

# PLANNING JUSTIFICATION REPORT & ARA SUMMARY STATEMENT

Thomas Street Pit/Quarry Expansion

Lot 29, Concession Thames, Blanshard Ward  
(4608 Line 5)

Township of Perth South

Date:

**November 24, 2020**

Prepared for:

**St. Marys Cement Inc. (Canada)**

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Our File Y321'X'

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# EXECUTIVE SUMMARY

St. Marys Cement Inc. (Canada) (SMC), is applying to the Ministry of Natural Resources and Forestry for a Class 'A' Pit and Quarry Licence under the Province's Aggregate Resources Act to allow for an expansion of their existing St. Marys Quarry and Pit, operating under ARA Licence No. 4494.

Applications for a Perth County Official Plan Amendment and Township of Perth South Zoning By-law Amendment under the Planning Act will also be submitted, to the County and Township, respectively, to re-designate and re-zone the property to permit aggregate extraction.

The subject property is approximately 46.5 hectares in size, with a proposed extraction area of 43.2 hectares. The subject property is municipally addressed as 4608 Perth Road Line 5, Township of Perth South.

The existing Pit/Quarry is an aggregate operation owned and operated by SMC and has a licensed extraction area of 424.97 hectares, with a maximum annual production amount of 3,250,000 tonnes. The licensed area of this site occurs on both sides of the North Thames River. The proposed Thomas Street Pit/Quarry Expansion will extend the existing aggregate operation west from the existing Pit/Quarry, and will maintain the same maximum annual production.

The purpose of the proposed Thomas Street Pit/Quarry Expansion is to extend the life of the existing Pit/Quarry operation currently run by SMC, and to maximize the efficiency of the overall SMC aggregate and cement production facilities in the area. Approximately 2 million tonnes of sand, gravel, and other surficial materials are available for extraction in the pit operation on the subject property. Below the surficial aggregate deposits and the clay overburden, the subject property contains bedrock at an estimated 15 million tonnes of high quality limestone resources suitable for use in cement production, road-based granular construction materials as well as for the manufacture of asphalt and concrete aggregates.

Pit operations will involve the extraction/processing of sand and gravel. Quarry operations involve the extraction/processing of sedimentary bedrock, which material predominantly lies below the established groundwater table.

Pit operations will be initiated first, followed by the quarry operations. Although there will be some portable processing equipment on the subject property during operations, the majority of processing will continue at the existing Pit/Quarry. Fueling of equipment will be done through mobile fuel trucks or at the established facilities located at the existing Pit/Quarry operation.

The proposed Thomas Street Pit/Quarry Expansion will be rehabilitated to form a quarry lake. Final rehabilitation including filling of the quarry to create the lake will be completed after all extraction in the quarry is completed. Rehabilitation back to an agricultural after use is not technically feasible due to extraction of the limestone bedrock below the water table; however, the proposed operations on the subject property will occur in phases, and the existing agricultural state will be maintained for as long as possible through the phased approach.

The Aggregate Resources of Ontario: Provincial Standards sets out the application process for proposed pits and quarries under the Aggregate Resources Act. The standards also identify the criteria for licence applications. The ARA Summary Statement and Site Plans have been prepared to conform to these standards.

A variety of supporting studies and reports have been prepared to assess the proposed Thomas Street Pit/Quarry Expansion against a variety of environmental, ecological, geological, and heritage-related features on and surrounding the subject property, and to comply with required provincial and municipal policy. In this regard, the following studies, reports, and plans were completed:

- The Hydrogeology and Hydrology Level 1 and 2 Study was completed to assess geological, hydrogeological, and hydrological conditions on the subject property. The main effect of the proposed Thomas Street Pit/Quarry Expansion operations is the dewatering of the quarry that is necessary to maintain dry working conditions. At full extraction, the incremental drawdown induced through dewatering creates a zone of influence estimated to reach approximately 1 kilometre from the perimeter of the subject property. Only two private wells lie within the dewatering zone of influence. Based on their depth and static water level, neither well is expected to experience adverse effects to well operation as a result of the minor incremental drawdown imposed by the proposed Thomas Street Pit/Quarry Expansion operations. Nonetheless, a groundwater monitoring and response program, including a complaint response action plan, will be utilized in the event of unanticipated impacts to water wells. Potential mitigation measures are available and can be used to protect well owner's water supply, if required.
- The Natural Environment Level 1/2 Report was prepared to characterize and assess potential impacts on significant natural environmental features (both flora and fauna) on and within 120 metres of the subject property. The Natural Environment Level 1/2 Report concluded that there will be no negative impacts to the significant natural features and functions on the site in the study area.
- The Blast Impact Assessment provided an assessment of the potential effects of the ground and air vibrations that will be produced by the proposed quarry's blasting operations on adjacent residences and other structures. Blasting operations on the Site can readily be carried out in compliance with existing provincial and federal environmental guideline limits with respect to ground and air vibrations.
- The Noise Impact Assessment established sound level limits according to Ministry of the Environment, Conservation and Parks noise guidelines and compared the predicted noise levels from the proposed Thomas Street Pit/Quarry Expansion operations concluding the Site can operate in compliance with MECP and MNRF noise guidelines.
- The Stage 1-3 Archaeological Assessments were conducted between 2018 and 2020. The Archaeological Assessment concluded that the pre-contact Indigenous components of the site had been sufficiently assessed and documented and no further archeological assessment is required for this component. The identified historical Euro-Canadian components should be subject to Stage 4 mitigation prior to the commencement of the proposed development in that area.
- The Heritage Impact Assessment was completed to evaluate the existing farm structures on the property for their potential cultural heritage value or interest. The HIA concluded that subject property has cultural heritage value or interest for its association with the existing farmhouse, albeit, with reduced integrity given its current state of repair. The

recommendation of the HIA was that a Heritage Documentation Report should be completed and achieved at the Township of Perth South to fully record and 'preserve by record' the property's cultural heritage attributes. The Ministry of Heritage, Sport, Tourism and Culture Industries confirmed that they were satisfied with the HIA and the proposed conservation methods.

The proposed Thomas Street Pit/Quarry Expansion has been designed to ensure that there are no negative impacts on surrounding natural heritage features and agricultural resources. The subject property has been designed to minimize impacts on adjacent sensitive receptors (noise, air, water supply and traffic).

This Planning Justification Report includes a review of applicable planning policies and concludes the proposed Thomas Street Pit/Quarry Expansion represents wise resource management and good planning; it:

- is consistent with the Provincial Policy Statement;
- conforms to the Perth County Official Plan;
- is consistent with the Township of Perth South Zoning By-law 4-1999; and
- includes information required by the Aggregate Resources Act.

# 1.0 INTRODUCTION

St. Marys Cement Inc. (Canada), hereon referred to as “SMC”, is applying to the Ministry of Natural Resources and Forestry (MNRF) for a Class ‘A’ Pit and Quarry Licence under the Province’s Aggregate Resources Act (ARA) to allow for an expansion of their existing St. Marys Quarry and Pit, operating under ARA Licence No. 4494 (“existing Pit/Quarry”).

The proposed expansion operation is referred to as the proposed Thomas Street Pit/Quarry Expansion and from here on out will be referred to as the “proposed Expansion” in this report. The subject property for the proposed Expansion is located immediately west of the existing St. Marys Quarry and Pit. Under the ARA Provincial Standards, the required applications are Category 1 - Class ‘A’ Pit (below the water table)<sup>1</sup> and a Category 2 - Class ‘A’ Quarry Licence (below the water table). Applications for a Perth County Official Plan Amendment and Township of Perth South Zoning By-law Amendment under the Planning Act will also be submitted, to the County and Township, respectively, to re-designate and re-zone the property to permit aggregate extraction.

The subject property is approximately 46.5 hectares in size, with a proposed extraction area of 43.2 hectares and is located north of Perth Road Line 5, south of Perth Road 139, west of the existing Pit/Quarry, and east of the Jack Pickel Pit (ARA Licence No. 4500). The subject property is municipally addressed as 4608 Perth Road Line 5, Township of Perth South and is legally described as Lot 29, Concession Thames, Blanshard Ward, Save and except Part 2 on Reference Plan 44R5481; Township of Perth South; County of Perth. Please refer to **Figure 1** for a locational context map and **Figure 2** for an illustrated version of the adjacent and surrounding land uses.

The existing St. Marys Quarry and Pit is an aggregate operation owned and operated by SMC and has a licensed extraction area of 424.97 hectares, with a maximum annual production amount of 3,250,000 tonnes. The licensed area of this site occurs on both sides of the North Thames River. The proposed Expansion will extend the existing aggregate operation west of the existing St. Marys Quarry and Pit, and will maintain the same maximum annual production.

The subject property for the proposed Expansion is located about 1 kilometre straight line distance or 4 kilometres driving distance (via Thomas Street) west of the Town of St. Marys and is currently in an agricultural condition (i.e. field crop) with a farmstead (house and farm out buildings to be demolished) located at the south end of the property closer to Perth Road Line 5. The subject property is located in a predominately rural area. Land uses surrounding the subject property includes existing aggregate operations, agriculture, general industrial (e.g. Maple Leaf Foods Inc., SMC’s cement manufacturing facility), and rural residential and hamlet / village residential uses (located approximately 760 m away, at the closest).

In preparing the ARA and *Planning Act* Applications, SMC undertook pre-submission consultation meetings with staff from MNRF and staff from the County of Perth, the Township of Perth South,

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<sup>1</sup> The sand and gravel on the site is above the regional water supply aquifer which occurs in the bedrock below the unconsolidated overburden. The hydrogeology investigation test pits into the sand and gravel are predominantly dry. The possibility of localized perched water conditions cannot be ruled out and as a result MNRF has requested that the pit application component be Category 1 – Class ‘A’ Pit Below Water.

and the Upper Thames River Conservation Authority to discuss the required reports needed for the submission of the application. The following table identifies the reports and technical studies required to accompany the application:

**Table 1: List of Required Technical Reports**

Report	Author	Date
Planning Justification Report and ARA Summary Statement	MHBC Planning Ltd.	November 2020
Blast Impact Assessment	Golder Associates Ltd.	June 2020
Hydrogeology and Hydrology Level 1 and 2 Study	Golder Associates Ltd.	June 2020
Natural Environment Level 1 and 2 Report	Golder Associates Ltd.	April 2020
Noise Impact Assessment	Golder Associates Ltd.	June 2020
Archaeological Assessments (Stage 3)	Golder Associates Ltd.	March 2020
Cultural Heritage Impact Assessment (HIA) and Heritage Documentation Report	Golder Associates Ltd.	November 2018 & January 2019, respectively
ARA Site Plans	MHBC Planning Ltd.	November 2020

This Planning Justification Report and ARA Summary Statement for the proposed Expansion provides an analysis of applicable planning policy contained within the Provincial Policy Statement (PPS), Perth County Official Plan, Township of South Perth Zoning By-law No. 4-1999; and, the Summary Statement requirements of the Aggregate Resources Act application process.



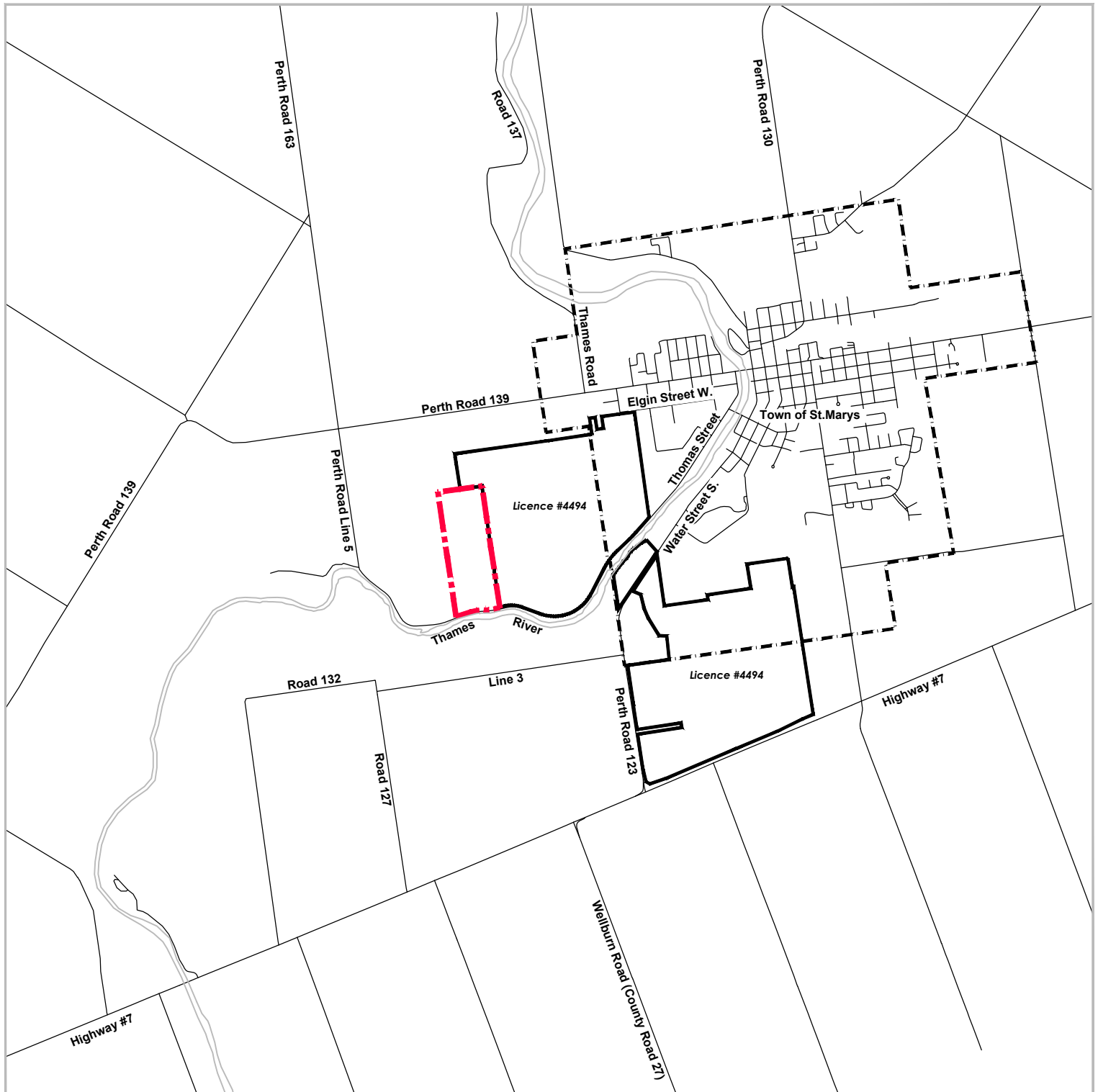


Figure 1  
Site Location

LEGEND



Proposed Licensed Boundary



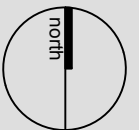
Adjacent Lands Owned by Applicant  
ARA Licence ID #4494

DATE: May 2020

SCALE: 1:40,000

FILE: Y321X

DRAWN: DGS



**St. Marys Cement Inc.  
(Canada)  
Thomas Street Pit & Quarry  
Expansion**

Part of Lot 28 Abutting Thames River and  
Part of Lot 19, Conc. 15  
(former Geographic Township of Blanshard)  
Township of Perth South  
County of Perth

Base Map Source:  
Land Information Ontario (LIO)

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PLANNING  
URBAN DESIGN  
& LANDSCAPE  
ARCHITECTURE

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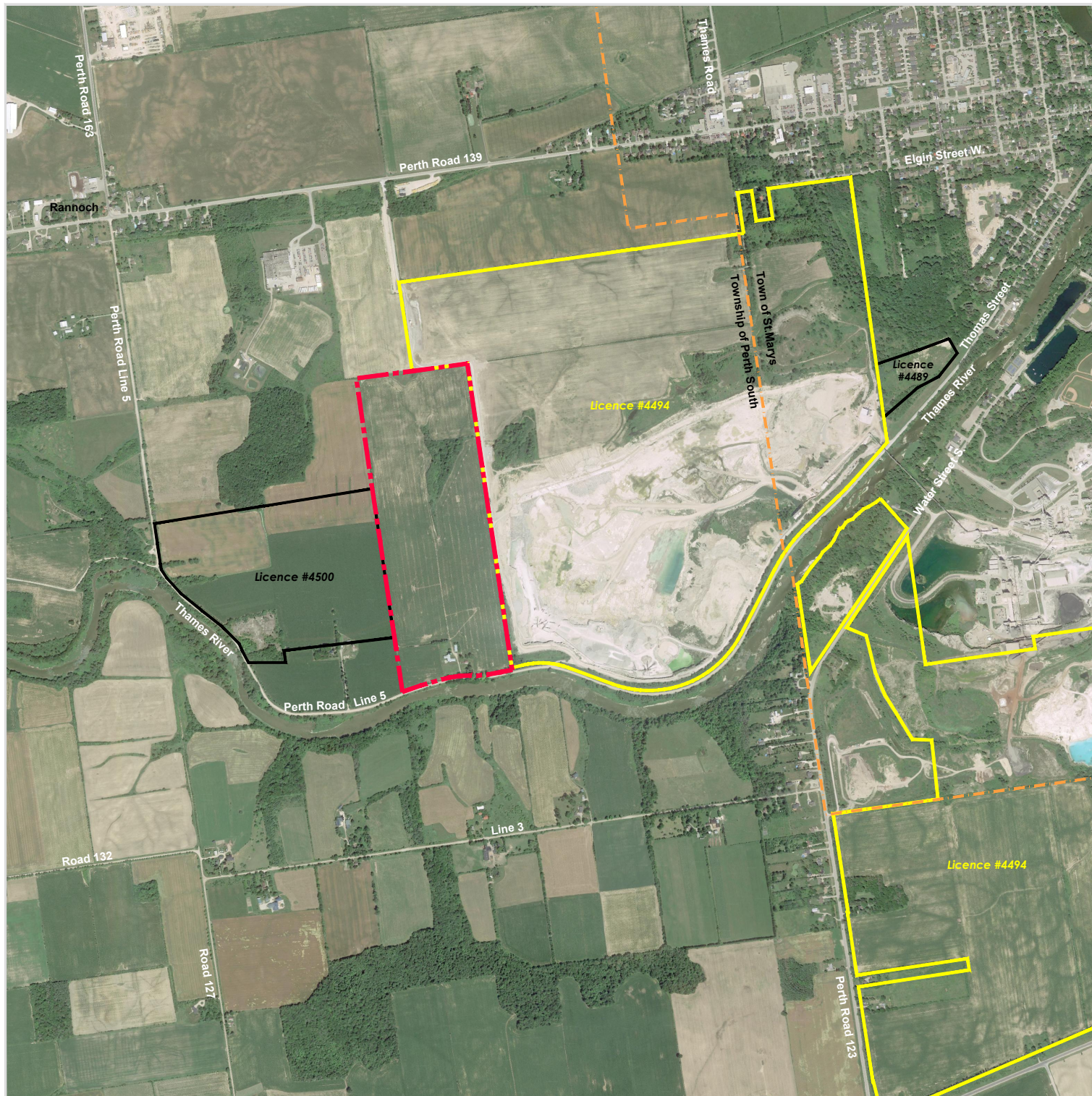


Figure 2  
**Air Photo  
Context Map**

**St. Marys Cement Inc.  
(Canada)  
Thomas Street Pit & Quarry  
Expansion**

Part of Lot 28 Abutting Thames River and  
Part of Lot 19, Conc. 15  
(former Geographic Township of Blanshard)  
Township of Perth South  
County of Perth

**LEGEND**



Proposed Licensed Boundary



Adjacent Lands Owned by Applicant  
ARA Licence ID #4494



Other Licensed Sites

Imagery Source:  
Google Earth (2018)

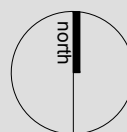
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## 1.1 Project Overview

The purpose of the proposed Expansion is to extend the life of the existing Pit/Quarry operation currently run by SMC on the adjacent property to the east, and to maximize the efficiency of the overall SMC aggregate and cement production facilities in the area. The subject property contains high quality sand, gravel and bedrock deposits to replace the depletion of those resources in the existing Pit/Quarry. The relatively thinner overburden on the southern portions of the property allows for efficient extraction of the underlying high quality bedrock.

SMC has been supplying cement to Ontario for more than 100 years, and its subsidiary companies, CBM Concrete and CBM Aggregates, produce specialized concrete mixes and high-quality aggregates. The aggregate resources extracted from the subject property will be used to produce a variety of aggregate and cement products for different purposes to the local and Great Lakes regional markets and wider North American markets.

According to a Hydrogeology and Hydrology Level 1 and 2 Study, the overburden on the property ranges in depth from less than 8 metres on southern portion of the property to over 26 metres on northern portion. In terms of aggregate geology, the subject property is characterised by a high quality sand and gravel deposit located essentially in the southern 2/3<sup>rd</sup> of the subject property. It has been estimated that approximately 2 million tonnes of sand, gravel, and granular deposits will be available for extraction for the pit operation. Below these surficial aggregate deposits at the southern portion of the site, and the clay overburden material located at the northern portion of the site, the subject property contains bedrock amounting to approximately 15 million tonnes of high quality aggregate and cement quality stone resources.

There are a range of products that can be produced at this location due to the uniqueness of the resources that occur. The sand and gravel deposit is a well sorted fluvial deposit that is used for high quality construction aggregates that make asphalt and concrete mixes for a wide range of construction projects. In addition to the sand and gravel, the glacial till includes pockets of larger stones that are separated and processed in the sand and gravel operation. The market area for these construction aggregate products is southwestern Ontario (Waterloo Region to Windsor).

The upper bench of the limestone deposit will be used to produce a range of construction aggregate products for the southwestern Ontario market as well as specialty products (e.g. cat litter) that has a national market area.

The lower sequences of the limestone are mined for cement production at the SMC plant located in the adjacent the existing Pit/Quarry. The cement powder products will continue to serve several North American markets.

### 1.1.1 Proposed Operations

Aggregate extraction at the proposed Expansion will include both surficial aggregate material (sand, gravel, and boulders) and subsurface bedrock. This will be preceded by stripping to remove overburden which lies above the sand and gravel at the south half of the expansion. At the north half of the expansion, the overburden is significantly thicker. Greater detail on the proposed operations are provided on the proposed Operations Plan. Pit and quarry operations occur using different methods and equipment. Given that sand and gravel overly bedrock at the southern half of the Site, pit and quarry operations will occur independently and concurrently. Pit operations will involve the extraction/processing of sand and gravel. Quarry operations involve the

extraction/processing of sedimentary bedrock, which material predominantly lies below the established groundwater table.

For operational purposes, the subject property has been subdivided into Phases: 1, 2a, 2b and 3. Phase 1 depicts the general area where Site operations will be initiated, which will progress southerly and northerly into Phase 2a and 2b, respectively. Phases 1, 2a and 2b may be operated concurrently. Phase 3 generally represents the area of thicker overburden, to be extracted as a progression of Phase 2b and subject to economic viability at the time.

Pit operations will be initiated first, by a westward progression of extraction into the Site from the existing Thomas Street Pit/Quarry, in the general area as depicted on the proposed Operations Plan. Pit extraction will then continue generally in a southwesterly direction and southerly direction, and in a northerly direction. Pit operations will involve the extraction/processing of sand and gravel.

Quarry operations involve the extraction/processing of sedimentary bedrock, which material predominantly lies below the established groundwater table. Quarry extraction will occur after pit extraction has been initiated and will follow a similar direction as the pit operation. Although there will be some portable processing equipment on the subject property during operations, the majority of processing will continue at the existing Pit/Quarry. Fueling of equipment will be done through mobile fuel trucks or at the established facilities located at the existing Pit/Quarry operation.

The total depth of extraction on the subject property will be contiguous with the existing Pit/Quarry floor, which is anticipated to vary between elevations of approximately 271 and 279 metres above sea level (masl).

Operations on the subject property may occur during the daytime (07:00 to 19:00), evening (19:00 to 23:00) and nighttime (23:00 to 07:00). The specific time-period categories relate to different noise level criteria and mitigation requirements.

Blasting procedures for the quarrying operations on the subject property will be carried out in a manner similar to those currently being carried out at the existing Pit/Quarry. Blasting is estimated to occur from one to two times per week at peak production levels, and the duration of each blast would generally be less than about one to two seconds. All explosives used for the purpose of blasting will be brought to the subject property on the day of each blast. No explosives will be stored on the subject property at any time. Blasting will be carried out by persons experienced, trained and qualified to conduct blasting operations, and they will be scheduled so that they occur routinely during a specific period of time each day. Blasting will not occur on a holiday or between the hours of 6 p.m. on any day and 8 a.m. on the following day. No drilling will occur during evening and nighttime hours. The types of operations on the subject property will be subject to specific controls and limitations as specified on the ARA Operational Plan. Please refer to the ARA Operational Plan for additional details on the proposed pit and quarry operations.

The proposed Expansion will not require a new entrance off of Perth Road Line 5 / Thomas Street. Access to the subject property will be via an internal road connection from the existing Pit/Quarry to the east, which is primarily accessed via the existing haul route connecting to Perth Road 139 / Queen Street West to the north. A secondary service / delivery access will be maintained for the existing Pit/Quarry off of Perth Road Line 5 / Thomas Street.

The main haulage route will utilize the existing route along the west property boundary of the established existing Pit/Quarry, which carries truck traffic northwards towards Perth Road 139 /

Queen Street West. All off-site traffic for the proposed Expansion will access Perth Road 139 / Queen Street West using the existing entrance/exit at the northern boundary of the existing Pit/Quarry. The locations of main internal haul routes and haul routes to the existing Pit/Quarry will vary based on the location of operational areas (stripping, extraction, processing).

The existing public highway portion of the external haul route is capable and adequate to accommodate the proposed Expansion and there are no enhancements, widenings, or improvements required, and no increase in truck traffic anticipated. The proposed Expansion will allow for the continued operation of the existing Pit/Quarry, and will maintain the status quo with respect truck traffic and related haulage.

### 1.1.2 Rehabilitation Plan

The proposed Expansion will be rehabilitated to form a quarry lake with potential for recreational and conservation uses.

The rehabilitation plan has been developed to be integrated and consistent with the rehabilitation plan that has been approved for the existing Pit/Quarry on the adjacent property to the east. Overburden will be moved between sites in order to create a peninsula landform in the existing quarry area. The expansion site will be a continuation of the future quarry lake with side slopes that will be built and stabilized progressively as the limits of the quarry are reached. Final rehabilitation including filling of the quarry to create the lake will be completed after all extraction in the quarry is completed. The side slopes will include reforestation areas in order to introduce a diversity of vegetation that is anticipated to spread around the rehabilitated side slopes.

Rehabilitation back to an agricultural after use is not technically feasible due to extraction of the limestone bedrock below the water table. The aggregate operation will be phased, thereby keeping as much land in agricultural use for as long as possible before extraction commences.

Further justification for this is provided in the responses to PPS 2.5.4.1 and OP 10.5.12.

The rehabilitation scheme for the proposed licensed area expansion is technically feasible, is capable of being implemented, and will be completed in accordance with the approved rehabilitation plan for the site. The rehabilitated condition will be compatible with the surrounding land uses including the rehabilitated existing quarry and agricultural uses. The backfilling design around the quarry perimeter allows for groundwater flow to continue to the North Thames River to the south.

## 1.2 Required Applications

The following applications are required to permit the proposed Expansion.

**Table 2: Required Applications and Approval Authorities**

Application	Approval Authority
County of Perth Official Plan Amendment	County of Perth
Township of Perth South Zoning By-law Amendment	Township of Perth South Endorsement & County Approval
Aggregate Resources Act (ARA) Licence application	Ministry of Natural Resources and Forestry

### 1.2.1 Proposed Official Plan Amendment

The subject property currently contains four (4) different land use designations under the County of Perth Official Plan: *Agriculture, Natural Resource/Environment, Flood Plain, Mineral Aggregate Resources (Potential Limestone Resource / Primary or Secondary Aggregate Resource)*. The southern 2/3<sup>rd</sup> of the subject property is designated Mineral Aggregate Resources, while the northern 1/3<sup>rd</sup> of the subject property is not. Please refer to **Figure 3: County of Perth Official Plan Schedule 'A' - Land Use**.

The majority of the subject property (southern 2/3<sup>rd</sup>) is designated *Mineral Aggregate Resources (Potential Limestone Resource / Primary or Secondary Aggregate Resource)* and contains both accessible limestone bedrock and surficial sands and gravels. The policies of the Official Plan are clear that the proposed extraction uses of pit, quarry and associated processing activities are a permitted use and no Official Plan Amendment would be required for these designated portions of the site. The policies are also clear that where enlargements of existing extraction areas are located outside designated "Mineral Aggregate Resources" an amendment to the Official Plan will be required to designate the proposed Expansion for the intended extraction use.

The County Official Plan Schedule 'A' intends to distinguish licenced pits and quarries from unlicensed potential resource areas within the *Mineral Aggregate Resources* designation. The Official Plan policies do not address how a potential area, such as the southern 2/3<sup>rd</sup> of the subject property (where extraction uses are permitted without an Official Plan Amendment) are changed to identify a licensed area when a licence has been issued by Ministry of Natural Resources and Forestry.

Since an Official Plan Amendment (OPA) is clearly required to change the designation for the northern 1/3<sup>rd</sup> of the subject property to the *Mineral Aggregate Resources* designation the OPA application submitted by SMC will include identification of the entire site as a licenced pit and quarry *Mineral Aggregate Resources (Licensed Pit or Quarry / Limestone Resource)* designation even though this OPA is not required to permit the proposed use for the southern 2/3<sup>rd</sup> of the subject property. Therefore, Schedule 'A' of the County of Perth Official Plan will be amended to re-designate the entirety of the subject property to *Mineral Aggregate Resources (Licensed Pit or Quarry / Limestone Resource)*. **Figure 4** illustrates the proposed County Official Plan Amendment.

### 1.2.2 Proposed Zoning By-law Amendment

According to the Township of Perth South Zoning By-law 4-1999, the majority of the subject property is zoned Agricultural ("A"), with the north half of the property being "A" and the south half of the property being "A-2"<sup>2</sup> in the Township of Perth South Zoning By-law 4-1999. There is also a small sliver of the property in the southwest corner that is zoned Flood Plain ("FP"). Please refer to **Figure 5: Township of Perth South Zoning By-law 4-1999 - Key Map 21**.

An amendment to the Township of Perth South Zoning By-law is required to rezone the subject property from Agricultural "A" and "A-2" and from Flood Plain "FP" to Mineral Aggregate Resources Zone ("MAR") in order to permit aggregate extraction. The Zoning By-law Amendment application is being submitted concurrently with the Official Plan Amendment application so that the matters can proceed together. **Figure 6** illustrates the proposed Township of Perth South Zoning By-law Amendment.

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<sup>2</sup> The "A-2" zone applies to potential sand and gravel deposits identified in the County of Perth Official Plan.

### 1.2.3 Proposed Aggregate Resources Act Licence application

The proposed Expansion will produce more than 20,000 tonnes of aggregate annually. Therefore, an application for a Class 'A' Licence under the Aggregate Resources Act (ARA) is required. The requirements outlined in the Aggregate Resources of Ontario Provincial Standards will be met. The licence application will be submitted concurrently with the Official Plan and Zoning By-law Amendment applications.

Under the Province's Aggregate Resources Act (ARA) Provincial Standards, the applications are for a Category 1 - Class 'A' Pit (Below Water) and a Category 2 - Class 'A' Quarry (Below Water).

# County of Perth Official Plan Designations

-  Agriculture
-  Licensed Pit or Quarry/  
Limestone Resource
-  Primary or Secondary  
Aggregate Resource
-  Potential Limestone Resource
-  Natural Resource/  
Environment (NRE)
-  NRE-Water
-  Flood Plain
-  Hamlet

# Town of St Marys Official Plan Schedule 'A' Land Use Plan

-  Settlement Area Boundary
-  Town Boundary
-  Water
-  Residential
-  Central Commercial
-  Highway Commercial
-  General Industrial
-  Extractive Industrial
-  Environmental Constraint
-  Recreational
-  Flood Plain
-  Natural Heritage
-  Agriculture

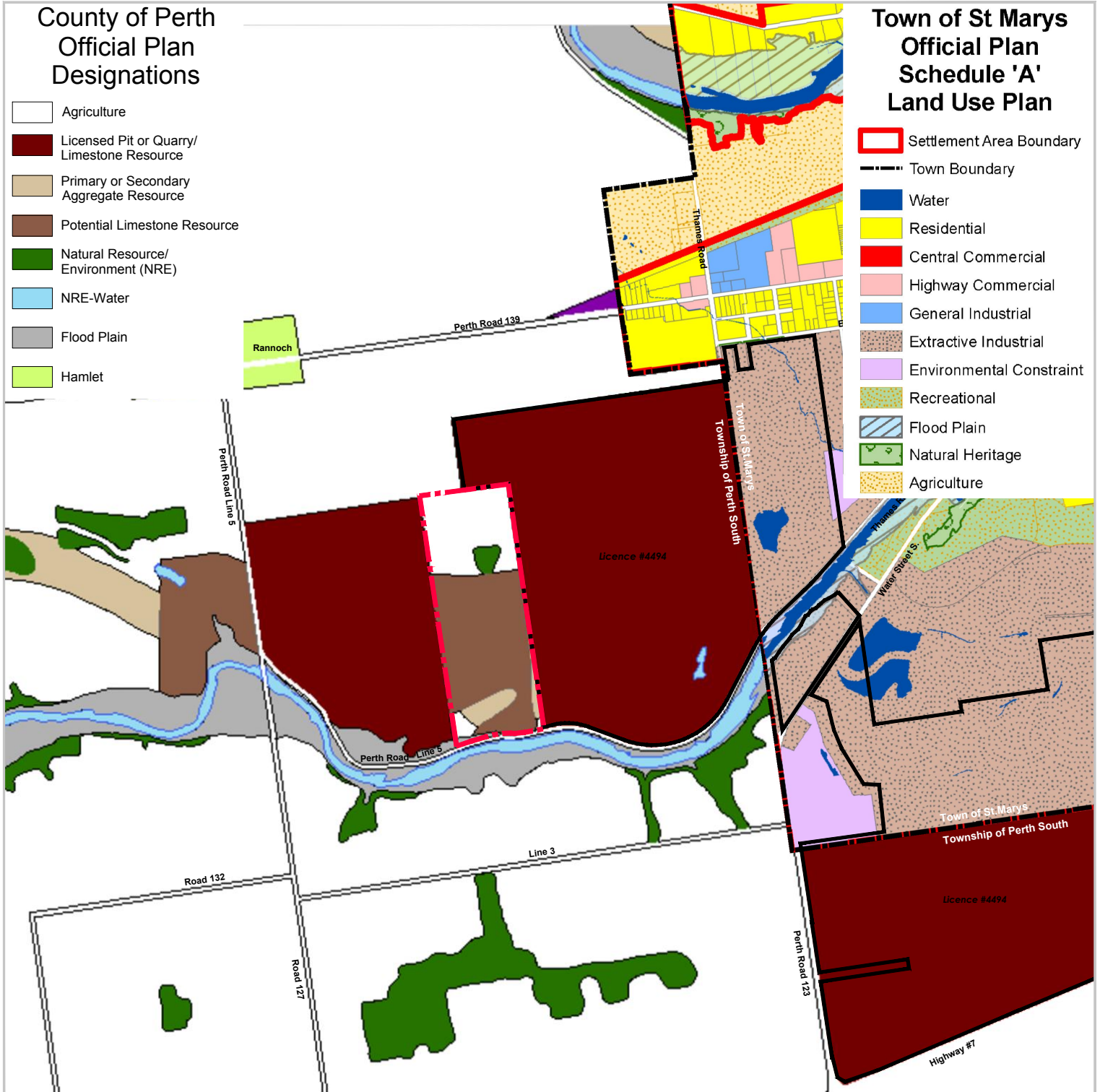


Figure 3  
**Official Plan  
Land Use**

## St. Marys Cement Inc. (Canada) Thomas Street Pit & Quarry Expansion

Part of Lot 28 Abutting Thames River and  
Part of Lot 19, Conc. 15  
(former Geographic Township of Blanshard)  
Township of Perth South  
County of Perth

### LEGEND



Proposed Licensed Boundary



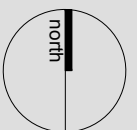
Adjacent Lands Owned by Applicant  
ARA Licence ID #4494

DATE: May 2020

SCALE: 1:25,000

FILE: Y321X

DRAWN: DGS



C:\TEMP\Y321X\OP LAND USE PLAN.DWG



PLANNING  
URBAN DESIGN  
& LANDSCAPE  
ARCHITECTURE

200-540 BINGEMANS CENTRE DR. KITCHENER, ON, N2B 3X9  
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Base Map Sources:  
County Official Plan Designations mapping layer from *Perth County Public Map Viewer*,  
March 2020 and Town of St. Marys Official Plan, Schedule 'A' Land Use Plan (Oct. 2007)



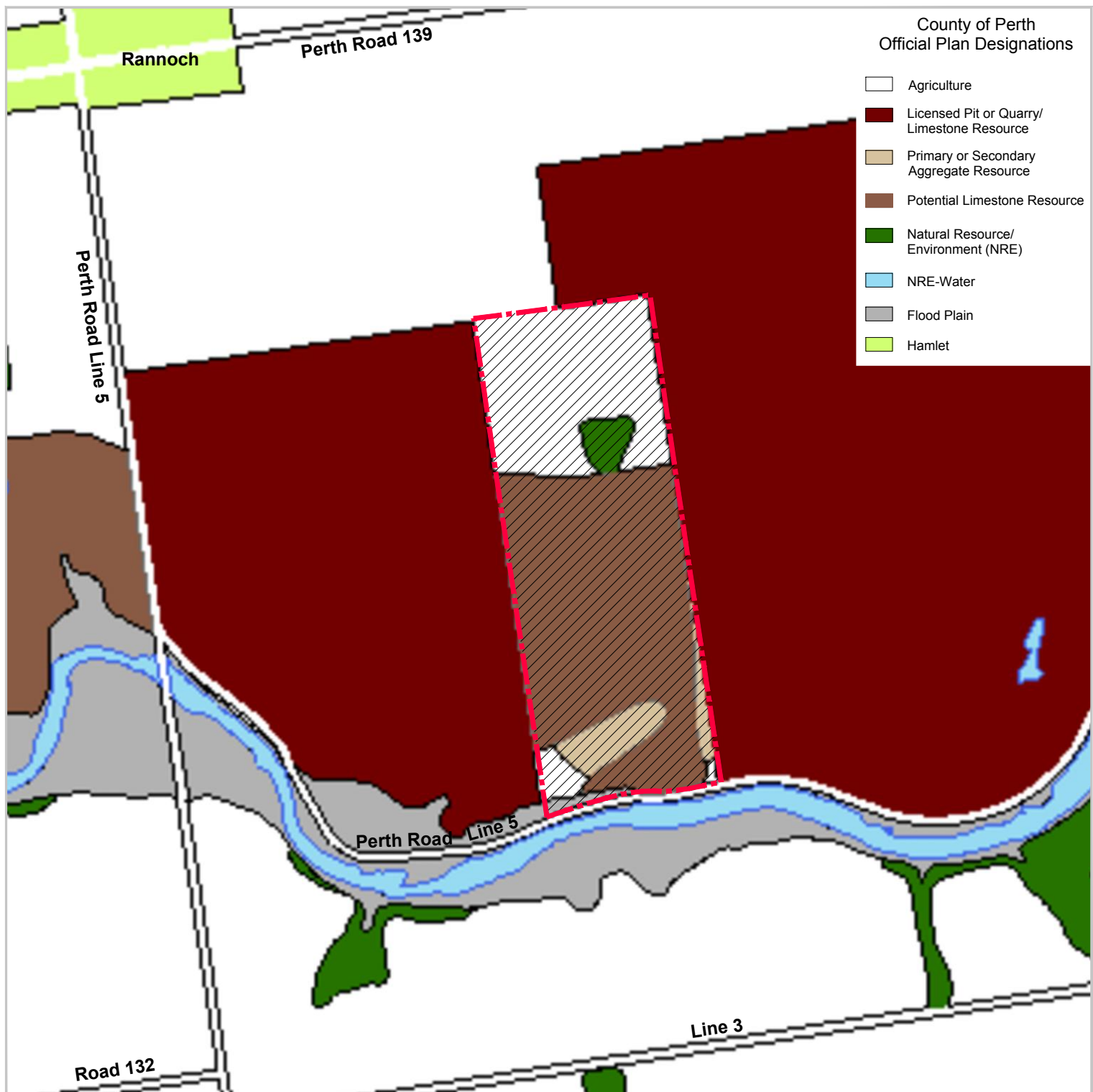


Figure 4  
**Official Plan  
Land Use  
Amendment Map**

**St. Marys Cement Inc.  
(Canada)  
Thomas Street Pit & Quarry  
Expansion**

Part of Lot 28 Abutting Thames River and  
Part of Lot 19, Conc. 15  
(former Geographic Township of Blanshard)  
Township of Perth South  
County of Perth

**LEGEND**



Lands to be Redesignated as  
Mineral Aggregate Resources  
(Licensed Pit or Quarry/  
Limestone Resource)



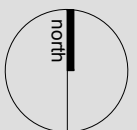
Proposed Licensed Boundary

**DATE:** May 20, 2020

**SCALE:** 1:12,500

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**DRAWN:** DGS



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**PLANNING  
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ARCHITECTURE**

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Base Map Source:  
County Official Plan Designations mapping layer from *Perth County Public Map Viewer*,  
March 2020

Township of  
Perth South  
Zoning By-Law  
No. 4-1999

- A Agricultural Zone
- RR Rural Residential Zone
- ACM Agricultural Commercial/Industrial Zone
- M2 General Industrial Zone
- MAR Mineral Aggregate Resources Zone
- NRE Natural Resources/ Environment Zone Two
- FP Flood Plain Zone

Town of St. Marys  
Zoning By-Law  
No. Z1-1997

- R2 Residential Zone Two
- C3 Highway Commercial Zone
- C4 Special Commercial Zone
- M3 Extractive Industrial Zone
- EC Environmental Constraint Zone
- FP Flood Plain Zone
- D or RD Development Zone

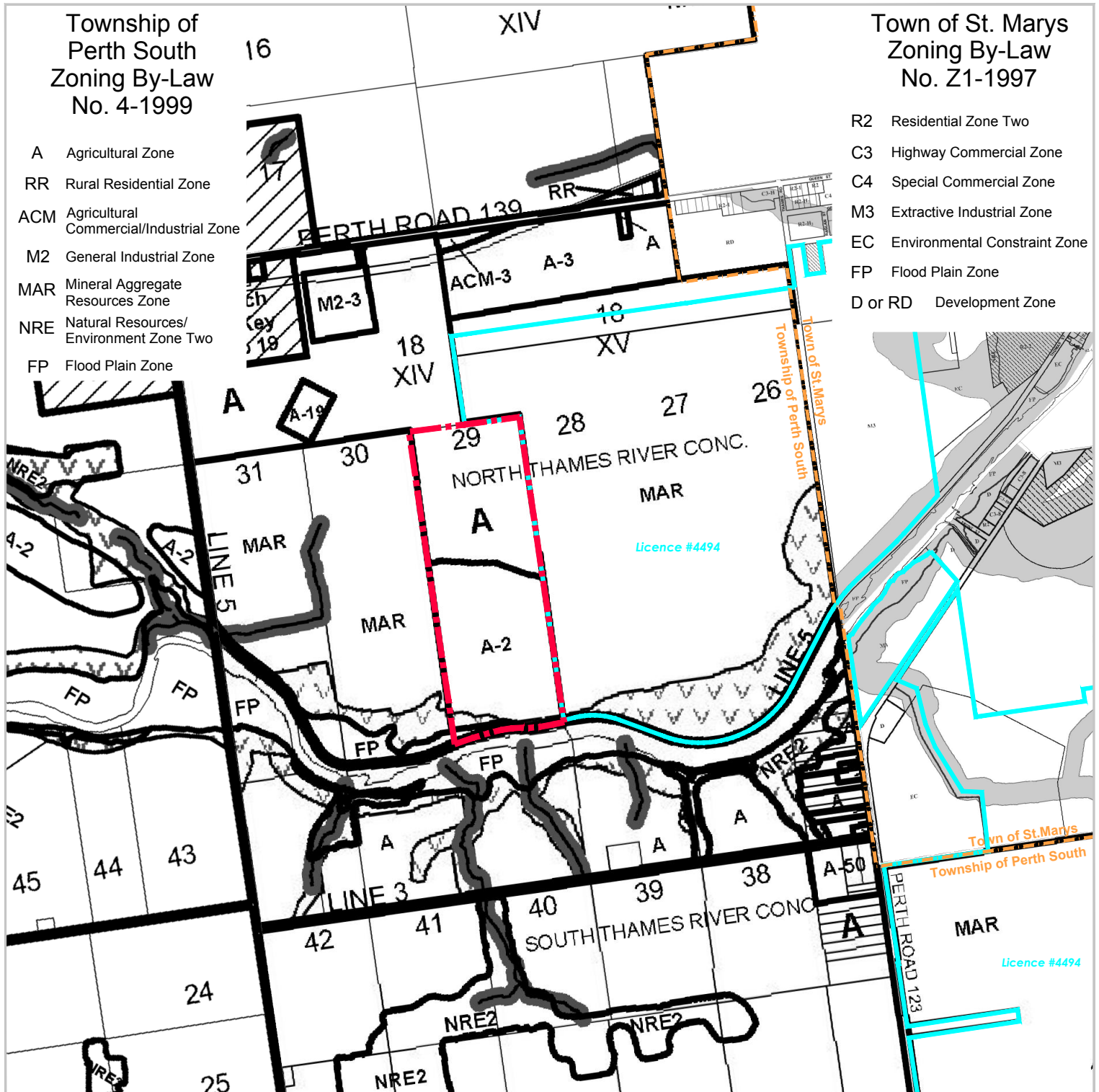


Figure 5  
**Zoning By-law  
Map**

**St. Marys Cement Inc.  
(Canada)  
Thomas Street Pit & Quarry  
Expansion**  
Part of Lot 28 Abutting Thames River and  
Part of Lot 19, Conc. 15  
(former Geographic Township of Blanshard)  
Township of Perth South  
County of Perth

**LEGEND**



Proposed Licensed Boundary



Adjacent Lands Owned by Applicant  
ARA Licence ID #4494

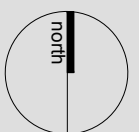
**DATE:** May 2020

**SCALE:** 1:20,000

**FILE:** Y321X

**DRAWN:** DGS

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**Base Map Sources:**

Township of Perth South Zoning By-law no.4-1999 (as approved by the Ontario Municipal Board March 23, 2000) Office Consolidation (incorporates zoning by-law amendments in force as of January 1, 2016); Town of St. Marys Zoning By-law No. Z1-1997 (consolidated through to December 14, 2018)



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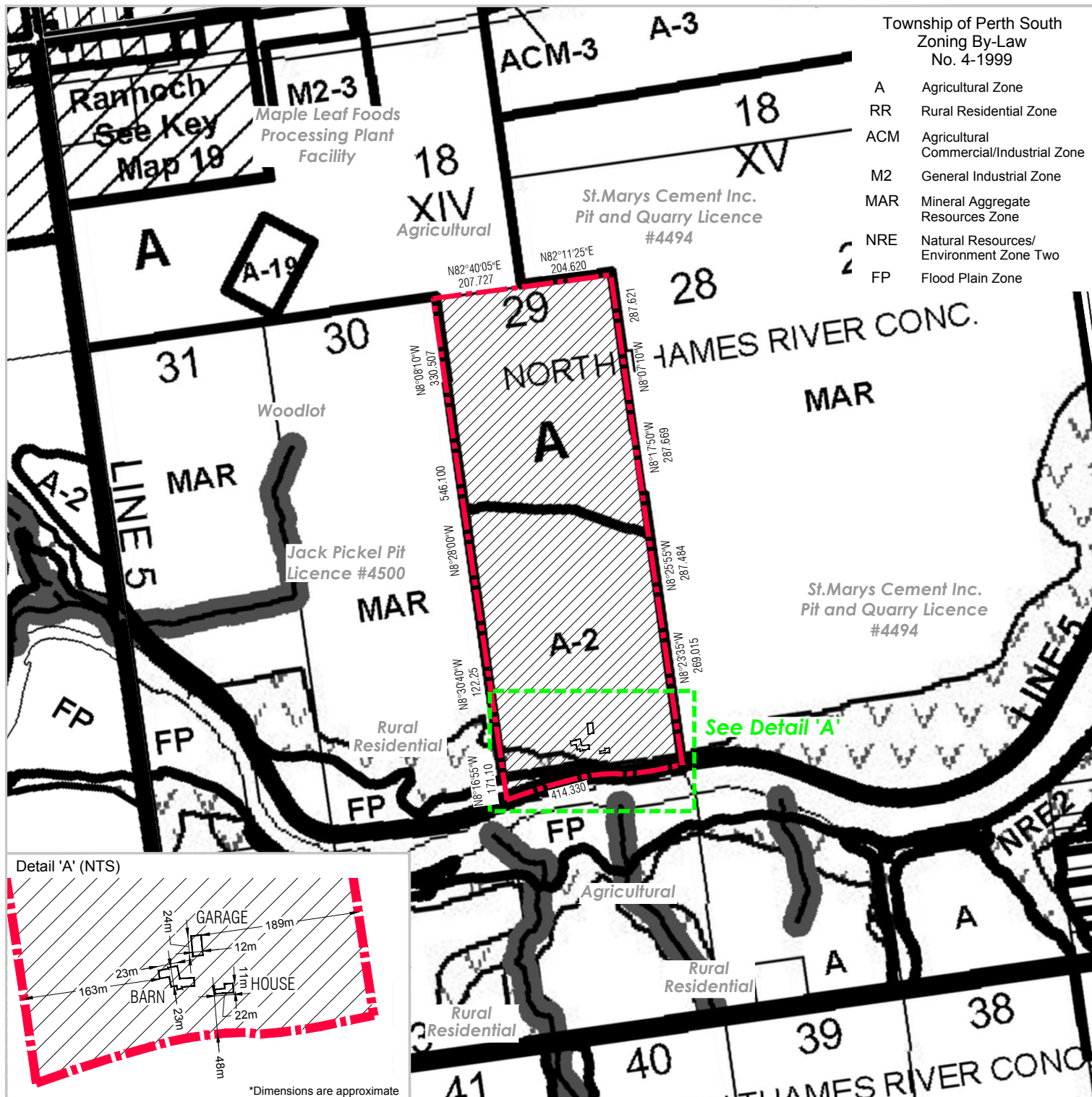


Figure 6  
Zoning By-law  
Amendment Map

**St. Marys Cement Inc. (Canada)**  
**Thomas Street Pit & Quarry Expansion**  
 Part of Lot 28 Abutting Thames River and Part of Lot 19, Conc. 15 (former Geographic Township of Blanshard) Township of Perth South County of Perth

**LEGEND**



Lands to be Rezoned to Mineral Aggregate Resources Zone (MAR)



Proposed Licensed Boundary

**Agricultural**

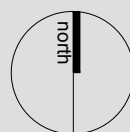
Existing Land Use

DATE: May 20, 2020

SCALE: 1:12,500

FILE: Y321X

DRAWN: DGS



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Base Map Source:  
 Township of Perth South Zoning By-law no.4-1999 (as approved by the Ontario Municipal Board March 23, 2000) Office Consolidation (incorporates zoning by-law amendments in force as of January 1, 2016);



## 2.0 BACKGROUND

### 2.1 Description of the Subject Property

The subject property is approximately 46.5 hectares with +/- 411 metres of frontage along the north side of Perth Road Line 5 / Thomas Street. The subject property is within a primarily rural setting approximately 2 km southwest of the Town of St. Marys in Perth County, Ontario. The majority of the site consists of an agricultural use (planted soya bean field) that is bordered by a sparsely vegetated hedgerow. There is a cultural thicket in the east central portion of the field, and a small meadow marsh at the north end of the property. The property currently contains a farmstead with farmhouse and outbuildings that have been dated back to the mid-1800s, and are to be demolished.

### 2.2 Adjacent and Surrounding Land Uses

The following is a summary of the adjacent and surrounding land uses to the subject property. Please refer to **Figure 1** for a locational context map and **Figure 2** for an illustrated version of the adjacent and surrounding land uses.

- **North:** There is a mix of land uses to the north of the subject property. The majority of lands to the north are agricultural uses. There is a general industrial use further to the north northwest, which is the location of the Maple Leaf Fresh Foods plant.
- **South:** Immediately abutting the subject property to the south is the municipal road allowance for Perth Road Line Five followed by the North Thames River. Beyond the North Thames River to the south is agricultural land.
- **East:** The existing Pit/Quarry (Licence No. 4494) is located to the east of the subject property.
- **West:** There is a mix of uses to the west of the subject property including agricultural land, and the Class 'A' licensed Jack Pickel Pit (Licence No. 4500).

### 2.3 Mineral Aggregate Resources

The proposed Expansion contains both unconsolidated sand and gravel resources and consolidated limestone bedrock that extends below the water table.

The composition of the overburden varies from sand and gravel beneath portions of the southern half of the subject property to clayey silt/silty clay till beneath the northern half of the subject property. There is a high quality sand and gravel deposit located in the southern portion of the property where the overburden is the shallowest. It has been estimated that approximately 2 million tonnes of sand, gravel, and other surficial materials are available for extraction in the pit operation on the subject property.

Below the surficial geologic aggregate deposits and the clay overburden, the subject property contains bedrock at an estimated 15 million tonnes (approximately) of high quality aggregate resources suitable for use in cement production, road-based granular construction materials as well as for the manufacture of asphalt and concrete aggregates. The quarry operation will involve extraction of the Dundee Formation (observed thickness ranges from 10 metres to 18 metres) and the Upper Lucas Formation (7 to 10 metres thickness). These elevations are approximate and extraction elevations may vary in order to achieve the complete extraction of the Dundee and Upper Lucas Formation target layers.

## 2.4 Agricultural Resources and Soils

The subject property is currently in an active agricultural condition and is primarily used for cash cropping (soya beans). **Figure 7** maps the Canada Land Inventory (CLI) soil classification for the property (mapping from Land Information Ontario). The CLI soil classification system uses a class system (i.e. 7 classes and 13 subclasses) according to the potential of each soil for the production of field crops to show the varying potential of a specific area for agricultural production. It indicates the classes and subclasses according to the Soil Capability Classification of Agriculture, which is based on characteristics of the soil as determined by soil surveys. The soils on the property consist of Class 1<sup>3</sup> soils.

The proposed licence area contains several land use designations as provided by the Perth County Official Plan. The northern 1/3<sup>rd</sup> of the subject property is primarily designated *Agriculture*, with a small portion being designated as *Natural Resource/Environment* representing the small cultural thicket. The southern 2/3<sup>rd</sup> of the subject property is designated *Mineral Aggregate Resources (Potential Limestone Resource / Primary or Secondary Aggregate Resource)* and contains both accessible limestone bedrock and surficial sands and gravels. In the southern 2/3<sup>rd</sup> of the subject property there is also a small portion of property that is designated *Agriculture* (southwest corner) and a small sliver of land in the southwest corner along Perth Road Line 5 that is designated *Flood Plain*. **Figure 3** illustrates the current Perth County Official Plan designations applied to the subject property.

While the subject property is currently used for agricultural purposes, the County has recognized the aggregate resources on the subject property through the land use designations of the Official Plan.

## 2.5 Natural Heritage Features

Golder Associates Ltd. (Golder) completed a Natural Environment Level 1/2 report in support of the licence application for the proposed expansion. The purpose of the Natural Environment Level 1 section of the report was to determine whether there is any significant natural environmental features (both flora and fauna) on and within 120 metres of the subject property, such as: wetlands, significant habitat of endangered or threatened species, fish habitat, significant woodlands, significant valley lands, significant wildlife habitat, and/or significant areas of natural and scientific interest.

---

<sup>3</sup> Class 1 Soils have no significant limitations in use for crops. The soils are deep, are well to imperfectly drained, hold moisture well, and in the virgin state were well supplied with plant nutrients. They can be managed and cropped without difficulty. Under good management they are 'moderately high' to 'high' in productivity for a wide range of field crops.

The purpose of the Natural Environment Level 2 section of the Level 1/2 report was to assess the potential impacts of the proposed Expansion on any features identified in the Level 1 report, and to discuss/recommend any preventative, mitigative or remedial measures that may be required. According to the Natural Environment Level 1/2 Report, there is a small cultural thicket (woodlot) located in the east-central portion of the subject property that is dominated by common buckthorn (*Rhamnus cathartica*).

*"A small cultural thicket in the east-central portion of the site dominated by common buckthorn (Rhamnus cathartica). Ground cover was sparse through the shaded middle of the thicket and moderate to dense along the thicket edges and in openings. Ground cover was composed of colonizing species, such as goldenrods (Solidago spp.), teasel (Dipsacus fullonum), garlic mustard (Alliaria petiolata), and common burdock (Arctium minus). In the north portion of the thicket there was a small sugar-maple-black maple deciduous forest inclusion. Trees were generally immature and small (<25 cm DBH), with the occasional larger tree (25-50 cm DBH). Snags and deadfall were few in number in this community. Occasional trees, such as poplar (Populus spp.), and willow (Salix spp.), were observed scattered through the south portion of the thicket."*

A small meadow marsh exists at the north edge of the subject property that is dominated by grasses. According to the Natural Environment Level 1/2 Report, this meadow marsh floods in the spring and early summer. This feature is not identified as Provincially Significant Wetland (PSW). In addition, an isolated intermittent tributary was observed within the cultural thicket, and was characterized by a narrow channel and high riparian cover. According to the Natural Environment Level 1/2 Report:

*"The water within the thicket was flowing from north to south, however there was no standing or flowing water upstream or downstream of the thicket. The water appeared to report from subsurface pathways and then returned back to subsurface after flowing across the surface (Golder 2020). The tributary within the thicket was intermittent and observed to be dry in several locations during all field surveys, suggesting that this feature likely only flows during or shortly after precipitation or melt events. In sections where the tributary contained water, wetted width was approximately 0.3 m, and wetted depth was 0.05 m. Substrates were composed of cobble, sand and silt."*

Field surveys undertaken by Golder identified that there were two (2) bird species observed on the subject property that are designated as 'threatened' under the Endangered Species Act (ESA): bank swallow and barn swallow. Bank swallow were observed flying over the site during breeding bird surveys, but no suitable nesting habitat was identified on the site. Off-site, aggregate stockpiles in the central and eastern portions of the study area may provide suitable nesting habitat for bank swallow. The agricultural fields on the site and throughout the study area may provide suitable foraging habitat for bank swallow. Two (2) of the existing farmstead structures on the subject property were assessed in the field, and were found to provide nesting habitat for barn swallows. Barn swallows were observed entering the large two-storey barn, and the existing farmhouse.

Based on the habitat assessment, three areas on the subject property were assessed to have moderate-high potential to provide suitable maternity roost habitat for bats. These areas included: the cultural thicket in the central portion of the property, rock piles at the south end of the cultural thicket, and the farm buildings and residence in the south portion of the property.

Acoustic surveys were completed on the subject property in order to detect and identify any bat species. The most frequently recorded bat species was the big brown bat. A low number of silver-haired bat, hoary bat, little brown bat, and red bat were also identified. According to the Natural Environment Level 1/2 Report, a low number of unknown *Myotis* species and high-frequency bat species (potentially indicative of *Myotis* species) were also recorded through the acoustic surveying.

There were no fish observed within the isolated intermittent tributary on the subject property, and there was no connection to surface water features downstream (i.e., the North Thames River).

Out of all of the species, only the barn swallow (a threatened species under the ESA), was actually observed living on the subject property, within the existing two-storey barn, and the existing farmhouse. Since all existing farm structures will be demolished, a Notice of Activity (NOA) was submitted and successfully registered under the ESA on November 7, 2018 (confirmation ID M-102-2269622060). A mitigation and restoration record was also prepared, and includes monitoring requirements, habitat compensation, and reporting expectations. The mitigation and monitoring plan was developed using general best management practices to mitigate damage to the adjacent natural features.

The Natural Environment Level 1/2 Report concluded that there will be no negative impacts to the significant natural features and functions on the site in the study area. In addition, the ARA rehabilitation plan and preventive mitigation measures that have been developed will enhance the natural heritage system. These conclusions were based on the following recommendations:

- *"To be in compliance with the MBCA, avoid removal of vegetation during the active season for breeding birds (April 15 – August 15) unless construction disturbance is preceded by a nesting survey conducted by a qualified biologist. If any active nests are found during the nesting survey, a buffer will be installed around the nest to protect against disturbance. Vegetation within the protection buffer cannot be removed until the young have fledged the nest."*
- *"Remove the barn and the cultural thicket on the site outside of the bat maternity roosting period (May 1 to July 31) to minimize adverse impacts on non-SAR roosting bats that may be roosting in the structure/feature."*
- *"All mitigation and monitoring requirements under O. Reg. 242/08, s. 23.5 for removal of barn swallow habitat will be followed."*
- *"The site will be rehabilitated in accordance with the requirements of the rehabilitation plan developed with ecological concepts from this report."*

## 2.6 Water Resources

A Hydrogeology and Hydrology Level 1 and 2 Study was completed by Golder to assess geological, hydrogeological, and hydrological conditions on the subject property. The study was also used to identify any potential post-extraction adverse effects on water resources, water uses or the natural environment resulting from the incremental effects of the proposed Expansion.

The impacts of Site Operations and Rehabilitated Scenarios on groundwater and surface water resources were evaluated through field investigations, desktop analysis and computer modelling. The hydrological assessment field work program was carried out between 2017 and 2019 and included test pitting and grain size analysis, drilling, borehole logging, geophysical logging,

hydraulic (packer) testing, water level monitoring, water quality sampling, private water well survey and hydrologic site reconnaissance.

The proposed Expansion will operate below the established water table. There are a range of groundwater table elevations across the site. The bedrock aquifer water levels range from approximately 275-291masl. Please refer to 'Hydrogeology and Hydrology Level 1 and 2 Study' for complete water table information.

The subject property lies within the "05T North Thames / Medway River" subwatershed, which belongs to the larger Thames River watershed. The North Thames River (located south of the subject property) at the Town of St. Marys drains an area of over 1,080 km<sup>2</sup> with an average flow rate of roughly 1 million m<sup>3</sup>/day. There are locations on the subject property where standing or flowing water was occasionally observed. These include a small pond at the northern edge of the subject property and the isolated intermittent tributary within the cultural thicket in the east-central area of the subject property. According to Hydrogeology and Hydrology Level 1 and 2 Study, it is likely that the latter feature only flows in relation to precipitation or melt events.

The impact assessment considered the incremental effects of the proposed Expansion operations relative to the approved site plan for adjacent existing Pit/Quarry. The main effect of the proposed Expansion operations is the dewatering of the quarry that is necessary to maintain dry working conditions. At full extraction, the incremental drawdown induced through dewatering creates a zone of influence estimated to reach approximately 1 kilometre from the perimeter of the subject property (as defined by the 1 metre drawdown contour). The maximum incremental drawdown magnitude is approximately 4 metres, which occurs along the west-central flank of the Site.

The hydrogeological investigation included an inventory of water supply wells in the vicinity of the subject property. Most of the area wells are outside the predicted zone of influence. Only two private wells lie within the dewatering zone of influence. Based on their depth and static water level, neither well is expected to experience adverse effects to well operation as a result of the minor incremental drawdown imposed by the proposed Expansion operations. Nonetheless, a groundwater monitoring and response program, including a complaint response action plan, will be utilized in the event of unanticipated impacts to water wells. Potential mitigation measures are available and can be used to protect well owner's water supply if required.

There are municipal wells for the Town of St. Marys and wells for the Maple Leaf Foods Inc. plant (to the northwest) that are outside the incremental dewatering influence of the expansion and are not anticipated to experience adverse effects as a result of required dewatering. The North Thames River is located south of the subject property, and is considered hydraulically disconnected from the underlying bedrock aquifer in the area of the subject property and is thus not expected to be adversely affected by drawdown. Groundwater and surface water inflow that is pumped from the quarry will be discharged to the North Thames River to the south, providing a minor supplement to existing flows.

Site groundwater quality will likely improve during operations and after rehabilitation as sources of bacteria loadings (e.g. manure application) will cease. In addition, the implementation of SMC's Spill Prevention and Contingency Plan will minimize the risk of groundwater contamination related to equipment re-fuelling and fuel storage.

During Rehabilitation, groundwater levels will slowly recover to pre-quarry conditions as a lake is formed and surrounding groundwater levels could rise as compared to pre-quarry conditions. The lake level will be maintained by allowing passive subsurface drainage from the quarry lake through the native overburden in the southwest corner of the subject property, with eventual discharge to



the North Thames River. Local wells may experience a significant increase in capacity as water levels return to pre-quarry conditions.

## 2.7 Archaeological Resources

Golder was retained to complete Stage 1-3 Archaeological Assessments for the site, which were conducted between 2018 and 2020. A Stage 1 and 2 Archaeological Assessment was completed in 2018 prior to the Stage 3 Assessment. This included a background study, test pit and pedestrian survey, which identified three artifact producing locations within the site.

The Stage 3 Archaeological Assessment involved the hand excavation of 43 test units and resulted in the recovery of 5,099 artifacts. 85.8% of the recovered artifacts were Euro-Canadian dating from the mid to late 19th and 20th century, and predominately consisted of structurally related artifacts, artifacts with an interminable function, and food and beverage related artifacts. There were also tools and equipment-related artifacts, personal artifacts, furnishing, transportation, and artifacts relating to arms and ammunition. The remainder of the artifacts extracted were pre-contact indigenous and faunal elements. The pre-contact indigenous artifacts included one thumbnail scraper and three pieces of lithic debitage. Additionally, 22 subsurface cultural features were identified.

The Stage 3 Archaeological Assessment concluded that the pre-contact Indigenous components of the site had been sufficiently assessed and documented and no further archeological assessment is required for this component. However, the identified historical Euro-Canadian components should be subject to Stage 4 mitigation prior to the commencement of the proposed development in that area. Until such time that the site can undergo the recommended Stage 4 excavation, a protective zone should be established that includes the archaeological site and a 10 metre buffer. In addition, it was concluded that there will be no adverse impacts on the 'Canadian Heritage River' designation of the North Thames River.

## 2.8 Cultural Heritage Resources

Provincial, County and local policies require that significant built heritage resources and significant cultural heritage landscapes be conserved and that significant archaeological resources are conserved by removal and documentation, or by preservation on-site. During the pre-submission consultation with the Township of Perth South and County of Perth, a Heritage Impact Assessment (HIA) was identified as a required part of the complete Official Plan and Zoning By-law Amendment application process.

The Heritage Impact Assessment (HIA) was completed in November 2018 to evaluate the existing farm structures on the property for their potential cultural heritage value or interest, and to determine the potential impacts of the proposed Expansion on those potential heritage resources, including recommendations for mitigation and conservation.

The HIA concluded that subject property has cultural heritage value or interest for its association with the existing farmhouse, albeit, with reduced integrity given its current state of repair. The farmhouse was identified as a vernacular expression of late 19th century Georgian-style farmhouse associated outbuildings. The proposed Expansion would result in the demolition of the existing farmhouse and outbuildings, and would directly and indirectly impact the property's heritage value. However, the reduced integrity of the structures, given their current state of repair, makes long-term conservation or rehabilitation impractical. The recommendation of the HIA was that,

prior to demolition, a Heritage Documentation Report should be completed and archived at the Township of Perth South to fully record and 'preserve by record' the property's cultural heritage attributes.

The HIA was submitted to the Ministry of Tourism, Culture and Sport (now the Ministry of Heritage, Sport, Tourism and Culture Industries), who confirmed, in a letter dated December 19, 2018, that they were satisfied with the HIA and the proposed conservation methods. In January 2019, Golder completed the Heritage Documentation Report to record and 'preserve by record' the property's heritage attributes prior to demolition.

## 2.9 Blast and Noise Impacts

Golder was retained to complete a Blast Impact Assessment to assess of the potential effects of the ground and air vibrations that will be produced by the proposed Expansion's quarrying operations on adjacent receptors such as residences, other structures, bedrock strata, water wells, and fish spawning depressions.

The assessment concluded that blasting operations on the subject property can be readily carried out in compliance with existing provincial and federal environmental guideline limits with respect to ground and air vibrations. In keeping with the blasting practices that have already been established for the existing Pit/Quarry, Golder recommended that these same procedures be continued during extraction on the subject property.

Golder was also retained to undertake a Noise Impact Assessment to examine noise that is predicted to be emitted from the proposed pit and quarrying operations resulting from the proposed Expansion relative to Ministry of the Environment, Conservation and Parks (MECP) noise guidelines.

Golder identified thirteen (13) points of reception (POR) as being representative of the most sensitive PORs within the vicinity of the subject property. They then established sound level limits according to these MECP noise guidelines and compared the predicted noise levels at identified representative off-site points of reception to the established limits. The assessment concluded that, after the implementation of identified noise controls or equivalent measures, the noise levels predicted at the representative off-site points of reception are expected to be at or below the applicable noise established by the MECP.

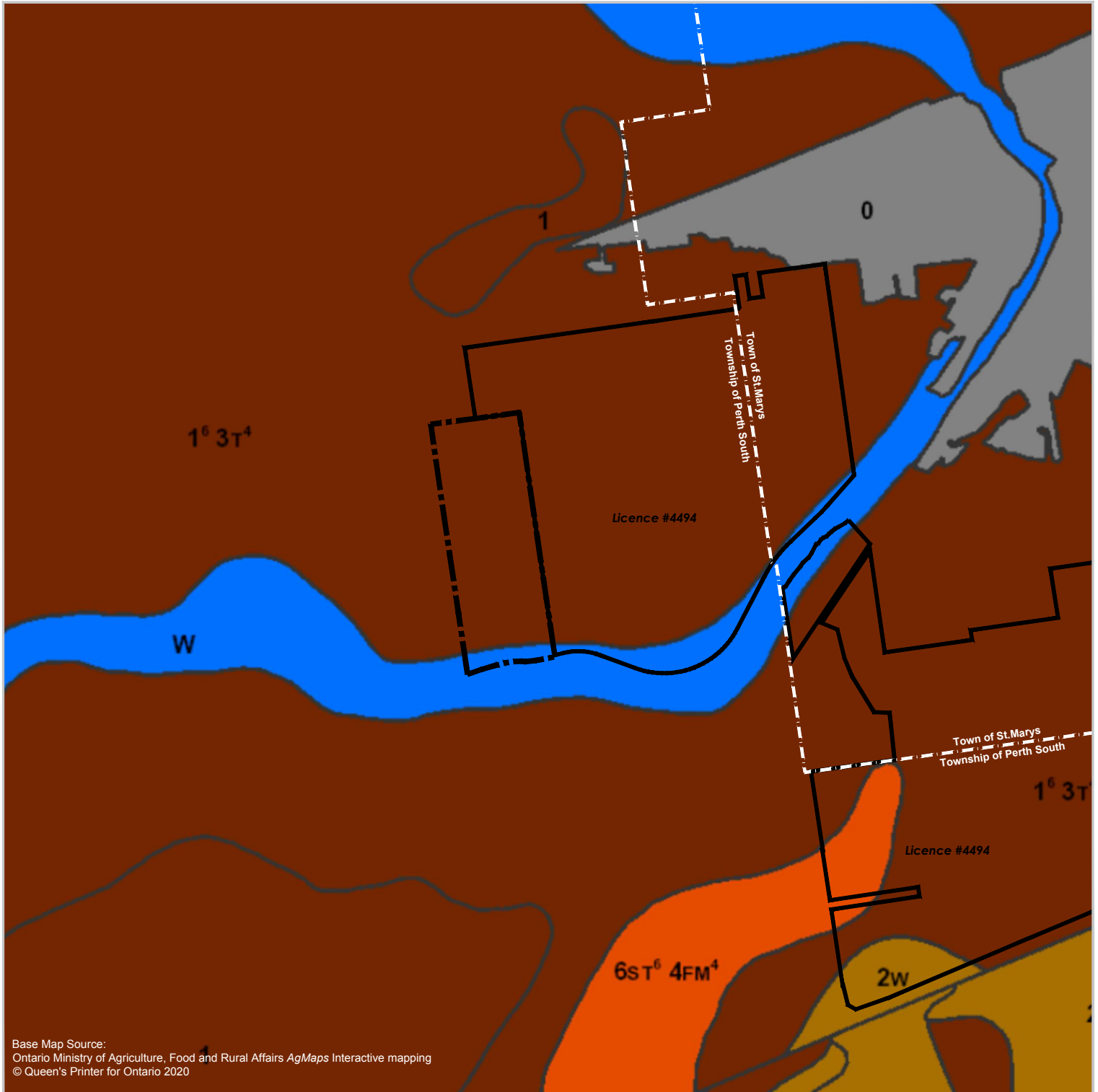


Figure 7  
**Soil Capability for  
Agriculture**

**St. Marys Cement Inc.  
(Canada)  
Thomas Street Pit & Quarry  
Expansion**  
Part of Lot 28 Abutting Thames River and  
Part of Lot 19, Conc. 15  
(former Geographic Township of Blanshard)  
Township of Perth South  
County of Perth

**LEGEND**



Proposed Licensed Boundary



Adjacent Lands Owned by Applicant  
ARA Licence ID #4494

**Soil Capability for Agriculture**



Unclassified



Class 1



Class 2



Class 6



Water

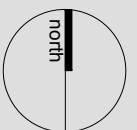
**DATE:** May 2020

**SCALE:** 1:25,000

**FILE:** Y321X

**DRAWN:** DGS

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## 3.0 PLANNING ANALYSIS

The following is an assessment of the proposed Expansion relative to the policies and provisions of the following documents:

- Provincial Policy Statement (2020);
- County of Perth Official Plan (Office Consolidation March 2020)
- Perth South Zoning By-law 4-1999 (Office Consolidation January 2012)

### 3.1 Provincial Policy Statement (2020)

The Provincial Policy Statement (PPS) was issued under section 3 of the Planning Act and came into effect on May 1, 2020. It replaces the Provincial Policy Statement issued April 30, 2014. According to the Act, all decisions affecting planning matters shall be consistent with the Provincial Policy Statement.

The PPS provides policy direction on matters of provincial interest related to land use planning in Ontario. It covers policies about managing growth, using and managing natural resources, protecting the environment, and public health and safety. The PPS provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment. (Part I: Preamble).

The PPS is a policy-led planning system that recognizes and addresses the complex inter-relationships among environmental, economic and social factors in land use planning. The PPS supports a comprehensive, integrated and long-term approach to planning, and recognizes linkages among policy areas. (Part III: How to Read the Provincial Policy Statement).

The PPS recognizes that the Province's natural heritage resources, water resources, including the Great Lakes, 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 Province must ensure that its resources are managed in a sustainable way to conserve biodiversity, protect essential ecological processes and public health and safety, provide for the production of food and fibre, minimize environmental and social impacts, provide for recreational opportunities (e.g. fishing, hunting and hiking) and meet its long-term needs. (Part IV: Vision for Ontario's Land Use Planning System).

The following policies from the 2020 PPS are relevant to the proposed pit/quarry expansion and related applications. A response follows each policy to demonstrate how the proposal is consistent with the PPS:

Section 1.1.4 of the PPS provides policy direction with respect to rural areas in municipalities, and defines *rural areas* as a system of lands within municipalities that may include rural settlement areas, rural lands, prime agricultural areas, natural heritage features and areas, and resource areas. The subject property is located within a rural area as defined by the PPS.

Section 1.2.6 of the PPS provides policy direction with respect to land use compatibility. Specifically,

*1.2.6.1 Major facilities and sensitive land uses shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of major facilities in accordance with provincial guidelines, standards and procedures.*

The proposed Expansion has been designed and buffered to mitigate potential adverse effects on nearby sensitive uses. Specifically, the risk to public health and safety are minimized by implementation of the recommendations of the technical reports and studies and by the monitoring and mitigation of potential effects as required by the ARA Site Plans. In general, the risk is minimized through the requirement for the proposed Expansion to operate in accordance with Prescribed Licence Conditions and Operational Standards, issued under the ARA.

Section 1.6.7 of the PPS provides policy direction with respect to transportation systems. Specifically

*1.6.7.1 Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs.*

*1.6.7.2 Efficient use should be made of existing and planned infrastructure, including through the use of transportation demand management strategies, where feasible.*

The proposed Expansion represents an efficient use of existing infrastructure by utilizing existing haul routes within the existing Pit/Quarry, and truck routes that connect to a County road. The proposed Expansion does not require any new haul routes or entrances to accommodate the proposed operations.

Section 1.7 of the PPS provides policy direction with respect to long term economic prosperity. Specifically,

*1.7.1 Long-term economic prosperity should be supported by:*

*c) optimizing the long-term availability and use of land, resources, infrastructure and public service facilities;*

The proposed pit optimizes the long-term availability of mineral aggregate resources and utilizes existing infrastructure.

Section 2 of the PPS is entitled “Wise Use and Management of Resources”. The introduction to this section reads:

*Ontario's long-term prosperity, environmental health, and social well-being depend on conserving biodiversity, protecting the health of the Great Lakes, and protecting natural heritage, water, agricultural, mineral and cultural heritage and archaeological resources for their economic, environmental and social benefits.*

Making this site available for aggregate extraction represents the wise use and management of resources, providing economic and social benefits, while minimizing potential environmental impacts.

The aggregate resources extracted from the subject property will be used to produce a variety of aggregate and cement products for different purposes to the local and Great Lakes regional markets and wider North American markets. As described in Section 1.1 there are a range of products that can be produced at this location due to the uniqueness of the resources that occur.

Section 2.1 of the PPS provides policy direction with respect to natural heritage. Specifically,

*2.1.1 Natural features and areas shall be protected for the long term.*

Through avoidance of impacts to significant natural heritage features, compliance with endangered Species legislation; and, progressive and final rehabilitation of the subject and adjacent lands, natural features and areas will be protected for the long term.

*2.1.2 The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.*

The subject lands are predominately active agricultural land with limited natural heritage features or surface water features. Based on the Natural Environment Level 1/2 Report, it is expected that there will be no negative impacts to the significant natural features and functions on the subject property in the study area as a result of the proposed Expansion operations. In addition, preventive, mitigative and remedial measures were considered in assessing the net impacts of the proposed Expansion operations on the surrounding ecosystem.

In addition, the Natural Environment Level 1/2 Report confirmed that there are no significant wetlands located on the subject property. Therefore, there will be no development or site alteration within the natural heritage features specified in Policies 2.1.4 and 2.1.5.

*2.1.6 Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.*

There will be no development or site alteration within fish habitat.

*2.1.7 Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.*

Out of all of the species identified on the subject property, only the barn swallow (a 'threatened' species under the ESA), was actually observed living on the subject property, within the existing two-storey barn, and the existing farmhouse. Since all existing farm structures will be demolished, a NOA was submitted and registered on November 7, 2018 (confirmation ID M-102-2269622060). A mitigation and restoration record was also prepared, and includes monitoring requirements, habitat compensation, and reporting expectations. The mitigation and monitoring plan using general best management practices to mitigate damage to the adjacent natural features.

*2.1.8 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

The Natural Environment Level 1/2 Report evaluated the ecological function of the lands adjacent to the subject property and demonstrated that there will be no negative impacts on the natural features or on their ecological functions of these lands. Specifically:

#### **Bank Swallow**

- There is abundant similar foraging habitat in the local area, and the suitable foraging habitat in the local landscape will not be altered.

#### **Bobolink, Chimney Swift, Eastern Meadowlark**

- Potential habitat is located outside of the proposed limit of extraction and is not expected to be directly impacted as a result of the proposed Project.

#### **Little Brown Bat, Northern Myotis, Tri-Colored Bat, and Eastern Small-Footed Myotis**

- There is a low potential for little brown bat maternity roost habitat on the site, and the detections of these species was likely representative of commuting or foraging bats (e.g., commuting to the nearby drinking source to the south, as discussed above).

#### **Black Redhorse, Silver Shiner, Wavy-rayed Lampmussel, and Spiny Softshell**

- All habitat for black redhorse, silver shiner, wavy-rayed lampmussel, and spiny softshell is located outside of the proposed limits of extraction. No adverse impacts to the North Thames River flow regime or channel stability are expected as a result of the proposed Expansion operations.

#### **Butternut**

- Habitat for butternut may be located off-site in the study area. Groundwater drawdown within the zone of influence as a result of the proposed Expansion operations is not expected to impact vegetation in the study.

#### **Significant Woodlands**

- A cultural thicket was identified within the east-central part of the subject property. The cultural thicket is mapped in the County's Official Plan as *Natural Resource/Environment*, which relates to significant woodlands. Field surveys conducted in 2018 by Golder confirmed that this feature was a cultural thicket, is not a woodland, and is not significant.
- All of the off-site woodlands are located greater than 30 metres from the subject property and are outside of the proposed limits of extraction.

#### **Significant Valleylands**

- The North Thames River valleyland is located off-site within the study area and is not expected to be directly impacted through ground disturbance or vegetation clearing.

#### **Significant Wildlife Habitat**

- There are areas of suitable habitat for monarch and yellow-banded bumblebee located adjacent to the study area, and loss of this habitat due to the proposed Expansion operations is not expected to impact the regional population of monarch or yellow-banded bumblebee.
- Candidate Significant Wildlife Habitat (SWH) for seven special concern or rare species (bald eagle, common nighthawk, eastern wood-pewee, grasshopper sparrow, wood thrush,

- northern map turtle, and snapping turtle) were identified off-site within the study area. All candidate SWH for these species are located outside of the proposed limits of extraction and no direct impacts to the features are anticipated.
- There will be no loss of aquatic habitat as a result of the proposed Expansion operations for northern map turtle or snapping turtle in the North Thames River, to the south of the site within the study area.
  - No impacts to the flow of the North Thames River (located south of the subject property) are anticipated due to the proposed extraction.
  - All other candidate SWH (i.e., bat maternity colonies, migration corridors and bald eagle nesting habitat) are located outside of the proposed limit of extraction and no direct impacts are expected.

Section 2.2 of the PPS provides policy direction with respect to water. Specifically,

*2.2.2 Development and site alteration shall be restricted in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved or restored.*

*Mitigative measures and/or alternative development approaches may be required in order to protect, improve or restore sensitive surface water features, sensitive ground water features, and their hydrologic functions.*

The potential impacts of the operation relative to the quality and quantity of groundwater and surface water have been assessed in the Level 1 and 2 Hydrogeology and Hydrology Report. A review of the Ontario Ministry of the Environment, Conservation and Parks (MECP) Water Well Information System (WWIS) database determined that there are a variety of active water wells located within 5 kilometres of the subject property. These wells were verified through field investigations and private water well survey and hydrologic site reconnaissance.

Along the west-central flank of the property, proposed quarry dewatering is estimated to produce an approximate 1 kilometre zone of influence, with a maximum incremental drawdown of approximately 4 metres occurring along the west-central side of the property.

Only two private wells are located within the 1 kilometre zone of influence (please refer to Figure 5.10 of the Hydrogeology and Hydrology Level 1 and 2 Study). Based on their depth and static water level, neither well is expected to experience any adverse effects to well operation as a result of the minor drawdown imposed by the proposed operations.

A groundwater monitoring and response program has been developed and will be implemented for the domestic wells.

Section 2.3 of the PPS provides policy direction with respect to agriculture. Specifically,

*2.3.1 Prime agricultural areas shall be protected for long-term use for agriculture.*

*Prime agricultural areas are areas where prime agricultural lands predominate. Specialty crop areas shall be given the highest priority for protection, followed by Canada Land Inventory Class 1, 2, and 3 lands, and any associated Class 4 through 7 lands within the prime agricultural area, in this order of priority.*

The northern 1/3<sup>rd</sup> of the subject property and a small pocket of land in the southwest corner of the property is 'prime agricultural area' and contains 'prime agricultural land' comprised of Class 1



soils. The lands are not within a 'specialty crop area'. Section 2.5.4 - Extraction in Prime Agricultural Areas applies to the rehabilitation of the subject property.

The PPS defines *Prime Agricultural Land* as "specialty crop areas and/or Canada Land Inventory Class 1, 2, and 3 lands, as amended from time to time, in this order of priority for protection". The subject property contains Class 1 soils as per online web mapping provided by the Ministry of Agriculture, Food and Rural Affairs' (OMAFRA) Agricultural Information Atlas.

According to OMAFRA (2016), Class 1 soils have no significant limitations in use for crops, and are level to nearly level, deep, well to imperfectly drained and have good nutrient and water holding capacity. "They can be managed and cropped without difficulty. Under good management they are moderately high to high in productivity for the full range of common field crops".

According to the County of Perth Official Plan (COP), the majority of the subject property (southern 2/3<sup>rd</sup>) is designated *Mineral Aggregate Resources* and contains both accessible limestone bedrock and surficial sands and gravels (see **Figure 3**). The PPS requirement for agriculture rehabilitation only applies to prime agricultural land in a prime agricultural area. Only the northern 1/3<sup>rd</sup> of the subject property and the small pocket of land in the southwest corner of property fit the PPS criteria for prime agricultural area and contains prime agricultural land. Therefore, the policies in the PPS with respect to non-agricultural uses in prime agricultural areas only applies to the agricultural designated portions of the subject property.

Section 2.3.6 of the PPS provides specific policy direction with respect to non-agricultural uses in prime agricultural areas. Specifically,

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

*a) extraction of minerals, petroleum resources and mineral aggregate resources;  
or [...]*

Extraction of mineral aggregate resources may be permitted in prime agricultural areas in accordance with Section 2.5 of the PPS.

Section 2.5 of the PPS provides policy direction with respect to mineral aggregate resources. Specifically,

*2.5.1 Mineral aggregate resources shall be protected for long -term use and, where provincial information is available, deposits of mineral aggregate resources shall be identified.*

The subject lands contain mineral aggregate resources consisting of high quality sand and gravel and bedrock resources. Section 2.5.2 of the PPS provides specific policy direction with respect to the protection of long-term resource supply of mineral aggregate resources. Specifically,

*2.5.2.1 As much of the mineral aggregate resources as is realistically possible shall be made available as close to markets as possible.*

*Demonstration of need for mineral aggregate resources, including any type of supply/demand analysis, shall not be required, notwithstanding the availability, designation or licensing for extraction of mineral aggregate resources locally or elsewhere.*

As discussed above in Section 1.1 of the report and in the discussion on the wise use and management of resources above, the aggregate resources extracted from the subject property

will be used to produce a variety of aggregate and cement products for different purposes to the local and Great Lakes regional markets and wider North American markets. There are a range of products that can be produced from the subject property due to the uniqueness of the resources that occur.

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

The operation has been designed in a manner which minimizes social, economic and environmental impacts. This is accomplished, in part, through efficiencies gained by exploiting existing low-capital infrastructure (i.e. existing haul roads, fueling, water management, etc.) of existing Pit/Quarry and high-capital infrastructure (cement plant). The other part that accomplished this was through the preparation of several supporting studies and reports including: Stages 1 – 3 Archaeological Assessments; a Blast Impact Assessment; a Cultural Heritage Impact Assessment and Heritage Documentation Report; a Hydrogeology and Hydrology Level 1 and 2 Study; a Natural Environment Level 1/2 Report; a Noise Impact Assessment; and this Planning Justification Report.

*2.5.2.3 Mineral aggregate resource conservation shall be undertaken, including through the use of accessory aggregate recycling facilities within operations, wherever feasible.*

The main products that are proposed at this site are for higher specification uses that do not typically involve incorporation of recyclable aggregates by SMC. The combined occurrence of sand and gravel and different layers of limestone at this location does present an opportunity for efficient use of land and resources resulting in multiple products being made available in one operating area.

Section 2.5.3 provides specific policy direction with respect to the rehabilitation of aggregate operations. Specifically,

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

The proposed Expansion will be rehabilitated to form a quarry lake.

The proposed rehabilitation plan was addressed previously in Section 1.1.2 of this report. The proposed Expansion will be rehabilitated to form a quarry lake. Final rehabilitation including filling of the quarry to create the lake will be completed after all extraction in the quarry is completed. Rehabilitation back to an agricultural after use is not technically feasible due to extraction of the limestone bedrock below the water table. The rehabilitation scheme for the proposed licensed area expansion is technically feasible, is capable of being implemented, and will be completed in accordance and conjunction with the approved rehabilitation plan for the adjacent existing licensed site.

Section 2.5.4 provides specific policy direction with respect to extraction in prime agricultural areas. Specifically,

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

*Complete rehabilitation to an agricultural condition is not required if:*

- a) outside of a specialty crop area, there is a substantial quantity of mineral aggregate resources below the water table warranting extraction, or the depth of planned extraction in a quarry makes restoration of pre-extraction agricultural capability unfeasible;*
- b) in a specialty crop area, there is a substantial quantity of high quality mineral aggregate resources below the water table warranting extraction, and the depth of planned extraction makes restoration of pre-extraction agricultural capability unfeasible;*
- c) other alternatives have been considered by the applicant and found unsuitable. The consideration of other alternatives shall include resources in areas of Canada Land Inventory Class 4 through 7 lands, resources on lands identified as designated growth areas, and resources on prime agricultural lands where rehabilitation is feasible. Where no other alternatives are found, prime agricultural lands shall be protected in this order of priority: specialty crop areas, Canada Land Inventory Class 1, 2 and 3 lands; and*
- d) agricultural rehabilitation in remaining areas is maximized.*

The proposed extraction area contains Class 1 soils and meets the definition of prime agricultural land according to the PPS. The subject property is located outside of a specialty crop area. Policy 2.5.4.1 applies to extraction of mineral aggregate on prime agricultural land in prime agricultural areas. Only the northern 1/3<sup>rd</sup> of the subject property and the small pocket of land in the southwest corner of property is prime agricultural area and contains prime agricultural land. Therefore section 2.5.4.1 only applies to the portions of the subject property that are designated agricultural areas.

The objective is to extend the existing Pit/Quarry onto the subject property. The majority of the subject property (i.e. the southern 2/3<sup>rd</sup>) is designated *Mineral Aggregate Resources* and contains both accessible limestone bedrock and surficial sands and gravels. The policies of the Official Plan are clear that the proposed extraction uses of pit, quarry and associated processing activities are a permitted use on these designated portions of the site.

There is a substantial quantity of mineral aggregate resources both above and below the water table warranting extraction. Approximately two thirds of the limestone resource to be quarried is located below the water table and this includes all of the cement grade limestone. The depth of the planned extraction for the proposed quarry makes restoration of pre-extraction agricultural capability unfeasible because the excavation area will fill with water following completion of extraction.

The vast majority of lands within the County of Perth are considered to be prime agricultural lands within a prime agricultural area, and according to the County of Perth's Official Plan, approximately 90% of the total land area in the County has either a Class 1, 2, or 3 soil capability rating for agriculture. This is also evident from a review of the Canada Land Inventory: Soil Capability for Agriculture Map 40P6, as well as the designation of a large portion of the County as *Agriculture* on Schedule 'A' - Land Use Plan of the Official Plan.

The PPS requires consideration of the suitability of alternatives by the applicant. The following information outlines SMC's consideration of alternatives related to this application for the proposed Expansion.

1. As SMC is currently operating an aggregate operation in the area and adjacent to the subject property (i.e. Licence No. 4494), the applicant's consideration of alternatives focused on primary aggregate resources located in close proximity to the existing Pit/Quarry. It is logical for SMC to apply for a new pit and quarry in close proximity to the existing operation and seek to licence additional reserves immediately adjacent to the existing operations.
2. According to the COP, Perth County does not have an abundance of mineral aggregate resources. Deposits are limited in respect to amount and location and the usable limestone reserves are very localized in location and limited in amount. As outlined below, there is a high degree of overlap between the aggregate and agricultural resources.
3. The PPS requires consideration of lands located on lower quality agricultural land (Class 4-7 soils), as part of the consideration of alternatives. There are very few areas (approximately 10% of the total land area) within the County of Perth that have Class 4-7 soils. The nearest area with Class 4-7 soils is located approximately 29 kilometres northeast of the subject property, and is already licensed. In addition, the next closest Class 4-7 soil area is not designated aggregate purposes. There are no primary or secondary aggregate resources in this area. No alternatives were located or found suitable within lands with lower quality soils.
4. The PPS also requires consideration of resources on lands identified as designated growth areas. The resources available on the subject property cannot be viably extracted in a designated growth area.

As a final consideration of alternatives, the PPS requires consideration of lands where agricultural rehabilitation is feasible. This would involve operations above the water table only which is not likely possible for extraction of bedrock resources required for cement production.

Where the alternatives have been found unsuitable, the PPS notes that Prime Agricultural Lands will be protected in the order of: specialty crop areas, and then CLI Class 1-3 Agricultural Lands.

The subject property is not part of a specialty crop area. The subject property is identified as having Class 1 soils. With respect to avoidance of prime agricultural lands, most of the land within the County of Perth is identified as having Class 1-3 soils (90%), and with the exception of a few small areas, all of the aggregate resources of primary significance are found on Class 1-3 soils. Therefore, there would be a similar conflict between agricultural land and aggregate resources elsewhere in the County.

Given the above, there are limited areas within the County of Perth for aggregate extraction that avoid prime agricultural lands. SMC has found the subject lands adjacent to the existing Pit/Quarry to be the most suitable for extraction activities.

Complete agricultural rehabilitation is not feasible for the proposed Expansion due to a large portion of the aggregate resource being located below the water table.

The aggregate operation will be phased, thereby keeping as much land in agricultural use for as long as possible before extraction commences. The proposed Expansion will be rehabilitated to form a quarry lake.

As discussed above in Section 1.1.2 of this report, the rehabilitation plan has been developed to be integrated and consistent with the rehabilitation plan that has been approved for the adjacent licensed quarry site. The side slopes will include reforestation areas in order to introduce a diversity

of vegetation that is anticipated to spread around the rehabilitated side slopes. The rehabilitated condition will be compatible with the surrounding land uses including the rehabilitated existing quarry and agricultural uses.

### Summary

- In summary, the applicant has considered the policies of the PPS as it relates to aggregate extraction within agricultural lands (i.e. the northern 1/3<sup>rd</sup> of the subject property), as required:
- There is a substantial amount of material located below the water table warranting extraction below the water table.
- Other alternatives have been considered, and there are no significant suitable aggregate resources of primary significance located within Class 4-7 agricultural lands, areas committed to designated growth area, or available areas in close proximity to the existing Pit/Quarry where the same materials could be extracted from above the water table.
- The proposed expansion lands are not located within Specialty Crop Land areas, and 90% of the County of Perth's total land area is classified as having Class 1-3 soil capability for agriculture (as per the County of Perth's Official Plan).
- It is not feasible to rehabilitate the entire site for agricultural uses, given the amount and type of extraction required for quarrying operations. However, the operation will be phased, keeping as much land in agricultural production for as long as possible and the rehabilitation plan has been developed to be integrated and consistent with the rehabilitation plan that has been approved for the adjacent existing Pit/Quarry.

Section 2.6 provides policy direction with respect to cultural heritage and archaeology. Specifically,

*2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.*

The Ministry of Heritage, Sport, Tourism and Culture Industries has approved the approach to 'preserve by record' the property's heritage attributes prior to demolition through the completion of a Heritage Documentation report, which was completed by Golder in January 2019.

*2.6.2 Development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved.*

The Stage 3 Archaeological Assessment concluded that the pre-contact Indigenous components of the site have been sufficiently assessed and documented and no further archaeological assessment is required for this component. Identified historical Euro-Canadian components will be subject to Stage 4 mitigation prior to the commencement of the proposed operations.

*2.6.3 Planning authorities shall not permit development and site alteration on adjacent lands to protected heritage property except where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved.*

There are no protected heritage properties (either designated or listed non-designated properties under the Ontario Heritage Act) located on or adjacent to the subject property. The farmhouse was identified as a building of potential cultural heritage value or interest. However, the building was recorded by Golder as being in poor condition and concluded that its demolition can be

mitigated through proper documentation, and the Ministry of Heritage, Sport, Tourism and Culture Industries has provided their clearance on this strategy.

In summary, the proposed Expansion is consistent with the Provincial Policy Statement, 2020.

## 3.2 County of Perth Official Plan

The County of Perth Official Plan (COP) is a strategic planning document that guides the long-term vision for the growth and development of the communities within Perth County including the Municipalities of North Perth, and West Perth, and the Townships of Perth East and Perth South. The COP determines how the County manages issues such as: agriculture; mineral aggregate resources; growth; housing; employment; and natural heritage conservation both now and into the future.

The COP was adopted by the Council of the County of Perth on December 11, 1997 and approved by the Ministry of Municipal Affairs and Housing on June 12, 1998 and the Ontario Municipal Board on March 29, 1999. The Official Plan has been reviewed several times between 1999 and 2020 and several policy amendments have been completed to keep the Official Plan up to date. The March 2020 Consolidation of the COP is currently in force and effect, and includes all of the amendments to the County of Perth Official Plan that were legally in force as of March, 2020.

Any land use planning decision must conform to the applicable policies of the COP. The following policies from the COP are relevant to the proposed Expansion and related applications. A response follows each policy to demonstrate how the proposal conforms to the COP.

Section 4 of the COP provides for an understanding of the County's land use designations and map schedules. Specifically, section 4.1 establishes the land use designations and provides specific goals and policies applicable to each designation. Each designation is defined according to its primary function or use and include provisions for additional uses that the County considers to be complimentary. The land use designations established in the COP are as follows:

- *Agriculture*
- *Settlement Areas*
  - *Serviced Urban Area*
  - *Village*
  - *Hamlet*
- *Mobile/Modular Home Park*
- *Urban Fringe*
- *Infilling*
- *Mineral Aggregate Resources*
- *Natural Resources/Environment*
- *Recreation*
- *Flood Plain*
- *Cultural Heritage*

In addition to the above designations, the COP establishes a *Flood and Fill Constraint Area* which acts as an overlay to the above land use designations and the policies of which will apply in addition to the policies of the underlying designations.

The subject property contains four (4) different land use designations as per Schedule 'A' – Land Use Plan of the COP (please refer to **Figure 3**).

The north 1/3<sup>rd</sup> of the subject property and a small portion of the property in the southwest corner is designated *Agriculture*. The *Agriculture* land use designation is intended for farming uses of all types as well as a variety of other uses as described in Section 5.4 of the COP.

There is a small portion of the property located in the east-central area of the property that is designated *Natural Resource/Environment* (NRE). The *Natural Resource/Environment* designation applies to a wooded area that has been field verified as a cultural thicket, dominated by common buckthorn with some trees scattered throughout. While the cultural thicket is mapped in the County's Official Plan as *Natural Resource/Environment*, field surveys conducted in 2018 by Golder confirmed that this feature was a cultural thicket, is not a woodland, and is not significant.

There is a small sliver of land located along the southern edge of the property which is designated as *Flood Plain*. The *Flood Plain* designation applies to lands that are subject to flooding from time to time, and in this instance, is associated primarily with the flood plain area of the North Thames River and its associated tributaries. The *Flood Plain* designation applies to those lands and watercourses that make up the regulatory flood plain as identified, regulated, and implemented, in this instance, by the Upper Thames River Conservation Authority (UTRCA). **Figure 3** illustrates the land use designations applied to the subject property from Schedule 'A'.

The majority of the property (lower 2/3<sup>rd</sup>) are designated *Mineral Aggregate Resources* through the use of two specific aggregate land use designations: *Potential Limestone Resource* and *Primary or Secondary Aggregate Resource*. Lands designated *Mineral Aggregate Resources* are intended to be used for the extraction and processing of mineral aggregate resources. Activities normally associated with extraction such as crushing, screening, washing, stockpiling, storage, and recycling of aggregate products are also permitted. The areas designated *Mineral Aggregate Resources* include both known and potential limestone resource areas. Potential limestone resource areas consists of one specific area situated in proximity to the existing Pit/Quarry licensed area, which is the subject property.

Section 10 of the COP provides policy direction with respect to mineral aggregate resources within the County. The County defines mineral aggregates as sand, gravel, shale, limestone, dolostone, sandstone and mineral materials suitable for construction, industrial, manufacturing and maintenance purposes, and considers them important to the local and provincial economies as a primary raw material used in building construction and road construction throughout the Province.

The majority of the subject property (southern 2/3<sup>rd</sup>) is designated *Mineral Aggregate Resources* and contains both accessible limestone bedrock and surficial sands and gravels. The policies of the Official Plan are clear that the proposed extraction uses of pit, quarry and associated processing activities are a permitted use and no Official Plan Amendment would be required for these designated portions of the site. The policies are also clear that where enlargements of existing extraction areas are located outside designated *Mineral Aggregate Resources* an amendment to the Plan will be required to designate the proposed enlargement site for the intended extraction use.

The COP intends to distinguish licenced pits and quarries from unlicensed potential resource areas within the *Mineral Aggregate Resources* designation. The Official Plan policies do not address how a potential area, such as the southern 2/3<sup>rd</sup> of the subject property (where extraction uses are permitted without an OPA) are changed to identify a licensed area when a licence has been issued by Ministry of Natural Resources and Forestry.

Since an OPA is clearly required to change the designation for the northern 1/3<sup>rd</sup> of the subject property to the *Mineral Aggregate Resources* designation the OPA application submitted by SMC will include identification of the entire property as a *Licensed Pit or Quarry / Limestone Resource* under the *Mineral Aggregate Resources* designation even though this OPA is not required to permit the proposed use for the southern 2/3<sup>rd</sup> of the property. The *Mineral Aggregate Resources* designation applies areas used for the extraction and processing of mineral aggregate resources. Other permitted uses in the *Mineral Aggregate Resources* designation include extraction, crushing, screening, washing, stockpiling, storage, and recycling of aggregate products.

Section 10.5 of the COP provides specific policy direction with respect to sand and gravel resource policies. Section 10.5.4 (Mineral Aggregate Resources - Enlargement of Existing Extraction Sites) states that:

*The enlargement of an existing extraction site shall be permitted provided the enlargement area is located in an area designated "Mineral Aggregate Resources" and all applicable policies of this Plan are met. Where a proposed enlargement area is located outside of an area designated "Mineral Aggregate Resources", an amendment to this Plan will be required in order to designate the proposed enlargement site for the intended extraction use and the applicable policies of this Plan shall apply when considering the amendment request.*

*All enlargements of existing extraction sites require a licence under the provisions of the Aggregate Resources Act. Applications for new and/or extended licences for such enlargement areas must be circulated to the local municipal Council and the County for input prior to issuance of the licence by the Ministry of Natural Resources.*

As previously stated, the policies of the Official Plan are clear that the proposed extraction uses of pit, quarry and associated processing activities are a permitted use and no Official Plan Amendment would be required for the *Mineral Aggregate Resources* designated portions of the site (i.e. southern 2/3<sup>rd</sup>). Again, since an OPA is clearly required to change the designation for the northern 1/3<sup>rd</sup> of the subject property to the *Mineral Aggregate Resources* designation, the OPA application submitted by SMC will include identification of the entire property as a *Licensed Pit or Quarry / Limestone Resource* under the *Mineral Aggregate Resources* designation even though this OPA is not required to permit the proposed use for the southern 2/3<sup>rd</sup> of the property.

Section 10.5.8 provides policy direction with respect to the requirement for licences under Aggregate Resources Act.

*All aggregate extraction operations within the "Mineral Aggregate Resources" designation, with the exception of portable asphalt plants as permitted by Section 10.5.7 of this Plan and removal of aggregate from a farm property for on-site use, shall be required to have a licence issued by the Ministry of Natural Resources pursuant to the provisions of the Aggregate Resources Act. The owner/operator of the extraction site is required to maintain the licence and comply with the requirements thereof for as long as the extraction site remains in operation.*

*When considering applications for new and/or enlarged extraction sites, the Ministry of Natural Resources shall give consideration to the policies of this Official Plan and the provisions of the implementing Zoning By-law during its review process. Further, the Ministry of Natural Resources shall provide the local municipal Council and the County with an opportunity to review and comment on proposals for new and/or enlarged extraction sites. It is a policy of this Plan that all new and/or enlarged extraction site*



*proposals must satisfy the policies of this Plan and the provisions of the implementing Zoning By-law prior to MNR's issuance of licence.*

The purpose of the described applications is to obtain a licence issued by the Ministry of Natural Resources and Forestry pursuant to the provisions of the Aggregate Resources Act.

Section 10.5.9 of the COP provides review criteria for new and/or enlarged extraction sites for both sand and gravel resources and limestone resources. The review criteria for new and/or enlarged extraction sites sand and gravel resources is provided in Section 10.5.9 of the COP, while similar review criteria for limestone resources is provided in Section 10.6.6. Many of these review criteria are similar for both sand and gravel resources and limestone resources, and are presented below in **Table 3** in an effort to simply the responses to these criteria. Since the proposed aggregate operation is for both a pit and a quarry expansion, the policies of both 10.5.9 and 10.6.6 must be addressed to ensure conformity.

Specifically, when reviewing a proposal for a new and/or enlarged extraction sites (for both sand and gravel resources and limestone resources), the local municipal Council and County shall be satisfied that the following criteria (**Table 3** below) are met prior to recommending that a licence application be approved. In an effort to simply the responses to each criterion we have provided a comprehensive response to address each of the criteria from 10.5.9 and 10.6.6 in **Table 3**.

Table 3: Review Criteria for New and/or Enlarged Extraction Sites

SAND AND GRAVEL RESOURCE POLICIES (Policy 10.5.9)	LIMESTONE RESOURCE POLICIES (Policy 10.6.6)	Policy Response
No Comparable.	(a) That the location of the extraction site is within an area designated for limestone extraction within the "Mineral Aggregate Resources" designation;	The proposed Thomas Street Quarry/Pit Expansion extraction site is within an area that is primarily designated for limestone extraction within the <i>Mineral Aggregate Resources</i> designation. The majority of the subject property (southern 2/3 <sup>rd</sup> ) is designated <i>Mineral Aggregate Resources</i> and contains both accessible limestone bedrock and surficial sands and gravels. The OPA application submitted by SMC will include identification of the entire property as a <i>Licensed Pit or Quarry / Limestone Resource</i> under the <i>Mineral Aggregate Resources</i> designation even though this OPA is not required to permit the proposed use for the southern 2/3 <sup>rd</sup> of the property.
(a) Confirmation from the Ministry of Natural Resources that all criteria required for licensing pursuant to the Aggregate Resources Act have been satisfied;	(b) Confirmation from the Ministry of Natural Resources that all criteria required for licensing pursuant to the Aggregate Resources Act, R.S.O. 1990, have been satisfied;	Provincial agencies will be circulated as part of the ARA Licence process in accordance with Provincial Notification and Consultation Standards for Category 1 and 2 Applications. Correspondence from Provincial agencies will be provided to the County.  An application for a Class A Pit and Quarry Licence under the Aggregate Resources Act (ARA) has been submitted to the Ministry of Natural Resources and Forestry (MNRF) concurrently with the applications for Official Plan and Zoning By-law Amendments. Confirmation from the MNRF that the application is complete will be forwarded to the County. The application package submitted to the County of Perth includes the ARA site plans and all technical reports prepared in support of the application. The application will also be circulated to the Upper Thames River Conservation Authority.
(b) Confirmation that all requirements of the appropriate	(e) Confirmation that all requirements of the Ministry of	A Hydrogeology and Hydrology Level 1 and 2 Study was completed and concluded the potential for adverse impacts to private well operation as a

provincial agencies concerning potential effect of the extraction operation on the contamination and depletion of surface and ground water resources and water supply services have been satisfactorily addressed; and	Environment and Energy and/or the applicable Conservation Authority concerning the potential effect on the contamination and depletion of surface water and ground water resources have been satisfactorily addressed;	<p>result of site dewatering are unlikely. All recommendations from the Hydrogeological Assessment are included on the ARA Site Plan. No negative impacts to ground or surface water are anticipated as a result of the incremental impacts of the proposed operations.</p> <p>Confirmation from the MOECP and Upper Thames River Conservation Authority that all requirements of the appropriate provincial agencies concerning potential effect of the extraction operation on the contamination and depletion of surface and ground water resources and water supply services have been satisfactorily addressed will be forwarded to the County.</p>
(c) Confirmation from the road authority having jurisdiction over access roads and nearby haul routes that truck traffic associated with the extraction operation will have no adverse effects on the access road and nearby haul routes;	(f) Confirmation from the road authority having jurisdiction over access roads and nearby haul routes that truck traffic associated with the extraction operation will have minimal effects on the access road and nearby haul routes; and	As previously noted, the proposed Thomas Street Quarry/Pit Expansion abuts the existing Pit/Quarry operated by SMC and can therefore take advantage of existing haul routes. Truck traffic associated with the extraction operation is not anticipated to change as the subject property would be utilized as the natural expansion of the existing operation and not a new, independent operation. The haul route will continue to utilize the internal route proceeding north from the subject property until it reaches Perth Road 139 (Queen Street West).
(d) Confirmation that the proposed rehabilitation plan and after use are consistent with the policies of this Plan; and	(g) Confirmation that the proposed rehabilitation plan and after use are both appropriate and consistent with the policies of this Plan. Confirmation that the proposed rehabilitation scheme is technically feasible and is capable of being implemented will be required (from the appropriate Ministry(s)/or qualified individuals obtained on behalf of the local municipality/County to	The proposed rehabilitation plan is consistent with the rehabilitation policies of the Official Plan. The proposed rehabilitation plan is discussed in greater detail above in Section 1.1.2 of this report. The proposed rehabilitation scheme is technically feasible, is capable of being implemented, and will be completed in accordance with the approved rehabilitation plan for the site. The rehabilitated condition will be compatible with the surrounding land uses including the rehabilitated existing quarry and agricultural uses.

	review rehabilitation plans).	
(e) All proposals shall include a site plan and any technical reports or studies that may be required under the Aggregate Resources Act, R.S.O. 1990, and include confirmation from the Conservation Authority that matters relating to natural hazards have been considered and addressed.	No Comparable.	The application package submitted to the County of Perth includes the ARA site plans and all technical reports prepared in support of the application. The application will also be circulated to the Upper Thames River Conservation Authority.
No Comparable.	(c) The amount of land to be licensed is not excessive in size;	The proposed Thomas Street Quarry/Pit Expansion would represent an approximate 10% increase to the existing Pit/Quarry. The proposed area for the expansion is appropriate given the proximity to the existing operation and the efficiencies present in accessing reserves where the overburden is thinner and includes recoverable sand and gravel. (This policy predates the 2005 PPS which does not require any demonstration of need for mineral aggregate operations.)
No Comparable.	(d) Confirmation that all requirements of the Ministry of Environment and Energy with respect to noise, vibration, particulate and dust related concerns have been satisfactorily addressed;	All requirements of the Ministry of Environment and Energy (now Ministry of the Environment, Conservation and Parks) with respect to noise, vibration, particulate and dust related concerns have been satisfactorily addressed.

Section 10.5.11 of the COP provides policy direction with respect to the rehabilitation of extraction sites. Specifically,

*The rehabilitation of extraction sites to accommodate subsequent land uses is a requirement of this Plan. Where extraction is ongoing, rehabilitation is to be carried out on a progressive basis and shall be in accordance with the rehabilitation plan submitted to the Ministry of Natural Resources as part of the site plan for licensing purposes.*

*It is a policy of this Plan that all subsequent land uses proposed through rehabilitation be both consistent and compatible with surrounding land uses and in accordance with the permitted use provisions of Section 10.4. Where an extraction site was previously used for agricultural purposes (including Class 1, 2 and 3 agricultural lands), such extraction site shall be rehabilitated to agricultural use and substantially the same acreage and average soil capability for agriculture as existed previous to the extraction should be restored. Where lands having poorer soil capabilities for agriculture are involved (i.e. lands other than Class 1, 2, and 3), consideration may be given to reforestation and the establishment of woodlot areas. If the pre-extractive use was forestry, reforestation is encouraged.*

*Rehabilitation plans that involve the establishment of uses that are inconsistent and/or incompatible with surrounding land uses and which are not in accordance with the permitted use provisions of Section 10.4 shall not be permitted. All rehabilitation plans included with a site plan submitted for licensing purposes shall be reviewed during the application review process to ensure that the subsequent land use resulting from the rehabilitation is appropriate and in conformity with this Official Plan.*

The proposed rehabilitation plan was addressed previously in Section 1.1.2 of this report. The proposed Expansion will be rehabilitated to form a quarry lake. Final rehabilitation including filling of the quarry to create the lake will be completed after all extraction in the quarry is completed. Rehabilitation back to an agricultural after use is not technically feasible due to extraction of the limestone bedrock below the water table. The proposed rehabilitation scheme for the proposed licensed area expansion is technically feasible, is capable of being implemented, and will be completed in accordance with the approved rehabilitation plan for the site.

Section 10.5.12 of the COP provides policy direction with respect to extraction operations below the water table for sand and gravel resources. The proposed pit operations involve the extraction/processing of sand and gravel materials which lie predominantly above the established groundwater aquifer.. However, since the underlying bedrock resource is below the water table the agricultural rehabilitation that is subject of section 10.5.12 is not feasible. As discussed previously, the PPS permits extraction without agricultural rehabilitation where there is a substantial resource available, alternatives have been considered and sand and agricultural rehabilitation of remaining areas are maximized. These PPS requirements are incorporated in Section 10.5.12 of the Official Plan and have been addressed as outlined above in the PPS policy section of this report.

Section 10.5.13 of the COP provides policy direction with respect to the appropriate zoning for aggregate extraction operations involving sand and gravel resources. Specifically,

*Existing extraction sites that are licensed under the Aggregate Resources Act, R.S.O. 1990 shall be placed in an appropriate aggregate extraction zone in the local municipality's implementing Zoning By-law. The implementing Zoning Bylaws shall contain appropriate provisions regulating aggregate extraction operations.*

*Lands designated "Mineral Aggregate Resources" and which are not the site of an existing aggregate extraction operation are not to be zoned for aggregate extraction purposes in the implementing Zoning By-laws. An amendment to the implementing Zoning By-law is required in order to establish the new and/or enlarged extraction operation.*

The applications include an application to amend the Township of Perth South's Zoning By-law No. 4-1999 in order to zone the subject property for the appropriate aggregate extraction zone. The Zoning By-Law amendment application is submitted concurrently with the Official Plan amendment application in order to establish the extended extraction operation on the subject property.

Section 10.6 of the COP provides specific policy direction with respect to limestone resources in the County. Specifically, areas that are designated *Mineral Aggregate Resources* include both known and potential limestone resource areas. As previously discussed, approximately two thirds of the subject property is designated as a *Potential Limestone Resource* on Schedule 'A' – Land Use Plan of the COP.

According to Section 10.6.1 of the COP:

*The areas designated "Mineral Aggregate Resources" by this Plan include both known and potential limestone resource areas. Known resource areas consist of lands currently licensed for limestone extraction by the Ministry of Natural Resources pursuant to the provisions of the Aggregate Resources Act. The potential resource area consists of one specific area situated in proximity to the aforementioned licensed areas. Both the known and potential resource areas are situated in the Blanshard Ward of the Township of Perth South and their identification is based on the Ministry of Natural Resource's published Aggregate Resources Information Paper (ARIP) for Blanshard Township (now Blanshard Ward).*

Section 10.6.4 of the COP provides policy direction with respect to the enlargement of existing extraction sites for both known and potential limestone resource areas. Specifically,

*The enlargement of an existing limestone extraction site shall be permitted provided the enlargement area is located in an area designated "Mineral Aggregate Resources" and/or it is within the area specifically identified in Section 10.6.1 of this Plan. Where a proposed enlargement area is located outside of an area designated "Mineral Aggregate Resources" and the specific area referred to above, an amendment to the Plan will be required in order to designate the site for the intended extraction use. All enlargements of existing extraction sites require a licence under the provisions of the Aggregate Resources Act. Applications for new and/or extended licences for such enlargement areas must be circulated to the local municipal Council and the County for input prior to issuance of the licence by the Ministry of Natural Resources.*

As previously stated, the majority of the subject property (southern 2/3<sup>rd</sup>) is designated *Mineral Aggregate Resources* and contains both accessible limestone bedrock and surficial sands and gravels. The policies of the Official Plan are clear that the proposed extraction uses of pit, quarry and associated processing activities are a permitted use and no Official Plan Amendment would be required for these designated portions of the property. The OPA application submitted by SMC will include identification of the entire property as a *Licensed Pit or Quarry / Limestone Resource* under the *Mineral Aggregate Resources* designation even though this OPA is not required to permit the proposed use for the southern 2/3<sup>rd</sup> of the property.

Section 10.6.5 of the COP provides specific policy direction with respect to the processing of limestone resources. With respect to the processing of limestone resources, the COP states that:

*The processing of limestone, including the manufacture of lime and cement, shall be permitted as part of an operating extraction site. Other processing activities such as crushing, screening, washing, stockpiling, storage, and recycling of aggregate products that are associated with on-site aggregate extraction and/or processing shall be permitted as a part of an operating extraction site. Processing operations such as asphalt plants and concrete batching plants shall also be permitted provided that the majority of the aggregate material used in such operations originates on-site as opposed as being imported from off-site. All asphalt plants and concrete batching plants shall be subject to site plan control pursuant to the provisions of Section 41 of the Planning Act, R.S.O. 1990. The local municipality's implementing zoning by-law shall set forth provisions pertaining to permitted processing operations. Such provisions shall include appropriate distance separations and buffering between processing activities in neighbouring land uses.*

Some processing activities such as crushing, screening, washing, stockpiling, storage, and recycling of aggregate products will occur on site with the majority of these activities taking place at the existing Pit/Quarry. Some portable processing equipment will be present on the subject property during operations; however, the majority of processing and related operations will continue to occur at the existing St. Marys Quarry and Pit site.

Section 10.6.7 of the COP provides policy direction with respect to limestone resources and the requirement for licences under the Aggregate Resources Act. Specifically:

*All limestone extraction operations within the "Mineral Aggregate Resources" designation shall be required to have a licence issued by the Ministry of Natural Resources pursuant to the provisions of the Aggregate Resources Act, R.S.O. 1990. The owner/operator of the extraction site is required to maintain the licence and comply with the requirements thereof for as long as the extraction site remains in operation.*

*When considering applications for new and/or enlarged limestone extraction sites, the Ministry of Natural Resources shall give consideration to the policies of this Official Plan and the provisions of the implementing zoning by-law. Further, the Ministry shall provide the local municipal Council and the County with an opportunity to review and comment on the proposals for new and/or enlarged limestone extraction sites. It is a policy of this Plan that all new and/or enlarged limestone extraction site proposals must satisfy the policies of this Plan and the provisions of the implementing zoning by-law prior to MNR's issuance of a licence.*

The purpose of the described applications is to obtain a licence issued by the Ministry of Natural Resources and Forestry pursuant to the provisions of the Aggregate Resources Act.

Section 10.6.9 of the COP provides policy direction with respect to the rehabilitation of limestone extraction sites. Specifically,

*The rehabilitation of limestone extraction sites is a requirement of this Plan. Where extraction is ongoing, rehabilitation is to be carried out on a progressive basis and shall be in accordance with the rehabilitation plan submitted to the Ministry of Natural Resources as a part of the site plan for licensing purposes.*

*Where an extraction site was previously used for agricultural purposes (including Class 1, 2 and 3 agricultural lands) and where rehabilitation to an agricultural use is technically*

*feasible, it is the intent of this Plan that substantially the same acreage and average soil capability for agriculture as existed previous to the extraction shall be restored. Where an extraction site was previously used for agricultural purposes and it is not technically feasible to rehabilitate to agricultural use, the rehabilitation and afteruse must be such that it does not conflict with the agricultural use of the surrounding land. Rehabilitation to afteruses such as wetland systems, wildlife/fish habitat areas, reforestation, and passive recreation uses may be permitted.*

The proposed rehabilitation plan was addressed previously in Section 1.1.2 of this report. The proposed Expansion will be rehabilitated to form a quarry lake. Final rehabilitation including filling of the quarry to create the lake will be completed after all extraction in the quarry is completed. Rehabilitation back to an agricultural after use is not technically feasible due to extraction of the limestone bedrock below the water table. The proposed rehabilitation scheme for the proposed licensed area expansion is technically feasible, is capable of being implemented, and will be completed in accordance with the approved rehabilitation plan for the site.

Section 10.6.10 of the COP provides policy direction with respect to the appropriate zoning for limestone extraction sites. Specifically,

*Existing limestone extraction sites that are licensed under the Aggregate Resources Act shall be placed in an appropriate extraction zone in the local municipality's implementing zoning by-law. The implementing zoning by-law shall contain appropriate provisions regulating such operations.*

*Lands designated "Mineral Aggregate Resources" and identified as a potential limestone resource area will not be placed in an extraction zone in the local municipality's implementing zoning by-law. An amendment to the implementing zoning by-law is required in order to establish a new and/or enlarged limestone extraction operation in such areas.*

The applications include an application to amend the Township of Perth South's Zoning By-law No. 4-1999 in order to zone the subject property for the appropriate aggregate extraction zone. The Zoning By-Law amendment application is submitted concurrently with the Official Plan amendment application in order to establish the extended extraction operation on the subject property.

In summary, the proposed Expansion meets the intent of the County of Perth Official Plan and conforms to the policies relating to mineral aggregate resources, and the studies prepared in support of this application address the policies of the County.

### 3.3 Township of Perth South Zoning By-law 4-1999

The majority of the subject property is zoned Agricultural, with the north half of the property being (A) and the south half of the property being (A-2) in the Township of Perth South Zoning By-law 4-1999 (see **Figure 5**). The Agricultural Zone (A) permits farm uses, conservation, existing non-farm institutional and residential uses, wayside permit aggregate operations and portable asphalt plants, etc. The A-2 zone is a special provision that applies to potential sand and gravel deposits identified in the County of Perth Official Plan.



There is a small sliver of the property in the southwest corner that is zoned Flood Plain (FP). The “FP” zone permits public parks, conservation, forestry, recreational trails; and public works and utility facilities.

A zone change from Agricultural “A” and “A-2” and from Flood Plain “FP” to Mineral Aggregate Resources Zone (MAR) is required in order to permit a mineral aggregate operation on the subject property. The application is being submitted concurrently with the Official Plan amendment application so that the matters can proceed together.

# 4.0 AGGREGATE RESOURCES ACT SUMMARY STATEMENT

St. Marys Cement Inc. (Canada) is applying for a Class A Pit and Quarry Licence to allow for the expansion of their operating St. Marys Quarry and Pit (Licence No. 4494) on the adjacent lands to the east. The project is referenced as the Thomas Street Pit/Quarry Expansion. Under the Province's Aggregate Resources Act (ARA) Provincial Standards the applications are for a Category 1 - Class A Pit (below the water table) and a Category 2 - Class A Quarry Licence (below the water table) .

The area proposed to be licensed under the ARA for the proposed Expansion is approximately 46.5 hectares and the proposed extraction area is 43.2 hectares. The Thomas Street Pit/Quarry Expansion is proposed in order to maintain the efficiency of and extend the life of the existing Pit/Quarry on the adjacent lands to the east. The proposed maximum annual tonnage for the Thomas Street Pit/Quarry Expansion will maintain the current limit of be 3,250,000 tonnes.

The complete Licence application consists of the following:

## 4.1 Site Plans

The Site Plans are included in the application package and are comprised of 4 pages that provide details and drawings on:

- Page 1: Existing features
- Page 2: Operations
- Page 3: Rehabilitation
- Page 4: Cross-Sections

## 4.2 Technical Reports

The following fulfil the study requirements of the Provincial Standards, Version 1.0, for a Category 1 - Class A Pit (below the water table) and a Category 2 - Class A Quarry (Below Water). Although there are separate requirements for each category, the requirements have been merged for simplicity. The following technical reports have been completed to address the study requirements for both categories.

- Hydrogeology and Hydrology Level 1 and 2 Study (Golder Associates Ltd., Jun 2020).
- Natural Environment Level 1/2 Report (Golder Associates Ltd., April 2020).
- Stage 1 (Background Study and Property Inspection) and Stage 2 (Property Assessment) Archaeological Assessments (Golder Associates Ltd., 2019).
- Stage 3 (Site-Specific) Archaeological Assessment (Golder Associates Ltd., Mar 2020).

- Noise Impact Assessment (Golder Associates Ltd., Jun 2020).
- Blast Impact Assessment (Golder Associates Ltd., Jun 2020).

In addition to the required studies, a Heritage Impact Assessment (HIA) was completed by Golder in November 2018 to evaluate the existing farm structures on the property for their potential cultural heritage value or interest, and to determine the potential impacts of the proposed Expansion on those potential heritage resources, including recommendations for mitigation and conservation. The results of the HIA identified that the existing farmhouse is a building of cultural heritage value or interest, and recommended the completion of a Heritage Documentation Report. In January 2019, Golder completed the Heritage Documentation Report to record and 'preserve by record' the property's heritage attributes prior to demolition.

Each report includes the qualifications and experience of the individual(s) that have prepared the report.

## 4.3 Summary Statement: Required Information

The following sections are structured to provide information required under the Provincial Standards for a Category 1 - Class A Pit (below the water table) and a Category 2 - Class 'A' Quarry (Below Water) Aggregate Resources Act Summary Statement.

### 4.3.1 Planning and Land Use Considerations – Standard 2.1.1

The proposed Expansion and associated Official Plan and Zoning By-law Amendment applications represent good planning and are consistent with the Provincial Policy Statement (PPS), conform to the County of Perth Official Plan, and are consistent with the Township of Perth South Zoning By-law 4-1999. See Sections 3.1, 3.2 and 3.3 of this Report for additional information.

### 4.3.2 Agricultural Classification of the Proposed Site – Standard 2.1.2

The proposed Expansion is in agricultural use and is mapped as Class 1 soils with a small portion of undisturbed area being comprised of a cultural thicket in the east-central portion of the site dominated by common buckthorn. The subject property is located in the rural area of Perth County and, given the Class 1 soils, is *Prime Agricultural Land*<sup>4</sup>. The northern 1/3<sup>rd</sup> of the subject property meets the definition under the 2020 PPS for prime agricultural area, and the County of Perth's Official Plan reflects that land use through the *Agriculture* designation on the northern 1/3<sup>rd</sup> of the property.

The proposed rehabilitation plan was addressed previously in Section 1.1.2 of this report, and is addressed again below in Section 4.3.5. The proposed Expansion will be rehabilitated to form a quarry lake. Final rehabilitation including filling of the quarry to create the lake will be completed after all extraction in the quarry is completed. Rehabilitation back to an agricultural after use is not technically feasible due to extraction of the limestone bedrock below the water table.

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<sup>4</sup> **Prime agricultural land:** means specialty crop areas and/or Canada Land Inventory Class 1, 2, and 3 lands, as amended from time to time, in this order of priority for protection (PPS, 2020).

### 4.3.3 Quality and Quantity of Aggregate On-site– Standard 2.1.3

The proposed Expansion is identified as a Mineral Aggregate Resource Area in both the County and Township's land use mapping (i.e. Official Plan and Zoning By-law). Site specific investigations of the property (test pits and boreholes) have estimated the availability of approximately 2 million tonnes of sand, gravel, and granular deposits that will form the basis for the pit operation on the subject property, and approximately 15 million tonnes of high quality bedrock resources.

### 4.3.4 Main Haulage Routes – Standard 2.1.4

Aggregate resources extracted, processed, and shipped from proposed Expansion will be transported to markets throughout the local and Great Lakes regional markets, as well as the various provincial, national, and international markets.

Access to the proposed Expansion will be via an internal road connection from the adjacent existing Pit/Quarry, which maintains an access from the north off of off of Perth Road 139 / Queen Street West. The internal road connection is located in the centre of the subject property at the east property line. The proposed Expansion will not require a new entrance off of Perth Road Line 5 / Thomas Street.

The main haulage route will utilize the existing route along the west property boundary of the existing Pit/Quarry, which directs truck traffic northwards towards Perth Road 139 / Queen Street West. The existing haul route is capable and adequate to accommodate the proposed Expansion and there are no enhancements, widenings, or improvements required. There will also not be an increase in truck traffic as a result of the expansion. Locations of internal haul roads may vary depending on areas of extraction, processing / stockpiling, backfilling / rehabilitation; and, transfer of materials to the existing Pit/Quarry site for processing or rehabilitation. Haul truck access to/from the Site will occur across the length of the common boundary with the existing Pit/Quarry. Entrance/exit points will not be gated.

### 4.3.5 Progressive and Final Rehabilitation – Standard 2.1.5

The proposed Expansion will be rehabilitated to form a quarry lake. The rehabilitation plan has been developed to be integrated and consistent with the rehabilitation plan that has been approved for the existing Pit/Quarry on the adjacent property to the east. Overburden will be moved between sites in order to create a peninsula landform in the existing quarry area. The Expansion site will be a continuation of the future quarry lake with side slopes that will be built and stabilized progressively as the limits of the quarry are reached. Final rehabilitation including filling of the quarry to create the lake will be completed after all extraction in the quarry is completed. The side slopes in the expansion will include reforestation areas in order to introduce a diversity of vegetation that is anticipated to spread around the rehabilitated side slopes.

Rehabilitation back to an agricultural after use is not technically feasible due to extraction of the limestone bedrock below the water table. The aggregate operation will be also phased, thereby keeping as much land in agricultural use for as long as possible before extraction commences.

Further justification for this is provided in the responses to PPS 2.5.4.1 and OP 10.5.12

The proposed rehabilitation scheme for the proposed licensed area expansion is technically feasible, is capable of being implemented, and will be completed in accordance with the approved rehabilitation plan for the site. The rehabilitated condition will be compatible with the surrounding land uses including the rehabilitated existing quarry and agricultural uses. The

backfilling design around the quarry perimeter allows for a hydraulic connection with the North Thames River to the south.

**The following sections provide additional information related to surface water and ground water.**

#### **4.3.6 Surface Water**

The Hydrogeology and Hydrology Level 1 and 2 Study (June 2020) investigated on-site surface water features. There are locations on the subject property where standing or flowing water was occasionally observed. These include a small pond at the northern edge of the subject property and an isolated intermittent tributary within the cultural thicket located in the east-central area of the subject property. According to the Hydrogeology and Hydrology Level 1 and 2 Study, it is likely that the latter feature only flows in relation to precipitation or melt events.

The proposed Expansion requires dewatering of surface water that accumulates within the quarry through direct precipitation on the quarry floor or seepage through the quarry walls. The dewatering is required to maintain safe mining operations. Dewatering operations for the proposed Expansion will follow the approved protocol from the existing Pit/Quarry, with surface water and groundwater inputs passively drained over the Pit/Quarry floor to a sump(s) and eventually pumped to the North Thames River located south the subject property on the opposite side of Perth Road Line 5 / Thomas Street. According to the conclusions of the Hydrogeology and Hydrology Level 1 and 2 Study, site runoff under the proposed operations scenario will be largely controlled by quarry dewatering and will not flow naturally to off-site receptors. Specifically:

*“The increase in annual runoff from the Site results in an approximately 0.02% increase to the North Thames River average annual flow. This increase in discharge under Operations Scenario to the North Thames River is not expected to have a significant impact on the river flow regime or channel stability.”*

#### **4.3.7 Ground Water Elevation**

The subject property ranges in elevation from 322 masl along its north property boundary to 297 masl at its south property boundary. The Hydrogeology and Hydrology Level 1 and 2 Study completed by Golder (Mar 2020), found that there are a range of groundwater table elevations across the site. The bedrock aquifer water levels range from approximately 275-291 masl. Please refer to ‘Hydrogeology and Hydrology Level 1 and 2 Study’ for complete water table information. As shown on the site plan, the proposed Expansion is proposed to be dewatered to an elevation of approximately 274 masl.

## 5.0 CONCLUSIONS

This application package provides the information required for the consideration of aggregate operations in the County of Perth, Municipality of West Perth and the Provincial Standards.

The proposed Expansion contains approximately 2 million tonnes of sand, gravel, and granular deposits that will form the basis for the pit operation on the subject property, and approximately 15 million tonnes of high quality bedrock (limestone and dolostone) that will be quarried.

The proposed Expansion has been designed to ensure no negative impacts on surrounding natural heritage features and agricultural resources. The operational plans, incorporated mitigation and conditions of approval will minimize impacts on adjacent sensitive receptors (noise, air, water supply and traffic).

The proposed Expansion represents wise resource management, is consistent with the Provincial Policy Statement with respect to the protection of mineral aggregate resources.

The proposed Expansion is located within an area identified by the Province and the County as having high quality aggregate resources, and is located within an area of existing aggregate extraction that has good access to market areas. The operation is well-positioned to supply high quality aggregate to existing and future growth areas in the County of Perth, as well as markets located further away.

The proposed Expansion represents good planning and:

- is consistent with the Provincial Policy Statement;
- conforms to the Perth County Official Plan;
- is consistent with the Township of Perth South Zoning By-law 4-1999; and
- includes information required by the Aggregate Resources Act.

Respectfully submitted by,

**MacNaughton Hermesen Britton Clarkson Planning Limited**



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