

PLANNING REPORT AND ARA SUMMARY STATEMENT

Strada Aggregates Melancthon Pit Extension

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

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Prepared for:



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1.0

EXECUTIVE SUMMARY

Strada Aggregates (Strada), part of the Con-Drain Group, is applying for a Class 'A' Licence (Category 3 – Pit Above Water) under the Aggregate Resources Act and an Official Plan Amendment and Zoning By-law Amendment to permit aggregate extraction on lands located on the east side of 4th Line in Township of Melancthon.

The subject lands are comprised of two parcels of land located on the east side of 4th Line, approximately 1.8 kilometres north of County Road 17 and south of Side Road 15 (Figure 1). The two parcels have an area of approximately 60 hectares (150 acres). The larger parcel, which is the northern parcel and legally described as Lot 14, Concession 3 ("Prince property"), is 40 hectares (100 acres) in size and the smaller parcel located to the south and legally described as Lot 12, Concession 3 ("Bonfield property"), is approximately 20 hectares (50 acres) in size. One larger parcel of land separates the two parcels and currently accommodates the existing Strada Aggregates operation known as Melancthon Pit #1 (Licence #129167). Melancthon Pit #2 (Licence #625155) is located immediately to the south of the Bonfield property.

The total area proposed to be licenced is approximately 60.7 hectares (150 acres), with approximately 48.4 hectares (120 acres) proposed for extraction. The pit is proposed to operate above the water table.

The subject lands are currently used for agriculture. The Prince property contains one residential structure and one barn structure along the western property line, adjacent to the 4th Line. The barn structure may be removed as part of the application while the dwelling will remain. The Bonfield property contains one residential structure in addition to an accessory building in close proximity to 4th Line. All structures on this property may be removed as part of the application. The pit will be rehabilitated back to agricultural land. There are deciduous woodlots at the rear of the lots that are being retained. There is a pine plantation that will be removed with that land being returned to an agricultural after use.

Schedule B (**Figure 5**) of the Dufferin County Official Plan designates the subject lands as "Countryside Area", Schedule C (**Figure 6**) designates the subject property as "Agricultural Area", and Schedule D (**Figure 7**) designates the properties as "Sand and Gravel Resource Area". Schedule A-5 'Land Use and Roads Plan' of the Township of Melancthon Official Plan (**Figure 9**) designates the subject lands as "Agricultural" and "Environmental Conservation". Schedule H-Primary Aggregate Resource Areas designates the subject lands as "Sand and Gravel Aggregate Resource-Primary" (**Figure 13**). The subject lands are zoned "General Agricultural (A1)" in the Township of Melancthon Zoning By-law (**Figure 14**).

Applications to amend the Township's Official Plan and Zoning By-law have been submitted.

The proposed Melancthon Pit Extension contains approximately 7 million tonnes of sand and gravel resources of primary significance within the proposed extraction area. Strada is proposing to maintain the shared maximum annual tonnage of 1.25 million tonnes with the existing operations.

The proposed Melancthon Pit Extension represents the wise use and management of provincially significant resources, is consistent with the Provincial Policy Statement and conforms with the Dufferin County Official Plan and Township of Melancthon Official Plan based on the following:

- The County and Township Official Plan recognizes that the availability of aggregate resources close to market is important both for economic and environmental reasons. The Official Plans recognize that the subject lands contain significant aggregate resources.
- The subject lands contain significant sand and gravel reserves located close to market and are located along an existing aggregate haul route with access to County Road 17.
- Natural Resources Solutions Inc. (NRSI) prepared a Level 1 and 2 Natural Environment Report which found that habitat of endangered and threatened species, significant woodlands and significant wildlife habitat are on or within 120 m of the subject lands. NRSI concluded that the proposed development will have no negative impacts on the form or function of the identified natural heritage features provided the recommended mitigative measures are appropriately implemented.
- Whitewater Hydrogeology Ltd. (Whitewater) prepared a Level 1 and 2 Hydrogeological Report which concluded that there will be no negative impacts to the groundwater system or local groundwater users as a result of the proposed above water table pit.
- The proposed pit operation is predicted to satisfy Ministry of Environment and Climate Change sound level limits at nearby receptors based on the recommendations and mitigation measures provided in the Noise Impact Study prepared by Aercoustics.
- Archaeological Services Inc. (ASI) prepared a Stage 1 & 2 Archaeological Assessment for each property and concluded that a Stage 3 assessment will be required for a portion of the Garner property prior to any disturbance. ASI concluded the Prince property should be considered clear of further archaeological concern subject to the completion of the Stage 2 work for approximately 15% of the property that was not assessed (i.e., the plantation and paddock areas).
- The operational design of the pit incorporates the recommendations of the technical reports prepared for the application in order that the pit can operate within the Provincial guidelines and minimize social and environmental impacts.
- There will be no new entrance to 4th Line or changes to the haul route or truck traffic.
- The area proposed for extraction contains active agricultural lands. The lands are recognized as a prime agricultural area based on the County and Township Official Plans. According to soils mapping from DBH Soil Services Inc. the subject lands contain predominantly Class 2 and Class 3 soils (prime agricultural land). In accordance with the PPS, the subject lands will be rehabilitated back to an agricultural condition in which substantially the same areas and same average soil capability for agriculture will be restored.

2.0

PROPOSAL

2.1 Strada Aggregates Inc.

The Con-Strada Group, established in 1980, comprises several inter-related businesses, focused on land development and infrastructure. Con-Strada Construction Inc. specializes in road construction and environmental remediation, primarily within the Greater Toronto Area (GTA).

Since the Con-Strada Group's operations require substantial quantities of aggregate, an assured supply, both in quantity and quality, is required. The Con-Strada Group created associated companies to supply sand and gravel and to produce construction aggregate by recycling. These operations merged as Strada Aggregates Inc. in January 2002 to provide complete production, recycling and supply of this non-renewable resource. Existing Strada Aggregates operations include:

- Strada's Shelburne Pit (Pit #1) located between the proposed extension lands. It commenced operations in the spring of 2004.
- Strada's Melancthon Pit (Pit #2) located to the south of the Bonnefield property was licenced in June 2012.
- the existing Hillsburgh Pit in the Town of Erin.
- portable crushing and screening plants are provided for the Company's pit and recycling sites; and
- high quality sand, gravel and limestone products are distributed, from depots in Brampton, Maple and Hillsburgh.

Strada generally produces Granular "A", Granular "B", Sand, and HL6 Stone and their existing operations in Melancthon. Strada is seeking additional reserves in the vicinity of their existing operations in order to maintain their ability to provide high quality aggregates to Dufferin County, Simcoe County and beyond.

2.2 Land Holdings

The subject lands are comprised of two parcels of land located on the east side of 4th Line, approximately 1.8 kilometres north of County Road 17 and south of Side Road 15, in the Township of Melancthon. The subject lands are west of Dufferin Road 124, two kilometres west of the hamlet of Horning's Mills and six kilometres north of the Town of Shelburne in the County of Dufferin. The lands are legally described as Part of West Half of Lots 12 and 14, Concession 3 O.S., Township of Melancthon. A location map of the subject lands is provided as **Figure 1**.

The two parcels have an area of approximately 60 hectares (150 acres). The larger parcel, which is the northern parcel and legally described as Lot 14, Concession 3 ("Prince property"), is 40 hectares (100 acres) in size and the smaller parcel located to the south and legally described as Lot 12, Concession 3 ("Bonfield property"), is approximately 20 hectares (50 acres) in size. One larger parcel of land separates the two parcels and currently accommodates the existing Strada operation known as Melancthon Pit #1. Melancthon Pit #2 is located immediately to the south of the Bonfield property. Strada is proposing to licence a total of approximately 60.7 hectares (150 acres) of the subject lands, with approximately 48.4 hectares (120 acres) proposed for extraction. 40.4 hectares (100 acres) of the Prince property is proposed to be licenced while 33.1 hectares (82 acres) is proposed for extraction. 20.3 hectares (50 acres) of the Bonfield property is proposed to be licenced while 15.3 hectares (38 acres) is proposed for extraction.

The Prince property contains one residential structure and one barn structure along the western property line, adjacent to the 4th Line. The barn structure is proposed to be removed as part of the application while the dwelling will remain. Steeper topography can be found in the wooded areas along the eastern property line. The property is actively used for agricultural purposes and the agricultural land is currently in hay/pasture production. The existing bank barn also has beef, which use the surrounding pasture land. There are no water courses on the property; however, there are two distinct woodlots along the eastern boundary of the property. The northerly woodlot on the Prince property is proposed to remain however, the second woodlot, located along the south-eastern edge of the property, is characterized as a plantation and is proposed to be removed as part of the expanded aggregate operations.

The Bonfield property contains one residential structure in addition to an accessory building in close proximity to 4th Line. All structures on this property are proposed to be removed as part of the application. The subject lands are actively used for agricultural purposes and are currently in soybean/cash crop production with no livestock on the subject lands. The property consists of three large fields and steep slopes to the east. It is located immediately south of Melancthon Pit #1 and north of Melancthon Pit #2. Although there are no identified water courses on the site, there is a woodlot that is approximately 9 acres in size along the eastern edge of the property as well as an unevaluated wetland located along the southeastern edge of the property which is regulated by the Nottawasaga Valley Conservation Authority (NVCA). The woodlot is proposed to remain as part of the proposed extension of operations.

The subject lands contain gently rolling to hummocky terrain. The Prince property ranges in elevation from 513masl to 504masl between the northeast and western property boundaries, while the Bonfield property ranges from 509masl to 498masl between the northern property boundary and the southeastern property corner.

The subject lands are located within the Nottawasaga River watershed, and the Boyne River subwatershed, which is a major tributary to the Nottawasaga River. The properties are located near the drainage divide between the Boyne River and Pine River subwatersheds. The subject lands do not contain any permanent watercourses or distinct drainage channels, and most topographically low depression areas in the 2 property woodlands were observed to be dry during NRSI field studies, which is indicative of the high degree of infiltration that occurs within the pervious soils. Within the Bonfield property, a localized drainage catchment primarily located within the rear-property woodlot contributes seasonal surface water to a hydrologically perched shallow-water wetland feature and small vernal pool.

2.3 Required Applications

The following applications are required to permit the proposed Melancthon Pit Extension:

- An amendment to the Township of Melancthon Official Plan to re-designated the subject lands from “Agricultural” and “Environmental Conservation” to “Extractive Industrial”;
- An amendment to the Township of Melancthon Zoning By-law to rezone the subject lands from “General Agricultural (A1)” to “Extractive Industrial (M2)”; and
- Class ‘A’ Licence under the Aggregate Resources Act (Category 3 application – Pit Above Water).

This application is considered Category 3 under the Aggregate Resources of Ontario Provincial Standards. The Technical Reports required for this licence application and Planning Act applications have been prepared and are listed as follows:

- Level 1 and 2 Natural Environment Report (NRSI, May 2017)
- Level 1 and 2 Hydrogeological Study (Whitewater, May 2017)
- Noise Impact Study (Aercoustics, May 2017)
- Stages 1 & 2 Archaeological Assessment (ASI, May 2017)
- Cultural Heritage Impact Assessment (MHBC, May 2017)
- Agricultural Impact Assessment (MHBC, May 2017)

Pre-consultation was held with the Ministry of Natural Resources and Forestry (MNRF) in June 2016. A pre-consultation meeting was also held with representatives from the Township of Melancthon and Nottawasaga Valley Conservation Authority (NVCA) in September 2016. Terms of Reference for the Natural Environment and Hydrogeological Study were prepared and provided to the MNRF, Township and NVCA in advance of the meetings.

2.4 Project Description

The subject lands are identified within a significant aggregate resource area (Sand & Gravel Resource Area of Primary Significance). The proposed extension is located within Resource Area 3. Much of the resource is described in the ARIP as, “...*medium-grained sand with some gravel and pebbly sand...suitable for a range of applications...selection and sand control is required for most crushed stone products*” (ARIP 163). The subject lands are also identified as a “Sand and Gravel Resource Area” in the Dufferin County Official Plan and a “Primary Aggregate Resource Area” in the Township of Melancthon Official Plan. Both Official Plans contain policies to protect these areas for long-term use.

Strada is proposing to licence a total of approximately 60.7 hectares (150 acres) of the subject lands, with approximately 48.4 hectares (120 acres) proposed for extraction. 40.4 hectares (100 acres) of the Prince property is proposed to be licenced while 33.1 hectares (82 acres) is proposed for extraction. 20.3 hectares (50 acres) of the Bonfield property is proposed to be licenced while 15.3 hectares (38 acres) is proposed for extraction.

Lands not located within the proposed extraction area will be used for setbacks, retained woodlands and the residence on the Prince property. The extraction setbacks will be:

- 30 metres from 4th Line to the west;
- 10 metres from the dripline of the retained woodlots to the east;
- 0 metres between the common boundaries with the existing Strada pits and CBM pit; and
- 15 metres from the north boundary of the Prince property.

The proposed pit extension lands contain approximately 7 million tonnes of significant sand and gravel resources above the water table. The maximum annual tonnage limit is proposed to be shared with the existing Strada pits at 1.25 million tonnes. There will be no increase in truck traffic as a result of the proposed extension.

Access to the proposed extension will be via the entrances to the existing Strada pits to 4th Line. These are established accesses and no new entrances are proposed. The haul route south to County Road 17 will also remain unchanged.

The first stage of the pit development involves land preparation including clearing of vegetation and the stockpiling of topsoil and overburden. Land preparation will occur prior to a specific phase of the operation meaning that the entire site will not be stripped and cleared all at once but rather discrete areas in advance of extraction. Areas that have not been stripped or are not under extraction or related operations will remain undisturbed including existing agricultural uses.

The initial stripping of overburden materials will be available for use in site mitigation measures such as acoustic berms. As the excavation becomes more fully developed, overburden materials obtained from clearing activities will be used directly in progressive rehabilitation or stockpiled, with vegetated cover, for later use in progressive rehabilitation.

Topsoil is recognized as a significant resource for agricultural use. The movement, handling and storage of topsoil will be limited to the extent feasible in order to retain biological properties of the soil. Topsoil will be used directly in the rehabilitation of the pit floor to return the lands to an agricultural condition in accordance with the Provincial Policy Statement.

Extraction in the proposed pit will commence at the southern limit of the Bonnefield property (identified as "Phase 4" on the Operational Plan) and proceed in a northerly direction towards Pit #1. The common boundary between Pit #2 and the Bonnefield property will be removed first. Truck traffic will enter and exit Phase 4 via the existing entrance and exit to 4th Line within Pit #2. A 4m high berm will be constructed along the west perimeter. Processing equipment (crushing and screening) will not operate within 75m of the west perimeter and must be operated with 50m of the extraction face if within 250m of the west licence boundary or 300m of the east licence boundary.

Within Phase 4 the extraction and processing equipment operating in the extension will be limited to:

- One crusher with extraction loader;
- One screening plant with extraction loader; and
- One shipping loader.

Concurrent processing allowed for Pit #2 in accordance with the existing noise conditions has been assumed, but there will not be more than a total of two crushers, two screeners, one wash plant and five loaders can operate at the same time between Phase 4 and Pit #2.

The Phase 4 lands will be extracted to approximately 492 mASL contingent upon the location of the water table (must remain 1.5 m above).

Extraction in Phase 5 will commence at the southern limit of the Prince property, through the common boundary with Pit #1. Extraction of Phase 5-7 will proceed in a northerly direction towards the northern limit of the Prince property. Truck traffic will enter and exit the Prince property via the existing entrance and exit to 4th Line within Pit #1. Within the Prince property, a 5m high berm will be constructed along the entire north perimeter and the majority of the west perimeter. Processing equipment (crushing, screening or washing) will not operate within 150m of the north and west perimeters or within 100m of the east perimeter. Processing equipment must operate within 50m of the extraction face if within 250m of the west licence boundary or within 200m of the east licence boundary.

Within Phase 5-7 the extraction and processing equipment operating in the extension will be limited to:

- One crusher with extraction loader;
- One screening plant with extraction loader;
- One shipping loader; and
- The potential to relocate the wash plant from the existing licences.

Concurrent processing allowed for Pit #1, Pit #2 and Phase 4 has been assumed but there will not be more than a total of two crushers, two screeners, one wash plant and 5 loaders.

Phase 5-7 on the Prince property will be extracted to approximately 490 mASL contingent upon the location of the water table or top of rock.

The proposed hours of operation are 6:00 am to 7:00 pm Monday to Friday (shipping) and 7:00 am to 7:00 pm Monday to Saturday (loading, shipping, crushing and processing). There will be no processing before 7:00 am.

Once extraction is complete, all equipment, scrap, haul roads and buildings will be removed and final rehabilitation will occur for the entire site.

The proposed pit will be rehabilitated back to an agricultural condition in accordance with the Provincial Policy Statement. The proposed rehabilitation of the subject lands will include soil preparation, soil conditioning and final implementation phases which includes the following general steps:

- Final grading to provide appropriate contour relief, and water drainage
- Deep ripping to alleviate compaction in pit floor
- Replace topsoil and subsoil
- Deep tillage and stone picking
- Plant cover crops
- Grass and legume cropping, and potential soil amendments
- Establish desired agricultural crops

The ARA Site Plans (Rehabilitation Plan) include additional details regarding progressive and final rehabilitation. The rehabilitated landform will be compatible with the surrounding area.

3.0

BACKGROUND

3.1 Surrounding Land Uses and Features

The subject lands are located within an agricultural and rural area of the Township of Melancthon. The surrounding land uses are primarily aggregate, agriculture, rural residential and natural heritage features (**Figure 2**).

Lands immediately south of the Prince property and north of the Bonnefield property are also owned by Strada (Pit #1, Licence No. 129167). Pit #1 has been active since 2004 and contains an office, scale house with associated fuel storage/refueling area, and scale. Access to 4th Line from Pit #1 is paved and secured with a gate. The east frontage of Pit #1 is visually screened with an acoustics berm and tree screen.

Lands immediately to the south of the Bonnefield property area also owned by Strada (Pit #2, Licence No. 625155). Pit #2 has been active since 2012 and contains an existing house, scale house/office and scale. Access to 4th Line from Pit #2 is also paved and secured with a gate. The east frontage of Pit #2 is visually screened with an acoustics berm and tree screen.

Lands immediately west of the subject lands include agricultural operations and a 28 ha active mineral aggregate operation (Duivenvoorden Haulage Ltd., Licence #3726).

Lands immediately east of the Prince property and Pit #1 include a 67 ha active mineral aggregate operation (St. Marys Cement, Kasakas Pit, Licence #3512). Strada has entered into an agreement with St. Marys Cement to extract the common boundary between the two licenced operations.

The subject lands are in close proximity to major County Roads and Highway 124. These roads are designated and designed to handle significant volumes of traffic and allow for goods movement.

3.2 Aggregate Resources

The subject lands are located in an area identified in the Aggregate Resources Inventory Paper (ARIP 163) of Dufferin County as a primary selected sand and gravel resource area (**Figure 3**). Within the Township of Melancthon, there are five Primary Resource Areas. The proposed Melancthon Pit is located within Resource Area 3. Much of the resource is described in the ARIP as, “...*medium-grained sand with some gravel and pebbly sand...suitable for a range of applications...selection and sand control is required for most crushed stone products*”. (ARIP 163)

Detailed field investigations, including test drilling, test pitting, and geophysical surveys were completed by Whitewater Hydrogeology, DBH Soils, and Strada on the subject property to confirm the

area is suitable for extractive development. This geological investigation was completed in five phases:

- Preliminary test pitting program to confirm resource;
- Initial drilling phase to determine overburden thickness;
- Detailed drilling program to delineate and quantify the extractable aggregate;
- Geophysical survey to define the geological contact between the sand and gravel and the top of the Tavistock Till; and
- Detailed test pitting program to further confirm the depth of unsaturated extractable material.

Additional detail on the resource investigation, test pit logs, and water well records are included in Whitewater's Level 2 Hydrogeological Assessment report.

The subject lands are identified as a "Sand and Gravel Resource Area" in the Dufferin County Official Plan and a "Primary Aggregate Resource Area" in the Township of Melancthon Official Plan. Both Official Plans contain policies to protect these areas for long-term use.

Based on the on-site resource testing and proposed site plans, there are approximately 7 million tonnes of sand and gravel resources located on the subject lands. The results of the site specific geological work program found that the material beneath the site is high quality Granular "A" aggregate, which is comparable to the material extracted from Strada's existing Melancthon Pit #1 and #2. Strada is proposing to maintain the shared maximum annual tonnage of 1.25 million tonnes with the existing operations.

3.3 Agricultural Resources

The subject lands are actively farmed with a variety of cash crops. The lands are recognized as a prime agricultural area based on the County and Township Official Plans. In accordance with the Township Official Plan, an Agricultural Impact Assessment (AIA) is required as the expanded aggregate operations are proposed to occur on properties that are in active agricultural areas.

As part of the 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 extension on the agricultural uses/operations and determine the extent of mitigation that may be required. Furthermore, a soil survey and Canada Land Inventory (CLI) Evaluation was completed to document the existing soil conditions and provide a more detailed assessment of the Canada Land Inventory (CLI) classification for the soil resources on both properties. Basic information about the soils helps to provide an interpretation of the agricultural capability of the soil to produce various types of crops and provides useful information to assess impacts on soil resources and inform the final agricultural rehabilitation.

According to the Soil Survey and Canada Land Inventory (CLI) Evaluation which was used by DBH Soil Services Inc., the Prince property is comprised mainly of Canada Land Inventory (CLI) Class 2 soils and the Bonnefield property consists mainly of Canada Land Inventory (CLI) Class 3 soils (**Figure 4**). Additional information regarding the soil survey and agricultural land uses is provided in the AIA.

In accordance with the PPS, the subject lands will be rehabilitated back to an agricultural condition in which substantially the same areas and same average soil capability for agriculture will be restored.

The rehabilitation plan includes the details of the proposed agricultural rehabilitation which is consistent with the ongoing agricultural rehabilitation of the existing pits.

3.4 Water Resources

Whitewater Hydrogeology prepared a Hydrogeological Report in accordance with the Aggregate Resources of Ontario Provincial Standards, and the County and Township Official Plans. The report assessed whether there is potential for adverse effects to groundwater and surface water resources and their uses.

The subject lands are located within the Nottawasaga River watershed, and the Boyne River subwatershed, which is a major tributary to the Nottawasaga River. The properties are located near the drainage divide between the Boyne River and Pine River subwatersheds. The subject lands do not contain any permanent watercourses or distinct drainage channels, and most topographically low depression areas in the two property woodlands were observed to be dry during field studies, which is indicative of the high degree of infiltration that occurs within the pervious soils. Within the Bonnefield property, a localized drainage catchment primarily located within the rear-property woodland contributes seasonal surface water to a hydrologically perched shallow-water wetland feature and small vernal pool, which are further discussed below.

Two principle aquifers were identified below the subject lands in the hydrogeological study: the overburden aquifer and the contact zone (upper fractured bedrock). Hydrogeological studies completed on the subject properties found the groundwater table generally reflects the surface-level topography, and that a northeasterly flow was likely predominant in the shallow groundwater. However, local groundwater flow patterns are likely influenced by the presence of a bedrock valley, which has led to a complex subsurface flow pattern. Most groundwater generally flows in an easterly direction under the subject properties, although some northerly flow occurs under the Bonnefield property as a result of the bedrock valley system. Groundwater levels are notably varied between the two properties. Within the Prince property the overburden is dry and the water table is located within the bedrock aquifer, which is driven by a primarily downward hydrological gradient on the property. Across the overburden monitoring wells on both properties, groundwater levels varied seasonally, ranging from a high of 501masl to a low of 491masl during the spring, then dropping 2-4m over the following months.

Compliance groundwater monitoring has been occurring at both Melancthon Pit #1 and #2 since 2001 and 2007, respectively. In addition, baseline groundwater monitoring commenced in 2017 at the Bonnefield and Prince properties. In total, there are currently 28 groundwater well nests that monitor 52 discrete aquifer intervals in the overburden and bedrock aquifers. The comprehensive groundwater monitoring database for the existing Melancthon Pit #1 and #2 have shown that the extraction of aggregate from above the water table at these sites has had no measurable influence on the groundwater conditions on -site

The Hydrogeological Report concluded no significant change in groundwater conditions is expected at local natural environment features or water supply wells due to the proposed extraction. In addition, on-site changes are expected to be insignificant relative to local natural environment features. Whitewater Hydrogeology completed a detailed review of the monitoring networks and recommended a streamlined program which is detailed in the Hydrogeological Study and on the ARA site plans.

3.5 Natural Heritage Features

NRSI prepared a Level 1 / 2 Natural Environment Report which also fulfils the requirement of an Environmental Impact Study as required in the County and Township's Official Plans. The scope of the Natural Environment Report was discussed with MNRF, Town and NVCA staff at pre-submission consultation meetings.

The Natural Environment Report determined whether any significant natural features exist on or within 120 m of the subject lands (proposed licenced area). If it is identified that significant features may be potentially affected by the proposed operation, then preventative, mitigation or remedial measures must be addressed.

Natural features on the subject lands are primarily comprised of Sugar Maple-dominated deciduous forest communities at the rear of each property, while the Bonnefield property also contains a shallow marsh inclusion and small vernal pool. An approximately 30-year old White Pine plantation is located in the southeast corner of the Prince property, while a centrally-located cultural meadow occurs centrally within the Bonnefield property. The Bonnefield property is subdivided into 3 separate agricultural fields by perimeter hedgerows, and isolated tree plantings on the Prince property are primarily located around the existing house and barn. Woodlands on the subject properties have been mapped as Significant Woodlands in the Township's Official Plan, and have been identified as components of the County's Preliminary Natural Heritage System as mapped in the County Official Plan. Although the deciduous woodland communities do not meet the size criterion for woodland significance, they will be retained outside of the proposed aggregate extraction limits and for the purposes of this study have been assumed to represent Significant Woodland as mapped by the Township. 10m woodland buffers have been recommended to protect these features and mitigate impacts from adjacent extraction activities while offering opportunity to restore and enhance the existing woodland edges.

The Bonnefield property wetland is an unevaluated feature. The wetland will be maintained within the Bonnefield property woodland and buffered by >30m from the proposed extraction limits.

The woodland and wetland communities were confirmed as woodland amphibian breeding (Bonnefield property only) and SCC Eastern Wood-Pewee breeding (both properties) SWH, while both property woodlands are considered potential bat SAR habitat. The proposed site alterations will not directly impact these SWH features. Based on field investigations, the small vernal pool is not considered a significant habitat feature.

Aggregate extraction within the subject properties will result in a 4% increase in groundwater recharge volume within the pit floors. As the pit floors will be maintained at least 1.5m above the water table, no negative effects on the groundwater table or overburden flow patterns within the subject property or at downstream receivers are anticipated. Aggregate extraction on the Bonnefield property will require removal of approximately 7.6% of the defined surface water catchment that sustains the wetland and vernal pool. However, it is expected that surface water runoff to these features are likely highly localized within the woodland community. Based on the proposed extraction limits, negative hydrological impact to the wetland and vernal pool, and their ecological functions, are not anticipated.

SAR Bobolink and Eastern Meadowlark breeding habitat (Prince property only), as well as nesting and foraging habitat for the SAR Barn Swallow (both properties) was identified by NRSI during field work in 2016. NRSI has recommended that the SAR habitat be assessed again prior to disturbance. If the

habitat is confirmed through subsequent investigations, ESA permitting requirements will apply. The proposed undertaking is exempt from ESA permitting requirements for these species under O. Reg. 242/08 provided that the requirements of the Regulation are met. Habitat removal activities must be registered with the MNR through a Notice of Activity and Mitigation Plans must be prepared according to the Regulation. The Mitigation Plans must identify the means by which impacts to the species will be effectively mitigated, and describe the strategy for habitat compensation, management and monitoring that is required by the Regulation. Although Bank Swallow foraging habitat will be removed through the proposed undertaking, due to anticipated creation of new nesting opportunities in the proposed pits and the abundance of foraging habitat on the surrounding landscape, no impacts to this species are anticipated.

Recommendations have been provided by NRSI to avoid, minimize or otherwise mitigate impacts that may occur through creation of the aggregate pits on the properties. These include recommendations to mitigate direct and indirect impacts that may arise through the proposed site alterations. Recommendations have been provided to enhance the retained on-site woodland edges through establishment of native tree and shrub plantings within the woodland buffers. Monitoring recommendations have been provided to ensure that construction-stage mitigations are functioning appropriately and construction limits are being respected. A monitoring plan outline has also been proposed that continues ongoing hydrogeological monitoring on the subject properties and adjacent Strada pits, as well as water level and amphibian monitoring within the Bonnefield wetland community.

NRSI concluded the proposed undertaking is not anticipated to cause negative impacts to the existing natural features and their ecological functions provided that recommended mitigation measures are implemented and monitored.

4.0

POLICY REVIEW

4.1 Provincial Policy Statement

The 2014 Provincial Policy Statement (PPS) provides policy direction on matters of provincial interest related to land use planning and development, and sets the policy foundation for regulating the development and use of land. The PPS provides for the appropriate development of land, while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment.

The PPS supports a comprehensive, integrated and long-term approach to planning, and recognizes linkages among policy areas. The PPS is to be read in its entirety and the relevant policies are to be applied to each situation. The policies in the PPS are outcome-oriented, and some policies provide flexibility in their implementation provided that provincial interests are upheld.

The Province's natural heritage resources, water resources, agricultural resources, mineral resources, and cultural heritage and archaeological resources provide important environmental, economic and social benefits. The wise use and management of these resources over the long term is a key provincial interest.

The PPS states that mineral aggregate resources shall be protected for long-term use. As much of the mineral aggregate resources as is realistically possible shall be made available as close to markets as possible.

The proposed Melancthon Pit Extension contains significant aggregate resources within a close to market area along an established haul route (4th Line and County Road 17). Extracting aggregate resources close to where they are used reduces the amount of greenhouse gas emissions, transportation costs, and road network impacts from the trucks used to transport these resources.

Design recommendations have been incorporated into the Site Plans based on technical recommendations to ensure that no negative impacts occur to the significant natural heritage features or adverse impacts on surrounding land uses as a result of the proposed operation.

The application is consistent with the PPS in the following respects:

- The proposed pit has been appropriately designed and buffered to mitigate adverse effects on nearby rural residences. Processing restrictions will mitigate noise impacts to acceptable levels. Acoustics berms will be constructed at the north and western limits of the subject lands to visual screen the operation and provide acoustic mitigation. The phasing of the pit will assist in screening and buffering the proposed operation from adjacent lands (Policy 1.2.6.1).

- The subject lands are located in close proximity to a major goods movement corridor (County Road 17 and Highway 124) which shall be protected for the long term (Policy 1.6.8.2).
- There are no significant wetlands, significant coastal wetlands, significant valleylands, significant areas of natural and scientific interest, coastal wetlands or fish habitat located on the subject lands. The Level 1 / 2 Natural Environment Report concluded that there will be no negative impacts on the significant woodlands or significant wildlife habitat. The proposed operations as outlined in the ARA Site Plans include mitigation measures to protect these natural heritage feature (Policy 2.1.4, 2.1.5, 2.1.6 & 2.1.8).
- The potential impacts of the operation relative to the quality and quantity of groundwater and surface water have been assessed and there will be no adverse hydrogeological impacts to water resources. The quality and quantity of both local groundwater and surface water will be maintained by the above water table operation (Policy 2.2.2).
- The proposed pit makes significant aggregate resources available from a close to market location. The proposed operation and ARA Site Plans have been designed in a manner which minimizes social and environmental impacts. (Policy 2.5.2.1 & 2.5.2.2).
- The subject lands will be progressively rehabilitated and the final rehabilitation will be compatible with surrounding land uses and approved land use designations (Policy 2.5.3.1).
- The subject lands are located on prime agricultural land within a prime agricultural area. The site will be rehabilitated back to an agricultural condition in conjunction with the existing pit (Policy 2.5.4).
- The subject lands do not contain significant cultural heritage landscapes. The house on the Prince property provides a built heritage resource and will be maintained outside the extraction area (Policy 2.6.1).
- A Stage 2 Archaeological Assessment investigated the site and concluded that a Stage 3 assessment is required for a portion of the Bonnefield property. (Policy 2.6.2).

The proposed Melancthon Pit Extension is consistent with the PPS, represents good planning, wise resource management, and is in the public interest after considering the economic, environmental and social factors that apply to this application.

4.2 Dufferin County Official Plan

The Dufferin County Official Plan received Provincial approval in March 2015 except for a few sections in the document that remain under appeal at the Ontario Municipal Board (OMB). Schedule B (**Figure 5**) of the Official Plan designates the subject lands as “Countryside Area” and Schedule C (**Figure 6**) designates the subject property as “Agricultural Area”. Deposits of mineral aggregate resources are identified on Schedule D of the Dufferin County Official Plan (**Figure 7**). Schedule D designates the properties as “Sand and Gravel Resource Area”. The woodlots at the rear of each property and the hedgerows on the Bonnefield property are identified as “Woodlands” on Schedule E (**Figure 8**) of the Official Plan.

Agriculture

The Agricultural Area designation applies to prime agricultural lands which are intended to be designated 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.

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. A site-specific local municipal official plan amendment will be required to permit a non-agricultural use within the agricultural area, however, an amendment to the Dufferin County Official Plan is not required. 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.

Mineral Aggregate Resources

Policy 4.4.2.1 provides criteria on impacts that new or expanding mineral aggregate resource operations must address. The criteria and how that criteria has been met is identified in the table below.

Table 1: Criteria to Permit New Mineral Aggregate Operations or Expansions

Policy	How the Policy is Addressed
i. surrounding land uses and siting of extraction operations, including demonstrating compatibility with the rural character and landscape, including visual impacts;	<ul style="list-style-type: none"> - The subject properties are in a rural area surrounded by existing mineral aggregate operations. - The subject properties are identified as being in a mineral resource areas in both the County and Township Official Plans. - The operations will be visually screened with 4-5 metre high berms and tree planting along 4th Line. Aggregate stockpiles will be located on the pit floor as well as portable processing equipment and front end loaders /shipping trucks. As a result, much of the physical activity within the pits will be screened from surrounding agricultural uses.
ii. surrounding sensitive uses through adequate buffering, screening, and other mitigation measures;	<ul style="list-style-type: none"> - The recommendation of the Noise Impact Study, including acoustic berms and processing area restrictions have been implemented on the site plans.
iii. transportation infrastructure, particularly as it relates to County Roads and Provincial Highways;	<ul style="list-style-type: none"> - The maximum annual tonnage limit is proposed to be shared with the existing Strada pits at 1.25 million tonnes. There will be no increase in truck traffic as a result of the proposed extension. - Access to the proposed extension will be via the entrances to the existing Strada pits to 4th Line. These are established accesses and no

Policy	How the Policy is Addressed
	<p>new entrances are proposed.</p> <ul style="list-style-type: none"> - The haul route south to County Road 17 will also remain unchanged.
<p>iv. surface water and groundwater quality and quantity, provincially significant natural features, natural heritage features and areas, and the environment;</p>	<ul style="list-style-type: none"> - A Hydrogeological Impact Assessment and EIS were prepared in support of the application. - The Hydrogeological Impact Assessment concluded t there will be no negative impacts to the groundwater system or local groundwater users as a result of the proposed above water table pit. - The EIS concluded that the proposed development should have no negative impacts on the form or function of the identified natural heritage features provided the recommended mitigative measures are appropriately implemented.
<p>v. social and community considerations;</p>	<ul style="list-style-type: none"> - The application represents a continuation of an existing use. - The subject lands are well separated from designated settlement areas. - Mitigation and design will minimize impacts on rural residential uses. - There are social benefits of making aggregate available from close to market locations.
<p>vi. cultural heritage and archaeological resources;</p>	<ul style="list-style-type: none"> - The subject lands do not contain significant cultural heritage landscapes. The house on the Prince property represents a built heritage resource and will be preserved. - A Stage 2 Archaeological Assessment investigated the site and concluded that a Stage 3 assessment is required for a portion of the Bonfield property.
<p>vii. noise, dust and vibration, in accordance with Provincial Standards;</p>	<ul style="list-style-type: none"> - The recommendation of the Noise Impact Study, including acoustic berms and processing area restrictions have been implemented on the site plans. - Dust is required to be mitigated on site through the prescribed conditions of the ARA. As a result of implementing these measures, it is not anticipated that dust will have an adverse impact on surrounding local agricultural or residential uses. - The application is for a Category 3 above water pit. No blasting is required.
<p>viii. the removal and placement of fill, topsoil or overburden;</p>	<ul style="list-style-type: none"> - Soil handling procedures as recommended by the Agricultural Impact Assessment have been implemented on the site plans.
<p>ix. demonstration that the final</p>	<ul style="list-style-type: none"> - The subject properties will be rehabilitated

Policy	How the Policy is Addressed
rehabilitation plan is consistent with the policies of this Plan and the local municipal official plan;	back to an agricultural condition in which substantially the same areas and same average soil capability for agriculture will be restored in accordance with the PPS and Official Plans.
x. other matters identified by the Province, County, or local municipality, or identified in the local municipal official plan; and	- Strada has pre-consulted with the MNRF, Township and NVCA. Recommendations provided by the MNRF and NVCA have been incorporated in the application.
xi. requirements under the Aggregate Resources Act.	- The licence application is being processed by the MNRF concurrently with the Planning Act applications.

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 on prime agricultural land provided the site will be rehabilitated back to an agricultural condition. Criteria are provided for when complete rehabilitation is not required however, as the proposed operations do not meet the criteria as set out in the Official Plan, complete agricultural rehabilitation is being proposed as part of the application. The proposed aggregate extraction operations are an interim use and once the use ceases, the properties will be returned back to a condition where agricultural activities can occur. Comprehensive and coordinated rehabilitation is encouraged. The comprehensive rehabilitation plan will facilitate more land to be returned to agriculture given the elimination of setbacks / side slopes between the licensed pits. It is estimated that, approximately 9.9 hectares (24.4 acres) of additional land can be returned to agriculture as a result of this comprehensive rehabilitation plan.

Natural Heritage

Section 5.3 of the Dufferin County Official Plan encourages the protection, restoration, or where possible, enhancement of natural heritage features and associated functions. Schedule E (**Figure 8**) is intended to reflect the known natural heritage features and areas. The boundaries of these features and areas are considered to be approximate, and their boundaries may be further refined without an amendment to the Official Plan. The tree covered areas of the subject lands are identified as “Woodlands” on Schedule E.

Development and site alteration is not permitted within or adjacent to the woodlands unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

The Dufferin County Official Plan does not contain criteria to determine whether the woodlands shown on Schedule E are significant. A woodland would be classified as being significant if it is determined to be an area which is ecologically important in terms of features such as species composition, age of trees and stand history; functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; or economically important due to site quality, species composition, or past management history.

The EIS prepared by NRSI in accordance with Section 5.3.11 of the Dufferin County Official Plan determined whether any significant natural features exist on or within 120 m of the subject lands (proposed licenced area). Natural features on the subject lands are primarily comprised of Sugar

Maple-dominated deciduous forest communities at the rear of each property, while the Bonnefield property also contains a shallow marsh inclusion and small vernal pool. An approximately 30-year old White Pine plantation is located in the southeast corner of the Prince property, while a centrally-located cultural meadow occurs centrally within the Bonnefield property. The deciduous woodland communities will be retained outside of the proposed aggregate extraction limits and for the purposes of this study have been assumed to represent Significant Woodland as mapped by the County. 10m woodland buffers have been recommended to protect these features and mitigate impacts from adjacent extraction activities while offering opportunity to restore and enhance the existing woodland edges.

The plantation and hedgerows were assessed by NRSI against the County definition of forest and the NHRM criteria for significant woodland. Within the County Official Plan, woodlands are defined, in part, as features that are identified as “forest” under the ELC system (County of Dufferin 2015). Under this definition, the plantation and hedgerows are not woodlands and would not be considered in an analysis of Significant Woodland under County policies. Various other aspects of woodland significance, as defined in the Natural Heritage Reference Manual, are not met by the plantation based on the character of the feature. For these reasons and its relatively small size (3.04ha) in comparison to Township size criteria (20ha), the plantation is not considered to represent Significant Woodland as defined by the County or Township, or the NHRM and is therefore included within the proposed limit of extraction.

In summary, the lands are considered prime agricultural lands and are not identified as being a specialty crop area. The subject lands were selected in order to provide a logical extension to the existing aggregate operations in the area and as the surrounding area consists predominantly of Class 2 and Class 3 soils. The proposed aggregate extraction operations are an interim use and the lands will be rehabilitated back to an agricultural condition. The EIS concluded that there will be no negative impacts on the significant woodlands or significant wildlife habitat. Therefore, the extraction of the aggregate resources on the Prince and Bonnefield Properties is consistent with the Dufferin County Official Plan.

4.3 Township of Melancthon Official Plan

The Township of Melancthon Official Plan was adopted by Township of Melancthon Council in August 2014. The Official Plan was approved by the Ministry of Municipal Affairs and Housing (MMAH) in March 2015 with modifications. The Township of Melancthon appealed some of the modifications but the majority of the Official Plan is in effect. The Township’s appeal has not been resolved as of the date of this report. This report is based on the Official Plan as modified by MMAH.

Schedule A-5 ‘Land Use and Roads Plan’ of the Township’s Official Plan (**Figure 9**) designates the subject lands as “Agricultural” and “Environmental Conservation”. The existing Strada pits are designated “Extractive Industrial”.

Agricultural

The principal objective of the Agricultural designation is to protect key prime agricultural areas for the long term use for agricultural purposes and includes lands having primarily Classes 1, 2 and 3 Soil Capability for Agriculture ratings under the Canada Land Inventory. The following uses are permitted in the Agricultural designation: *“Agricultural uses, agriculture-related uses, and on-farm diversified uses*

are permitted in the Agricultural designation. Agricultural uses include all agricultural operations that are determined to be normal farm practices as defined herein using the terminology of the Farming and Food Production Protection Act.” In addition, farm related tourism and on-farm business uses are permitted as on-farm diversified uses and a single detached dwelling is permitted as a component of an agricultural use.

Section 5.2.2(b) states that agricultural uses are to 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 in compliance with the applicable policies of the Official Plan detailed below.

Natural Environment/Environmental Conservation Designation

In addition to the “Agricultural” designation, a portion of the subject lands is also designated “Environmental Conservation” to recognize the woodlots on the properties. Schedule D ‘Natural Heritage 1 (Wetlands)’ (**Figure 10**) identifies two locally significant/unevaluated wetlands within these woodlots; one in the northeast corner of the Prince property and one which overlaps the boundary between Pit #1 and the Bonnefield property. The Bonnefield property wetland is an unevaluated feature. The wetlands will be maintained within the property woodlands and buffered by >30m from the proposed extraction limits. Schedule E ‘Natural Heritage 2 (Woodlands, Wildlife Habitat and ANSI)’ (**Figure 11**) identifies the woodlots on the properties as “Significant Woodlands”. Section 3.4.1(c) permits development in and adjacent to these areas subject to the applicable policies in Section 5.5 and the completion of an Environmental Impact Study (EIS).

An EIS was undertaken by NRSI in accordance with Section 3.4.2 of the Official Plan. As previously noted in Section 3.5, NRSI concluded that the natural features on the subject lands are primarily comprised of Sugar Maple-dominated deciduous forest communities at the rear of each property, while the Bonnefield property also contains a shallow marsh inclusion and small vernal pool. An approximately 30-year old White Pine plantation is located in the southeast corner of the Prince property. The deciduous woodland communities will be retained outside of the proposed aggregate extraction limits and for the purposes of this study have been assumed to represent Significant Woodland as mapped by the Township even though they are under the size threshold. 10m woodland buffers have been recommended to protect these features and mitigate impacts from adjacent extraction activities while offering opportunity to restore and enhance the existing woodland edges. The plantation was assessed by NRSI against the NHRM criteria for significant woodland. Under this definition, the plantation is not a woodland and would not be considered in an analysis of Significant Woodland. Various aspects of woodland significance, as defined in the Natural Heritage Reference Manual, are not met by the plantation based on the character of the feature. For these reasons and its relatively small size (3.04ha) in comparison to Township size criteria (20ha), the plantation is not considered to represent Significant Woodland as defined by the County or Township, or the NHRM and is therefore included within the proposed limit of extraction.

The deciduous woodland and wetland communities were confirmed as woodland amphibian breeding (Bonnefield property only) and SCC Eastern Wood-Pewee breeding (both properties) SWH, while both property woodlands are considered potential bat SAR habitat. The proposed site alterations will not directly impact these SWH features. Based on field investigations, the small vernal pool is not considered a significant habitat feature.

SAR Bobolink and Eastern Meadowlark breeding habitat (Prince property only), as well as nesting and foraging habitat for the SAR Barn Swallow (both properties) was identified by NRSI during field work in 2016. NRSI has recommended that the SAR habitat be assessed again prior to disturbance. If the

habitat is confirmed through subsequent investigations, ESA permitting requirements will apply. The proposed undertaking is exempt from ESA permitting requirements for these species under O. Reg. 242/08 provided that the requirements of the Regulation are met. Habitat removal activities must be registered with the MNR through a Notice of Activity and Mitigation Plans must be prepared according to the Regulation.

Recommendations have been provided by NRSI to avoid, minimize or otherwise mitigate impacts that may occur through creation of the aggregate pits on the properties. These include recommendations to mitigate direct and indirect impacts that may arise through the proposed site alterations. NRSI concluded the proposed undertaking is not anticipated to cause negative impacts to the existing natural features and their ecological functions.

Water Resources

Schedule G 'Aquifer Vulnerability and Wellhead Protection Areas' (**Figure 12**) classifies key aquifers in terms of their vulnerability to contamination. The Prince property is identified as being within an area of "High Vulnerability". Section 4.4.1(c) provides policy intended to apply an appropriate level of protection for these areas. The Official Plan requires that any development proposal in this area shall include an assessment of groundwater impacts confirming that there will be no negative effects on the quantity and quality of groundwater.

As previously noted, Whitewater Hydrogeology prepared a Hydrogeological Report in accordance with the Aggregate Resources of Ontario Provincial Standards, and the County and Township Official Plans. The report assessed whether there is potential for adverse effects to groundwater and surface water resources and their uses. The Hydrogeological Report concluded no significant change in groundwater conditions is expected at local natural environment features or water supply wells due to the proposed extraction. In addition, on-site changes are expected to be insignificant relative to local natural environment features.

Mineral Aggregate Resources/Extractive Industrial Designation

Schedule H-Primary Aggregate Resource Areas designates the subject lands as "Sand and Gravel Aggregate Resource-Primary" (**Figure 13**). The areas identified as such on Schedule H are based on the 2014 edition of Aggregate Resources Inventory Paper of Dufferin County as published by the Ministry of Northern Development, Mines and Forestry. The purpose of Schedule H is to identify areas of potentially significant deposits of mineral aggregate resources in the Township of Melancthon and to assist in protecting as much of those resources as is justifiable in planning policy terms. Much of the Primary Sand and Gravel Resource in the Township is overlain by prime agricultural land and designated "Agricultural" in the Official Plan. The existing Strada pits are designated "Extractive Industrial on Schedule A-5 (**Figure 9**).

Section 3.17.2 of the Township of Melancthon's Official Plan applies to new or expanded mineral aggregate operations. It states that new or any expansion of an existing mineral aggregate operation will be permitted only through an amendment to the Official Plan. Furthermore, Policy 3.17.2(e) states that new or expanded mineral aggregate operations are permitted in conformity with the policies in Section 5.6 Extractive Industrial.

Policy 5.6.2(g) of the Township's Official Plan states that applications to permit new or expanded mineral aggregate operations will be evaluated on a case by case basis to determine the best haul route. The 4th Line is designated as a "Mineral Aggregate Haul Route" south of the Prince property.

The 4th Line will continue to operate as the haul route and no additional haul routes are proposed as part of the proposed expansions. Tonnage limits are not changing as a result of the expansion and therefore the traffic volumes to/from the existing and proposed aggregate operations will not change. As a result, no additional impacts on agricultural traffic is anticipated on the established haul routes.

Policy 5.6.2(j) of the Township’s Official Plan states that extraction shall be undertaken in a manner which minimizes social and environmental impacts. As previously noted, the operational design of the pit incorporates the recommendations of the technical reports prepared for the application in order that the pit can operate within Provincial guidelines and minimize social and environmental impacts.

Policy 5.6.2(k) provides that mineral aggregate operations are permitted provided documentation has been provided demonstrating to Council’s satisfaction that there is conformity with certain criteria and policies. The criteria and how they have been met is summarized in the table below.

Table 2: Criteria to Permit Mineral Aggregate Operations in the “Agricultural” Designation

Policy	How the Policy is Addressed
i. The use shall be interim in nature.	The operation is temporary and upon the operation ceasing, the lands will be progressively rehabilitated to an agricultural use.
ii. The site will progressively rehabilitated to an agricultural condition.	The extraction on both subject lands will take place above the water table and as such, the site is proposed to be rehabilitated to an agricultural use. The rehabilitation plans require that the lands be progressively rehabilitated back to the same average soil capability and prescribes a process for agricultural rehabilitation. The rehabilitation plan also provides for substantially the same area of agricultural land (8.8 hectares is lots primarily to side slopes). This is offset by the elimination of side slope areas between the existing and proposed licensed operations.
iii. Complete rehabilitation to an agricultural condition is not required if...	N/A
iv. Impacts on surrounding agricultural operations and lands are to be mitigated to the extent feasible.	Anticipated impacts on the surrounding agricultural activities are discussed and addressed in Section 5 of the Agricultural Impact Assessment report.

The Official Plan goes on further to state that where no other alternatives are found, prime agricultural lands shall be protected in the following order of priority: Specialty Crop Areas, Canada Land Inventory Class 1 soils, Class 2 soils and Class 3 soils. The subject lands are not within a specialty crop area as identified by the province. As previously noted, although the subject lands are within a prime agricultural area, there are few other alternative areas within the Township’s Primary Aggregate Resource Area that will avoid agricultural sites.

Policy 5.6.2(n) also includes evaluation criteria applicable to new or expanded aggregate operations. The criteria and how that criteria has been met is identified in the table below.

Table 3: Application Documentation and Evaluation Criteria

Policy	How the Policy is Addressed
i. That the application complies with all of the applicable policies of this Plan;	The Planning Report documents how the application complies with the applicable policies of the Official Plan.
ii. That the municipal planning related components of the material required for a license application under the Aggregate Resources Act is provided to the Township;	The ARA licence submission package has been provided to the Township.
iii. That all environmental studies, as required by this Plan and all relevant plans, policies, legislation, regulations and guidelines, have been completed and that these studies clearly demonstrate that there will be no negative impacts on significant natural heritage features and areas or on the associated ecological functions;	The Natural Environment Report/EIS prepared by NRSI provides recommendation to minimize or otherwise mitigate impacts that may occur through creation of the aggregate pits on the properties. These include recommendations to mitigate direct and indirect impacts that may arise through the proposed site alterations. NRSI concluded the proposed undertaking is not anticipated to cause negative impacts to the existing natural features and their ecological functions.
iv. That all water resource related studies, as required by this Plan and all relevant plans, policies, legislation, regulations, and guidelines, have been completed and that these studies clearly document that wells, vulnerable groundwater and surface water, sensitive surface water and groundwater features, and their hydrologic functions will be protected or improved;	The Hydrogeological Report was prepared in accordance with the Aggregate Resources of Ontario Provincial Standards, and the County and Township Official Plans. The report assessed whether there is potential for adverse effects to groundwater and surface water resources and their uses. The Hydrogeological Report concluded no significant change in groundwater conditions is expected at local natural environment features or water supply wells due to the proposed extraction. In addition, on-site changes are expected to be insignificant relative to local natural environment features.
v. That the applicant has entered into an agreement to undertake any required groundwater, environmental or other monitoring program required by the municipality;	The required monitoring programs have been incorporated into the ARA site plans which are binding on the applicant. Strada also maintains operating agreements with the Township for their existing operations which include monitoring requirements.
vi. That there is compliance with the haul route related policies of subsection (q) of this section including the requirement to provide a Traffic Impact Study and that, where necessary, the applicant has entered into the required agreement concerning funding for related road	The subject lands are located on an approved haul route. No new entrances or changes to the haul route are proposed as part of the application. The tonnage condition and truck traffic will not increase as a result of the application.

Policy	How the Policy is Addressed
improvements and other matters;	
vii. That the applicant has entered into any required operational agreement with the Township in accordance with the policies of subsection (s) of this section;	Strada currently maintains operating agreements with the Township for their existing operations.
viii. That provincial guidelines for noise and vibration levels will be met with the land use planning aspects of any related mitigation measures being acceptable to the municipality;	The proposed pit operation is predicted to satisfy Ministry of Environment and Climate Change sound level limits at nearby receptors based on the recommendations and mitigation measures provided in the Noise Impact Study prepared by Aercoustics.
ix. That dust and any other air emissions will be mitigated on-site to the extent feasible, through land use planning, such as the implementation of required setbacks through the Zoning By-law, being acceptable to the municipality;	Dust is required to be mitigated on site and specific mitigation measures are noted on the site plans.
x. That any other studies or documentation required to address specific aspects of a site or application have been satisfactorily completed;	
xi. That the rehabilitation will be progressive, will minimize the extent of the disturbed area in accordance with the policies of subsection (r) of this section, and will comply with other applicable policies of this Plan such as those in subsection (j) of this section;	The rehabilitation plans require progressive rehabilitation to reduce the extent of disturbed area.
xii. That the proposal minimize impacts on surrounding land uses and views by means such as screening, phasing and the direction of extraction; and	The pits will be screened with perimeter berms and planting along 4 th Line.
xiii. That all issues and concerns arising from the municipal review and evaluation process have been addressed to the satisfaction of the Township.	Comments provided by the NVCA through pre-consultation have been implemented in the EIS.

In summary, the ARA licence plans and prescribed conditions of the ARA addresses the criteria of policy 5.6.2(n).

Policy 5.6.2(o) requires certain information, including the site plans and reports required by the Official Plan, ARA and through pre-consultation be provided to the Township and made available to the

public for review at the Township. This policy will be satisfied in accordance with the ARA notification and consultation process and the Planning Act application process.

Policy 5.6.2(p) details the requirements applying to designated “Mineral Aggregate Haul Routes” and traffic impacts resulting from mineral aggregate operations. As previously noted, The 4th Line is designated as a “Mineral Aggregate Haul Route” south of the Prince property. The 4th Line will continue to operate as the haul route and no additional haul routes are proposed as part of the extension. Tonnage limits are not changing as a result of the extension and therefore the traffic volumes to/from the existing and proposed aggregate operations will not change. As a result, no additional impacts on agricultural traffic is anticipated on the established haul routes.

Where possible, Strada will utilize internal haul routes through the existing operations to minimize the length of travel on the haul route. No new entrances are proposed and product will be shipped via the existing entrances from Pit #1 and #2.

Policy 5.6.2(q) provides that mineral aggregate operations mitigate any visual impact with measures such as berms and vegetation. The proposed extension will be screened from 4th Line and adjacent farms with 4m and 5m high berms. Strada is also proposing to plant trees along the 4th Line frontage, in front of the berm, in order to further screen the operation from view.

Policy 5.6.2(r) provides that the applicant for a mineral aggregate operation related planning amendment enter into or amend an agreement with the Township relating to such matters as are required to meet the policies of the Official Plan. Strada previously entered into agreements with the Township through the approval process for their existing operations. The existing operating agreements address items such as haul routes and the related improvements and maintenance, groundwater and environmental monitoring, financial securities and site rehabilitation.

In terms of rehabilitation of the site, Policy 5.6.2(w) provides that any site consisting of prime agricultural land prior to the commencement of a mineral aggregate operation and originally within the Agricultural designation shall be restored to agricultural use in compliance with the policy of subsection 5.6.2(k)iii. The proposed rehabilitation plan proposed in support of the applications satisfies this report. The details on the plan prescribe a method/approach to rehabilitating the lands back to the same or equivalent soil capability that exists today. The proposed rehabilitation plan for the subject lands complements the rehabilitation plans for the existing pits, which also propose rehabilitation back to agriculture.

In summary, the proposed extension on the subject lands conforms with the policies of the Township of Melancthon Official Plan. The Official Plan objective (2.2.5) of minimizing negative impacts on the environment, other land users and rural character can be satisfied through the proposed location, design and mitigation measures that have been incorporated in the proposal. As outlined in the General Policies (3.17) expanded operations are permitted by amendment to the Plan as an interim use in the Agricultural designation. The application package that has been prepared in support of the Official Plan Amendment application has provided documentation to demonstrate compliance with the applicable policies and criteria of the Official Plan.

4.4 Township of Melancthon Zoning By-law

The subject lands are zoned “General Agriculture (A1)” in the Town’s Zoning By-law (**Figure 14**). This application proposes to rezone the A1 lands to “Extractive Industrial (M2)”.

The M2 Zone permits the following uses:

- a) a sand, gravel or rock quarry extraction operation;
- b) a sand, gravel or rock processing, washing, sorting, screening or crushing operation;
- c) uses accessory to the above permitted uses.

M2 Zone regulations includes provisions stating that no sand and gravel extraction shall proceed closer than 120 metres to any Residential, Commercial, Institutional or Industrial M1 or M3 Zone, nor closer than 15 metres to a property line, nor closer than 30 metres to a public road allowance. The proposed Melancthon Pit Extension is in compliance with these provisions.

5.0

AGGREGATE RESOURCES ACT SUMMARY INFORMATION

The following section is structured to address the information required under the ARA Provincial Standards for a Category 3 - Class A Pit Above the Water Table.

5.1 Standard 2.1.1 – Planning and Land Use Considerations

The subject lands are located north of County Road 17 and are immediately adjacent to the existing Melancthon Pits #1 (Licence 129167) and #2 (Licence 625155). The surrounding lands include licenced pits operated by Strada, rural residential uses, agricultural uses and natural heritage features.

The subject lands are recognized for containing significant sand and gravel resources (7 million tonnes) in a location that is close to market and along a designated haul route.

The subject lands are identified as a “Sand and Gravel Resource Area” in the Dufferin County Official Plan and a “Primary Aggregate Resource Area” in the Township of Melancthon Official Plan. The subject lands are zoned General Agricultural (A1) in the Township’s Zoning By-law. The County and Township Official Plans contain policies protecting aggregate resources.

The technical reports prepared for this application have concluded that the proposed pit can operate in accordance with Provincial requirements while minimizing social and environmental impacts. The ARA Site Plans have incorporated the recommendations from these reports which include processing restrictions in the northern portion of the pit. The proposed pit is in keeping with the surrounding rural character and landscape.

Please refer to Section 4.0 of this report for a further discussion on Planning and Land Use Considerations.

5.2 Standard 2.1.2 – Agricultural Classification of the Proposed Site

According to soils mapping the subject lands contain predominantly Class 2 and Class 3 soils. The subject lands are located within a prime agricultural area based on the PPS, County and Township Official Plans.

The subject lands will be rehabilitated back to an agricultural condition. Please refer to Section 3.3 for a further discussion on agricultural classifications for the subject lands.

5.3 Standard 2.1.3 – Quality and Quantity of Aggregate

The subject lands are located in an area identified in the Aggregate Resources Inventory Paper (ARIP 163) of Dufferin County as a primary selected sand and gravel resource area. Within the Township of Melancthon, there are five Primary Resource Areas. The proposed Melancthon Pit is located within Resource Area 3. Much of the resource is described in the ARIP as, “...medium-grained sand with some gravel and pebbly sand...suitable for a range of applications...selection and sand control is required for most crushed stone products”. (ARIP 163)

Detailed field investigations, including test drilling, test pitting, and geophysical surveys were completed by Whitewater Hydrogeology, DBH Soils, and Strada on the subject property to confirm the area is suitable for extractive development.

Based on the on-site resource testing and proposed site plans, there are approximately 7 million tonnes of sand and gravel resources located on the subject lands. The results of the site specific geological work program found that the material beneath the site is high quality Granular “A” aggregate, which is comparable to the material extracted from Strada’s existing Melancthon Pit #1 and #2. Strada is proposing to maintain the shared maximum annual tonnage of 1.25 million tonnes with the existing operations.

Please refer to Section 3.2 for further information on aggregate quantity and quality.

5.4 Standard 2.1.4 – Haul Routes and Truck Traffic

The proposed Melancthon Pit Exstein will be accessed via the existing entrances to 4th Line from Strada’s Pit #1 and Pit #2. The existing entrances provide good sight lines to the north and south and are in close proximity to County Road 17. The proposed pit will utilize the existing designated haul routes in the area; south on 4th Line to County Road 17 and predominantly east to Highway 124.

There will be no increase in truck traffic as there is no proposed increase in the annual tonnage limit.

5.5 Standard 2.1.5 – Progressive and Final Rehabilitation

The proposed pit will be rehabilitated back to an agricultural condition in accordance with the PPS. approximately 81% of the subject lands will be rehabilitated back to an agricultural after use. As a result of the proposed comprehensive rehabilitation plan (which includes the adjacent licensed pits) an additional 9.9 hectares (24.5 acres) of land will be rehabilitated back to agriculture

The proposed rehabilitation of the subject lands will include soil preparation, soil conditioning and final implementation phases which includes the following general steps:

- Final grading to provide appropriate contour relief, and water drainage
- Deep ripping to alleviate compaction in pit floor
- Replace topsoil and subsoil
- Deep tillage and stone picking
- Plant cover crops
- Grass and legume cropping, and potential soil amendments
- Establish desired agricultural crops

Annual reporting of all stages of the rehabilitation process will be documented and reported. Random soil testing will also be completed at the beginning of each growing season to analyze soil fertility and structure. Adjustments to cropping practices and / or soil amendments may be required based on the results of the soil testing.

An annual rehabilitation practices report will be submitted in order to documents agricultural rehabilitation activities and demonstrate compliance in relation to soil stripping, handling and storage; rehabilitation progress, methods and best practices; soil tests; and, post rehabilitation soil capability and farming activity.

The rehabilitated landform will be compatible with the surrounding area. Please refer to the ARA Site Plans (Rehabilitation Plan) for additional details regarding progressive and final rehabilitation and Section 2.5 of this Report.

5.6 Standard 2.1.6 – Existing Surface Water and Proposed Discharge

The subject lands do not contain any permanent watercourses or distinct drainage channels, and most topographically low depression areas in the two property woodlands were observed to be dry during field studies, which is indicative of the high degree of infiltration that occurs within the pervious soils. Within the Bonfield property, a localized drainage catchment primarily located within the rear-property woodlot contributes seasonal surface water to a hydrologically perched shallow-water

wetland feature and small vernal pool, which are further discussed in more detail in Section 3.4 and 3.5.

5.7 Standard 2.1.7 – Groundwater Table Elevation

The elevation of the water table varies from approximately 498.5 masl in the northeast to approximately 482.2 masl in the southeast portion of the Prince property. The elevation of the water table varies from approximately 500.3 masl in the northwest to approximately 489.5 masl in the northeast portion of the Bonnefield property. The water table elevation was determined based on monitoring wells on the subject lands and data from the existing pits in the area. Further information on the elevation of the water table is provided in the Hydrogeological Study prepared by Whitewater Hydrogeology.

6.0

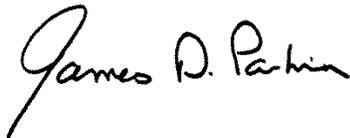
CONCLUSIONS

The subject lands are located north of County Road 17 and are immediately adjacent to the existing Melancthon Pits #1 (Licence 129167) and #2 (Licence 625155). The surrounding lands include licenced pits operated by Strada, rural residential uses, agricultural uses and natural heritage features.

The subject lands are recognized for containing significant sand and gravel resources in a location that is close to market and along a designated haul route.

The operational design of the pit incorporates the recommendations of the technical reports prepared for the application in order that the pit can operate within Provincial guidelines and minimize social and environmental impacts.

The proposed Melancthon Pit Extension represents the wise use and management of significant aggregate resources and is in the public interest. The proposal is consistent with the PPS, and conforms to the Dufferin County Official Plan and Township of Melancthon Official Plan.



James D. Parkin, BES, MCIP, RPP



David R. Barrett, BES, MCIP, RPP

COUNTY OF DUFFERIN

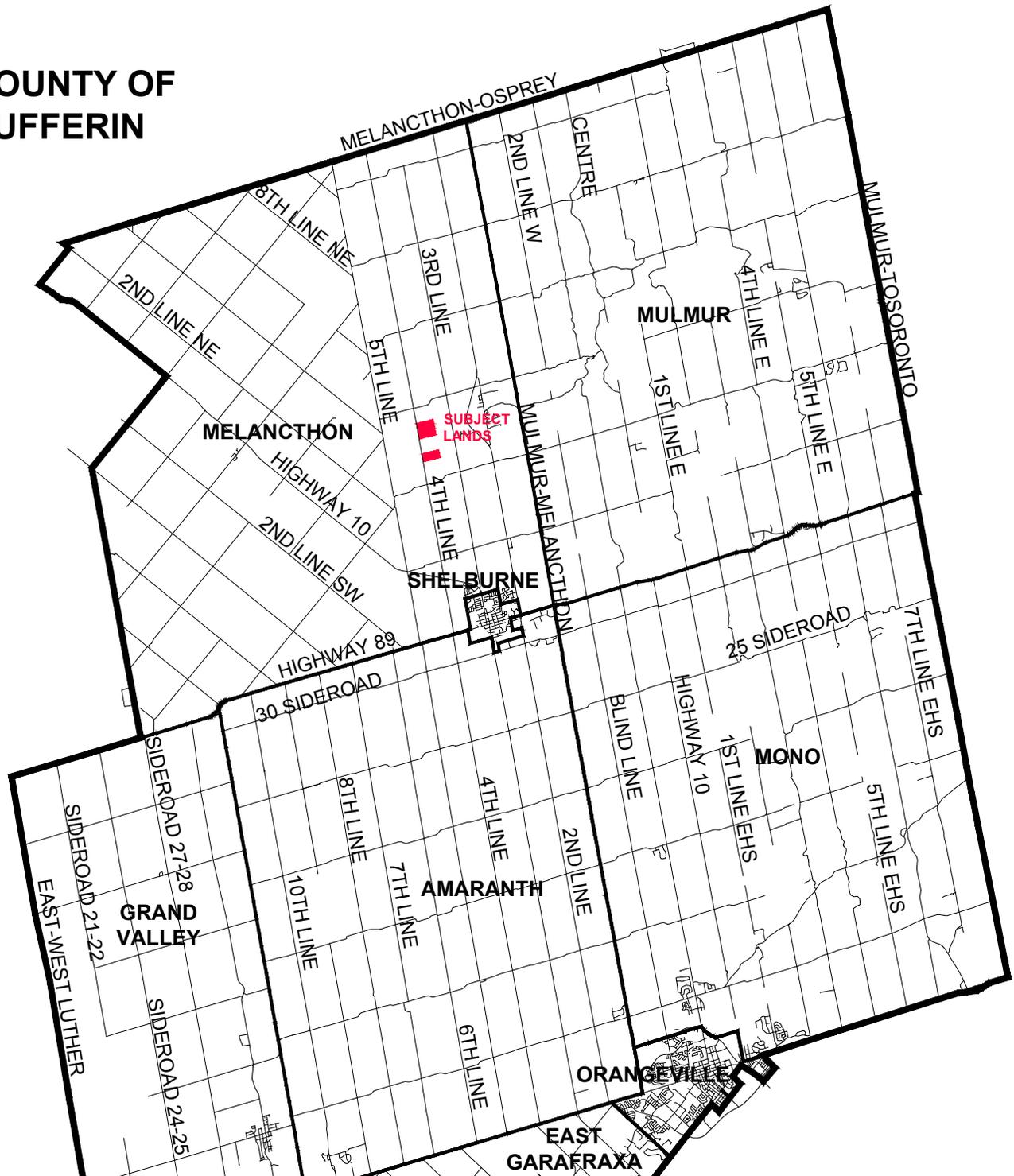


Figure 1
Location Map

LEGEND

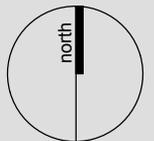
 Subject Lands

DATE: May 2017

SCALE: NTS

FILE: Y349G

DRAWN: GMC



K:\Y349G STRADA DUFFERIN COUNTY PROPERTIES\RP1\FIG_LOCATION_MAP2.DWG

Strada Aggregates

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

Source:
Dufferin County Open Data

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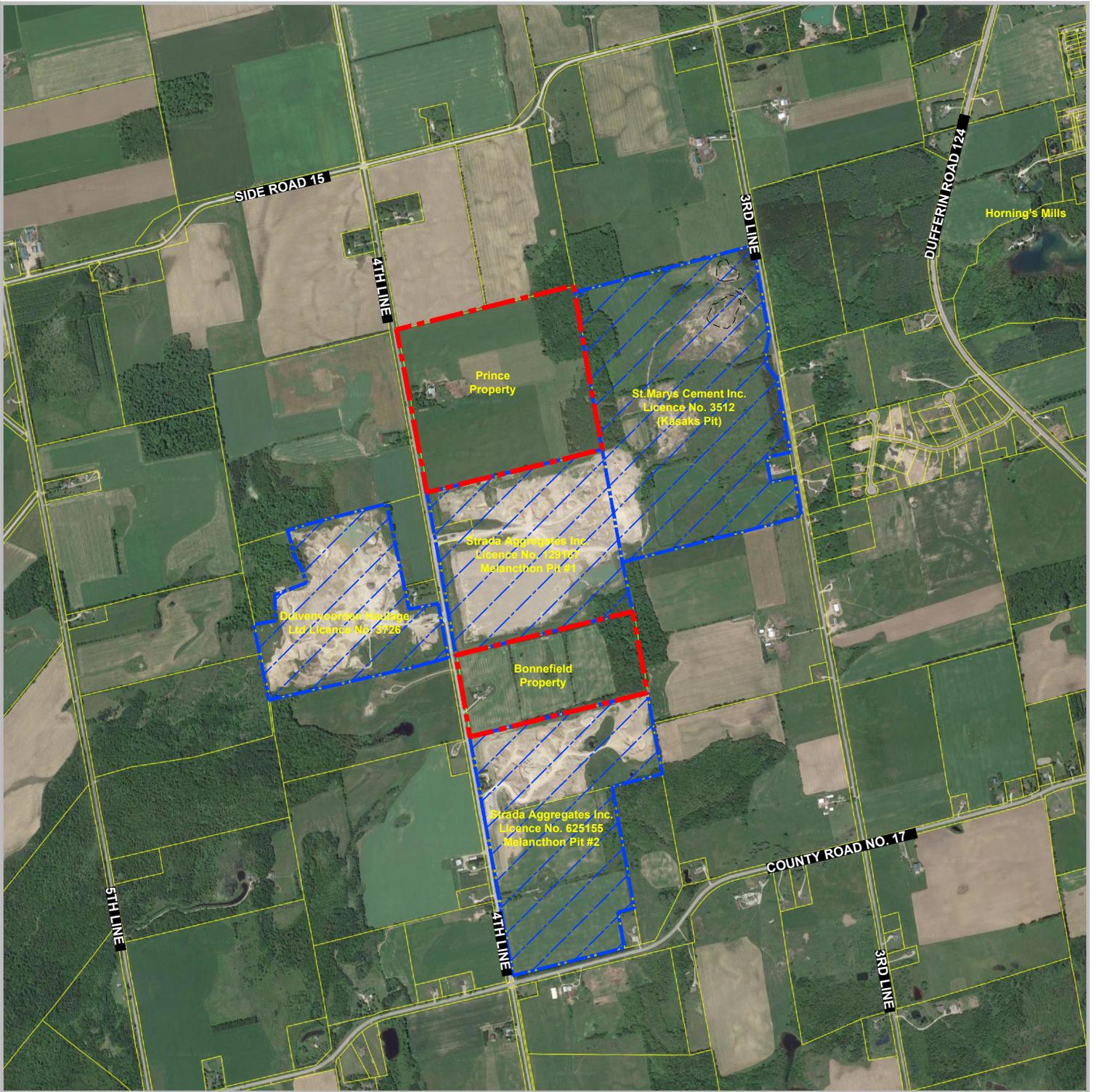


Figure 2
Site Environs

LEGEND

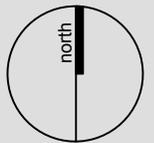
-  Subject Lands
-  Existing Mineral Aggregate Operations

DATE: December 2016

SCALE: 1:2,000

FILE: Y349G

DRAWN: GMC



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

Source:
 Vumap 2015 Google Sattelite imagery

K:\Y349G STRADA DUFFERIN COUNTY PROPERTIES\RPPT\FIG_SITE_ENVIRONS.DWG

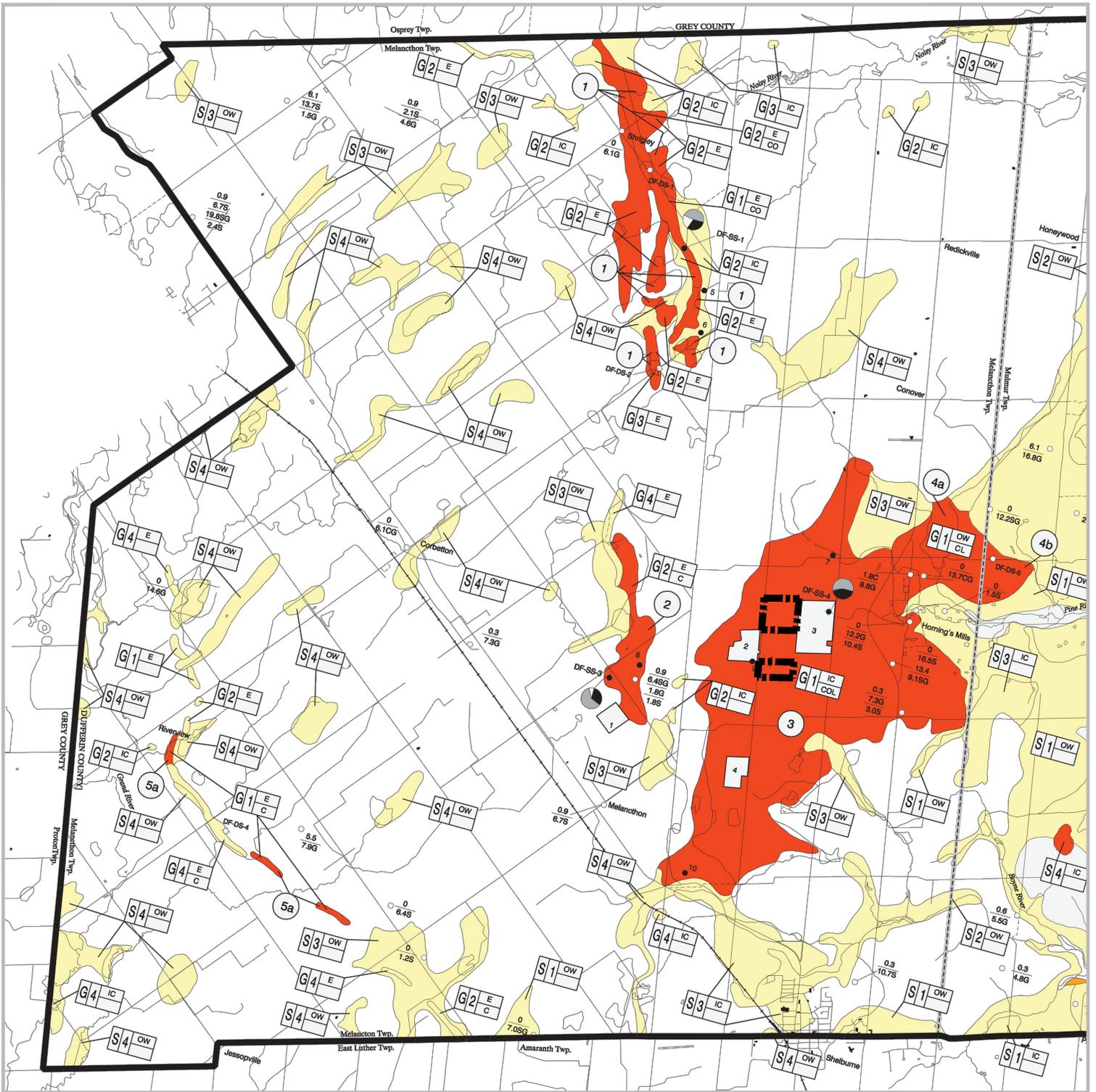
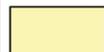


Figure 3
Aggregate Resources Inventory- ARIM 163-1A
 Sand and Gravel Resources

LEGEND

-  Subject Lands
-  Selected sand and gravel resource area, primary significance; deposit number; see Table 3.
-  Selected sand and gravel resource area, secondary significance.
-  Sand and gravel deposit, tertiary significance.
-  Other surficial deposits or exposed bedrock.

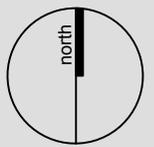
Source:
 Aggregate Resources Inventory of Dufferin County, Ontario Geological Survey
 Paper 163, 1998

DATE: May 2017

SCALE: NTS

FILE: Y349G

DRAWN: GMC



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Strada Aggregates
 Part of West Half of Lots 12 and 14
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 Township of Melancthon
 County of Dufferin

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Figure 4
**Canada Land
 Inventory Soils Map**

LEGEND

 Subject Lands

SOILS - CLI

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

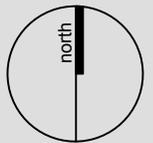
Source:
 Ministry of Agriculture, Food and Rural Affairs- Agricultural Information Atlas

DATE: December 2016

SCALE: NTS

FILE: Y349G

DRAWN: GMC



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 County of Dufferin

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Figure 5

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

Strada Aggregates

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

LEGEND

-  Subject Lands
-  Urban Settlement Area
-  Community Settlement Area
-  Countryside Area
-  Provincially Plan Area
-  Provincially Significant Wetlands
-  Provincial Highway

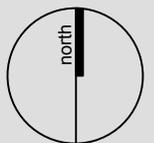
Source:
County of Dufferin Official Plan, (Schedule B, September, 2014)

DATE: December 2016

SCALE: 1:60,000

FILE: Y349G

DRAWN: GMC



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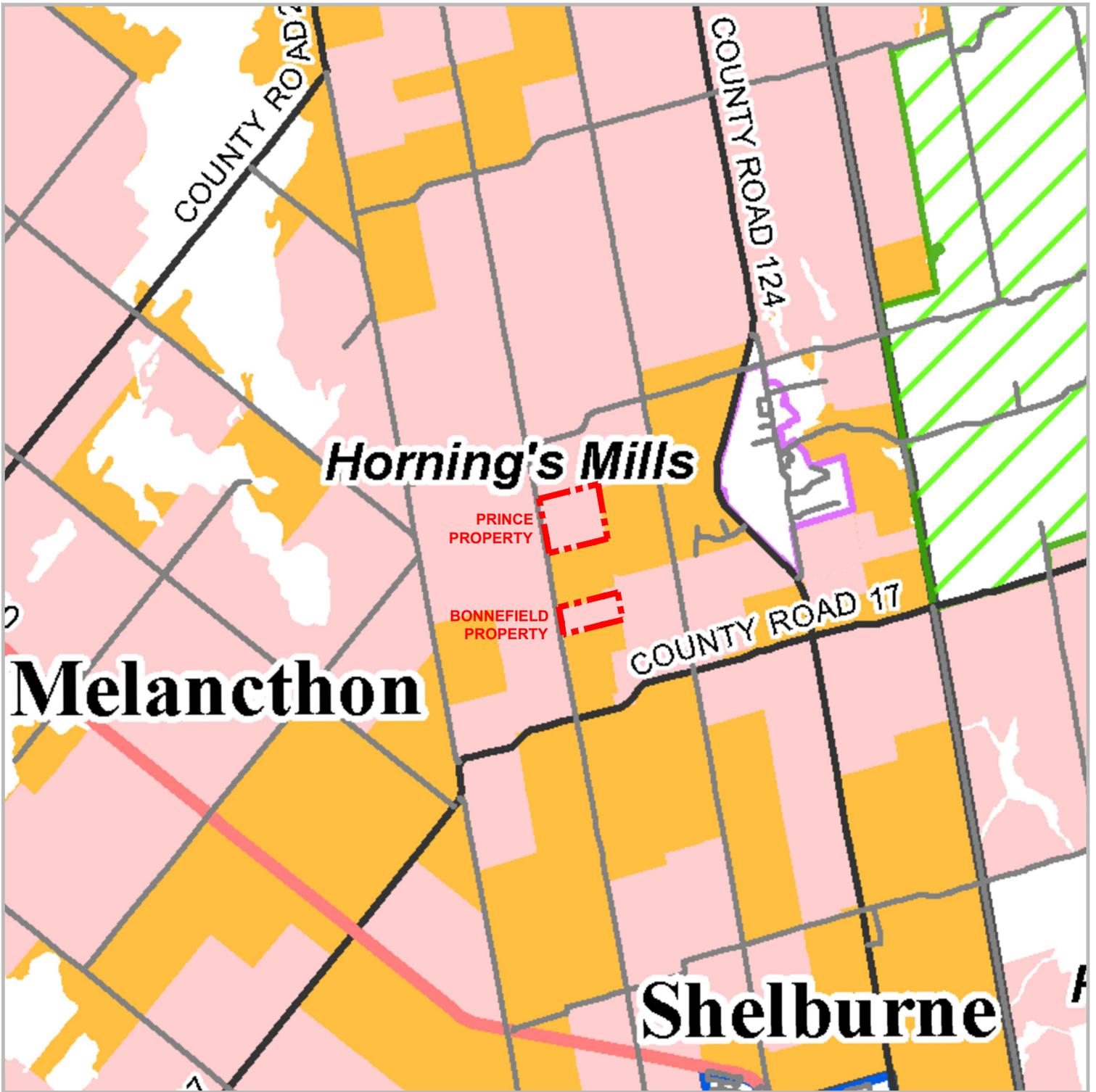


Figure 6
**Dufferin County
 Official Plan**
 Schedule C:
 Agricultural Area and Rural
 Lands

- LEGEND**
-  Subject Lands
 -  Urban Settlement Area
 -  Community Settlement Area
 -  Agricultural Area
 -  Rural Lands
 -  Provincial Plan Area
 -  Provincial Highway

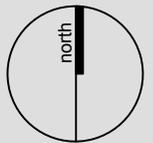
Source:
 County of Dufferin Official Plan, (Schedule C, September, 2014)

DATE: December 2016

SCALE: 1:60,000

FILE: Y349G

DRAWN: GMC



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

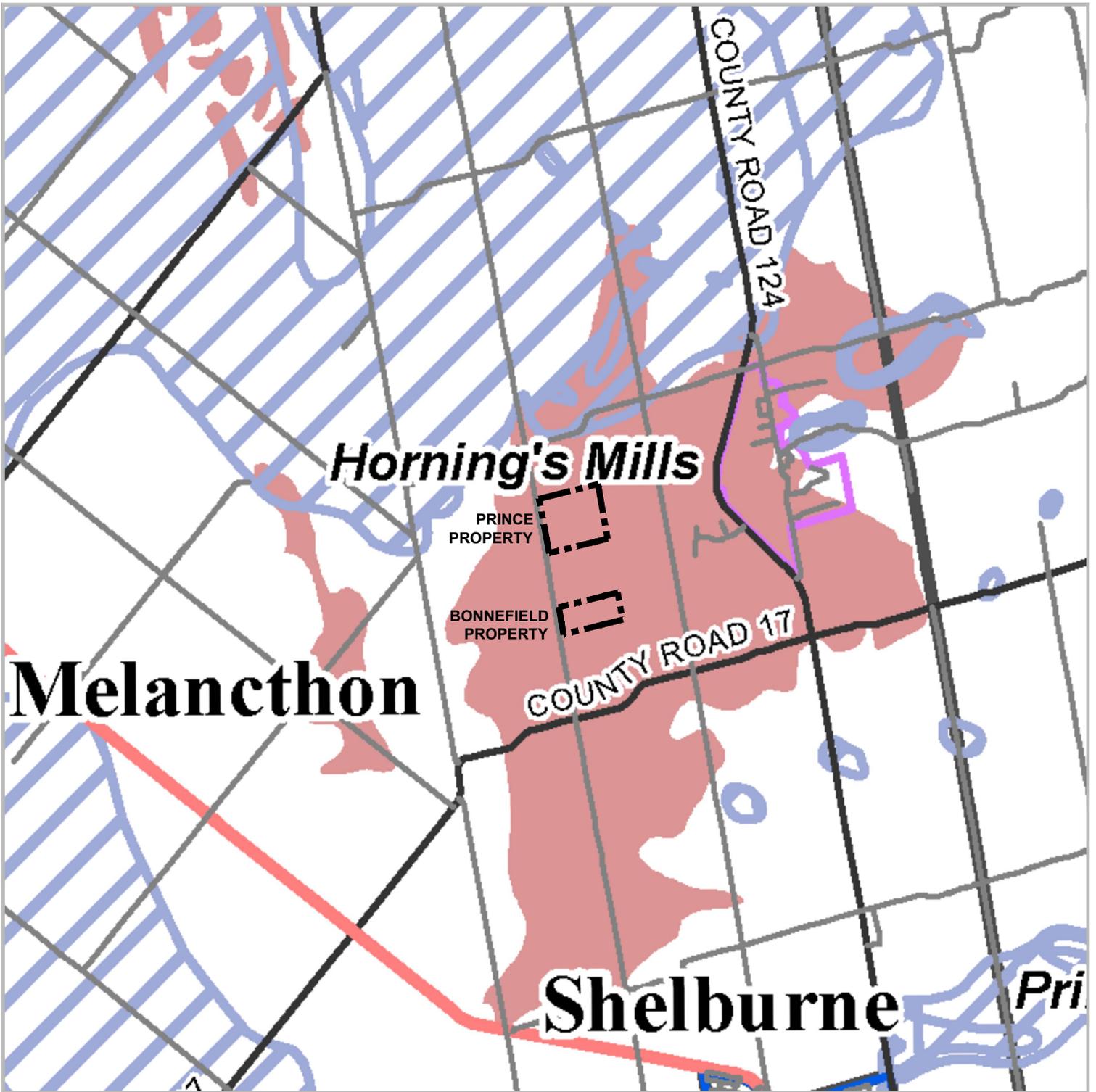


Figure 7

**Dufferin County
Official Plan**
Schedule D:
Mineral Aggregate Resource
Areas

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

LEGEND

-  Subject Lands
-  Urban Settlement Area
-  Community Settlement Area
-  Sand and Gravel Resource Area
-  Bedrock Resource Area

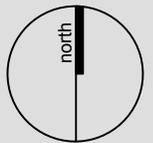
Source:
County of Dufferin Official Plan, (Schedule D, September, 2014)

DATE: December 2016

SCALE: 1:60,000

FILE: Y349G

DRAWN: GMC



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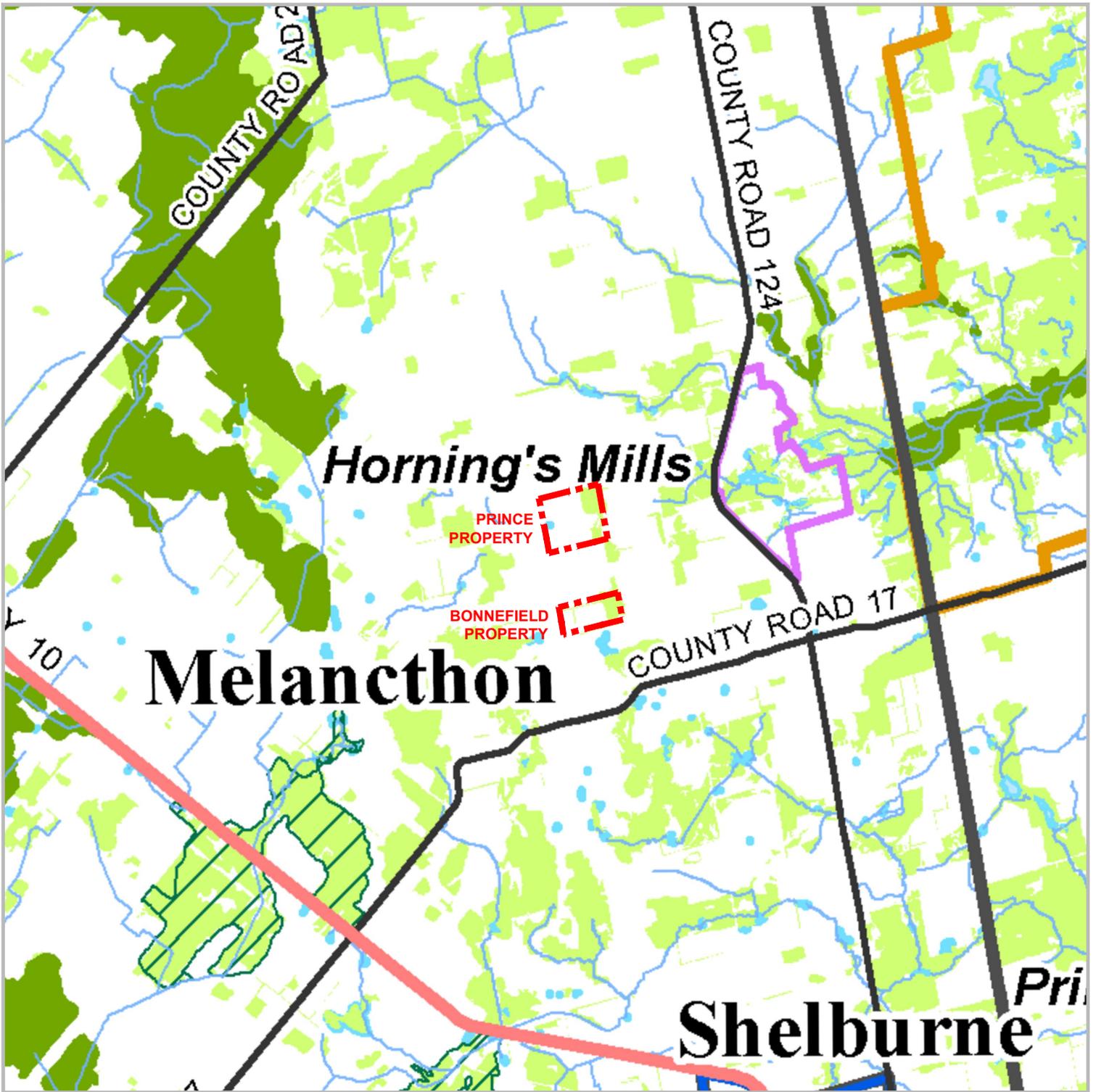


Figure 8
**Dufferin County
 Official Plan**
 Schedule E:
 Natural Heritage Features

- LEGEND**
-  Subject Lands
 -  Urban Settlement Area
 -  Community Settlement Area
 -  Niagara Escarpment Plan Area
 -  Provincially Significant Wetlands
 -  Woodlands
 -  Waterbody
 -  Unevaluated Wetlands
 -  Provincial Highway

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

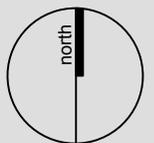
Strada Aggregates
 Part of West Half of Lots 12 and 14
 Concession 3 O.S.
 Township of Melancthon
 County of Dufferin

DATE: December 2016

SCALE: 1:60,000

FILE: Y349G

DRAWN: GMC



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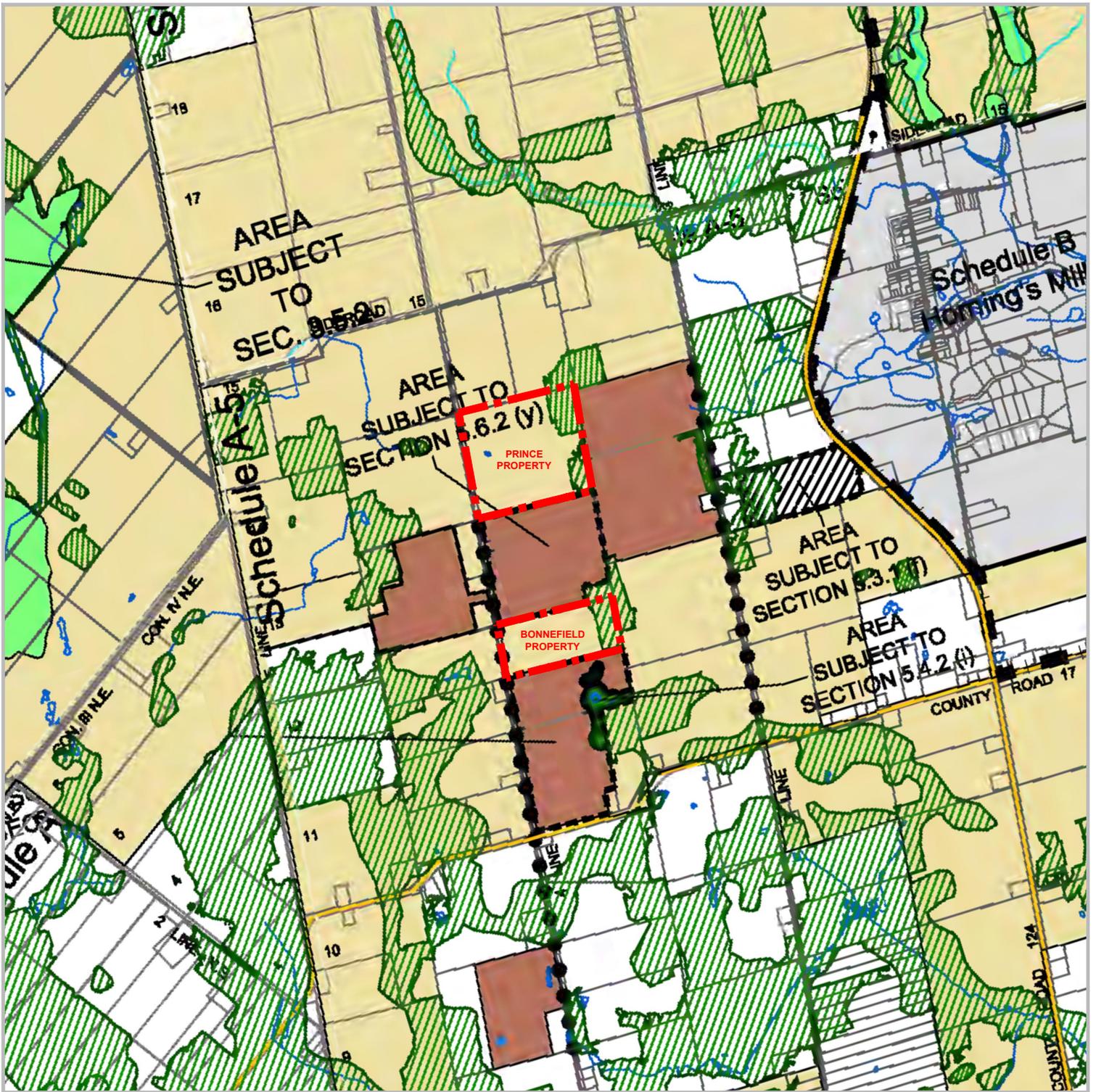


Figure 9

**Township of Melancthon
Official Plan**

Schedules A-2, A-3, A-4 &
A-5: Land Use & Roads Plan

Strada Aggregates

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

LEGEND

-  Subject Lands
-  Agricultural
-  Extractive Industrial
-  Environmental Conservation
-  Existing Mineral Aggregate Haul Route

Source:

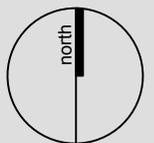
Township of Melancthon Official Plan, (Schedules A-2, A-3, A-4, A-5, August, 2014)

DATE: December 2016

SCALE: NTS

FILE: Y349G

DRAWN: GMC



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Figure 10

**Township of Melancthon
Official Plan**
Schedule D:
Natural Heritage 1 Wetlands

LEGEND

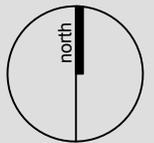
-  Subject Lands
-  Locally Significant and Unevaluated Wetlands

DATE: December 2016

SCALE: 1:12,000

FILE: Y349G

DRAWN: GMC



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Strada Aggregates

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

Source:

Township of Melancthon Official Plan, (Schedule D, August, 2014)



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Figure 11

**Township of Melancthon
Official Plan**
Schedule E:
Natural Heritage 2 Woodlands,
Wildlife Habitat and ANSI

LEGEND



Subject Lands



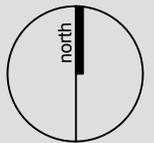
Significant Woodlands
(Primarily 20+ Hectares)

DATE: December 2016

SCALE: 1:12,000

FILE: Y349G

DRAWN: GMC



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Strada Aggregates

Part of West Half of Lots 12 and 14
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County of Dufferin

Source:

Township of Melancthon Official Plan, (Schedule E, August, 2014)



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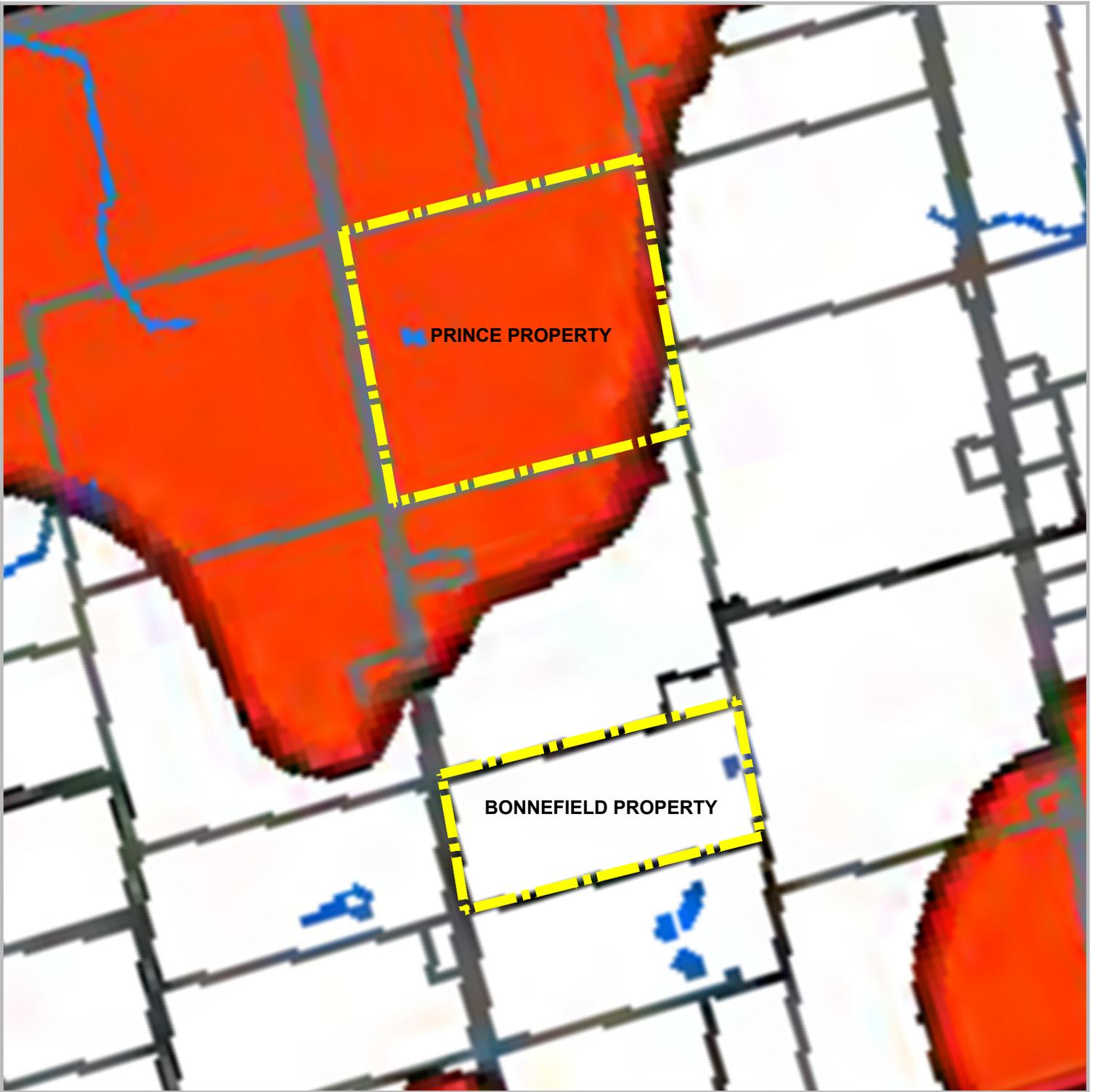


Figure 12

**Township of Melancthon
Official Plan**
Schedule G:
Aquifer Vulnerability and
Wellhead Protection Areas

LEGEND

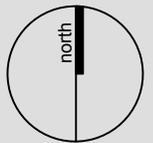
-  Subject Lands
-  High Vulnerability

DATE: December 2016

SCALE: 1:12,000

FILE: Y349G

DRAWN: GMC



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Strada Aggregates

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

Source:

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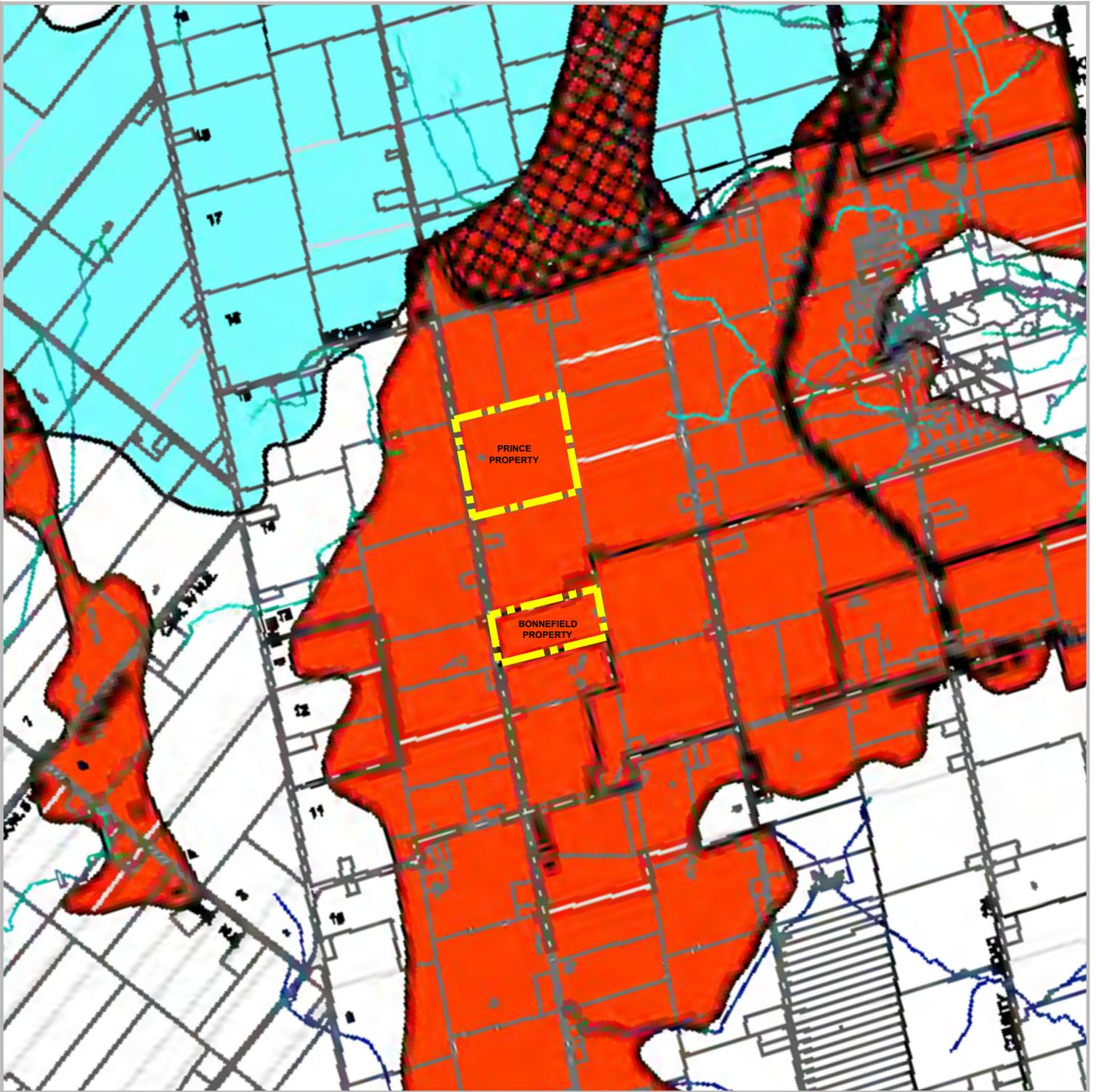


Figure 13

**Township of Melancthon
Official Plan**
Schedule H:
Primary Aggregate Resource
Areas

LEGEND



Subject Lands



Sand & Gravel Resource Area -
Primary

Source:

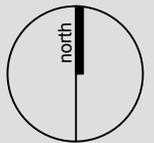
Township of Melancthon Official Plan, (Schedule H, August, 2014)

DATE: December 2016

SCALE: NTS

FILE: Y349G

DRAWN: GMC



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Strada Aggregates

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



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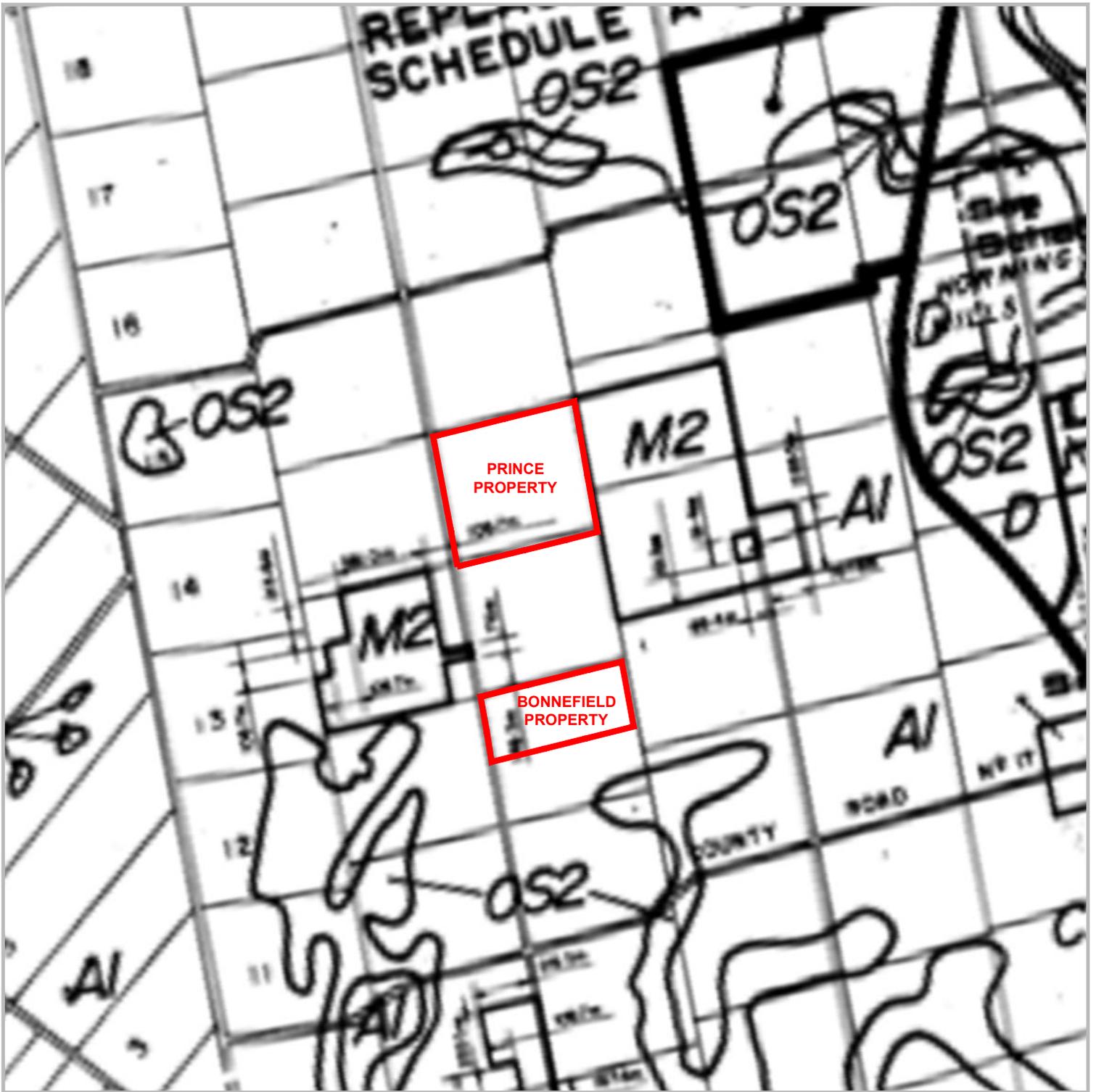


Figure 14

Township of Melancthon
Zoning By-Law 12-1979
Schedule A

LEGEND

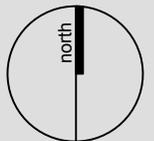
- Subject Lands
- A1- General Agricultural Zone
- M2- Extractive Industrial
- OS2- Open Space Conservation Zone
- D- Development

DATE: December 2016

SCALE: NTS

FILE: Y349G

DRAWN: GMC



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Strada Aggregates

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

Source:

Township of Melancthon Zoning By-law 12-1979 (Schedule A)



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