. Remnants of former barn/structures are apparent on the property and a single drive shed remains on the property. There is no evidence of any livestock or any facilities/structures to accommodate livestock on the property. In addition to the drive shed, there is an existing single detached dwelling present on the property. The drive shed is in poor condition and is in need of repair. The agricultural lands surrounding the farmstead is predominantly in corn and pasture production.

Farm No. 10 – 585158 County Road 17

This property is located immediately south of County Road 17 and opposite Melancthon Pit #2. The property is located on the southeast corner of County Road 17 and 4th Line and contains a single detached dwelling, a bank barn and a coverall/arena. Visual observations of this farm revealed no evidence of livestock. The agricultural lands surrounding the farmstead are generally comprised of pasture and hay fields.

585188 County Road 17

Farm No. 11 – Humble Acres Ontario (436574 4th Line)

435574 4th Line

This property is located southwest of Melancthon Pit #2 and is located on the southwest corner of County Road 17 and 4th Line. The farm's website states that they are a black currant and haskap berry farm. The property is occupied by a single detached dwelling and a bank barn. The barn appears to be generally in good repair and existing fencing on the surrounding pastures appear to be well maintained. The agricultural lands surrounding the farmstead are predominantly in soybean pasture and hay production with about a dozen rows of berry bushes (observed to the rear of the farmstead through satellite imagery)

B

Appendix B: Soil Survey and Canada Land Inventory Classification – DBH Soil Services Inc.

DOCUMENT TRANSMITTAL

Document: **SOIL SURVEY AND CANADA LAND INVENTORY (CLI) EVALUATION**

Prepared for:
Mr. David Barrett
MHBC Planning, Urban Design & Landscape Architecture
540 Bingemans Centre Drive
Suite 200
Kitchener, ON
N2B 3X9

Date: February 1, 2017
Our Ref. No.: 2017-02
Your Ref. No.:

Attention: Mr. David Barrett

DRAFT
FINAL ☑

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1 pdf report	Mr. David Barrett
3 Bound copies	Mr. David Barrett

Approved by:

Dave Hodgson
DBH Soil Services Inc.

SOIL SURVEY AND CANADA LAND INVENTORY CLASSIFICATION FOR PART OF WEST HALF OF LOTS 12 AND 14 CONCESSION 3 O.S. TOWNSHIP OF MELANCTHON COUNTY OF DUFFERIN

Prepared for:

Strada Aggregates
30 Floral Parkway
Concord, ON
L4K 4R1

DBH Soil Services Inc.

February 1, 2017

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1.0 BACKGROUND

DBH Soil Services Inc was retained by Strada Aggregates to complete a Soil Survey and Canada Land Inventory (CLI) Classification assessment for an area identified as:

Part of West Half of Lots 12 and 14
Concession 3 O.S.
Township of Melancthon
County of Dufferin

This area comprises two parcels (identified above), with a total area of approximately 60.9 ha (150.5 acres). The parcel located on Lot 14 encompasses approximately 40.8 ha (99.8 acres), while the parcel located on Lot 12 covers approximately 20.5 ha (50.7 acres). Together these two parcels are referred to as the Subject Lands.

The Subject Lands are roughly bounded: on the west by 4th Line (a paved and upgraded road (to the south) used for rural traffic and the existing aggregate pits located west of, south of and between these two parcels), aggregate pits and agricultural lands; on the north by agricultural lands and woodlots; on the east by aggregate operations, agricultural lands and woodlots; and on the south by aggregate operations.

In the local area context, the Subject Lands are located approximately 2.0 km west of the hamlet of Horning's Mills and approximately 6.0 km north of the Town of Shelburne.

This report was completed to document the existing soil conditions and to provide a more detailed assessment of the Canada Land Inventory (CLI) classification of the soil resources onsite.

Figure 1 illustrates the relative location of the Subject Lands with respect to the above mentioned features.

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

Legend

- Roads
- Built Up Areas (MNR Data)
- Lot Lines
- Subject Lands

Figure 1

Location

DBH Soil Services Inc

November 2016

2017/02/Figure 1 - Location

2.0 METHODOLOGY

2.1 DATA SOURCES

The following data sources were used to carry out the detailed Soil Survey and Canada Land Inventory Classification (CLI) for this study:

- 1:10000 scale Ministry of Natural Resources (MNR) Aerial Photography, 1978,
- 1:10000 scale Ontario Base Map (1983) Ministry of Natural Resources:
    - 10 17 5550 48850
    - 10 17 5600 48900
    - 10 17 5550 48900
    - 10 17 5600 48850,
- 1:50000 scale NTS Map No 41A/1 and 31 D/4. 1984. Ministry of Energy Mines and Resources, Canada,
- 1:50000 scale NTS Map No 41A/1 and 31 D/4. Canada Land Inventory (CLI) Capability Mapping,
- *Agronomy Guide for Field Crops (Publication 811). (2009).* Ontario Ministry of Agriculture, Food and Rural Affairs,
- *Classifying Prime and Marginal Agricultural Soils and Landscapes:* Guidelines for Application of the Canada Land Inventory in Ontario. OMAFRA. Online, 2016,
- *County of Dufferin Soils data,* Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), digital data 2016,
- *Dufferin County Official Plan, (March 27, 2014),*
- *Greenbelt Protection Plan* (The Greenbelt Act 2005),
  Guide to Agricultural Land Use, Ontario Ministry of Agriculture, Food and Rural Affairs, March 1995,
- Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas (Publication 851). Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), 2016,
- *Niagara Escarpment Plan* (June 1, 2005),
- Ontario Ministry of Agriculture and Food - Land Use Systems Mapping,
- Ontario Ministry of Agriculture and Food - Artificial Drainage Mapping,
- *Provincial Policy Statement, 2014,*
- *Soil Survey and Canada Land Inventory Classification for Part Lot 13, Concession 3 OS, Township of Melancthon, Dufferin County (DBH Soil Services Inc), 2001,*
- *Soil Survey of Dufferin County; Report No. 38 of the Ontario Soil Survey. (Hoffman, D.W., B.C. Matthews, and R.E. Wicklund, 1964),*
- *Surficial Soil Study, Part Lots 11 & 12, Concession 3, Township of Melancthon, Dufferin County (May 2008),*
- *The Physiography of Southern Ontario 3rd Edition, Ontario Geological Survey Special Volume 2, Ministry of Natural Resources, 1984,*
- *The Township of Melancthon Official Plan (August 2014),*
- *Windshield and field surveys by DBH Soil Services staff, October 17, 2016.*

2.2 FIELD DATA COLLECTION

2.2.1 SOIL INVESTIGATION

Basic soils information was provided in the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) soils reporting and mapping (*Soil Survey of Dufferin County,* Report No. 38 of the Ontario Soil Survey (Hoffman, D.W., B.C. Matthews, and R.E. Wicklund, 1964)) with mapping at a scale of 1:63360 (or one inch to one mile). Mapping at this scale is of a general nature when referring to site-specific planning; therefore detailed soils assessments are often required for farm scale or lot size planning initiatives and applications for amendments to Official Plans.

With this in mind, a detailed soil survey was completed for the Subject Lands. The detailed soil survey was completed by following the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) *Guidelines for Detailed Soil Surveys for Agricultural Land Use Planning* (May 31, 2004). These guidelines were created in response to concerns with the accuracy of published mapping and classification of soil materials and that the existing information is of too general a nature to adequately describe and interpret the soil properties for site-specific planning purposes.

A detailed onsite soil survey and surrounding land reconnaissance survey were conducted on October 17, 2016.

2.2.2 TOPOGRAPHY AND CLIMATE

Topographic information was reviewed and correlated to the Site Plan (provided by MHBC/Stada Aggregates), the 1:10000 scale Ontario Base Mapping, detailed soil survey assessment (using a hand held clinometer), aerial photo interpretation and windshield surveys.

Climate data was taken from the OMAFRA document titled 'Agronomy Guide for Field Crops – Publication 811 (June 2009)'.

2.2.3 AGRICULTURAL LAND USE

Initial Agricultural Land Use data was provided by the Ontario Ministry of Agriculture, Food and Rural Affairs. This information is presented at the Township level and identified a land usage for individual properties. This information provided a baseline for the identification of agricultural land use on the Subject Lands. It should be noted that the OMAFRA Land Use data is of older material and is not updated on a regular basis. With this in mind, the OMAFRA data was used for comparison purposes.

Agricultural land use data was collected through observations made during the detailed soil survey completed in October 17, 2016. Data collected included the identification of land use (both agricultural and non-agricultural), documentation of the type and location of agricultural facilities (if any), non-farm residential units (if any) and non-farm buildings (business, commercial and institutional usage). The data presented in this report reflects the present day agricultural land use (if any).

3.0 POLICY REVIEW

The long term protection of quality agricultural lands is a priority of the Province of Ontario and has been addressed in the Provincial Policy Statement (2014). Municipal Governments have similar regard for the protection and preservation of agricultural lands, and address their specific concerns within their respective Official Plans. With this in mind, the Provincial Policy Statement (2014), *Dufferin County Official Plan, (March 27, 2014) and The Township of Melancthon Official Plan (August 2014)* were reviewed for policies directly related to soil resources and Canada Land Inventory (CLI). The relevant policies are indicated as follows.

The Official Plan Policies were reviewed to verify if there were any additional or specific soil components to be investigated when determining the potential impacts to agriculture.

3.1 PROVINCIAL AGRICULTURAL POLICY

The Provincial Policy Statement (2014) was enacted to document the Ontario Provincial Governments development and land use planning strategies. The Provincial Policy Statement provides the policy foundation for regulating the development and use of land.

Agricultural Policies are addressed in Section 2.3 – Agriculture. Section 2.3.6 – Non-Agricultural Uses in Prime Agricultural Areas provides policy specific to this study. Section 2.3.6.1 states: "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;

Mineral Aggregate Policies are addressed within Section 2.4 and 2.5 of the Provincial Policy Statement. Section 2.4.2.1 identifies the Protection of Long-term Resource Supply and states: "*Mineral mining operations* and *petroleum resource operations* shall be identified and protected from *development* and activities that would preclude or hinder their expansion or continued use or which would be incompatible for reasons of public health, public safety or environmental impact."

Further, Section 2.4.3.1 states:

> "2.4.3.1 Rehabilitation to accommodate subsequent land uses shall be required after extraction and other related activities have ceased. Progressive rehabilitation should be undertaken wherever feasible", and Section 2.4.4.1 states:
> "2.4.4.1 Extraction of *minerals* and *petroleum resources* is permitted in *prime agricultural areas* provided that the site will be rehabilitated."

Sections 2.5.2 – Protection of Long-Term Resource Supply and Section 2.5.3 – Rehabilitation provide policy for Mineral Aggregate Resources and Rehabilitation.

"2.5.2 Protection of Long-Term Resource Supply

2.5.2.1 As much of the *mineral aggregate resources* as is realistically possible shall be made available as close to markets as possible. Demonstration of need for *mineral aggregate resources*, including any type of supply/demand analysis, shall not be required, notwithstanding the availability, designation or licensing for extraction of *mineral aggregate resources* locally or elsewhere.

2.5.2.2 Extraction shall be undertaken in a manner which minimizes social, economic and environmental impacts."

Section 2.5.3 Rehabilitation provides the following policies:

"2.5.3.1 Progressive and final rehabilitation shall be required to accommodate subsequent land uses, to promote land use compatibility, to recognize the interim nature of extraction, and to mitigate negative impacts to the extent possible. Final rehabilitation shall take surrounding land use and approved land use designations into consideration.

2.5.3.2 *Comprehensive rehabilitation* planning is encouraged where there is a concentration of mineral aggregate operations.

2.5.3.3 In parts of the Province not designated under the *Aggregate Resources Act*, rehabilitation standards that are compatible with those under the Act should be adopted for extraction operations on private lands."

3.2 OFFICIAL PLAN POLICY

Official Plan policies are prepared under the Planning Act, as amended, of the Province of Ontario. Official Plans generally provide policy comment for land use planning while taking into consideration the economic, social and environmental impacts of land use and development concerns. For the purpose of this report the Dufferin County Official Plan (March 27, 2015) and the Township of Melancthon Official Plan (August 2014) were reviewed for issues related to agricultural soils.

The County municipal government is a two tier system. The County sets broad level policies while the local (township) municipalities provide more detailed policies for planning and development.

3.3 DUFFERIN COUNTY OFFICIAL PLAN

Dufferin County is in the process of completing their first Official Plan. For the purposes of this study, the Dufferin County Official Plan (March 27, 2015) was reviewed. Schedule C – Agricultural Area and Rural Lands mapping illustrates that the Subject Lands are located in an area designated as Agricultural Area. Schedule D – Mineral Aggregate Resource Areas

illustrates that the Subject Lands are located in an area designated as Sand and Gravel Resource Area.

Section 4.2 provides policies for Agricultural Area, Section 4.3 provides Land Use policies, while Section 4.4 provides policies on the Management of Mineral Aggregate, Minerals and Petroleum Resources. Section 4.4.2.1 provides policy on New or Expanding Mineral Resource Operations, while Section 4.4.2.2 provides policy on Rehabilitation.

Section 4.2.3 states:

"a) The County and local municipalities will designate prime agricultural areas in their official plans, through procedures established by the Province. Prime agricultural areas are designated on Schedule C of this Plan. Any changes to the designation of prime agricultural areas will require an amendment to this Plan, and an amendment to the local municipal official plan."

Section 4.4.2.1 states:

"a) New mineral aggregate resource operations or any expansion to an existing mineral aggregate resource operation that extends beyond the lands identified in the local municipal official plan will require an amendment to the local municipal official plan, and will conform to the policies of this Plan and the local municipal official plan. An amendment to this Plan will not be required for new or expanding mineral resource operations.

b) Development and activities in known deposits of mineral aggregate resources and on adjacent lands, with the exception of agricultural uses, which would preclude or hinder the establishment of new mineral aggregate resource operations or access to the resources will only be permitted if: i. resource use would not be feasible; or ii. the proposed land uses or development serves a greater long-term public interest; and iii. issues of public health, public safety and environmental impact are addressed. For the purposes of this policy, 'adjacent to' will generally include lands within 1,000 metres of an existing pit, quarry, and aggregate reserve.

c) Mineral aggregate resource operations shall be protected from development and activities that would preclude or hinder their expansion or continued use or which would be incompatible for reasons of public health, public safety or environmental impact.

d) In considering new mineral aggregate resource operations or any expansion to an existing mineral aggregate resource operation, the County and local municipality will be satisfied that prior to approval of a local municipal official plan amendment that impacts are minimized with respect to the following:

i. surrounding land uses and siting of extraction operations, including demonstrating compatibility with the rural character and landscape, including visual impacts;

ii. surrounding sensitive uses through adequate buffering, screening, and other mitigation measures;

iii. transportation infrastructure, particularly as it relates to County Roads and Provincial Highways;

iv. surface water and groundwater quality and quantity, provincially significant natural features, natural heritage features and areas, and the environment;

v. social and community considerations; vi. cultural heritage and archaeological resources;

vii. noise, dust and vibration, in accordance with Provincial Standards;

viii. the removal and placement of fill, topsoil or overburden;

ix. demonstration that the final rehabilitation plan is consistent with the policies of this Plan and the local municipal official plan;

x. other matters identified by the Province, County, or local municipality, or identified in the local municipal official plan; and

xi. requirements under the Aggregate Resources Act.,"

Section 4.4.2.2 – Rehabilitation states that:

"a) Progressive and final rehabilitation will be required to accommodate subsequent land uses, to promote land use compatibility, to recognize the interim nature of extraction, and to minimize impacts, to the extent possible. Final rehabilitation will take into consideration the pre-extraction land use designation and conditions, and compatibility with the character of the surrounding land uses and approved land use designations, in consideration of the County Plan and local municipal official plan, as well as the opportunity to accommodate parks and open space uses.

b) Comprehensive and coordinated rehabilitation planning is encouraged where there is a concentration of mineral aggregate operations.

c) In prime agricultural areas, on prime agricultural land the extraction of mineral aggregate resources is permitted as an interim use provided the site will be rehabilitated back to an agricultural condition. Complete rehabilitation back to an agricultural condition is not required if:

i. there is a substantial quantity of mineral aggregate resources below the water table warranting extraction, or the depth of planned extraction in a quarry makes restoration of pre-extraction agricultural capability unfeasible;

ii. other mineral aggregate resource extraction alternatives have been considered by the proponent and found unsuitable. The consideration of other mineral aggregate resource extraction alternatives will include mineral aggregate resources in areas of Canada Land Inventory Class 4 through 7 lands, resources on lands identified as settlement areas, and,

resources on prime agricultural lands where rehabilitation is feasible. Where no other alternatives are found, prime agricultural lands will be protected in this order of priority: Canada Land Inventory Class 1, 2 and 3 lands; and

iii. agricultural rehabilitation in remaining areas is maximized."

3.3.1 Township of Melancthon Official Plan (August 2014)

The Township of Melancthon Official Plan (August 2014) provides for Agricultural Policies in Section 5.2 and Extractive Industrial in Section 5.6.

Section 5.2.2 states:

"(b) *Agricultural uses* shall be given priority over all other uses with the exception of:
ii new or expanded *mineral aggregate operations,* on the basis of a site specific interim use related amendment to this Plan, and *wayside pits and quarries* where either of these types of uses can be justified in terms of their compliance with the applicable policies of sections 3.17, 3.18, and 5.6 including the policies of subsections 5.6.2(k) and (m) in the Extractive Industrial section of this Plan, and all other polices of this Plan"

Section 5.6.2 – Planning and Development Policies states:

"(k) Where a new or expanded *mineral aggregate operation* is proposed for a site either within the Agricultural designation or on agriculturally used land within the Rural designation, such use may be permitted only if documentation has been provided demonstrating to Council's satisfaction that there is conformity with the following criteria and policies, in addition to all other applicable policies of this Plan.

i The use shall be interim in nature.
ii Alternatives involving sites having lower quality or nonagricultural soils have been evaluated by the applicant and have been found to be unsuitable.
iii On a site designated Agricultural, the *mineral aggregate operation* shall be limited to a size and to a depth, both below the existing grade and above the water table, that makes it feasible through rehabilitation to restore a minimum of 90 percent of the area to be extracted, as shown on site plans approved by the Ministry of Natural Resources, back to the same soil quality for agriculture as existed prior to the *mineral aggregate operation*.
iv On a site having agriculturally used land in the Rural designation, the rehabilitation policy in item iii above shall apply unless its implementation is unfeasible, in which case there shall be conformity with the other rehabilitation related policies of this Plan.

(l) As with all materials provided in support of a proposed *mineral aggregate operation*, the documentation provided with regard to the matters referenced in subsection (k) above will be peer reviewed by the Township.

(m) Where no other alternatives are found in accordance with subsection (k) above, prime agricultural lands shall be protected in this order of priority: Specialty Crop Areas, if any, Canada Land Inventory Class 1 soils, Class 2 soils and Class 3 soils."

Section 5.6.2 – Planning and Development Policies (General Policies for the Extractive Industrial Designation) provides policy for rehabilitation in Section (v) – Use of Site After Rehabilitation. This policy states:

"(v) As *mineral aggregate operations* are to be permitted only as interim uses, upon completion of mineral aggregate extraction and full implementation of the associated rehabilitation plans to pre-extraction conditions or enhanced preextraction conditions, the site of an extractive industrial operation may be used for any of the other uses permitted in subsection 5.6.1, including agriculture, forestry and low intensity outdoor recreation.

(w) Notwithstanding the provisions of subsection (v) immediately above, any site consisting of prime agricultural land prior to the commencement of a *mineral aggregate operation* and originally within the Agricultural designation or agriculturally used land originally within the Rural designation shall be restored to agricultural use in compliance with the policy of subsection 5.6.2(k)iii. The use of rehabilitated extractive industrial lands for any purpose other than those permitted by subsection (v) and this subsection will require amendments to this Plan and the zoning by-law.

(x) Post-rehabilitation uses shall comply with all applicable policies of this Plan, particularly those intended to achieve compatibility between new and existing uses."

4.0 FINDINGS

4.1 SUBJECT LANDS

The Subject Lands were defined as:

Part of West Half of Lots 12 and 14
Concession 3 O.S.
Township of Melancthon
County of Dufferin

This area comprises two parcels (identified above), with a total area of approximately 60.9 ha (150.5 acres). The parcel located on Lot 14 encompasses approximately 40.8 ha (99.8 acres), while the parcel located on Lot 12 covers approximately 20.5 ha (50.7 acres). Together these two parcels are referred to as the Subject Lands.

The Subject Lands are roughly bounded: on the west by 4th Line (a paved and upgraded road (to the south) used for rural traffic and the existing aggregate pits located west of, south of and between these two parcels), aggregate pits and agricultural lands; on the north by agricultural lands and woodlots; on the east by aggregate operations, agricultural lands and woodlots; and on the south by aggregate operations.

In the local area context, the Subject Lands are located approximately 2.0 km west of the hamlet of Horning's Mills and approximately 6.0 km north of the Town of Shelburne.

The northern portion of the Subject Lands (40.8 ha (99.8 acres)) comprise croplands, pasture, woodlots and a farm residential unit (including out buildings (barn, machine shed)). The southern portion of the Subject Lands (20.5 ha (50.7 acres)) comprise croplands, woodlots and a farm residential unit (including out buildings).

No ponds, standing water or stream courses were observed on either portion of the Subject Lands.

Cattle were pastured on a central pasture area on the northern portion of the Subject Lands.

4.2 PHYSIOGRAPHY AND CLIMATE

The *Physiography of Southern Ontario* Physiographic Unit Map indicates that the Subject Lands are located within the Dundalk Till Plain Physiographic Region. This Region is described as gently undulating till plain. The plain is characterized by swamps or bogs and poorly drained depressional areas. Much of the plain area is comprised of surficial soil deposits consisting of silt of fine sands. This material is usually less than 60 cm (2 feet) in depth.

The Subject Lands are located along the eastern boundary of this physiographic region and have slopes that range from gently sloping to steeply sloping.

The Subject Lands are located within the 2700 - 2900 average accumulated Crop Heat Units (CH-M1) available for Corn production in Ontario. The Crop Heat Units (CHU) index was originally developed for field corn and has been in use in Ontario for 30 years. The CHU ratings are based on the total accumulated crop heat units for the frost free growing season in each area of the province. CHU averages range between <2700 east of Parry Sound to over 3500 near Windsor. The higher the CHU value, the longer the growing season and greater are the opportunities for growing value crops.

4.3 DETAILED SOIL SURVEY

A detailed on-site soil survey was conducted to more accurately map and classify the soil resources of the soil materials on the Subject Lands as a whole and for the individual parcels. The soil survey included the following tasks:

- Completion of a review of published soil information (*Soil Survey of Dufferin County, Report No. 38 of the Ontario Soil Survey (Hoffman, D.W., B.C. Matthews, and R.E. Wicklund, 1964*)),
- Conduct a review of published Canada Land Inventory (CLI) ratings for the soils of this area,
- Conduct an aerial photographic review and interpretation of the soil polygons, disturbed soil areas and miscellaneous landscape units (ie: streams, boulder pavement, wayside pits),
- Conduct an on-site soil survey,
- Completion of mapping to illustrate the location of the property, the occurrence of soil polygons and appropriate CLI capability ratings,
- Completion of a report outlining the methodologies employed, findings (including a discussion of relevant features identified) and a conclusion as to the relevance of the CLI classifications for the soil polygons on the property.

The detailed soil survey of the Subject Lands and reconnaissance of the surrounding area was conducted on October 17, 2016. Aerial photographic interpretation was used to delineate soil polygon boundaries by comparing areas, on stereoscopic photographs, for similar tone and texture. Delineated soil polygons were evaluated for the purpose of verifying soil series and polygon boundaries. The evaluation was completed through an examination of the existing soil conditions to a minimum depth of 100 cm or to refusal. A hand held Dutch Soil Auger and/or Dutch Stone Auger was used to extract the soil material to a minimum depth of one metre (or to refusal).

Each soil profile was examined to assess inherent soil characteristics. Soil attributes were correlated with the *Canadian System of Soil Classification* (CSSC) (Agriculture Canada, 1998) and the *Field Manual for Describing Soils in Ontario* (Ontario Centre for Soil Resource Evaluation, 1993). A hand held clinometer was used to assess percent slope characteristics. Soils were assigned to a soil map unit (series) based on soil texture (hand texturing assessment), soil drainage class and topography (position and slope).

Depth to free water within one metre of the soil surface was also recorded at inspection sites located on lower slope positions (where applicable). Names for the soil series and the Canada Land Inventory (CLI) ratings were assigned to each soil polygon by correlating the soil series with soils information presented in the *Soil Survey of Dufferin County, Report No. 38 of the Ontario Soil Survey (Hoffman, D.W., B.C. Matthews, and R.E. Wicklund, 1964)* and with the CLI information presented on the 1:50000 scale manuscript mapping.

The detailed soil survey of the Subject Lands revealed that the majority of the southern parcel had been harvested and plowed this fall. Numerous stone piles were noted along fence rows, field rows, along the forested edge and in piles in the fields (particularly in the eastern most field). The parcel comprises three large fields, with the middle and eastern fields covering areas of steeply sloping topography.

Photograph illustrates the central portion of the property looking north (Panoramic view)

The northern parcel comprised large pasture/forage areas bordering a central pasture area extending from the farm building complex to the wooded areas at the east. Steeper topography was noted in an area surrounding and adjacent to the farm building complex. The wooded areas at the eastern extent of the property are divided into two sections. The northern section comprised simple slopes (greater than 50 m slope length), while the southern section comprised more complex topography (slope lengths less than 50 m). Numerous stone piles were noted along fence rows and in the eastern portions of the property.

Photograph illustrates the northern property looking north east at the woodlot edge. Note boulders.

A total of 48 soil inspection sites were examined over the Subject Lands (two parcels). The soil inspection information was correlated with soil descriptions in *Soil Survey of Dufferin County,* Report No. 38 of the Ontario Soil Survey (Hoffman, D.W., B.C. Matthews, and R.E. Wicklund, 1964), prior to the production of the soils map in Figure 2. Soil names used in the identification of the soil series on Figure 2 were taken from *Soil Survey of Dufferin County, Report No. 38 of the Ontario Soil Survey (Hoffman, D.W., B.C. Matthews, and R.E. Wicklund, 1964)*.

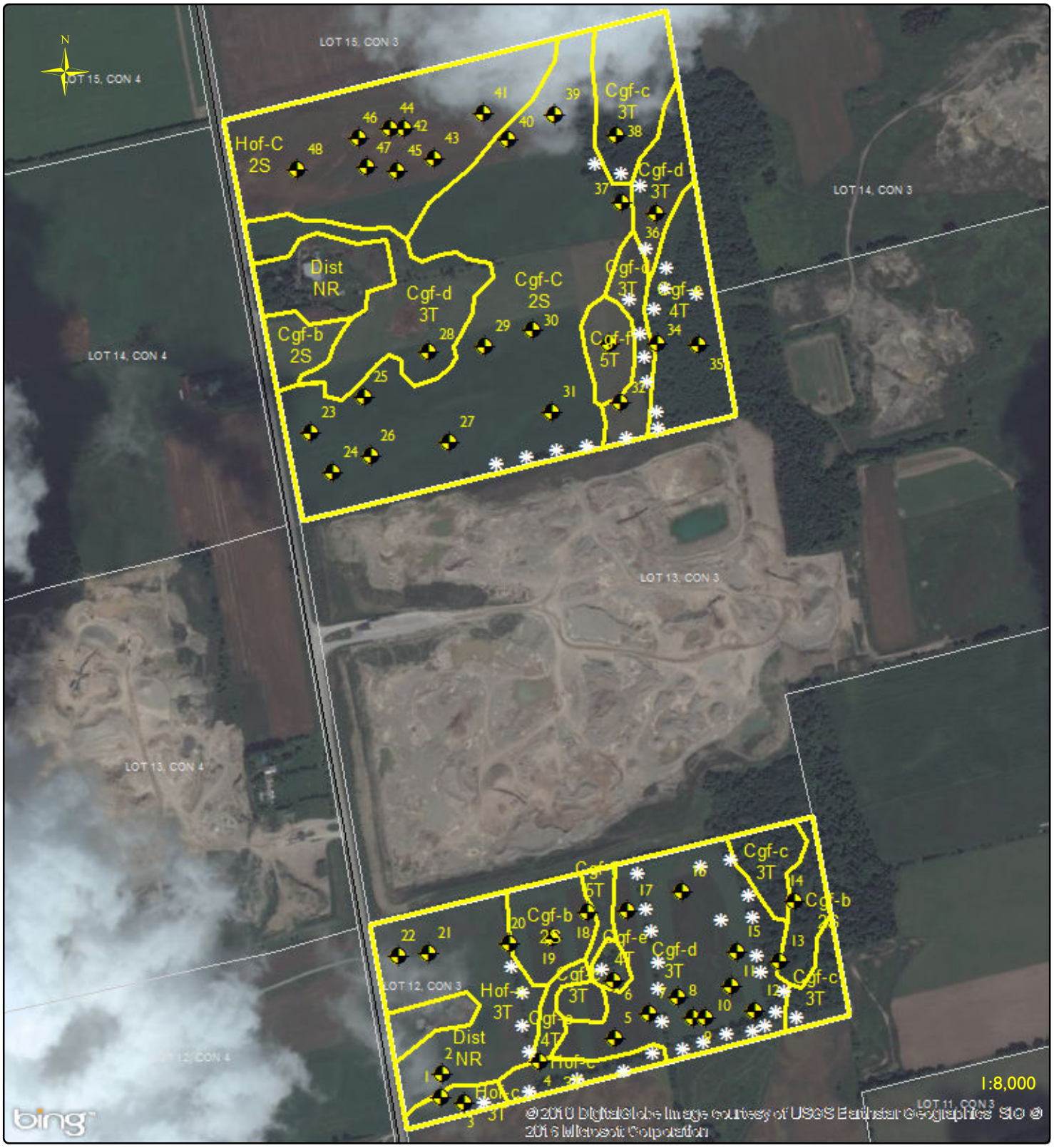
The onsite soil survey identified two soil series and one miscellaneous landscape unit. The soil series were identified as Honeywood Fine Sandy Loam and Caledon Fine Sandy Loam. The miscellaneous landscape unit was identified as Disturbed Soils. The Disturbed soils are associated with the farm building complexes on both parcels.

The Honeywood Fine Sandy Loam soils are the well-drained member of the Honeywood soil catena. Honeywood soils developed from wind deposited fine sandy loam materials that are underlain by calcareous loam till materials. Generally the fine sandy materials over the till are stone free. However, in areas of steeper topography, the soils may be eroded resulting in stony materials at the soil surface.

The Caledon Fine Sandy Loam soils are the well-drained member of the Caledon soil catena. Caledon soils developed on gravelly materials. Caledon soils occur on gently sloping topography. External drainage is moderate and internal drainage is rapid.

Caledon soils occur on gently undulating topography. The soil surface is usually stone free. External drainage is moderate and internal drainage is medium.

A detailed description of the soils at each inspection site is included in Appendix A.



Legend

- Stone Pile
- Soil Inspection Site Location
- Roads
- Detailed Soil Survey Polygon
- Lot Lines
- Subject Lands

Soil Code

Dist = Disturbed
Cgf = Caledon Fine Sandy Loam
Hof = Honeywood Fine Sandy Loam

Slope Class

Aa = 0.0 - 0.5%
Bb = 0.5 - 2.0%
Cc = 2.0 - 5.0%
Dd = 5.0 - 9.0%
Ee = 9.0 - 15.0%
Ff = 15.0 - 30.0%
Slope length < 50 m
Slope length > 50 m

Soil Code / Slope Code
Cgf - e
4T
CLI Class / CLI Subclass

CLI Subclass Limitation

D = Undesireable Structure
E = Erosion
F = Low Fertility
I = Inundation
M = Low Moisture
P = Stoniness
R = Shallow to Bedrock
S = Adverse Conditions (F, M, T or P)
T = Topography
W = Excess Water

Figure 2

Soils and
Canada Land Inventory (CLI)

DBH Soil Services Inc

November 2016

2017/02/Figure 2 - Soils/CLI

4.3.1 SOIL CAPABILITY FOR AGRICULTURE

Basic information about the soils of Ontario is made more useful by providing an interpretation of the agricultural capability of the soil for various crops. The Canada Land Inventory (CLI) system combines attributes of the soil to place the soils into a seven-class system of land use capabilities. The CLI soil capability classification system groups mineral soils according to their potentialities and limitations for agricultural use. The first three classes are considered capable of sustained production of common field crops, the fourth is marginal for sustained agriculture, the fifth is capable for use of permanent pasture and hay, the sixth for wild pasture and the seventh class is for soils or landforms incapable for use for arable culture or permanent pasture. Organic or Muck soils are not classified under this system. Disturbed Soil Areas are not rated under this system.

Each polygon identified on-site was classified according to the Canada Land Inventory rating system then correlated to the CLI classifications as presented *Soil Survey of Dufferin County, Report No. 38 of the Ontario Soil Survey (Hoffman, D.W., B.C. Matthews, and R.E. Wicklund, 1964)* report, CLI map No 41A/1 and 31 D/4, the digital soil data provided by OMAFRA, and the OMAFRA document "Classifying Prime and Marginal Agricultural Soils and Landscapes: Guidelines for the Application of the Canada Land Inventory in Ontario".

Caledon Fine Sandy Loam soils on complex slopes (slope length less than 50 m) on 'b' slopes (0.5 – 2.0 percent) and on simple 'C' slopes (slope length greater than 50 m)(2.0 – 5.0 percent slope) are rated as class 2S. Caledon Fine Sandy Loam soils on complex 'c' and complex 'd' slopes are rated as class 3T. Caledon Fine Sandy Loam soils on complex 'e' slopes are rated as Class 4T, and on complex 'f' slopes are rated as 5T.

Honeywood Fine Sandy Loam soils on simple 'C' slopes are rated as class 2S. Honeywood Fine Sandy Loam soils on complex 'c' slopes are rated as Class 3T.

Disturbed soil areas are considered as Not Rated within the Canada Land Inventory classification system.

Table 1 summarizes the relative percent area occupied by each capability class for the whole of the Subject Lands.

Table 1 Canada Land Inventory - Subject Lands (Both Parcels Combined)

Canada Land Inventory Class (CLI)	Area (ha/acres)	Percent Occurrence
Class 1	-	-
Class 2	28.1/69.5	46.2
Class 3	24.8/61.2	40.7
Class 4	4.0/9.8	6.5
Class 5	1.4/3.4	2.3
Class 6	-	-
Class 7	-	-
Disturbed Soil Areas	2.6/6.5	4.3
Totals	60.9/150.5	100.0

The Subject Lands (both parcels) comprise approximately 86.9 percent Canada Land Inventory (CLI) class 1 – 3 soils. No CLI Class 1 lands were identified on the Subject Lands.

Table 2 summarizes the relative percent area occupied by each capability class for the southern parcel of the Subject Lands.

Table 2 Canada Land Inventory - Subject Lands (Southern Parcel)

Canada Land Inventory Class (CLI)	Area (ha/acres)	Percent Occurrence
Class 1	-	-
Class 2	2.7/6.7	13.2
Class 3	15.9/39.3	77.5
Class 4	0.8/1.9	3.8
Class 5	0.4/1.1	2.2
Class 6	-	-
Class 7	-	-
Disturbed Soil Areas	0.7/1.7	3.3
Totals	20.5/50.7	100.0

The Southern Parcel comprises approximately 90.7 percent Canada Land Inventory (CLI) class 1 – 3 soils.

Table 3 summarizes the relative percent area occupied by each capability class for the northern parcel of the Subject Lands.

Table 3 Canada Land Inventory - Subject Lands (Northern Parcel)

Canada Land Inventory Class (CLI)	Area (ha/acres)	Percent Occurrence
Class 1	-	-
Class 2	25.4/62.8	62.9
Class 3	8.9/22.0	22.0
Class 4	32./7.9	7.9
Class 5	0.9/2.3	2.3
Class 6	-	-
Class 7	-	-
Disturbed Soil Areas	2.0/4.9	4.9
Totals	40.4/99.8	100.0

The Northern Parcel comprises approximately 84.9 percent Canada Land Inventory (CLI) class 1 – 3 soils.

The Provincial Policy Statement (PPS) considers Class 1 – 3 soils as Prime agricultural lands. Approximately 0.0 percent of the Subject Lands are rated as Class 1 – 3 soil materials within the Canada Land Inventory System.

4.3.2 ARTIFICIAL DRAINAGE

An evaluation of artificial drainage on the Subject Lands was completed through a correlation of observations noted during the windshield surveys, aerial photographic interpretation and a review of the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) Artificial Drainage System Mapping.

Visual evidence supporting the use of subsurface tile drains would include observations of drain outlets to roadside ditches or surface waterways, and surface inlet structures (hickenbottom or french drain inlets).

Evidence in support of subsurface tile drainage on aerial photographs would be based on the visual pattern of tile drainage lines as identified by linear features in the agricultural lands and by the respective light and dark tones on the aerial photographs. The light and dark tones relate to the moisture content in the surface soils at the time the aerial photograph was taken.

OMAFRA Artificial Drainage System Maps were reviewed to determine if an agricultural tile drainage system had been registered to the Subject Lands. The OMAFRA maps revealed that agricultural drainage systems were not registered to Subject Lands.

4.3.3 IRRIGATION

Observations noted during the surficial soil survey indicated that the Subject Lands are not irrigated and that the property is not set up for the use of irrigation equipment. Visual evidence

supporting the use of irrigation equipment would include the presence of the irrigation equipment (piping, water guns, sprayers, tubing, etc), the presence of a body of water capable of sustaining the irrigation operation and lands that are appropriate for the use of such equipment.

No irrigation equipment was observed during the course of the on-site survey.

5.0 SUMMARY AND CONCLUSIONS

DBH Soil Services Inc was retained by Strada Aggregates to complete a Soil Survey and Canada Land Inventory (CLI) Classification assessment for an area identified as:

Part of West Half of Lots 12 and 14
Concession 3 O.S.
Township of Melancthon
County of Dufferin

This area comprises two parcels (identified above), with a total area of approximately 60.9 ha (150.5 acres). The parcel located on Lot 14 encompasses approximately 40.8 ha (99.8 acres), while the parcel located on Lot 12 covers approximately 20.5 ha (50.7 acres). Together these two parcels are referred to as the Subject Lands.

The Subject Lands are roughly bounded: on the west by 4th Line (a paved and upgraded road (to the south) used for rural traffic and the existing aggregate pits located west of, south of and between these two parcels), aggregate pits and agricultural lands; on the north by agricultural lands and woodlots; on the east by aggregate operations, agricultural lands and woodlots; and on the south by aggregate operations.

In the local area context, the Subject Lands are located approximately 2.0 km west of the hamlet of Horning's Mills and approximately 6.0 km north of the Town of Shelburne.

The results of the Soil Survey assessment include the following:

- The Subject Lands comprise two individual parcels: Part of West Half Lots 12 and 14, Concession 3 O.S., Township of Melancthon, County of Dufferin..

- Both parcels are used for agricultural operations. The northern parcel comprises forage/pasture lands, woodlots and a farm building complex. The south parcel comprises cropland, woodlots and a farm building complex.

- The eastern extents of both parcels are wooded.

- No open water, ponds or streams were observed on either parcel

- Significant stone piles were noted along the fence rows, field edges and in piles in the fields on the central-eastern extent of both parcels.

- Steeper slopes were noted in the eastern extent of both parcels.

- The presence of livestock, or areas for pasturing or for housing livestock were observed on the northern parcel of the Subject Lands.

- No irrigation equipment or irrigation systems were observed on the Subject Lands

- No artificial tile drainage was noted on the Subject Lands and no agricultural tile drainage systems were registered to the property. Therefore, no additional investment in agriculture is associated with these lands.

- The Northern Parcel comprises approximately 84.9 percent Canada Land Inventory (CLI) class 1 – 3 soils.

- The Southern Parcel comprises approximately 90.7 percent Canada Land Inventory (CLI) class 1 – 3 soils.

- The Subject Lands (both parcels) comprise approximately 86.9 percent Canada Land Inventory (CLI) class 1 – 3 soils.

- No CLI Class 1 lands were identified on the Subject Lands.

6.0 REFERENCES

- 1:10000 scale Ministry of Natural Resources (MNR) Aerial Photography, 1978,
- 1:10000 scale Ontario Base Map (1983) Ministry of Natural Resources:
    - 10 17 5550 48850
    - 10 17 5600 48900
    - 10 17 5550 48900
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- *Dufferin County Official Plan, (March 27, 2014),*
- *Greenbelt Protection Plan* (The Greenbelt Act 2005),
  Guide to Agricultural Land Use, Ontario Ministry of Agriculture, Food and Rural Affairs, March 1995,
- Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas (Publication 851). Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), 2016,
- *Niagara Escarpment Plan* (June 1, 2005),
- Ontario Ministry of Agriculture and Food - Land Use Systems Mapping,
- Ontario Ministry of Agriculture and Food - Artificial Drainage Mapping,
- *Provincial Policy Statement, 2014,*
- *Soil Survey and Canada Land Inventory Classification for Part Lot 13, Concession 3 OS, Township of Melancthon, Dufferin County (DBH Soil Services Inc), 2001,*
- *Soil Survey of Dufferin County; Report No. 38 of the Ontario Soil Survey. (Hoffman, D.W., B.C. Matthews, and R.E. Wicklund, 1964),*
- *Surficial Soil Study, Part Lots 11 & 12, Concession 3, Township of Melancthon, Dufferin County (May 2008),*
- *The Physiography of Southern Ontario 3rd Edition, Ontario Geological Survey Special Volume 2, Ministry of Natural Resources, 1984,*
- *The Township of Melancthon Official Plan (August 2014),*
- *Windshield and field surveys by DBH Soil Services staff, October 17, 2016.*

APPENDIX A

Soil Inspection Site Characteristics

Soil Inspection Site Number	Horizon	Depth of Horizon (cm)	Soil Texture	Drainage Class	Soil Series
1	Ap Bt Ck	0 – 21 21 – 36 36 +	fSL fSL L	Well	Honeywood
2	Ap Bt Ck	0 – 22 22 – 38 38 +	fSL fSL L	Well	Honeywood
3	Ap Bt Bm	0 – 25 25 – 50 50 +	fSL fSL fSL	Well	Honeywood
4	Ap Bt Bm	0 – 25 25 – 50 50 +	fSL fSL fSL	Well	Caledon
5	Ap Bt Ck	0 – 22 22 – 38 38 +	fSL fSL L	Well	Caledon
6	Ap Bt Ck	0 – 21 21 – 36 36 +	fSL fSL L	Well	Caledon
7	Ap Bt Ck	0 – 22 22 – 39 39 +	fSL fSL L	Well	Caledon
8	Ap Ah Bt Bm	0 – 25 25 – 30 30 – 80 80 - 100	fSL fSL fSL fSL	Well	Caledon
9	Ap Btk Ck	0 – 22 22 – 38 38 +	fSL fSL L	Well	Caledon
10	Ap Bt Bmk	0 – 25 25 – 50 50 +	fSL fSL fSL	Well	Caledon
11	Apk Bmk Ck	0 – 15 15 – 45 45 +	fSL fSL L	Well	Caledon
12	Apk Bmk Ck	0 – 10 10 – 40 40 +	fSL fSL L	Well	Caledon
13	Apk Bmk Ck	0 – 15 15 – 45 45 +	fSL fSL L	Well	Caledon
14	Ap Bt Bmk	0 – 25 25 – 50 50 +	fSL fSL fSL	Well	Caledon
15	Ap Btk Ck	0 – 22 22 – 38 38 +	fSL fSL L	Well	Caledon
16	Ap Btk Ck	0 – 22 22 – 39 39 +	fSL fSL L	Well	Caledon
17	Apk Bmk Ck	0 – 10 10 – 40 40 +	fSL fSL L	Well	Caledon
18	Apk Bmk Ck	0 – 15 15 – 45 45 +	fSL fSL L	Well	Caledon

Soil Inspection Site Number	Horizon	Depth of Horizon (cm)	Soil Texture	Drainage Class	Soil Series
19	Ap Ah Bt Bm	0 – 25 25 – 30 30 – 80 80 - 100	fSL fSL fSL fSL	Well	Caledon
20	Ap Ah Bt Bm	0 – 25 25 – 30 30 – 80 80 - 100	fSL fSL fSL fSL	Well	Caledon
21	Ap Bt Ck	0 – 21 21 – 36 36 +	fSL fSL L	Well	Honeywood
22	Ap Bt Ck	0 – 24 24 – 42 42 +	fSL fSL L	Well	Honeywood
23	Ap Bt Ck	0 – 25 25 – 45 45 +	fSL fSL L	Well	Caledon
24	Ap Bt Ck	0 – 26 26 – 55 55 +	fSL fSL L	Well	Caledon
25	Ap Btk Bmk Ck	0 – 22 22 – 39 39 – 55 55 – 80+	fSL fSL fSL L	Well	Caledon
26	Ap Ah Bt Bm	0 – 25 25 – 35 35 – 74 74 - 100	fSL fSL fSL fSL	Well	Caledon
27	Ap Btk Ck	0 – 22 22 – 45 45 +	fSL fSL L	Well	Caledon
28	Ap Ah Bt Bm	0 – 25 25 – 30 30 – 70 70 - 100	fSL fSL fSL fSL	Well	Caledon
29	Ap Bt Ck	0 – 25 25 – 45 45 +	fSL fSL L	Well	Caledon
30	Ap Btk Ck	0 – 26 26 – 39 39 +	fSL fSL L	Well	Caledon
31	Ap Bt Ck	0 – 26 26 – 55 55 +	fSL fSL L	Well	Caledon
32	Ap Ah Bt Bm	0 – 25 25 – 29 29 – 65 65 - 100	fSL fSL fSL fSL	Well	Caledon
33	Ap Ah Bt Bm	0 – 25 25 – 30 30 – 80 80 - 100	fSL fSL fSL fSL	Well	Caledon
34	Ap Bt Ck	0 – 25 25 – 45 45 +	fSL fSL L	Well	Caledon

Soil Inspection Site Number	Horizon	Depth of Horizon (cm)	Soil Texture	Drainage Class	Soil Series
35	Ap Bt Ck	0 – 29 29 – 48 48 +	fSL fSL L	Well	Caledon
36	Ap Btk Ck	0 – 28 28 – 57 57 +	fSL fSL L	Well	Caledon
37	Ap Bt Ck	0 – 26 26 – 65 65 +	fSL fSL L	Well	Caledon
38	Ap Bt Ck	0 – 22 22 – 53 53 +	fSL fSL L	Well	Caledon
39	Ap Btk Ck	0 – 22 22 – 39 39 +	fSL fSL L	Well	Caledon
40	Ap Bt Ck	0 – 26 26 – 55 55 +	fSL fSL L	Well	Caledon
41	Ap Bt Ck	0 – 24 24 – 47 47 +	fSL fSL L	Well	Honeywood
42	Ap Bt Ck	0 – 23 23 – 50 50 +	fSL fSL L	Well	Honeywood
43	Ap Bt Ck	0 – 25 25 – 54 54 +	fSL fSL L	Well	Honeywood
44	Ap Bt Ck	0 – 24 24 – 42 42 +	fSL fSL L	Well	Honeywood
45	Ap Bt Ck	0 – 21 21 – 53 53 +	fSL fSL L	Well	Honeywood
46	Ap Bt Ck	0 – 24 24 – 65 65 +	fSL fSL L	Well	Honeywood
47	Ap Bt Ck	0 – 25 25 – 62 62 +	fSL fSL L	Well	Honeywood
48	Ap Bt Ck	0 – 24 24 – 42 42 +	fSL fSL L	Well	Honeywood

Notes:

L = Loam, SL = Sandy Loam, fSL = fine Sandy Loam

- A horizons are the surface materials often with the greatest percent of organic material
- B horizons are generally beneath the A horizon and show slight soil formation (ie: increases in clay and organic content)
- C horizons are generally beneath the B horizon and show little to no soil formation

APPENDIX B

Photographs

Photograph illustrating slopes and surface stone content (South Parcel)

Photograph illustrating slopes and surface stone content (South Parcel)

C

Appendix C: CVs

Education

University of Waterloo
Master of Arts, Regional Planning and Resource Development
1997

University of Guelph
Bachelor of Science in Agriculture
1993

Professional Associations

Registered Professional Planner (RPP)

Member, Canadian Institute of Planners (CIP)

Full member, Ontario Professional Planners Institute (OPPI)

Member of Parks & Recreation Ontario

Member of the WRHBA Kitchener Development Liaison Committee

Member of the Waterloo Region Homebuilders' Association Liaison Committee with the Region of Waterloo

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MHBC | PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE

Pierre Chauvin

BSc(Agr), MA, MCIP, RPP

Pierre Chauvin joined the firm as a Planner in 1998. Mr. Chauvin provides urban and rural planning analysis and research services for public and private sector projects across Ontario.

His professional activities include project management, community planning, and land development. Pierre's experience ranges from residential and commercial development, environmental and recreational planning and resource management.

Pierre also has specific expertise in rural and agricultural planning. He has prepared agricultural impact assessments as part of settlement area expansions and development proposals. He also has experience with MDS and the Nutrient Management Act, and has provided expert agricultural and planning evidence at the Ontario Land Tribunal and other similar boards/tribunals.

Pierre holds a Masters degree in Regional Planning and Resource Development and a Bachelor of Science in Agriculture degree with a major in Natural Resources Management. Pierre is also a full member of the Canadian Institute of Planners and Ontario Professional Planners Institute.

Professional History

Partner, MacNaughton Hermsen Britton Clarkson Planning Limited (2013 – Present)

Associate, MacNaughton Hermsen Britton Clarkson Planning Limited (2004– 2013)

Planner/Senior Planner, MacNaughton Hermsen Britton Clarkson Planning Limited (1998 – 2004)

Assistant Planning Officer, Upper Grand District School Board (1997 – 1998)

Research Assistant (Nutrient Management), Land Resource Science Department, University of Guelph (1993 – 1995)

Professional Associations

Member of the Waterloo Region Homebuilder's Association and City of Kitchener Liaison Group

Member of the Waterloo Region Homebuilder's Association and Waterloo Region Liaison Group

Member of the Waterloo Region Homebuilder's Association Laison Group with the Townships of Woolwich and Wilmot

Past Chair of the Homebuilders' Association Liaison Committee with the Grand River Conservation Authority

Past Chair and member of the Industry Luncheon Committee, Guelph & District Homebuilders' Association

Past Member of Board of Directors, Guelph & District Homebuilders' Association

Past Member, Committee of Adjustment for the Township of Centre Wellington

Past Member, Heritage Centre Wellington Committee (LACAC)

Past Vice-Chair, Village of Elora Planning Advisory Committee

Selected Project Experience

Agricultural/Rural Planning

- Project lead to undertake a LEAR Study for the Township of Amaranth, County of Dufferin
- Project planner to undertake a review of the Minimum Distance Separation formulae for the Region of Peel and Town of Caledon as part of their LEAR Study.
- Review and provided opinion to the Township of Guelph-Eramosa regarding the revised Minimum Distance Separation Formulae.
- Project planner for the preparation of an agricultural assessment of potential growth areas as part of the City of Brantford Growth Strategy/Official Plan Review.
- Preparation of agricultural impact statements/assessments including MDS I & II assessments on behalf of various private sector clients in support of development and aggregate applications.
- Preparation of an agricultural assessment on behalf of the Township of Guelph/Eramosa to explore the feasibility and potential of a dual Agricultural/Rural designation approach in the Official Plan.

Parks & Recreation

- Project lead and consultant to the City of Port Colborne to complete a Parks and Recreation Master Plan.
- Project lead and consultant to the Town of Collingwood to complete a Parks and Recreation Master Plan.
- Project lead and consultant to the Town of Grimsby to complete a Parks and Recreation Master Plan.
- Project lead and consultant to the City of Kitchener to undertake a Business Case for the Doon Pioneer Park Community Centre Expansion.
- Project lead and consultant to the Town of Cobourg for the Cobourg Community Centre and YMCA Northumberland Joint Facility Needs Assessment.
- Project lead and consultant to the Town of Cobourg for the preparation a Recreation Strategy and Implementation Plan.
- Project Lead and Consultant to the Town of Caledon in the preparation of a Parks and Recreation Visioning Plan.
- Consultant to the Township of West Lincoln in the preparation of a Parks and Recreation Master Plan.

- Project planner, Township of Guelph-Eramosa Parks, Recreation and Culture Master Plan.

Source Water Protection

- Prepared Official Plan Amendment and policies as well as implementing Zoning By-law to implement the Source Water Protection Plan policies for the Counties of Norfolk, Elgin and Middlesex.
- Prepared Official Plan Amendment and policies to implement the Source Water Protection Plan policies for the County of Wellington.
- Consultant to Grand River Conservation Authority, County of Wellington and County of Perth in the development of Source Water Protection water quality policies for the Lake Erie Region Source Protection Plan.
- Prepared Official Plan Amendment and policies to implement the Groundwater Protection Strategy for the County of Wellington.

Official Plan/Zoning By-laws

- Project lead and consultant for the preparation of an Official Plan Update for the Municipality of Kincardine.
- Project lead and consultant to the Municipality of Kincardine for the preparation of a Comprehensive Zoning By-law Review (on-going).
- Project lead and consultant to the Township of Huron-Kinloss for the preparation of a Comprehensive Zoning By-law Review.
- Project lead and consultant for the preparation of an Official Plan Update for the Township of Huron-Kinloss.
- Project lead and consultant to the County of Norfolk to prepare an Issues and Report for the Hastings Drive Zoning By-law Study.
- Project planner for preparation of a Consolidated Zoning By-law for the City of Kawartha Lakes (involved consolidating 17 By-laws).

Special Studies & Other

- Consulting planner for the City of Stratford to review and process select development applications.
- Consulting planner for the County of Perth to review and process planning applications.
- Consulting planner for the County of Bruce to review Consent and Minor Variance applications for the Lakeshore and Peninsula Hubs.
- Project planner for the Municipality of North Perth to complete a Secondary Plan and Master Servicing Plan for North-East Listowel (on-going).
- Project Lead and planner for the Upper Grand District School Board for the approval of new secondary school in the City of Guelph.
- Consultant to the Upper Grand District School Board regarding the justification and approval of a new secondary school in the Township of Centre Wellington, including a settlement area expansion.
- Consultant to the Huron-Perth Catholic District School Board regarding the justification and approval of a new elementary school in the Town of North Perth, including an agricultural impact assessment for a proposed expansion of the settlement boundary to accommodate the school.
- Justification of an urban expansion in the former Town of Listowel (Municipality of North Perth) and preparation of a Plan of Subdivision for a 50 acre property. The justification included an assessment of agricultural impacts and servicing considerations.
- Consultant to the City of Woodstock regarding the justification and approval of the East Woodstock Secondary Plan & Design Study. Prepared Official Plan Amendment and policies to implement the Secondary Plan.
- Consultant to the Town of North Perth on the Southeast Listowel Community Plan.

- Project planner providing planning services to the Township of Guelph-Eramosa. Review of applications, and preparation and presentation of planning reports to Council.
- Review and/or preparation of numerous planning approvals relating to draft plan of subdivisions, draft plan of condominiums, site plans, Official Plan amendments, Zoning By-law amendments, consents and minor variances throughout the Region of Waterloo, the Counties of Wellington, Perth, Bruce, Oxford, Huron and surrounding areas.
- Advisor to various aggregate producers regarding the review of new Official Plan policies in the Region of Durham and County of Oxford.
- Project Planner to the Aggregate Producers' Association of Ontario on the review of the Oak Ridges Moraine Conservation Plan.
- Coordinating the design and preparation of site plans under the Aggregate Resources Act. Research and preparation of Planning Reports and Aggregate Resources Act Reports for license and permit applications, including work for companies such as Lafarge Canada, Dufferin Aggregates, Federal White Cement and Beachville Lime Limited.

Awards / Publications / Presentations

2017	Designing Public Spaces to Support Vibrant Communities – Presentation on Park Land Dedication and Implications of Bill 73, September 15, 2017
2012	OPPI – Southwest District – Presentation on Source Water Protection Planning and Implementation, October 25, 2012
2012	Ontario Sand and Gravel Association – Presentation on Implications of Source Water Protection on Aggregate Operations, November 8, 2012.
2004	B. Hermsen and P. Chauvin, 2004. Elementary Schools and Residential Absorption Rates in New Neighbourhoods. Spring 2004 Ontario Expropriation Association Newsletter.
2003	Nutrient Management Act - Presentation to the Municipal Law Seminar Series, in co-operation with Kearns McKinnon LLP, February 26, 2003.
1997	Planning and Development of Recreational Trails on Private Lands: A Case Study of the Grand Valley Trails Association. Unpublished M.A. Thesis, School of Urban and Resource Development Planning, Faculty of Environmental Studies, University of Waterloo, Ontario

Education

University of Guelph
Master of Science
Rural Planning & Development
2022

University of Guelph
Master of Arts
Geography, Environment, and Geomatics
2021

University of Guelph
Bachelor of Arts, Honours
International Development
2018

Professional Associations

Candidate Member, Canadian Institute of Planners (CIP)

Candidate Member, Ontario Professional Planners Institute (OPPI)

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Chelsea Brooks

BA, MA, MSc, RPP Candidate

Chelsea Brooks is an Intermediate Planner with MHBC, specializing in rural, agricultural, and aggregate planning. Chelsea joined the firm in 2022. Before joining MHBC, Chelsea gained experience as a researcher responsible for producing policy reports and social studies.

At MHBC, Chelsea works with both public and private sector clients on a variety of projects. Chelsea has experience providing land use planning advice and policy review, and preparing agricultural impact assessments, planning justification reports, urban design briefs, and Aggregate Resource Act summary statements. Additionally, Chelsea has experience facilitating development approvals for a range of development and aggregate resource projects. Her experience also includes project coordination and management, undertaking special studies and associated research, and presentations to Committees, Council and the public.

Chelsea is working towards becoming a full member of the Ontario Professional Planners Institute (OPPI) and Canadian Institute of Planners (CIP). She is currently completing her candidacy for her Registered Professional Planner Designation in Ontario

Professional History

Intermediate Planner, MacNaughton Hermsen Britton Clarkson Planning Limited (2023 – Present)

Planner, MacNaughton Hermsen Britton Clarkson Planning Limited (2022-2023)

Research Assistant, University of Guelph (2019-2022)

Project Assistant, Ministry of the Environment, Conservation and Parks (Summer 2021)

Experience in many facets of development applications including applications for minor variance, severance, Site Plan approval, Aggregate Resource Act (ARA) licences, and Zoning By-law and Official Plan Amendments.

Agriculture / Rural

- Agricultural Impact Assessments for aggregate licence applications, settlement area boundary expansions, and non-agricultural uses in prime agricultural areas
- Minimum Distance Separation (MDS) review and analysis
- Land Evaluation and Area Review (LEAR) studies
- Research, preparation and co-ordination of reports and approvals for agricultural uses, agriculture-related uses, and On-Farm Diversified Uses (OFDUs)
- Surplus farm residence severances

Aggregate / Industrial

- Property investigations and planning assessments for due diligence reviews for mineral aggregate and concrete and asphalt plant projects
- Research, preparation and co-ordination of reports / applications under the *Planning Act* (Zoning By-law Amendment, Official Plan Amendment) and the *Aggregate Resources Act* (licence and site plan amendment applications).

Residential / Mixed-use / Retail

- Preparation of planning assessments and due diligence reviews to identify development potential of properties for a range of clients
- Research, preparation and co-ordination of reports / applications under the *Planning Act* (Zoning By-law Amendment, Official Plan Amendment)

Municipal Planning / Policy Review

- Review of Provincial Planning activities (Places to Grow, Bill 109, PPS Review), and preparation of summary information, comments to Provincial Ministries, and policy suggestions for a range of clients.
- Review and provide comments related to Official Plan Reviews and Zoning By-law Reviews for a variety of clients across Ontario).

Urban Design

- Urban Design Briefs

Project Management

- Minor Variance, Severance, Site Plan, Official Plan and Zoning By-law amendment approvals
- Coordination of technical requirements with sub-consultants

Other

- Presentation and representation at public meetings, committees and municipal Council on behalf of clients.
- Extensive research of land use policy and regulation and prepare planning justification reports in support of development applications.

MHBC

PLANNING
URBAN DESIGN
& LANDSCAPE
ARCHITECTURE