PEEL REGION AND TOWN OF CALEDON JOINT AGGREGATE POLICY REVIEW

PEEL 2051 DISCUSSION PAPER (FINAL DRAFT)

May 2023

Table of Contents

LIST OF ACRONYMS REFERENCED IN THIS REPORT

AMP	Adaptive Management Plan
ARA	Aggregate Resources Act
ARIP	Aggregate Resource Inventory Paper
ARMMA	Aggregate Resources and Mining Modernization Act
CCRS	Caledon Community Resources Study
CHPMARA	Caledon High Potential Mineral Aggregate Resource Area
CAR	Compliance Assessment Report
GTA	Greater Toronto Area
Growth Plan	Growth Plan for the Greater Golden Horseshoe
HPMARA	High Potential Mineral Aggregate Resource Area
LPAT	Local Planning Appeal Tribunal
MNRF	Ministry of Natural Resources and Forestry
NEP	Niagara Escarpment Plan
NEPA	Niagara Escarpment Plan Area
ORMCP	Oak Ridges Moraine Conservation Plan
OP	Official Plan
OMB	Ontario Municipal Board
PPS	Provincial Policy Statement
RMP	Rehabilitation Master Plan
ROP	Regional Official Plan
TOARC	The Ontario Aggregate Resource Trust

1.0 INTRODUCTION

The Region of Peel's Regional Official Plan (ROP) provides the long-term policy framework for land use planning decision-making. It sets the context for detailed planning by providing the policy framework to protect the environment, manage resources, direct growth and set the basis for providing Regional services in an efficient and effective manner. The *Planning Act* requires municipalities to update their Official Plan as a new Official Plan every 10 years, and every five years thereafter to ensure that the policies remain current and are consistent with Provincial plans and policies.

Since 2017, the Province has amended the *Planning Act* and has released a new Growth Plan and Provincial Policy Statement. The new Provincial Policy Statement (PPS 2020) came into effect on May 1, 2020 and A Place to Grow: Growth Plan for the Greater Golden Horseshoe (Growth Plan) came into effect in 2019. The Growth Plan was subsequently amended with an effective date of August 28, 2020. The policies of the Oak Ridges Moraine Conservation Plan (ORMCP), the Greenbelt Plan and the Niagara Escarpment Plan (NEP) were also updated in 2017.

The ROP, originally adopted in 1996, has been the primary long range strategic land use policy document in the Region of Peel and has been amended over the past 30 years. The Peel 2051 ROP Review and Municipal Comprehensive Review was initiated in 2013 to fulfill a periodic review of the ROP for planning to the year 2051 and to achieve Provincial conformity.

On April 28, 2022, Regional Council passed By-law 20-2022 to adopt the new "April 2022 ROP, which addressed updates for 12 of the 13 focus areas. At the time of adoption, the Aggregate Resources Policy Review was still underway and proceeding as a further phase of the Peel 2051 Regional Official Plan Review. On November 4, 2022, the Minister issued a Notice of Decision approving the new ROP with 44 modifications. This approval repealed and replaced the Regional Official Plan adopted in 1996 including all subsequent amendments made to it on the same date. The new ROP, as approved by the Minister, came into effect on November 4, 2022. The Aggregate Resources Policy Review will now consider changes to the policies and mapping in the new April 2022 ROP as approved by the Province.

The Town of Caledon's Future Caledon Official Plan Review is intended to create a new OP that will guide land development and growth over the next twenty years. The review is divided into five focus areas including the natural resources and agriculture policies. As a natural resource, the mineral aggregate resources policies will be reviewed and updated.

Thus, one of the focus areas identified as part of these reviews is mineral aggregate resources. An important component of the aggregate policy is ensuring that resource areas are identified and protected while also protecting communities, natural environment and cultural heritage features from the potential adverse and negative impacts of mineral aggregate resource extraction. In addition to ensuring conformity with current provincial plan policies, the Joint Aggregate Policy Review will ensure that ROP Schedule D-2 and the corresponding Town of Caledon Official Plan Schedule L reflect the updated Provincial mineral aggregate resource mapping produced by the Ministry of Mines.

Other topics of the aggregate review initiative include the consideration of locally developed policy direction for aggregate conservation, aggregate recycling, cumulative impact, community impacts and aggregate rehabilitation best practices. Through the consultation process additional areas of policy review may emerge and can be addressed. Similarly, the Town of Caledon will establish priority policy areas for discussion through the Town's official plan review and consultation process.

2.0 PURPOSE

The purpose of this Discussion Paper is to:

- Provide an overview of the existing land use planning policy framework in the Peel and Caledon Official Plans related to mineral aggregate resources.
- Provide a characterization of the mineral aggregate resource areas in Peel and Caledon.
- Describe trends related to aggregate licensing and production in Peel and Caledon.
- Outline the provincial policy framework related to the land use planning for mineral aggregate resources and discuss implications of the recent changes.
- Consider land use planning policy approaches and best practices for aggregates in other municipalities with a focus on addressing cumulative impact, aggregate recycling, adaptive management plans (AMP), community impacts and rehabilitation.
- Address the policy gaps in the Peel and Caledon Official Plans where changes should be considered to bring the plans into conformity with current provincial policy and meet regional and local needs.
- Identify other opportunities to support the implementation of aggregate policy in Peel and Caledon.

Though all three local municipalities in Peel Region are considered; this analysis is focused on the areas in the Town of Caledon where mineral aggregate resources are concentrated. The aggregate resource policies in the Town of Caledon Official Plan complement and conform with the Regional policies and together the two plans represent the complete policy framework for aggregate resources planning and management in the Region of Peel.

While the purpose of the review is to be consistent with provincial growth management and land use planning policy direction and mapping, the aggregate resources policy review will also consider transportation policies from the perspective of aggregate resources goods movement. The Region recently completed the Peel Goods Movement Strategic Plan, a component of which seeks to understand and manage aggregate resources goods movement and their community impacts. In addition to updating official plan policies, the Region is obtaining information to inform the implementation of the strategic actions in the Goods Movement Strategic Plan and review the Strategic Goods Movement Network.

The Discussion Paper describes the nature and distribution of aggregate resources within Peel Region, identifying the important resource areas for both sand and gravel and crushed stone. A related component of the Official Plan policy review is a more detailed evaluation of the methodology for mapping aggregate resources. This report was prepared to highlight the recent updates to the provincial resource mapping database and the constraints to extraction for the purpose of identifying potential changes to the mapping in the Official Plan(s).

A characterization of aggregates in Peel Region, identifying current licensed areas and production volumes, and reviewing trends over the past 20 years are included in the Discussion Paper. The challenges and opportunities related to aggregate operations and rehabilitation in Peel Region is provided, along with an assessment of what has changed since the Official Plan policies were initially developed.

The current policy framework for aggregates is outlined, highlighting key changes or shifts in provincial growth management and land use planning policy that will be considered as part of the Official Plan update. An examination of aggregate policy in other jurisdictions, most notably the top aggregate producing municipalities in Ontario, provides examples of policy approaches used in other areas.

The Discussion Paper also considers emerging issues such as aggregate recycling which may occur as a stand-alone use, outside of licensed aggregate sites. Other aggregate resource related issues included in the Discussion Paper include the management of excess soil and commercial fill operations, best practices

for assessing cumulative impacts of aggregate extraction, policy considerations for adaptive management plans, land use compatibility and comprehensive aggregate rehabilitation.

This report is informed by initial discussions with key stakeholders, including provincial ministries, municipal planners, as well as representatives from the industry and community associations.

3.0 AGGREGATE POLICY AND THE OFFICIAL PLAN UPDATE PROCESS

While the focus of this paper is on mineral aggregate policy in official plans, it is important to consider the interrelationships between other policy areas that are being separately reviewed as part of the Peel 2051 process and the Future Caledon OP Review. In particular, ensuring consistency and coordination with other focus areas, such as Growth Management, Health and the Built Environment, Agriculture, Water Resources, Greenland Systems Planning, and Transportation is essential to the success of the overall project. Proper cross referencing of policy sections will help to ensure that the updated local official plans functions as intended.

3.1 Background

The Official Plans for both Peel Region and the Town of Caledon recognize that mineral aggregate resources are an important component of the economy and providing access to the resource close to market have benefits that included reducing the transportation cost of supplying materials for development in the Region. The official plans also recognized that aggregate operations have the potential to adversely and negatively impact communities, the natural environment, cultural heritage and other economic activities. Achieving a balance between these considerations is an objective of the Official Plan. As well, the official plan policies must reflect the balance the municipal and provincial interests have in aggregate resource planning.

3.2 What are Aggregate Resources

Aggregates are non-renewable resources found in certain fixed locations and are used in the construction of roads, homes, schools and offices as well as other industrial and institutional buildings.

Aggregate is defined in Ontario's *Aggregate Resources Act* as:

> "*gravel, sand, clay, earth, shale, stone, limestone, dolostone, sandstone, marble, granite or other material"*.[1]

The Provincial Policy Statement defines Mineral Aggregate Resources as:

> "*gravel, sand, clay, earth, shale, stone, limestone, dolostone, sandstone, marble, granite, rock or other material prescribed under the Aggregate Resources Act suitable for construction, industrial, manufacturing and maintenance purposes but does not include metallic ores, asbestos, graphite, kyanite, mica, nepheline syenite, salt, talc, wollastonite, mine tailings or other material prescribed under the Mining Act*."[2]

There are two basic types of aggregate operations, "pits" and "quarries". The distinction relates to the type of aggregate being mined. Pits mine unconsolidated material such as sand and gravel, while quarries mine bedrock, such shale, limestone, and dolostone. While both are aggregate operations, the difference between pits and quarries is significant and has a direct bearing on operational requirements and potential social and environmental impacts. Important differences relate to matters such as blasting, processing equipment and water management when working below the water table. Ultimately, all aggregate operations have the potential for significant social and environmental impacts. The land use requires the removal of all vegetation and soil (overburden) in the extraction area and extraction below the water table has the potential to impact ground and surface water flow. Impacts to communities include, but are not limited to, dust, noise and traffic. Accordingly, each proposed aggregate operation requires appropriate technical studies to address the particular circumstances of that proposal.

Sand and gravel and crushed stone resources are non-renewable resources found in fixed locations. Some areas have abundant resources, while others have little or none. In addition, there is variability in aggregate deposits influencing the types of products that can be made. High quality materials, with particular gradation and chemical characteristics are required for the production of asphalt and concrete

[1] *Aggregate Resources Act*, R.S.O. 1990

[2] Provincial Policy Statement, 2020

sands whereas lower quality sand, stone and gravel may only be suitable for making granular road base and fill products. The demand for aggregate varies with construction activity and this is reflected in annual fluctuation is aggregate production as well as in the Regional variation in aggregate production.

The aggregate that Ontario uses comes mainly from primary sources of material extracted from Ontario pits and quarries. Secondary sources of material (primarily recycled materials) are an increasing source of total aggregate supply comprising 7% of the total supply in the past 10 years (up from about 4% in the early 1990s),[3] and recycled material is expected to continue to gradually increase its contribution to total aggregate consumption over the next 20 years. However, the main source of aggregate supply is expected to continue to be primary aggregate from Ontario pits and quarries.

Mineral aggregate resources are important in providing the essential materials used in construction. Some examples of the amounts of aggregate used in various construction applications include:

- 18,000 tonnes per kilometre of a two-lane highway in Southern Ontario;
- 250 tonnes for a 185 m2 (2,000 sq. ft.) house; and
- 1,000-4,500 tonnes per kilometre of water main.

3.3 Aggregate Resources in Peel Region

Over the past 20 years, Ontario has consumed over 3 billion tonnes of aggregate or about 160 million tonnes per year on average with the Greater Toronto Area (GTA)[4] consuming in the range of 60 million tonnes per year to support growth. More than half of this material is produced outside of the GTA, and as the resource supply close to market is increasingly constrained, municipalities like Peel Region rely more and more on importing aggregate materials from neighbouring municipalities to meet demand.

Within the Region of Peel, significant aggregate resources are found primarily in the Town of Caledon, and Caledon has been one of the top aggregate producing municipalities in the province for over 25 years. Historically extraction took place in Mississauga and Brampton, however, these deposits are now depleted or inaccessible due to urbanization. As local resource supplies are depleted or unavailable, Peel Region as well as other GTA municipalities (York, Durham, Halton) increasingly rely on imports from surrounding areas. Aggregate production trends in Peel have been steadily declining from over 5 million tonnes per

[3] State of the Aggregate Resource in Ontario Study, Consolidated Report, 2010

[4] For the purposes of this report the GTA municipalities include York, Peel, Durham and Halton

year in the early 2000's to less than 3 million tonnes in the past few years, representing a decrease of almost 35%[5]. This reflects the general trend in the aggregate producing municipalities in the GTA, where overall production has declined to just over half the level of 20 years ago, mainly due to the reduced availability of licenced aggregate resources.

Given the costs involved with transporting aggregate resources to market, almost exclusively using trucks, Provincial Policy protects aggregate resources located "close to market". "Close to market" is generally understood to mean in close proximity to where the aggregate will ultimately be "consumed" (i.e. used in roads, buildings, etc.), or processed into other materials that are partially composed of aggregates (concrete, asphalt). As the supply of licensed resources within Peel becomes depleted or inaccessible, and as access to resources becomes increasingly complex, protection of remaining resource areas is important.

3.4 Aggregate Resource Planning in Peel

Land use planning policy for aggregate resources is complex as it is governed by a number of policies at the provincial and local levels. In Peel Region, the Growth Plan, Greenbelt Plan , NEP and ORMCP policies also apply. In addition to *Planning Act* approvals, aggregate operations require provincial approvals [License under the *Aggregate Resources Act* (ARA)] and the province has responsibilities for compliance and enforcement of aggregate operations and rehabilitation. The aggregate resources policy framework in Peel and Caledon is a continuum that starts with Provincial legislation, provincial plans that inform the ROP and is expanded in the Caledon OP. Applicants for a new aggregate licence or expansion to an existing licence must demonstrate how the requirements of the provincial plans and local official plans have been met.

The process for obtaining a new licence or amendment to an existing licence often generates a high level of community interest and participation. Public concerns are typically focused on the social, environmental and hydrogeological impacts of extraction. Other issues raised include visual impact, impact on sensitive land uses, noise, dust and the impacts of transporting aggregate to market along haul routes. Accordingly, municipalities have an interest in assessing social, environmental and other impacts when considering applications under the *Planning Act* and ensuring policies provide a comprehensive framework to guide their review. As a result, public and agency concerns are not always fully resolved

[5] The Ontario Aggregate Resources Corporation Annual Production Statistics available at https://toarc.com/production-statistics/

and applications for new or expanding aggregate operations are appealed to the Ontario Land Tribunal under both the *Planning Act* and *Aggregate Resources Act*.

As discussed in more detail in the next section, the existing aggregate planning policy framework in Peel and Caledon was informed by a comprehensive study that was undertaken between 1996-1998. The study was called the Caledon Comprehensive Resource Study or CCRS and took into account the provincial policy direction at the time, particularly the 1998 PPS as well as local considerations which were determined through community consultation. Through this study, an analysis of resource areas and constraints mapping led to the development of the High Potential Mineral Aggregate Resource Areas (HPMARA) and Caledon High Potential Mineral Aggregate Resource Area (CHPMARA) mapping in the Official Plans together with a comprehensive set of policies pertaining to aggregate resources. The Peel 2051 review will build upon the existing framework, taking into consideration updated provincial land use planning policies, local trends and other best practices.

The mapping found in the official plans is derived from information provided by the Province. The Ministry of Northern Development and Mines produces a mapping database called the Aggregate Resource Inventory Papers (ARIP) which identifies significant sand and gravel and bedrock resource areas. The Ministry now supplements the ARIPs with information provided on the Aggregate Resources of Ontario (ARO): OGSEarth geographic information database. All the sand and gravel deposits are first delineated by geological boundaries and then classified into one of three levels of significance: primary, secondary or tertiary. The process by which deposits are evaluated and selected involves the consideration of two sets of criteria. The main selection criteria are related to the characteristics of individual deposits. Factors such as deposit size, aggregate quality, and deposit location and setting are considered in the selection of those deposits best suited for extractive development. A second set of criteria involves the assessment of local aggregate resources in relation to the quality, quantity and distribution of resources in the region in which the report area is located. Criteria equivalent to those used for sand and gravel deposits are used to map select bedrock areas, with geologic formation and “drift thickness” (the amount of overburden covering the bedrock), as the key selection criteria.

The ARIP mapping for Peel Region was updated recently to reflect new drilling information which refined the mapping of bedrock resource areas. As part of the Joint Aggregate Policy Review with the Town of Caledon, HPMARA and CHPMARA mapping was reviewed and updated to consider the recent ARIP mapping updates in the Town. The methodology used to update the HPMARA mapping is discussed in more detail in a separate methodology report.

3.5 Caledon Community Resources Study (CCRS)

When Peel Region adopted its Official Plan in 1996, specific policies were included that required the Town of Caledon to undertake a comprehensive study to investigate aggregate resource management. To address this requirement, the CCRS was commissioned jointly by the Town of Caledon and the Region of Peel in 1996 with an overall goal "to develop a sustainable community model for the management of the aggregate resource that will enable the Caledon ecosystem and community to be maintained and enhanced over the long term". The study, arguably the most comprehensive aggregate study undertaken in Ontario, was a three-part exercise, that closely examined the issues related to aggregate resource management, and ultimately informed the aggregate policies in the current Official Plans for Caledon and Peel. There was extensive consultation with stakeholders in the community and the aggregate industry.

The concerns about aggregate extraction in Caledon that were expressed during the CCRS included truck traffic/transportation issues, rehabilitation (pace and quality), and community impact versus benefits. There were also concerns expressed about the regulation of the industry and what some felt was a lack of communication between aggregate operators and the community.

The CCRS Phase 1 identified the various community resources, including numerous environmental features, recreational areas, agricultural and economic resources and the interface with the aggregate industry. Phase 2 provided a more detailed evaluation of the constraints and opportunities associated with each of the aggregate resource areas within the Town. Phase 3 provided recommendations regarding broad or strategic policies and mapping for Caledon and Peel.

The recommendations from the CCRS were incorporated into the Town of Caledon Official Plan through Official Plan Amendment 161 which was adopted in March 2000. As part of the current policy review, the key issues and background identified in the CCRS were reviewed to understand the basis for the current policies. To set the stage, a characterization of the resource base and an overview of the industry in Peel is explored in the next sections.

4.0 CHARACTERIZING THE AGGREGATE RESOURCE BASE IN PEEL

Mineral aggregate deposits by nature, are found in river valleys, outwash plains, limestone plains, eskers, kames and moraines. These landforms also contain wetlands, woodlands, agricultural lands, ground and surface and water features. In some areas, like Peel, deposits are also located in proximity to rural settlement areas and other sensitive land uses. Many of these features are provincially and regionally significant and should be protected to support biodiversity and ecological health. Navigating policy and addressing and applying policy requirements for aggregate extraction in areas of overlapping provincial interest such as agriculture, natural heritage, cultural heritage and aggregates is challenging. In Peel Region, the multiple layers of provincial plan policy that must be addressed to manage growth while ensuring environmental protection, adds additional complexity to the planning process.

The regional characteristics and the distribution of surficial deposits in Peel Region strongly reflect the presence of the Niagara Escarpment and the influence of glacial activity that occurred at least 12,000 years ago. The Niagara Escarpment, formed by erosion over millions of years, greatly influenced the pattern of glaciation in the Region. The Escarpment is a high relief bedrock scarp that runs from the southwest of the Region to the northeast.

In Peel, the Niagara Escarpment divides the Region into two more or less distinct physiographic areas: the Oak Ridges Moraine found in north Peel (from top of Peel Region southwards until the Etobicoke Headwaters) and the Peel Plain and South Slope in middle and south Peel (Etobicoke Headwaters moving south until the Lake Ontario shoreline). North Peel contains steep, irregular topography up to 305 m.a.s.l.[6]whereas the Peel Plain and South Slope are more or less gradually sloping towards Lake Ontario at 76 m.a.s.l., with some very flat geographic areas such as the West Humber.

The Orangeville Moraine, which covers much of the northern portion of the Town of Caledon, was deposited by meltwaters flowing off the ice lobes at this time. The moraine, a large hummocky ridge composed of a mixture of sand, gravel and till, has been a source of aggregate production for many years.

The Ontario Lobe retreated below the brow of the Niagara Escarpment where it deposited a long hummocky ridge known as the Paris Moraine. Meltwaters flowing from the ice margin cut a large channel between the Paris Moraine and the Niagara Escarpment. Sand and gravel was deposited in this channel

[6] Metres above sea level (m.a.s.l.)

and formed the Caledon Outwash deposit. This deposit contains large resources of sand and gravel and is a major aggregate source in central Ontario. The vast majority of sand and gravel production in Peel Region takes place in this deposit.

The underlying bedrock in Peel include several different formations, and the ARIP mapping shows "drift cover" or overburden thickness of less than eight meters to identify important resource areas.

For construction aggregates, some parts of the Amabel Formation in Peel have been selected for possible bedrock resource protection as this formation is widely recognized for producing high quality road building and construction bedrock aggregate. There is a demand for high quality aggregate suitable for concrete used in construction of bridges and other infrastructure. Using the highest quality material found in the Amabel Formation produces infrastructure that lasts longer and has a direct impact on the long term cost of building and maintaining infrastructure.

The Queenston Formation is well suited for the manufacture of structural clay products such as brick and tile. This formation has been extensively exploited in the southern part of Peel, notably in the vicinity of Streetsville, Cooksville and Brampton.

4.1 Resource Areas in Caledon and Peel

While Caledon aggregate production to date has been primarily for sand and gravel, it is anticipated that the increasing demand for high quality aggregate that can only be sourced from limestone, there will be interest by producers to license quarries within the Town of Caledon in the future. Based on the updated provincial Aggregate Resource Inventory Mapping (ARIP) just over one-third of the significant aggregate resources identified within the Town of Caledon is stone, as compared to sand and gravel resources which have been the primary resources developed to date. Consequently, the Town and Region need to ensure the appropriate official plan policy framework is in place to address and manage both pit and quarry applications.

The CCRS reported that approximately 16,600 hectares of land in Caledon was identified as having high potential (primary/secondary) sand and gravel and/or bedrock resources based on the original ARIP mapping for Peel (See Figure 1). An evaluation of the constraints to extraction, which included settlements, significant wetlands, , woodlands, provincial plan designations and other Environmentally Sensitive Areas, identified areas unsuitable for extraction. A detailed discussion of the constraint evaluation can be found in CCRS Part 2.

The CCRS made further refinements to the resource areas removing small fragments and isolated areas and by distinguishing between sand and gravel and bedrock resource areas. The individual resource areas that were defined in the CCRS are described below.

Area #1 – Alton West

This area is located in the northwest corner of Caledon and is identified as an area of secondary significance and is primarily fine sand. The area is characterized by irregular topography and a high proportion of fine sands, known as the Hillsburgh Sandhills. There is currently no licensed extraction in this area.

Area #2 – Orangeville

Situated within the Orangeville Moraine, Resource Area #2 is classified as a deposit of primary significance. The deposit is accessible from Regional Road 136 and is close to Orangeville. There is currently one license within this area, the Olympia Sand and Gravel Pit, which was licensed in 2015 and consists of a licenced area of just over 111 ha.

Area #3 – Mono Mills

Also located within the Orangeville Moraine, Resource Area #3 is a sand and gravel deposit of secondary significance. There is currently no extraction activity in this area.

Area #4 – Melville

Located to the northeast of Alton, and extending towards Hurontario Street, this deposit of primary significance covered an area of 381 ha, according to the CCRS. The area has good access to Highway 10 and Regional Road 24 and 136. There is currently one license with a licenced area of 27 ha located on Porterfield Road within this area.

Area #5 – Cataract

Located in the west part of the Town, between Alton and Belfountain, this area includes both sand and gravel of primary significance as well as significant bedrock resources of the Amabel Formation. The Amabel is recognized as the formation producing the highest quality of crushed stone in Ontario. Regional Road 24 traverses the area.

The Town of Caledon CHPMARA prioritization plans (OP Schedule L) refers to this area as 5a –Belfountain (sand and gravel) and 5b – Belfountain (bedrock resource).

There are currently four licensed pits with a combined area of 325 ha in Area #5. Two additional licensed pits operated in this area and the licenses have been surrendered.

Area # 6 – Caledon Village

Located around Caledon Village, this sand and gravel deposit of primary significance has the highest concentration of licensed operations in the Region. The deposit area encompassed 1835 ha according to the CCRS data. The resource extends below the water table and an aerial view shows the vast areas of below water extraction that have occurred. Over 1,300 ha of this area is either currently licensed, or has been extracted and rehabilitated (see Figure 2). In addition to the sand and gravel deposit, primary bedrock resource is identified, in the area south of Charleston Sideroad and east of Caledon Village.

Area #7 – Grange

Located in the central part of Caledon, on the Oak Ridges Moraine, this is a deposit of secondary significance comprising of sand material, suitable for lower quality products. There is no licenced activity in this area.

Area #8 – Caledon East

This is a fragmented deposit, mapped in four segments, which collectively span 467 ha. This glacial outwash deposit is primarily a sand resource of secondary significance. There is one license located within this area.

Area #9 – Inglewood

Located east of Inglewood, on the brow and base of the escarpment, this is a bedrock resource area which includes portions of Amabel Formation suitable for construction aggregate, together with Queenston Formation which is suitable for shale. This is a deposit of primary significance with four quarry licenses, including Brampton Brick (shale) as well as three quarries which are “B” licenses, extracting material from above the water table, for landscape and dimension stone. There was an application to establish a quarry in the Amabel Formation (Rockfort Quarry) but the proposal was ultimately denied.

Area #10 – Humber

This is a sand and gravel resource area of secondary significance, located west of The Gore Road and south of Castlederg Side Road. The deposit is within the Oak Ridges Moraine. There is currently no extraction activity.

Area #11 – Brampton

The only resource area located outside of Caledon is a large area of primary significance for bedrock resources, in this case shale resource used in the manufacturing of brick. In 2005, the Region extended the urban boundary to include the North West Brampton Policy Area, which overlapped with a large portion of the shale resource area. A study was undertaken to consider the provincial direction related to protection of shale resources and the implications of growth in north west Brampton. The study concluded that the urbanization of the are served a great long-term public interest and recommended removing the policies protecting shale resources in the area. This recommendation was reflected in an amendment to the ROP (ROPA 32) which was subsequently appealed by the province due to a concern with the consistency with the PPS policies related to resource protection. A resolution was achieved in the form of modifications to ROPA 32 which allowed for development to proceed whileconsidering opportunities to extract the resource in advance of, or in coordination with, development. The HPMARA mapping in Brampton was amended to reflect the settlement.

As noted earlier in this report, the Joint Aggregate Policy Review will include an update to the HPMARA and CHPMARA mapping. As part of this review, there will be no further mapping adjustments to the area amended by ROPA 32 or amendment to the associated policies.

Image: Aerial view of the James Dick pit operations on the west side of Highway #10 in Caledon

4.2 Licensed Areas in Peel and Caledon

According to the Province's Aggregate Licensing Program database, as of January 2023, there are 24 *Aggregate Resources Act* (ARA) licenses within the Region of Peel (see Figure 3). This includes 19 sand and gravel pits and five quarries.

The ARA recognizes two types of licences, a Class 'A' (i.e. to remove more than 20,000 tonnes annually from a pit or quarry) and a Class 'B' (i.e. to remove 20,000 tonnes or less annually). ARA Regulation 244/97 sets out the mandatory conditions that must be included as part of every licence. These conditions include requirements for dust suppression, fuel storage and a spill contingency plan as well as securing permits for Environmental Compliance Certificates (ECA) and Permits to Take Water (PTTW) where required. Additional site-specific conditions reflect the recommendations provided in the technical reports and may include conditions related to hydrogeology, archaeology, natural heritage, noise mitigation and site rehabilitation.

An application to excavate aggregate closer than 1.5 m (for a pit) or 2 m (for a quarry) from the maximum predicted water table is considered a below water application. The site plan that is approved with the application would indicate whether the operation would extract above or below the water table or a combination of both. Ten of the 24 licenses in Peel Region are approved as below groundwater operations, including nine sand and gravel (pit) operations and one quarry operation. Half of the licenses in Caledon, representing 75% of licensed area, are held by two companies (Lafarge and James Dick Construction Limited).

There is one aggregate licensed site, a quarry, located in the City of Mississauga. The 33.6 ha quarry is part of the larger property occupied by the Ash Grove Cement Plant (formerly St. Lawrence Cement) a manufacturing facility that has been in operation for 65 years. This is one of five cement plants located in Ontario.

In addition to the quarry license in Mississauga, there are four other quarry licenses in Peel. Brampton Brick operates the only other class A quarry in Peel Region, and this 100-ha license is located between Terra Cotta and Cheltenham, within a shale resource area. The shale extracted within Brampton Brick's Cheltenham quarry is used for the manufacturing of brick at Brampton Brick's manufacturing plant in located in the City of Brampton. Credit Valley Sandstone and DeForest Brothers operate small class B licensed quarries in Caledon. They produce flagstone and dimension stone from the sandstone of the Whirlpool Formation. One of these quarries is currently the only known Canadian source of the red-coloured sandstone that can match the Ontario Legislative Buildings in Toronto. This quarry can provide

dimension stone for repair and restoration. There are currently no quarry operations that produce construction aggregate in Peel Region. A proposal by James Dick Construction Limited in 1998 (Rockfort Quarry) was denied by the Ontario Municipal Board (OMB) in 2008. At this time of this study, there is another limestone quarry proposal that was recently submitted to the Town by CBM Aggregates in the vicinity of Charleston Sideroad and Regional Road 136.

The total combined licensed area in 2023 is 1,887 hectares which represents a decrease of 10% from the 2,096 hectares licensed in 1998. The change in total licensed area is a result of some licenses being rehabilitated and surrendered, and the area of newly licensed sites is smaller than the surrendered sites. There is currently one active application for a new sand and gravel pit (McCormick Pit) which would add an additional licensed area of 26 hectares if approved.

There are 20 licensed pits in Peel Region, all located in the Town of Caledon (see Figure 4). As mentioned, sand and gravel extraction is concentrated in the area around Caledon Village, on the east and west sides of Highway #10. In terms of licensed area, this concentration represents 75% of the total licenced area in the Region. Many of these licenses operated below the water table and this has had a significant impact on the landscape in the area.

In the past 20 years, there have been four applications for new pit licenses that received approval. This includes two licenses in Resource Area #6 (Lafarge Limbeer, Lafarge Lawford) adding 148 ha, one license in Area 2 (OlympiaSand and Gravel) adding 111 ha of licensed area and one licence in Resource Area #5 (James Dick Construction Limited, Erin Pit) adding 124.9 ha of licensed area.

Over the same period of time, a number of pit licenses have been depleted and rehabilitated and the licenses have been surrendered. This includes Jannock Brick limited, Armbro and Warren Paving in Brampton, as well as Lafarge Flaherty, and Pinchin pits in Caledon.

There is one pit application in process in Caledon (Blueland Farms McCormick pit). This application is for a below water license.

ARA LICENSES IN PEEL REGION, 2023

ALPS ID	LICENCEE	OPERATION	TYPE	Max. Tonnage	Water Status	Licensed Area (Ha)
6677	BROCK AGGREGATES	Pit	CLASS A	270000	Below Water	32.7
6516	DEFOREST BROS	Quarry	CLASS B	20000	Above Water	10.27
6551	CREDIT VALLEY SANDSTONE	Quarry	CLASS B	20000	Above Water	1.05
6517	JAMES DICK CONSTRUCTION LTD	Pit	CLASS A		Below Water	21
6552	CREDIT VALLEY SANDSTONE	Quarry	CLASS B	20000	Above Water	40.47
6630	BRAMPTON BRICK	Quarry	CLASS A	540000	Below Water	99.15
6510	NEIL MONKMAN	Pit	CLASS B	20000	Above Water	13.9
6609	CRH CANADA GROUP	Quarry	CLASS A	90700	Above Water	33.6
6525	WARREN PAVING & MATERIALS (LAFARGE)	Pit	CLASS A		Above Water	37.47
6619	WARREN PAVING & MATERIALS (LAFARGE)	Pit	CLASS A	450000	Above Water	78.2
6506	2004295 ONTARIO INC.	Pit	CLASS A		Below Water	571.7
6670	TOWN OF CALEDON	Pit	CLASS A	200000	Above Water	9.2
6568	WARREN PAVING & MATERIALS (LAFARGE)	Pit	CLASS A		Below Water	41.88
625823	LAFARGE	Pit	CLASS A	1000000		39.7
6523	WARREN PAVING & MATERIALS (LAFARGE)	Pit	CLASS A		Below Water	43.42
6622	GRAHAM BROS	Pit	CLASS A	900000	Above Water	63.22
6685	GRAHAM BROS	Pit	CLASS A	900000	Above Water	35.35
6512	CALEDON SAND & GRAVEL	Pit	CLASS A	1800000	Below Water	214.3
19073	CALEDON SAND & GRAVEL	Pit	CLASS A	1800000	Below Water	82.8
626172	JAMES DICK CONSTRUCTION LTD	Pit	CLASS A	1800000		124.9
6524	WARREN PAVING & MATERIALS (LAFARGE)	Pit	CLASS A		Below Water	36.6
608341	LAFARGE	Pit	CLASS A	750000	Above Water	107.9
6537	JAMES DICK CONSTRUCTION LTD	Pit	CLASS A	0	Below Water	27
625402	OLYMPIA SAND & GRAVEL	Pit	CLASS A	950000	Above Water	111.6

4.3 Licensing Activity 2000-2021

At the date of this report, there are seven aggregate applications that have been proposed in Peel Region in the past 20 years, all within the Town of Caledon. The chart below provides a summary of licensing activity, including the status of each application. The applications for the Rockfort Quarry, Olympia Sand and Gravel pit and James Dick Erin Pit were referred to OMB and LPAT. Some of the key takeaways from the tribunal decisions are discussed below.

APPLICATION	RESOURCE AREA	TYPE OF APPLICATION	AREA TO BE LICENSED (ha)	STATUS
James Dick Rockfort Quarry	9 - Inglewood	Quarry	89	Denied 2008
Lafarge Lawford Pit	6 – Caledon Village	Pit	107	Approved 2012
Olympia Sand and Gravel	2 - Orangeville	Pit	111	Approved 2015
Lafarge Limebeer Pit	6 – Caledon Village	Pit	45	Approved 2019
James Dick Erin Pit	5 - Cataract	Pit	125	Approved 2021
Blueland Farms McCormick Pit	6 – Caledon Village	Pit	26	In process (submitted 2013)
CBM Aggregates Quarry	6 – Caledon village	Quarry	n/a	Submitted 2023

4.4 Ontario Municipal Board (OMB) and Local Planning Appeal Tribunal(LPAT)

The James Dick Erin Pit (expansion) was referred to the LPAT in 2020 as a result of unresolved objections on the ARA license application, as well as an appeal for non-decision on the zoning. The applications ultimately received support from the Town of Caledon and the Region of Peel as detailed in the February 2020 Town of Caledon staff report (2020-0016). The application was approved by LPAT in April 2021.

The Olympia Sand and Gravel pit proposal was originally introduced in 2005. The proposal was refined through the early stages of review and in 2008 a statutory Public Information Meeting was held under the *Planning Act*. The applicant continued to adjust the plans in response to concerns/issues raised by residents, the Ministry of Natural Resources (MNRF), and commenting agencies, and another public information session was held in 2013 to provide further opportunity for public input. The *Planning Act* applications were approved by the Town of Caledon in 2013. There was significant public opposition to this pit, in response to concerns about impacts on water, air quality and traffic, and the application was referred to the OMB. The OMB decision characterized the main issue as a concern with impacts on water. There were some site-specific conditions added which included circulating the municipality on any future Permit to Take Water applications. The Board heard objections from a number of residents at the hearing, but ultimately found the applications had appropriately addressed the technical and planning concerns. In November 2015, the OMB dismissed the appeals on the *Planning Act* applications and directed MNRF to issue the license. The license was issued in 2017 and the site began operations that year.

The Rockfort Quarry application began in 1998 and was referred to the OMB in 2000. After numerous prehearing conferences and procedural decisions, the hearing was scheduled in 2009. The hearing process took over 10 years and ultimately the application was denied by the Board. Some of the key issues were concerns with environmental impacts, lack of an appropriate mechanism to implement and monitoring of an Adaptive Management Plan, and concerns with the proposed haul route. The Region of Peel together with the Town of Caledon and the Credit Valley Conservation Authority, opposed the Quarry application for several reasons. The Region's staff report stated:

"Although the Regional Official Plan recognizes the potential economic benefits of utilizing high potential mineral aggregate resources and the public interest of having a new source of high quality aggregate close to market, Regional Council has not been satisfied by the applicant that the proposed extraction of the aggregate resource in this location can be undertaken without causing significant adverse impacts, risks and costs to ground and surface water resources, the natural environment, the local community, and the economic interests of the taxpayers and residents of the Region of Peel" (Region of Peel Staff Report and Recommendation, March 2009).

Among the significant issues that were central to the OMB's decision to deny the applications, were concerns with the proposed haul route, visual and cultural heritage impacts, and concerns with the proposed AMP.

The OMB decision stated:

"A failure in the mitigation measures proposed for the quarry … would have a catastrophic impact on the natural environment or the natural features and functions of the area," the decision said. "Such an impact cannot be countenanced by the Board. In addition, the fundamental change to the character ofthe area attendant upon the proposed quarry would not be acceptable."

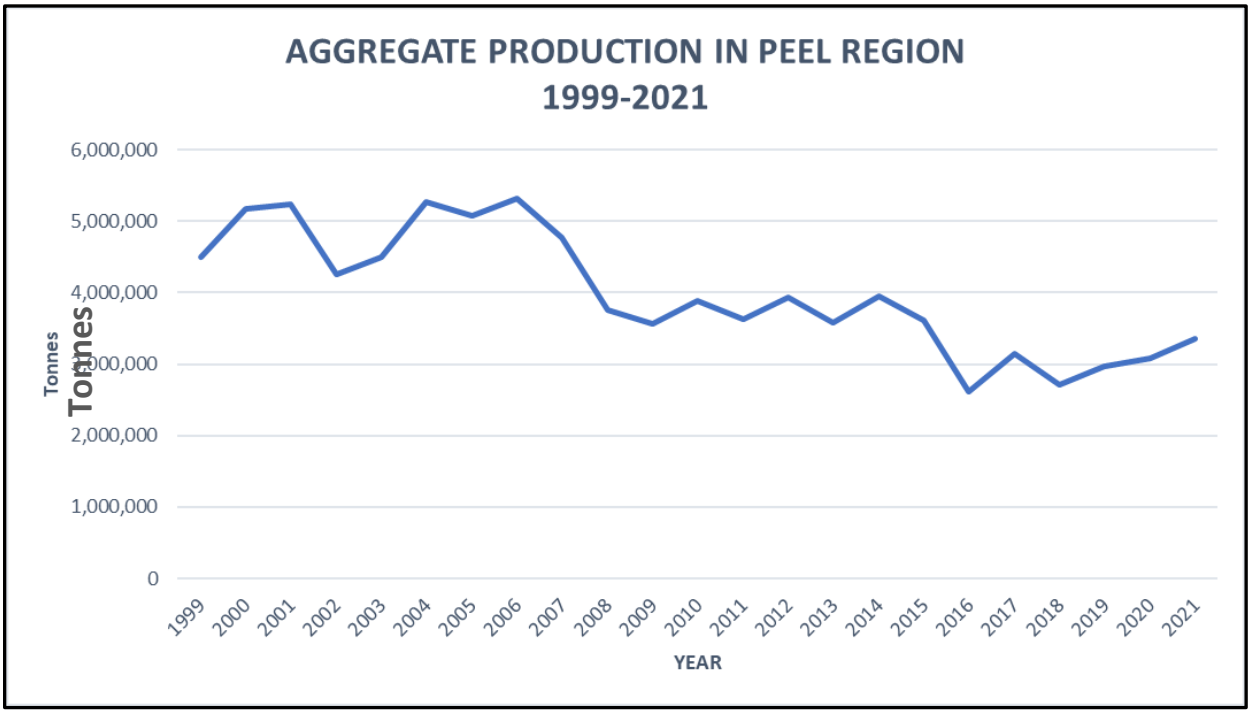
Section 3 of this report explores the use of AMPs in other areas of the province and outlines how other municipalities have addressed issues related to monitoring and financial security.

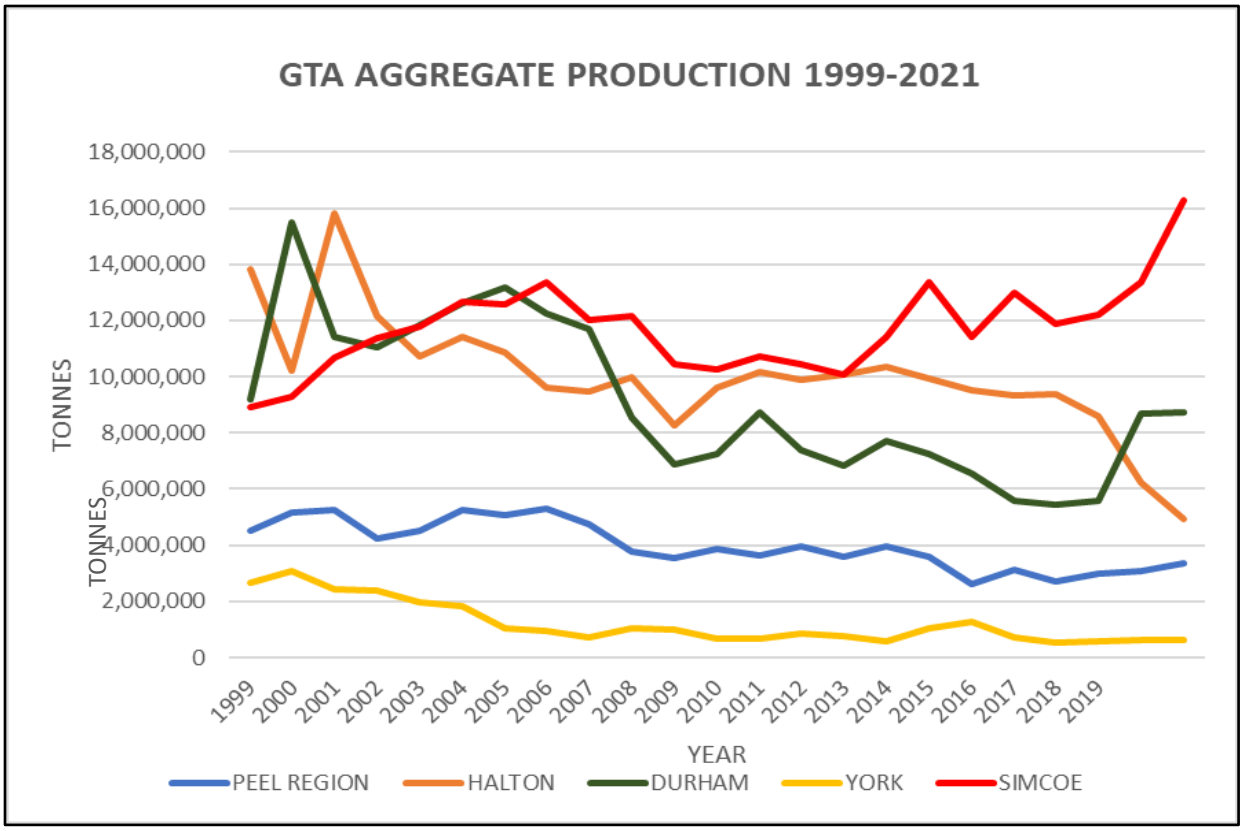
4.5 Aggregate Production Trends: 2000-2020

Production statistics are submitted for every licensed site in the Province and are reported annually by The Ontario Aggregate Resources Corporation (TOARC). In the 1980's and 1990's, the Town of Caledon was ranked as one of the highest aggregate producing municipalities in the Province, reporting an average of 5 million tonnes per year. While Caledon is still one of the top producing municipalities, the Town has not ranked in the top 10 as reported by TOARC since 2015. Aggregate production in Peel and Caledon has been steadily declining over the past 15 years, and in recent years the annual volume is less than 3 million tonnes. This decline mirrors the trend in GTA municipalities, as licensed supply is depleted without replacement licenses and an increasing proportion of aggregate consumed in the GTA is being imported from neighbouring municipalities.

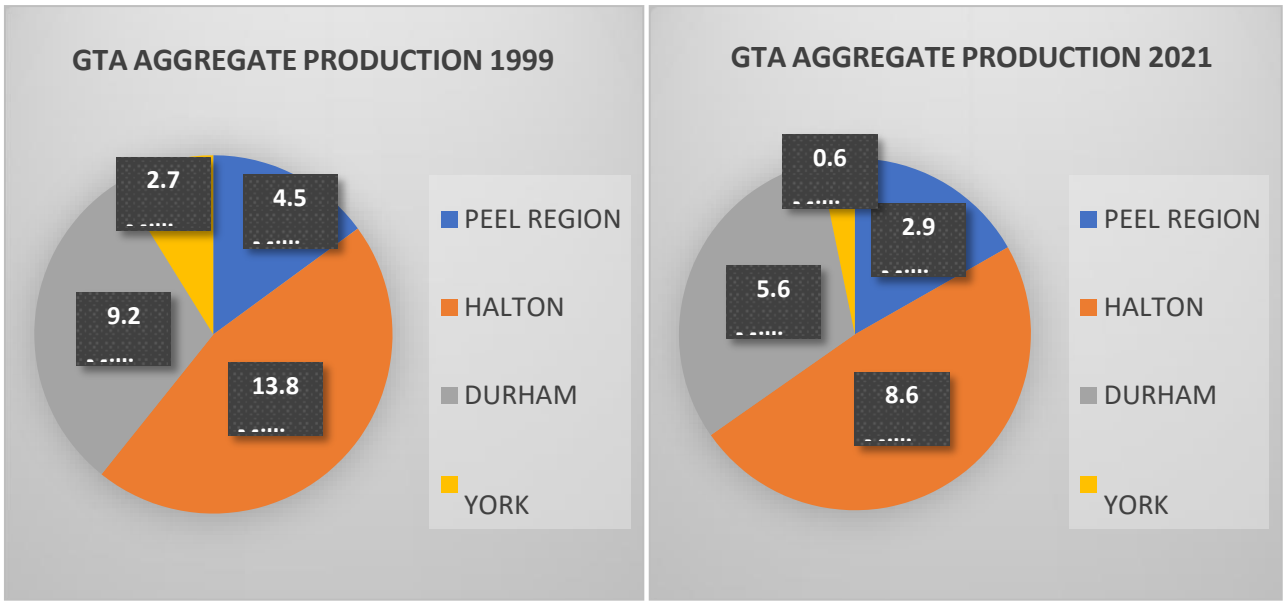
For example, the quarries in Halton Region were at one time a significant source of crushed stone for the GTA. As the licensed reserves became depleted, there was a substantial decline in Halton production. An increasing amount of crushed stone for use in the GTA is being imported from Simcoe County and the City of Kawartha Lakes.

The following charts depict production trends in Peel and the GTA over the last 20 years using data from the TOARC annual production statistics.


AGGREGATE PRODUCTION IN PEEL REGION
1999-2021
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
Tonnes
Tonnes
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
YEAR


GTA AGGREGATE PRODUCTION 1999-2021
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
TONNES
TONNES
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
YEAR
PEEL REGION
HALTON
DURHAM
YORK
SIMCOE

Within the GTA, Peel/Caledon production in 2021 represents about 19% of total GTA Production. This proportion is similar to the 1999 percentage. At its peak in 2001, GTA production was 34.9 million tonnes. In 2021, the total was 17.6 million tonnes, a reduction of nearly 50%. Although the amount of tonnage produced is declining across the GTA Regions, including in Peel/Town of Caledon, the proportion of Peel's/Town of Caledon's production still remains at the same proportion at 19%."



4.6 Aggregate Rehabilitation Trends in Peel Region

Rehabilitation is a requirement that must be fulfilled by every operator in accordance with the site plans approved under the ARA. The rehabilitation of pits and quarries generally refers to the grading, replacement of soil, and revegetation of the land, in order to transform the depleted pit or quarry to a post-extractive land use. Progressive rehabilitation means rehabilitation done sequentially, whereas final rehabilitation refers to rehabilitation that is performed after aggregate resource excavation is complete. Current MNRF requirements stipulate that vegetation being re-planted must be comprised of species that are native to the area.

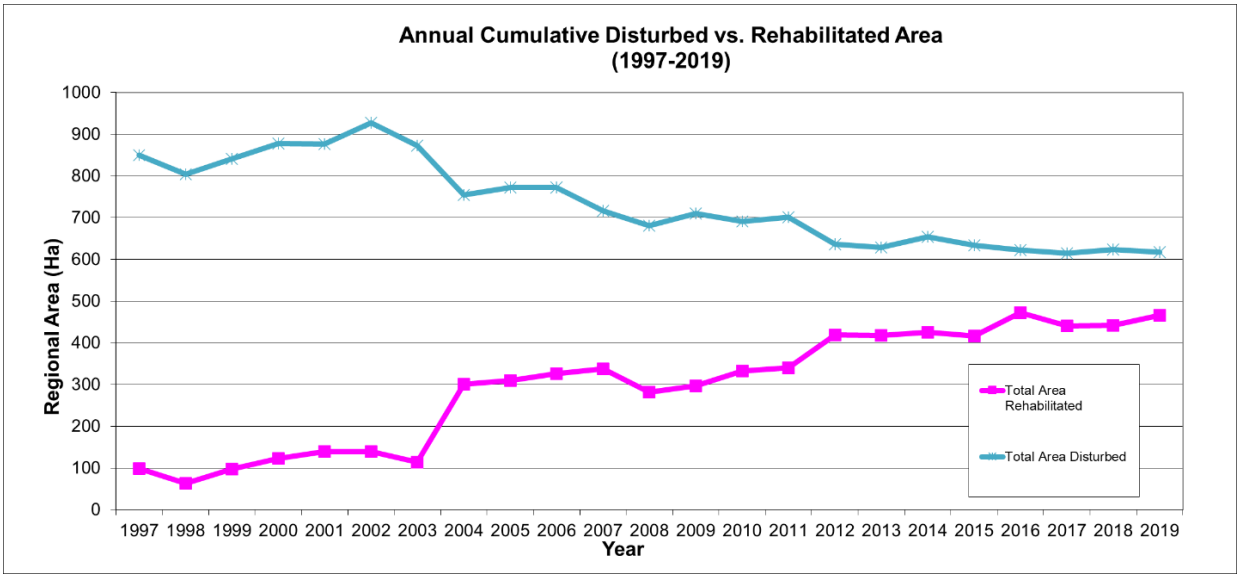
One of the concerns that has consistently been raised in relation to aggregate resource operations relates to the pace and quality of rehabilitation of former aggregate sites. This was also one of the major community concerns expressed in the CCRS reports.

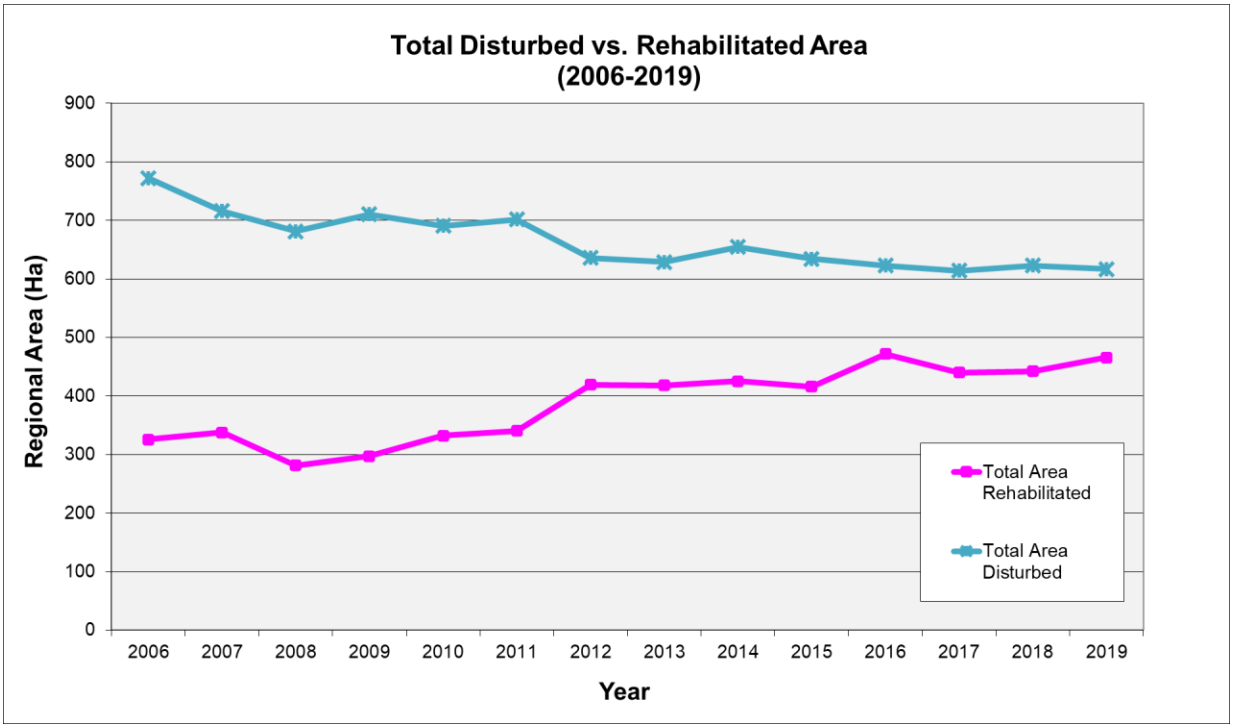
While there are some excellent examples of rehabilitated sites, there is a wide range in the quality of aggregate rehabilitation. Where extraction takes place below the water table, the landscape is permanently altered. The community impact of aggregate extraction is prominent in the area around Caledon Village, where vast areas of extraction have transformed the area into a series of ponds and lakes. In 2022, Caledon completed its "Master Aggregate Rehabilitation Plan" a report which outlined objectives for the after uses of this area.

Image: Rehabilitated area of the James Dick pit operations on the west side of Highway #10 in Caledon

In accordance with the ARA, each licensee is required to submit an annual Compliance Assessment Report (CAR) to MNRF with copies provided to the local and upper tier municipality. The CAR form reports on a range of operating conditions, and also requires that the licensee report disturbed and rehabilitated areas within the licence. The figures presented in the CAR reports represents the annual amount of disturbed and rehabilitated areas within the reporting year. The trend in Peel Region shows that the ratio of disturbed area to rehabilitated area has changed over time with an increase in the rehabilitated area and a decline in the disturbed area (see charts below). Of the total licensed area within the Region, the percentage of disturbed area has declined from just over 21% in 1999 to 16% in 2019 according to the data reported in the CAR forms.

The CAR forms were revised in 2020 to include additional requirements related to rehabilitation. In addition to providing the total area disturbed and the total area rehabilitated, each licencee must now report on sloping of faces, grades and elevations, the location, layout and type of vegetation established during progressive and final rehabilitation in accordance with the site plan, sequencing of operations and status of progressive rehabilitation. A checklist of the rehabilitation activities must also be completed for each licence (e.g., backfilling, rough grading, cultivating, aerating, re-spreading of topsoil, seeding/tree planting) as well as the intended use of the area that was rehabilitated in the previous calendar year (e.g., agricultural, recreational, natural, water, etc.).





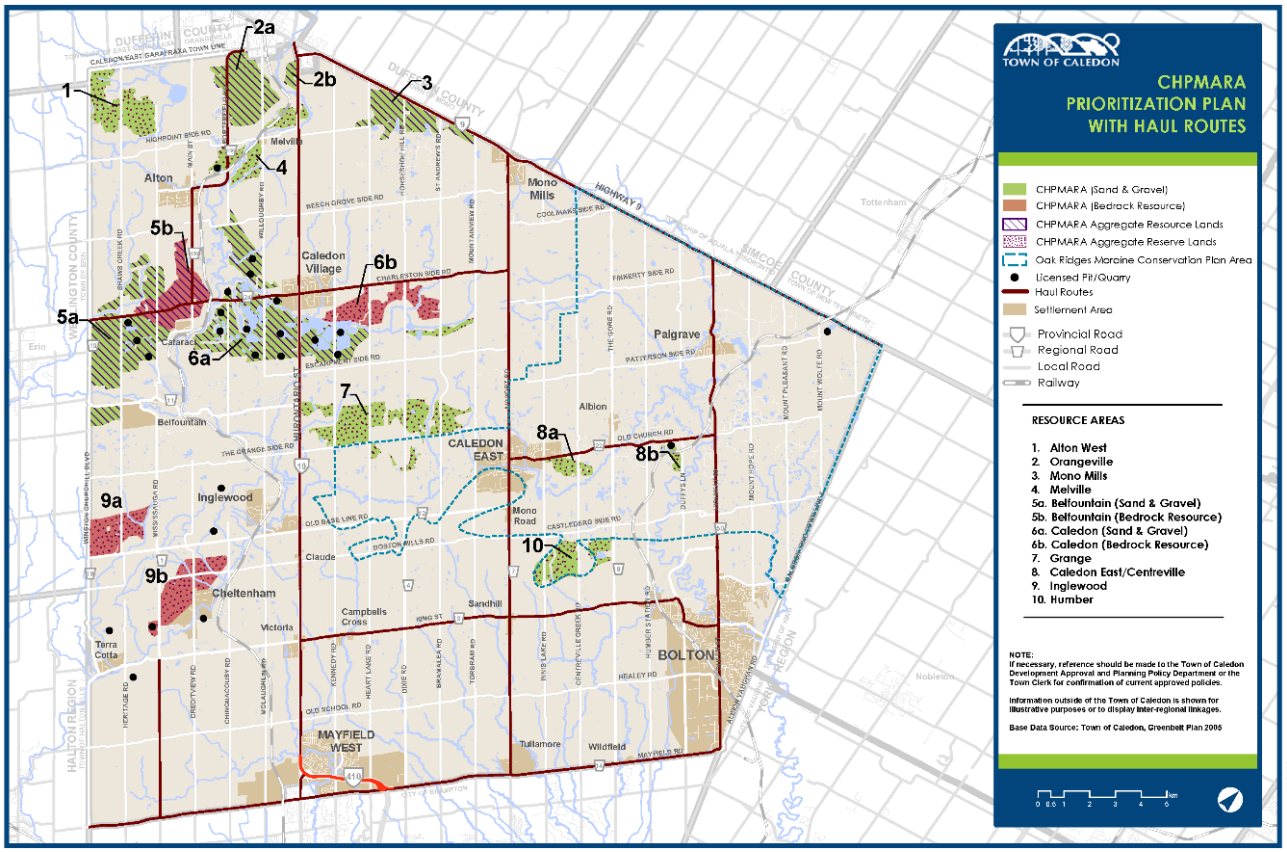
4.7 Haul Routes and Goods Movement

Trucking of aggregates is often a contentious issue for local municipalities due to impacts on residents located near haul routes and the wear and tear on roads caused by trucks over time. As noted in MTO's Commercial Vehicle Travel Profile (October 2015), trucks carrying minerals (primarily gravel) account for 6% of commercial vehicle trips and 20% of cargo weight in Peel Region. Gravel is the Peel Region's top commodity by weight at 13,862,000 tonnes (9%). The high cargo weight of aggregates has a significant impact public infrastructure – requiring a higher standard of pavement design and/or more frequent rehabilitation. A recent amendment to the ARA, subsection 12.(1.1), addressing matters to be considered by the Minister when considering approval of an aggregate licence, states "the Minister or the Tribunal shall not have regard to ongoing maintenance and repairs to address road degradation that may result from proposed truck traffic to and from the site" which has the effect of limiting the matters that can be included in haul route agreements that may be required as part of an aggregate licence approval.

While the transport of aggregate is expected to be a major component of goods movement in Caledon given the location of pits and quarries, the number of weekly trucks carrying minerals is actually higher in Brampton and Mississauga. This reflects the dispersed travel patterns of aggregates to construction sites or aggregate recycling sites in Brampton and Mississauga. As well, this may indicate that the aggregate needs of Brampton and Mississauga are greater than what is produced in Caledon, requiring aggregate to be trucked in from other areas such as the Milton-area quarries.

In Caledon, existing haul routes used to transport aggregate from the local aggregate pits to their destinations are confined to a relatively small network of Regional Roads and Provincial Highways within the Town of Caledon. As a result of the significant number of pits located in areas surrounding the Village of Caledon, the truck activity is concentrated in the area of Highways 10 and 24 (Charleston Sideroad) which has had significant local impacts.

The current policies in the Caledon OP set out the criteria for addressing traffic impacts for new applications and identify the network of preferred haul routes in the municipality.



5.0 POLICY GAPS AND CONSISTENCY ANALYSIS

The legislative and policy framework for managing aggregate resources is complex, as it is governed by a myriad of policies at the provincial, regional and local levels. The protection and management of aggregate resources has been deemed to be of provincial significance and aggregate operations are regulated by specific legislation. In addition to the ARA, the development of aggregate extraction operations must conform to and have regard for the provisions of the *Planning Act*, and provincial plans such as the Greenbelt Plan. Aggregate operations must balance the provincial interest with the municipal interest as expressed in official plans and zoning bylaws.

When the municipal council makes a land use planning decision, it will appropriately be guided by provincial interests. In the case of aggregate resources, often more than one provincial interest exists, and it is the goal of sound land use planning to balance and protect these competing interests in the most effective manner, keeping in mind the long term planning horizon.

While the licensing and management of aggregate resource operations in the province is governed by the ARA, and administered by the MNRF, land use planning considerations including siting of operations and assessment of impacts, is purview of provincial and local plans. In Peel Region, there are multiple layers of relevant policy including the Growth Plan, the Greenbelt Plan, ORMCP and the NEP.

In considering new aggregate operations or expansions of existing aggregate operations, proponents are required to submit applications under two Provincial Acts, the ARA, and the *Planning Act*. In the areas of Peel Region within the Niagara Escarpment Plan Area (NEPA), the application is also considered pursuant to the *Niagara Escarpment Planning and Development Act* (NEPDA). Although the Province guides the review and decision-making on applications for new or expansions to existing aggregate operations and the management of existing operations through the ARA, the Region and the Town of Caledon have an important role implementing provincial policy in a way that reflects unique local interests and community values.

In addition to undertaking a thorough review of the current provincial regulatory and policy framework, this Discussion Paper also explores, implementation of the provincial policies in municipal official planning, and official plan policies which respond to local context. Some of the policy approaches and implementation tools that have been developed by other municipalities to deal with management of aggregate resources have been reviewed.

5.1 Aggregate Resources Act (ARA)

The ARA is administered by the Ministry of Natural Resources and Forestry (MNRF) and provides guidelines for the management of aggregate resources in Ontario. The four established purposes for the ARA are to:

(a) to provide for the management of the aggregate resources of Ontario;
(b) to control and regulate aggregate operations on Crown and private lands;
(c) to require the rehabilitation of land from which aggregate has been excavated; and
(d) to minimize adverse impact on the environment in respect of aggregate operations.

In the ARA, the definition of "environment", cited in the purposes above, is intended to refer to the natural environment such as "the air, land and water".

The ARA states that "no license shall be issued for a pit or quarry if a zoning by-law prohibits the site from being used for the making, establishment or operations of pits and quarries." (Section 12.1(1))

Section 12(1) of the ARA outlines the conditions that the Minister shall have regard to in determining whether or not to issue a license. These are:

(a) the effect of the operation of the pit or quarry on the environment;
(b) the effect of the operation of the pit or quarry on nearby communities;
(c) any comments provided by a municipality in which the site is located;
(d) the suitability of the progressive rehabilitation and final rehabilitation plans for the site;
(e) any possible effects on ground and surface water resources including on drinking water sources;
(f) any possible effects of the operation of the pit or quarry on agricultural resources;
(g) any planning and land use considerations;
(h) the main haulage routes and proposed truck traffic to and from the site;
(i) the quality and quantity of the aggregate on the site;
(j) the applicant's history of compliance with this Act and the regulations, if a licence or permit has previously been issued to the applicant under this Act or a predecessor of this Act; and
(k) such other matters as are considered appropriate.

Section 12.2 of the ARA indicates that the MNRF may include such conditions as are considered necessary within a license and that the Minister of MNRF has the discretion to add a condition or rescind or vary a condition at any time. In considering appropriate conditions and the site plan, the MNRF generally consults with commenting agencies including municipalities.

Sections 12.2 and 15.1 give MNRF the authority to determine the conditions that will apply to a license and in order to manage compliance, the ARA requires that every licensee submit an annual compliance report to MNRF [7]. Inspectors also have authority to inspect a licensed site at any time and can issue orders to correct any non-compliance issues or to complete progressive rehabilitation.

The requirements for aggregate rehabilitation are outlined in Part VI of the ARA. Section 48 indicates that "Every licensee and every permittee shall perform progressive rehabilitation and final rehabilitation on the site in accordance with this Act, the regulation, the site plan and the conditions of the license or permit to the satisfaction of the Minister." In addition, this section provides the MNRF with the ability to order a person to carry out progressive or final rehabilitation.

5.2 Aggregate Resources Act Reforms

In 2015, MNRF introduced "A Blueprint for Change" a document outlining proposed changes to the ARA to strengthen and modernize the policy framework for managing aggregates in Ontario. The Blueprint focused on four main areas of opportunity including stronger oversight of aggregate operations, environmental accountability by updating application requirements and improving tracking and record keeping; improved accessibility to information and enhanced opportunities for consultation; and increased fees and royalties. The proposed changes received broad support for many of the changes from industry, environmental interest groups, and municipalities.

On May 9, 2017, the Ontario Legislature passed the *Aggregate Resources and Mining Modernization Act* (ARMMA). The passage of this amendment to the ARA marked a further step in Ontario's ongoing overhaul of the rules surrounding resource extraction in the province, which began in 2009. Many of the details related to these changes were left to regulation, which was introduced in August 2020.

The ARMMA introduced new licensing conditions, giving the Minister new regulation-making powers relating to the preparation of, and the documentation to be included in, applications.

[7] Site plans attached to aggregate licences contain site plan notes that are important conditions for implementing mineral aggregate operations and for mitigating and monitoring adverse and negative impacts.

It also requires the Minister, in exercising any power under the ARA relating to licences or permits that has the potential to adversely affect established or credibly asserted Aboriginal or treaty rights, to consider whether adequate Aboriginal consultation has been carried out.

The ARMMA also introduced new enforcement powers and increased penalties for non-compliance.

While the ARA already required every licensee or permittee to undertake progressive rehabilitation and final rehabilitation of the site of a pit or quarry, the changes introduced a new requirement to submit reports on these rehabilitation activities. The licensee will also need to be aware of the increased importance of community and Aboriginal consultation in the process, as well as the increased liabilities for failure to comply with the ARA.

In 2019, the ARA and PPS were further amended to not permit municipalities to enact zoning by-laws that prohibit the depth of extraction on a site. The intent of this amendment was to confirm extraction depth is regulated through the site plan associated with the licence and not municipal zoning by-laws.

MNRF restructured the program delivery for aggregates on April 1, 2020, introducing a new centralized department with a mandate for processing all aggregate license and permit applications, as well as site plan amendments and license transfers and surrenders. The Integrated Aggregate Operations Section (IAOS) includes a team of aggregate technical specialists together with a hydrogeologist, biologist, and planner. By centralizing the review function, the IASO seeks to improve consistency in the way applications are managed across the province. The move also separated the application review function from the compliance and inspection function, leaving the responsibility for monitoring and enforcement of licenses with local district office staff.

In August 2020, following a year of consultation, the government released the revised General Regulation under the ARA which introduced the following changes:

- new and updated technical reports and information requirements for applications to establish new pit or quarry including enhanced water study requirements;
- updated site plan requirements for new pit and quarry applications;
- enhanced notification and consultation requirements for new pit and quarry applications;
- updated conditions that will apply to newly issued licences and permits;

- new application requirements for existing pit or quarry operators wishing to make an amendment to extract below the water table or to expand into an adjacent road allowance;
- new rules requiring custom plans to be prepared for applications seeking to extract from land under water;
- new rules to allow self-filling of some minor routine site plan amendments (e.g. re-location of some structures or fencing as long as setbacks are respected);
- updated operating requirements that apply to all pits and quarries authorized under the ARA; and,
- updated annual compliance reporting requirements, including a streamlined report for inactive sites.

The new regulations require applications made after April 1, 2021 to meet the new standards which include providing additional information related to source water protection, and a full year of water level monitoring for below water applications. The ARA notification and consultation period which occurs at the beginning of the license review process, was also extended, from 45 days to 60 days. As part of the modernization process, electronic communication is recognized as an acceptable method of submitting comments and confirming any objections, reducing the need to objectors to provide notice by registered mail. A new "Objector Form" has also been developed by the Ministry as part of the application package to be completed where any individual or organization has unresolved objections at the end of the two-year ARA process.

5.3 History of Aggregate Planning Policy in Ontario

In 1978, the Mineral Aggregate Policy for Official Plans (Ten Point Policy for Aggregates) was approved by Cabinet as one of the first Provincial statements. The purpose of the Ten Point Policy was to provide direction for municipalities on Official Plan aggregate resource policies. Some of the general themes included a shared responsibility for supply, identifying high potential mineral resource areas, protecting resource areas from incompatible land uses and a requirement to make aggregates available at a reasonable cost including environmental, transportation and energy costs.

In December 1982, the Mineral Aggregate Resources Planning Policy was published. This included 13 directions to municipalities and to the Ministry regarding the regulation of aggregate resources and operations. In 1986, the Mineral Aggregate Resources Policy Statement (MARPS) was approved as the first policy statement issued under Section 3 of the *Planning Act*. Essentially this statement declared that

aggregate resources are of Provincial interest and all municipalities have a shared responsibility for meeting the needs to provide this resource when it is found within a municipality. A basic premise of MARPS was that it did not supersede or take priority over other policy statements or other policy for specific areas of the province. MARPS included specific policies to ensure regard to the importance of mineral aggregates was taken into account in any related planning action.

In 1995, the Comprehensive Set of Policy Statements came into effect. Section F was a separate Mineral Aggregate Resource Policy. Municipal planning decisions were to be consistent with this Policy.

In 1996, the PPS was introduced to provide overall policy direction on matters of provincial interest related to land use planning and development. The PPS set out policies that deal with the use and protection of the province's resources, including agricultural land, mineral resources, natural heritage resources, ground and surface water and cultural heritage resources. The PPS contemplates the balancing of these various Provincial interests by considering the characteristics of and circumstances affecting a given municipality. Municipal official plans have been identified by the PPS as the most important vehicle for implementing Provincial Policies. Municipal planning decisions were to have regard for this policy.

The PPS was reviewed and updated in 2005, 2014 and most recently in 2020. The intent of the PPS with respect to mineral aggregates remains basically the same as those policies for aggregate which preceded it. The 2014 PPS introduced a policy to encourage comprehensive rehabilitation planning in areas where there is a concentration of mineral aggregate operations. Some refinement was also made to the policy for aggregate resource conservation, to include a specific reference to aggregate recycling, and the "preclude and hinder" policies were revised to require consideration of deposits of mineral aggregate resources and adjacent lands. Policy 2.5.2.2 is the only provincial interest that directs municipalities to seriously consider social impacts: "Extraction shall be undertaken in a manner which minimizes social, economic and environmental impacts."

5.4 Provincial Policy Statement, 2020 (PPS)

The most recent changes to the PPS are reflected in the 2020 PPS. The PPS recognizes that the Province's natural heritage resources, water, agricultural lands, mineral aggregate resources, cultural heritage and archaeological resources provide important environmental, economic and social benefits. The wise use and management of these resources over the long term is a key provincial interest. The Province must

ensure that its resources are managed in a sustainable way to conserve biodiversity, protect essential ecological processes and public health and safety, provide for the production of food and fiber, minimize environmental and social impacts and meet its long term economic needs. (PPS, Part IV).The aggregate related policies in the latest version of the PPS are very similar to the policies that arereflected in the 2005 and 2014 PPS. The PPS continues to require that mineral aggregate resources be identified and protected for long term use, that as much of the resources as is realistically possible be made available as close to markets as possible and that extraction be undertaken in a manner which minimizes social, economic and environmental impacts. Extraction of mineral aggregate resources continues to be recognized as a permitted non-agricultural use in prime agricultural areas (Sections 2.3.6.1a). The policies related to identifying and protecting long-term resource supply in known deposits and on adjacent lands from development and activities that would preclude or hinder resource use are unchanged (Section 2.5.2). Adjacent lands are defined as lands contiguous to lands on the surface of known deposits of mineral aggregate resources where it is likely that development would constrain future access to the resources. For bedrock deposits the current guidance as provided in MNRF's 1997 Non-Renewables Training manual defines "adjacent" to be a minimum of 500 metres or as indicated for heavy industry as defined in the MECP's D-6 Guideline on Separation Distance Between Industrial Facilities and Sensitive Land Uses. For sand and gravel deposits, "adjacent" is generally defined as 300 metres. Distances are to be measured from the outside boundary of the deposit. The MECP Guideline generally classifies mineral aggregate operations as a Class III industrial use. The MECP Guideline recommends a 1000 metres potential area of influence and 300 metre minimum separation distance for Class III industrial uses and sensitive land uses.

It is important to note that the PPS policies are to be read in their entirety and all relevant policies applied to each situation. The PPS sets out policy direction for land use compatibility between 'major facilities', defined to include resource extraction activities, and 'sensitive land uses' (Section 1.2.6), which is discussed in more detail below. The PPS also directs municipalities to protect natural heritage features for the long term (Section 2.1); protect, improve and restore the quality and quantity of water resources (Section 2.2); and require that "extraction shall be undertaken in a manner which minimizes social, economic and environmental impacts." (Policy 2.5.2.2)

In 2019, changes were made to the ARA restricting the ability of municipalities to regulate the depth of extraction for new and existing aggregate operations. This amendment is reflected in the PPS. A new policy has been added to Section 2.5.2.4 which clarifies the responsibility for determining depth of extraction as a matter to be addressed through the ARA process.

"Where the *Aggregate Resources Act* applies, only processes under the *Aggregate Resources Act* shall address the depth of extraction of new or existing mineral aggregate operations". According to MNRF the intent of this change is to clarify that zoning should not distinguish between above and below water extraction (vertical zoning) and that the ARA regulates this matter. Protection of ground and surface water resources remains a policy direction that municipalities shall be consistent with.

This update will require that the existing policies in the Town of Caledon OP be revisited as they currently distinguish above and below water operations (Extraction A and Extraction B respectively) and require a zoning amendment to change the depth of extraction. The PPS clarifies that this is addressed through the ARA process.

While the PPS permits mineral extraction in prime agricultural areas, provincial policy requires prime agricultural area designations be retained and not be removed. Lands may only be excluded from prime agricultural areas for expansions to or identification of settlement areas in accordance with the PPS. Where there is a proposed amendment to permit an aggregate use, the suggested policy approach is to maintain the prime agricultural designation, and allow extraction as an interim use within the prime agricultural designation. A dual or hybrid designation is one option that would acknowledge where an amendment has been approved for an aggregate use while maintaining the agricultural designation. Upon surrender of the licence, the agricultural designation would remain in effect.

The 2005 and 2014 PPS policies for mineral aggregate resource conservation, including allowing aggregate recycling facilities within operations, and promoting comprehensive rehabilitation planning are retained in the 2020 PPS. The Region of Peel and Caledon OP policies should be reviewed to ensure consistency with the PPS direction for aggregate resource conservation.

The PPS also provides definitions for Mineral Aggregate Resources, Mineral Aggregate Operations and Mineral Aggregate Resources Conservation (see below). These same definitions are also found in the Provincial Plans. For consistency, these definitions could also be provided in the Town and Regional Official Plans.

Mineral aggregate operation:

a) lands under license or permit, other than for wayside pits and quarries, issued in accordance with the Aggregate Resources Act;

b) for lands not designated under the Aggregate Resources Act, established pits and quarries that are notin contravention of municipal zoning by-laws and including adjacent land under agreement with or owned by the operator, to permit continuation of the operation; and,

c) associated facilities used in extraction, transport, beneficiation, processing or recycling of mineral aggregate resources and derived products such as asphalt and concrete, or the production of secondary related products.

Mineral aggregate resources: *means gravel, sand, clay, earth, shale, stone, limestone, dolostone, sandstone, marble, granite, rock or other material prescribed under the Aggregate Resources Act suitable for construction, industrial, manufacturing and maintenance purposes but does not include metallic ores, asbestos, graphite, kyanite, mica, nepheline syenite, salt, talc, wollastonite, mine tailings or other material prescribed under the Mining Act.*

Mineral aggregate resource conservation:

a) the recovery and recycling of manufactured materials derived from mineral aggregates (e.g. glass, porcelain, brick, concrete, asphalt, slag, etc.), for re-use in construction, manufacturing, industrial or maintenance projects as a substitute for new mineral aggregates; and,

b) the wise use of mineral aggregates including utilization or extraction of on-site mineral aggregate resources prior to development occurring.

5.5 Provincial Plans

Provincial Plans build upon the PPS to establish a unique land use planning framework for the Greater Golden Horseshoe. These Provincial Plans provide broad direction to protect provincial interests and promote sound infrastructure planning, environmental and natural heritage protection, economic development and safe communities. The Province put in place four different plans over a 20 year period to help accommodate growth while protecting valuable farmland, water resources and natural heritage (see Figure 5). The NEP, the ORMCP, the Greenbelt Plan and the Growth Plan for the Greater Golden Horseshoe set the framework for where and how future population and employment growth should be accommodated. Together, all four provincial plans build on the Provincial Policy Statement to establish a land use planning framework that supports a thriving economy, a clean and healthy environment and social equity.

In 2015, the province completed a simultaneous review of all four plans, recognizing their common geography and the interconnected nature of their policies. This Coordinated Plans Review provided an opportunity to assess progress to date, address challenges and make improvements to harmonize the planning policies.

The changes introduced as part of the co-ordinate plan review came into effect in 2017. Further amendments to the Growth Plan were approved in 2019.

As part of the Peel 2051 ROP review process, a series of discussion papers were prepared outlining the policy changes required to bring the ROP into conformity with the Greenbelt Plan, NEP and ORMCP. These papers provide a detailed account of each of these Plans, and for the purposes of this paper, we focus on the changes relevant to mineral aggregate resource policy.

5.6 Niagara Escarpment Plan, 2019 (NEP)

The NEP governs land use within the NEPA and serves as a framework of objectives and policies to strike a balance between development, preservation and the enjoyment of this important resource. The purpose of the NEP is to provide for the maintenance of the Niagara Escarpment and lands in its vicinity substantially as a continuous naturalenvironment and to ensure only such development occurs as is compatible with the natural environment.

There are seven land use designations in the NEP, including a specific designation for "Mineral Resource Extraction". The Plan does not permit aggregate extraction in the Escarpment Natural Area, Escarpment Protection Area, Minor Urban Centre, Urban Areas and Escarpment Recreation Area designation. The Plan only permits consideration of new mineral aggregate operations in the Escarpment Rural Area subject to an amendment and satisfying the relevant policies of the NEP.

The NEP Area also contains what is considered to be Ontario's highest quality limestone resources (Amabel Formation). It is suitable for the production of a wide range of construction projects including crushed stone, concrete aggregate and building stone. Within Peel Region, the NEP area covers portions of the Town of Caledon. The Cataract and Caledon Village Resource areas are partially within the NEP and the Inglewood resource area is entirely within the NEP.

The 2017 NEP introduced a new section outlining provisions to be applied to amendments for mineral resource extraction areas (Section 1.2.2). This section sets out the matters to be evaluated when considering an application to redesignate Escarpment Rural Area to Mineral Resource Extraction Area for proposed aggregate operations. These include:

a) protection of the Escarpment environment;

b) opportunities for achieving the objectives of the *Niagara Escarpment Planning and Development Act* through the final rehabilitation of the site;

c) the protection of prime agricultural areas, the capability of the land for agricultural uses, and its potential for rehabilitation for agricultural uses; and,

d) opportunities to include rehabilitated lands in the Niagara Escarpment Parks and Open Space System.

Permitted uses on lands designated Mineral Resource Extraction Area in Section 1.9.3 of the NEP have been revised and updated to reflect new terminology and definitions in the Plan together with site specific permissions that have been approved in the period since the earlier Plan was approved.

The policy which allowed for New Mineral Resource Extraction Areas producing less than 20,000 tonnes (22,000 tons) annually to be permitted in the Escarpment Rural Area without an amendment to the Plan (see exception Part 1.5, Permitted Use 37) has also been removed from the Plan.

A new policy related to after use of mineral extraction sites is included in Section 1.9.5 which requires an amendment to the NEP following the surrender of a license. The amendment would change the land use designation from Mineral Resource Extraction Area to a land use designation consistent with the rehabilitation completed on the property.

Section 2.9 of the 2017 NEP outlines the policies for Mineral Aggregate Resources (previously Section 2.11 in the 2014 NEP). Section 2.9 further clarifies the environmental features and areas where mineral aggregate operations, wayside pits and quarries are not permitted, the criteria to be demonstrated.

5.7 Oak Ridges Moraine Conservation Plan, 2017 (ORMCP)

The ORMCP Area (ORMCPA) overlies the north-easterly part of the Town of Caledon. Land use designations in the ORMCP include Natural Core, Natural Linkage, Countryside and Settlements. The Grange and Caledon East Resource areas are within the ORMCPA and are predominantly within the Countryside designation. The policies prohibit aggregate extraction in the Natural Core Area. Above table water aggregate extraction is permitted within the Natural Linkage Area and above / below table water aggregate extraction is permitted within the Countryside Area. New aggregate operations need to address the applicable environmental and water resources policies in the plan. The policies in the ORMCP prohibit aggregate extraction in most key natural heritage features and key hydrologic features with limited exceptions for significant woodlands that are young plantations or early successional habitat and in

habitat of endangered and threatened species in the Countryside Area subject to criteria. In this respect, it is noted that the ORMCP's provisions are very restrictive and ensure protection of the Moraine's natural environment and ecological integrity. The 2017 Plan includes some revisions which are relevant to aggregate resource policy in municipal official plans including:

- Aligning policy on the rehabilitation of mineral aggregate operations in prime agricultural areas with the PPS definition of "agricultural condition" (Section 35(1b);
- Updating the policy on mineral aggregate operations in Natural Linkage Areas to clarify that the 1.25km area of undisturbed land aggregate operations are currently required to maintain in Natural Linkage Areas could also contain adjacent portions of Natural Core Areas (Section 35(3)); and
- Requiring municipalities and industry to use best practices to ensure that excess soil is re-used, either on-site or locally, to the maximum extent possible and to ensure that soil received at a sitewill not cause an adverse effect on the current or proposed uses of the property or the natural environment (Section 36.1).

The Region and Caledon Official Plans should be updated to reflect the recent changes made to the ORMCP. The Town and Region will also want to ensure mapping of HPMARAs are consistent with the ORMCP mapping that identifies areas where extraction is not permitted (e.g. in Natural Core Areas, key features and associated vegetation protection zones).

In reviewing and updating policies, municipalities are prohibited from applying any new policies on mineral aggregate resources in their OPs that are more restrictive than those in the ORMCP. Both the Region and Town completed conformity exercises to implement the ORMCP and have provisions which clarify the requirements of the ORMCP and interpretation of their current respective aggregates policies. In the case of the Region of Peel Official Plan (adopted April 28, 2022), the following policy is included, with recommended modifications, which reflects the direction of the ORMCP with respect to aggregates uses in cases of conflict where the Regional policies are more restrictive.

"2.11.51

Direct that within the ORMCPA, in the case of conflict between the policies of Section 3.4 of this Plan and Section 33 of the ORMCP, the policies of the ORMCP prevail with respect to mineral aggregate operations and wayside pits and shall apply to the extent that they are less restrictive."

5.8 Greenbelt Plan (2017)

The Greenbelt Plan is a Provincial Plan that governs land use within the Greenbelt Plan Area and includes the NEPA and ORMCPA. Within Peel Region, the Greenbelt Plan Area includes most of the Town of Caledon.

This Plan sets out the three key inter-related policy areas in the Protected Countryside designation that are spatially based: the Agricultural System, the Natural System and settlement areas. Lands in the Protected Countryside are within one of the following policy areas: specialty crop areas, prime agricultural areas, rural lands, Towns/Villages or Hamlets. In addition, lands may also be subject to the Natural Heritage System, Water Resource System, key hydrologic areas, key natural heritage features and key hydrologic features policies of this Plan.

The Greenbelt Plan permits new or expanded mineral aggregate operations in the Protected Countryside and Natural Heritage System subject to the relevant policies of the plan and supports the availability of close to market aggregates for economic and environmental reasons. The Plan recognizes the benefits of protecting renewable and non-renewable natural resources and has provision for the availability and sustainable use of those resources.

Within the Natural Heritage System, the Greenbelt Plan makes a distinction between new aggregate operations and expansions to existing operations. For expansions, the policies are more permissive and extraction may be permitted in key natural heritage features and key hydrologic features if the decision is consistent with the Provincial Policy Statement. In contrast, within the Natural Heritage System, new aggregate operations and wayside pits and quarries are prohibited in significant wetlands; habitat of endangered species and threatened species; and significant woodlands unless the woodland is occupied by young plantation or early successional habitat. Applications in other key natural heritage and hydrologic features, and associated vegetation protection zones, are permitted if the applicant can demonstrate how connectivity between key natural heritage and hydrological features will be maintained before, during, and after extraction; how any lost habitat will be immediately replaced with equivalent habitat; and how the water resource system will be protected or enhanced.

The Greenbelt Plan establishes objectives for the rehabilitation of mineral aggregate operations with a goal to minimize disturbed areas and promote progressive rehabilitation. For new and existing mineral aggregate operations provisions require the establishment of a maximum allowable disturbed area.

Rehabilitation of mineral aggregate operation sites in the Protected Countryside is subject to the following policies:

- Disturbed areas will be rehabilitated to a state of equal or greater ecological value and the long-term ecological integrity of the entire site will be restored or improved;
- The health, diversity, and size of key natural heritage and hydrologic features and aquatic areas will berestored or improved;
- Extraction and rehabilitation in key natural heritage and hydrological features and in aquatic areas willbe completed as quickly as possible; and,
- Comprehensive rehabilitation plans will be considered in areas with a high concentration of aggregate operations.

According to the policy direction provided in the Greenbelt Plan, within prime agricultural areas, applications for new mineral aggregate operations must be supported by an agricultural impact assessment and, where possible, seek to maintain or improve connectivity of the agricultural system. In prime agricultural areas, aggregate operators within the Greenbelt Plan Area must rehabilitate sites back to an agricultural condition with the average soil capability for agriculture.

Municipalities are prohibited from applying any new policy on mineral aggregate resources in their OPs that are more restrictive than those in the Greenbelt Plan unless a comprehensive aggregate resource management study has been completed. Such a study was prepared for Peel Region, the results of which are reflected in policies that were incorporated into the Town of Caledon Official Plan.

The Region and the Town will need to determine an implementation approach that either modifies or provides for the continued application of the mineral aggregate resource policies that are incorporated in the Region of Peel and Town of Caledon Official Plans as a result of the CCRS (i.e. OPA 161) in the Greenbelt Plan Area Protected Countryside and in other provincial plan areas provided the policies do not conflict with the provincial plans. It was the intention of the CCRS and OPA 161 that the aggregates policies were to be applied on a Region and Town-wide basis. In this regard, it is noted that all of the relevant provincial plans/policies, including the Provincial Policy Statement, Growth Plan, Greenbelt Plan, NEP and ORMCP contain provisions and/or explanatory text that permits municipal official plans to establish policies that are more restrictive or that go beyond minimum standards provided there is no conflict with the policies or provisions limiting the ability of municipalities to implement more restrictive policies. The only provincial plans that expressly limit the ability of municipalities to include provisions that are more restrictive with respect to mineral aggregates are the Greenbelt Plan and ORMCP. The Greenbelt Plan

policy 4.3.2.10 specifically provides that municipal official plan policies approved prior to December 16, 2004 and that implement the results of a comprehensive aggregate resource management study are deemed to conform with the Greenbelt Plan. As it does not contain a similar provision, in the ORMCPA, any policy as implemented shall not be more restrictive than the ORMCP.

Both the Region and Town completed previous conformity exercises to implement the Greenbelt Plan and have provisions which clarify the requirements of the Greenbelt Plan and interpretation of their current respective aggregates policies. In the case of the Region of Peel Official Plan, the Region's policies apply in addition to the requirements of the Greenbelt Plan and to the extent that they implement the results of the CCRS are more restrictive than the Greenbelt Plan (e.g. prohibiting mineral aggregate extraction in Core Areas of the Greenlands System).

In effect, the Region and Town's current policy frameworks are complementary and overlap with the policies of the provincial plans and apply throughout their respective municipal areas while recognizing that no policies apply that are more restrictive than the ORMCP.

Suggested policy options and revisions which are relevant to aggregate resource policy in the municipal official plans, include:

- Clarifying the application and interpretation of the Region's policy framework in areas of overlap with provincial plans;
- Updating policies in the Region's Plan to reflect the current comprehensive framework implemented in the Town of Caledon Official Plan through OPA 161 and the CCRS exercise, where appropriate, while retaining the higher level policy direction of the Regional Plan (e.g. updating and clarifying matters to be addressed in the review of proposals for new or expanded mineral aggregate operations);
- Ensuring that guiding policy is provided to require local municipal official plans to provide comprehensive policies and requirements for the review of mineral aggregate applications;
- Ensuring that the revisions to the rehabilitation policies for mineral aggregate uses in the Greenbelt Plan Protected Countryside are updated and reflected in the Regional Plan (e.g. policy changes applying to final rehabilitation and requirements to rehabilitate sites to an agricultural condition in prime agricultural areas);
- Adding new policy direction to require proposals for mineral aggregate operations to complete agricultural impact assessments in prime agricultural areas;

- Ensuring that the list of areas where new mineral aggregate extraction is prohibited reflects the restrictions within the Greenbelt Plan Area (e.g. in significant wetlands, habitat of endangered and threatened species and significant woodlands in the Greenbelt Natural Heritage System); and,
- Ensuring that mapping of HPMARAs excludes key natural heritage and key hydrologic features where aggregates extraction is not permitted.

5.9 Growth Plan for the Greater Golden Horseshoe, 2019 (Growth Plan)

The Growth Plan, prepared to implement the Province's vision for building stronger, prosperous communities by better managing growth, applies to the entire Region of Peel. The Plan guides decisions on a wide range of issues, such as transportation, infrastructure planning, land use planning, urban form, housing, natural heritage and resource protection in the interest of promoting economic prosperity.

The policies encourage mineral aggregate resource conservation through means such as aggregate recycling. The policies also reflect a greater emphasis on protection of agricultural resources and requires that an Agricultural Impact Assessment be prepared to support development, including new aggregate operations, in prime agricultural areas.

The Growth Plan defines an Agricultural System and a Natural Heritage System and the Province has prepared mapping to delineate the extent of both of these systems. The Natural Heritage System for the Growth Plan mapping will apply only after the Growth Plan conformity process is complete. In the interim, Growth Plan policies would apply to the natural heritage system areas as currently mapped in the Regional and local Official Plans.

The policies regarding the protection of key natural heritage features and key hydrologic features are similar to the Greenbelt Plan with a similar distinction for new and expanding mineral aggregate operations. Within the Natural Heritage System for the Growth Plan, new mineral aggregate operations are not permitted in significant wetlands, habitat of endangered and threatened species and significant woodlands unless the woodland is a young plantation or early successional habitat. For expansions, the policies are more permissive and extraction may be permitted in key natural heritage features and key hydrologic features if the decision is consistent with the PPS (i.e. meets the protection standards of the PPS). Collectively, the policies of the various provincial plans applying to mineral aggregate operations in Peel along with the policies currently implemented through OPA 161 and the CCRS provide rigorous requirements that limit and restrict where and how aggregate extraction may be permitted in Peel. There are very few gaps with respect to the comprehensive policy framework currently in place.

5.10 Provincial Plan Conformity Analysis

As mentioned previously in this report, as part of the broader Peel 2051 ROP update process, a policy gap analysis for each of the individual Provincial Plans was completed. The relevant discussion papers highlight the specific policy revisions that are required as part of the conformity exercise, and highlights of the recent changes are discussed here.

In 2010, the Town of Caledon adopted Official Plan Amendment 226 in order to conform to the Provincial Plans. The amendment updated the Town's growth management and Greenbelt Plan policies in conformity with the Growth Plan and Greenbelt Plan, including the natural heritage and mineral aggregate resources policies.

Also in 2010, the Region adopted Regional Official Plan Amendment (ROPA) 24 to bring the ROP into conformity to the Greenbelt Plan (2005). ROPA 24 introduced a new policy section and schedule to the ROP (Section 2.2.10 and Schedule D3 – Greenbelt Plan Area Land Use Designations) that reflected the policies of the Greenbelt Plan (2005). Revisions to the Greenbelt Plan Section 2.2.10 have been included as part of the Peel 2051 ROP Review. The Greenbelt Plan section is now renumbered Section 2.12 in the new Region of Peel Official Plan adopted on April 28, 2022. Policies addressing non-renewable resources, including mineral aggregate extraction, have been updated to reflect changes in the Greenbelt Plan. Revisions now specify a requirement that applications for non-agricultural uses, including mineral aggregate operations in prime agricultural areas be supported by an agricultural impact assessment.

Recent changes to the ROP to conform with the NEP are identified in the NEP Discussion Paper and include updates to the preamble and goals in the ROP and policies to recognize the NEC's role in planning and development approvals. The new ROP policy directs any development to adhere to the provisions of the NEP.

A new ROP policy recognizes the Niagara Escarpment Parks and Open Space System (NEPOSS) and promotes these areas for parks and recreation. A new ROP schedule shows the NEP area land use designations.

Proposals for aggregate development will be required to address the policy requirements of the NEP for mineral aggregates, summarized in Section 5.6 of this report.

Most of the changes to the ORMCP (2017) do not require amendments to the ROP. Recent changes to the ROP include updated policies to support climate change planning and agricultural systems planning,

including a requirement for an Agricultural Impact Assessment for proposed mineral aggregate operations. In addition, new ROP policies require comprehensive and progressive rehabilitation plans and for development proposals to incorporate best practices for managing excess soil and fill generated and received during development or site alteration.

The changes to the Growth Plan introduce new prohibitions for new mineral aggregate operations in the Growth Plan Natural Heritage System key features including where there is habitat for species at risk.

Regarding consistency with the 2020 PPS, it is recommended that the policies maintain and build on the current policy framework in OPA 161 which provides a comprehensive approach for aggregate resource management in Peel and addresses PPS 2020 direction regarding the protection of natural heritage and water resource systems, features and areas, land use compatibility between major facilities and sensitive land uses, and that extraction be undertaken in a manner which minimizes social, economic and environmental impacts. Revisions to the Region of Peel and Caledon Official Plans regarding requirements for the consideration of aggregate recycling as an accessory use within operations and to the Regional OP to reflect new provincial direction for comprehensive rehabilitation planning are recommended. Finally, the PPS 2020 includes a change to clarify that the depth of extraction is governed by the ARA. The Town of Caledon Official Plan policies include separate designations for above and below water aggregate operations and requires an OPA where there is a proposed amendment to allow below water extraction for an existing license. These provisions will need to be revisited in light of the direction in the PPS.

It is appropriate to reference the amendments to the *Planning Act* that came into effect with the *More Homes Built Faster Act, 2022* that came into effect on November 28, 2022.

6.0 AGGREGATE POLICY CONSIDERATIONS AND BEST PRACTICES

The PPS and the Provincial Plans provide the land use planning policy framework for aggregate resources, highlighting priorities for resource protection, and the need to balance resource extraction with the protection of the environment and communities. However, there are issues that arise in relation to aggregate development where there is only limited policy direction from the province. For example, aggregate recycling, cumulative impact, comprehensive rehabilitation and social impact assessment are all issues that have implications for land use planning but only limited guidance in provincial policy.

The Town will be seeking public input on policy issues, priorities and approaches that should be considered as part of the Joint Aggregate Policy Review. The Discussion Paper provides preliminary policy considerations intended as a starting point to facilitate public input. Information obtained will help formulate more detailed policy directions and the development of draft policies in subsequent consultation stages. To understand how these issues and the policy considerations have been addressed in other areas, the Discussion Paper includes policy approaches from other municipalities in Ontario.

6.1 Experience from Other Municipalities

Our background research examined aggregate policy approaches for 17 Ontario municipalities, with a focus on the top aggregate producing municipalities. Highlights of our review with example policy wording are included in Appendix A.

Oxford County recently completed a comprehensive update of aggregate policies and has many good examples which are reportedly working well. Other municipalities with robust aggregate policies include the Region of Waterloo and the Township of North Dumfries. Halton Region also has a very comprehensive set of aggregate policies and is very similar to Peel Region in terms of the multiple layers of Provincial Plan policies that apply.

Our research noted that the aggregate policies in Caledon's Official Plan are among the most "complete" of the policies reviewed so far.

All of the reviewed Official Plans included similar policies reflecting the aggregate policies in the PPS. Our research was specifically focused on the policy approaches for aggregate recycling, cumulative impacts,

adaptive management plans, land use compatibility, blasting impacts (fly rock) and comprehensive rehabilitation, as outlined in the following sections.

6.2 Land Use Compatibility and the Protection of Mineral Aggregate Resources, Mineral Aggregate Operations and Sensitive Land Uses

The PPS 2020 sets out policies with respect to Land Use Compatibility. In particular, Section 1.2.6.1 states that "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 PPS definition of "major facilities" includes resource extraction activities.

Where sensitive land uses are proposed in the vicinity of an existing or planned major facility (includes pits or quarries) and avoidance of potential adverse effects is not possible, the Province now directs municipalities to apply policy 1.2.6.2 of the PPS which requires planning authorities to protect the long-term viability of existing or planned industrial, manufacturing or other uses that are vulnerable to encroachment by ensuring that the planning and development of proposed adjacent sensitive land uses are only permitted if the following are demonstrated in accordance with provincial guidelines, standards and procedures.

Separation distances are the most common approach to mitigation between incompatible land uses. In cases of land use planning, assessments evaluating noise, vibration, odour and air quality may be conducted or requested by local municipalities prior to lands being designated in local official plans. These assessments may determine actual areas of influence and recommended separation distances between particular facilities and sensitive uses.

Land Use Compatibility and the Protection of Mineral Aggregate Resources

With respect to mineral aggregates, additional direction is provided in the PPS that mineral aggregate resources and mineral aggregate operations are to be protected from development that would preclude or hinder access to the resource, the establishment of new operations or the expansion or continued use of existing operations.

Policies addressing the protection of mineral aggregate resource deposits (HPMARA and CHPMARA) are provided in the Region of Peel and Town of Caledon Official Plans in accordance with provincial policy. In the Caledon OP, the protection of mineral aggregate resources (CHPMARA) from encroachment of sensitive land uses is addressed in the Land Use Compatibility section of the policies (Caledon OP 5.11.2.6). The intent of the policies is to protect resource deposits from development that would preclude or hinder the establishment of new operations in both known deposit areas and on lands adjacent to known deposits.

The Town of Caledon Official Plan defines an "area of influence" of 300 metres for sand and gravel operations and 500 metres for quarries from either the limits of the CHPMARA mapping or the extraction limit of existing licenced operations (Caledon OP Section 5.11.2.6.1). The CHPMARA policies trigger land use compatibility study requirements for new or expanding sensitive land uses that are proposed within the CHPMARA or that encroach within its area of influence. The criteria and requirements that apply to development that would preclude or hinder the establishment of new operations or access to the resources are consistent with provincial requirements. Recommended revisions to the identification and mapping of HPMARA/CHPMARA are addressed in Section 5 and in a separate mapping methodology report.

Land Use Compatibility and the Protection of Mineral Aggregate Operations

Where a new sensitive land use is proposed within the area of influence of an existing licenced extraction operation, the applicant proposing the development is required to provide appropriate technical studies to address land use compatibility requirements. Applicants proposing sensitive land uses bear the primary responsibility for the mitigation of potential land use conflicts between the proposed use and the aggregate extraction operation (Section 5.11.2.6.4).

When avoidance of potential adverse effects is not possible, the new criteria in the 2020 PPS apply when adjacent sensitive land uses are proposed within the area of influence of existing operations. The Caledon OP policies regarding the protection of mineral aggregate operations from encroachment of sensitive land uses are generally consistent with provincial policy, however, the new land use compatibility criteria for sensitive land uses as noted above are not currently included in the Caledon OP.

Land Use Compatibility and the Protection of Sensitive Land Uses

The 2020 PPS requires municipalities to protect sensitive land uses by applying an avoid, minimize and mitigate land use planning hierarchy and for proposed mineral aggregate operations, demonstration that extraction will be undertaken in a manner that minimizes social, economic and environmental impacts. Land use compatibility for new or expanding mineral aggregate operations is provided in the Region of Peel and Town of Caledon Official Plans through policies requiring social, economic and environmental impacts to be minimized consistent with the PPS direction. Detailed criteria and requirements are set out in Section 5.11 and specifically in Section 5.11.2.4 in the Town of Caledon's Official Plan dealing with applications to permit new or expanding operations. The policies are comprehensive and set out detailed impact assessment requirements and criteria for the review of new or expanding mineral aggregate operations (Section 5.11.2.4). The policies require applicants for new or expanding aggregate operations to submit reports assessing several considerations including traffic, social and environmental impacts.

The Caledon OP also includes Aggregate Operations/Design policies that encourage, where appropriate, feeder pits with load and haul operations to utilize infrastructure (processing equipment) at existing aggregate operations owned by the same company. The policies include a number of suggested provisions for new or amended licenses:

- small phases in aggregate operations to limit the amount of disturbed area at any one time;
- strategic direction of extraction and placement of screens and buffers where operational areas may be visible to the public;
- creation of variable berms and mature vegetative screens to replicate the natural topography of the area;
- utilization of offset entrances to screen the internal pit areas; and,
- sharing or coordination of entrances where possible.

Some municipalities, for example Halton Region, has developed a series of guidelines to provide direction and outline approaches to assist in implementing Official Plan policies. The Halton Region Land Use Compatibility Guidelines provide guidance and identify a process for assessing land use compatibility and are used to inform Official Plan and Zoning By-law amendments.

The policy considerations outlined in the Discussion Paper addressing the recycling of mineral aggregates, cumulative impacts, adaptive management plans, and goods movement would further clarify and strengthen the existing policy framework and help to further improve the compatibility and management of mineral aggregate uses in the municipality.

Suggested policy considerations for the Region to consider related to land use compatibility include:

- Retaining the current general guidance that the local municipalities include policies to specify appropriate study requirements for applicants proposing designations to establish new or expand existing aggregate extraction operations,
- Providing greater direction in the ROP by listing study requirements to be requested,
- Consider whether the area of influence distance/definition of adjacent lands that applies to bedrock and sand and gravel resource deposits and operations should be included in the Region of Peel Official Plan (e.g., specifying that "adjacent lands" include lands within 300 metres of sand and gravel and 500 metres of bedrock operations and HPMARA deposits).

As noted earlier, the Ministry of Environment Conservation and Parks (MECP) developed a series of Guidelines in 1995 to assess land use compatibility (D Series Guidelines). The guidelines recommend setback and other control measures for land use planning proposals to prevent or minimize adverse effects from the encroachment of incompatible land uses.

6.3 Comprehensive Rehabilitation

The primary regulatory mechanism governing aggregate extraction and site rehabilitation in Ontario is the ARA. Legislation and policies that apply to aggregate extraction and rehabilitation are in effect to ensure that aggregate extraction is an interim land use and rehabilitation is carried out to return the lands to the previous use or to one that is compatible with adjacent land uses.

The PPS encourages comprehensive aggregate rehabilitation planning where there is a concentration of mineral aggregate operations. Provincial plans provide additional policies for rehabilitation in certain areas. Many municipalities in Ontario have incorporated policies into their Official Plans that reflect the direction of the PPS with respect to comprehensive rehabilitation; however, there are few practical examples and very little provincial guidance to assist with implementing this policy.

The PPS defines comprehensive rehabilitation as the "rehabilitation of land from which *mineral aggregate resources* have been extracted that is coordinated and complementary, to the extent possible, with the rehabilitation of other sites in an area where there is a high concentration of *mineral aggregate operations*."

A comprehensive rehabilitation approach aims to support broader landscape-level targets for rehabilitation and after uses in areas where there is a concentration of aggregate operations. It provides an opportunity to enhance the current standard of practice in Ontario where rehabilitation plans are generally developed on a site-by-site basis without necessarily considering a broader landscape-level perspective.

Comprehensive aggregate rehabilitation planning can range from relatively straightforward opportunities that involve coordinating rehabilitation of a small number of adjacent properties to situations involving multiple sites in an area that may include other land uses. A comprehensive rehabilitation plan is most appropriate in areas where multiple aggregate operations already exist, but also where there is the potential for future operations based on the presence of a significant aggregate deposit. The area of a comprehensive rehabilitation plan may also vary in size and could include a mix of licensed and future sites together with other land uses.

Comprehensive planning and decision-making can lead to enhanced opportunities for rehabilitated aggregate sites to achieve a range of socio-economic and ecological objectives that would not be possible if aggregate rehabilitation was done on a site-by-site basis alone. For producers, there is an opportunity to build good community relations and garner positive recognition of rehabilitation efforts, as well as the potential to recover additional aggregate material in setbacks and road allowances. For communities, comprehensive rehabilitation could open the door to meaningful participation in planning about the future use of rehabilitated sites and their integration with other community plans and objectives. Ultimately, success requires ongoing collaboration among producers, municipalities, communities and the Province and a willingness to understand and address the economic, regulatory and policy barriers that may inhibit the implementation of creative rehabilitation planning opportunities.

As a principle, the concept of coordinated rehabilitation is sound, but there are some practical considerations which influence the outcome of a broader rehabilitation planning exercise. In dealing with multiple aggregate licensed sites, it is likely that the lifespan of each site, and the projected closure dates, may vary significantly. In addition, there may be areas outside of the licensed properties that may be considered for future extraction within the study area. The planning process should consider how the timing of extraction and rehabilitation might affect the implementation of the overall plan.

The Town of Caledon Official Plan calls for the preparation of Rehabilitation Master Plans (RMPs) for the 10 aggregate resource areas in the Town. The Town recently completed its first RMP that may serve as a

potential model for the remaining aggregate resource areas. Resource Area #6 (Caledon Village) was the focus of the most recent planning exercise.

The stated goal of the Caledon RMP is "to create a landscape consisting of compatible land uses, environmental features, recreational and tourism opportunities and linkages." The Town identified a range of post-extraction land use options and included a conceptual land use model that incorporates compatible land uses, environmental features and linkages and promotes connectivity. The process was informed by consultation and community engagement and provides an initial basis for understanding how the development of RMPs in the other aggregate resource areas identified in the Town's Official Plan might be undertaken. The Rehabilitation Plan for the Belfountain and Caledon Sand and Gravel Resource Areas was recently considered by Caledon Council and approved with direction that staff consider the implementation framework outlined in the RMP including referencing the RMP as a guideline for implementation of comprehensive rehabilitation of pits and quarries in the study area. Given that this is one of the few examples of a coordinated rehabilitation planning exercise in the province, the Caledon RMP may also provide a model for other municipalities.

Policy considerations to address comprehensive rehabilitation planning related to mineral aggregate resource extraction include:

- Providing policy direction in the Regional Official Plan to promote local municipal comprehensive rehabilitation planning consistent with provincial direction, regional and local needs.
- Providing policy direction regarding Regional support for the further consideration and implementation of recommendations in approved or endorsed comprehensive rehabilitation master plans.
- Specifically referencing the Rehabilitation Plan for the Belfountain and Caledon Sand and Gravel Resource Areas in the Regional Official Plan with direction to support the further consideration and implementation of the recommendations, as appropriate.

6.4 Goods Movement

The CCRS investigated transportation and truck traffic issues associated with the movement of aggregates resources. At that time, the existing haul routes used to transport aggregates from local aggregate pits to their destinations were largely confined to a relatively small network of Regional roads and Provincial

highways within the Town of Caledon. Truck traffic movements and volumes were studied to understand how aggregates good s movement functioned and to inform policies that are now incorporated in the Town of Caledon's Official Plan through OPA 161.

These policies provide a framework with requirements for traffic impact and road improvement studies when new or expanding operations are proposed. Policy requirements ensure that the structural adequacy, capacity and safety of site access and haul routes exists or is provided when new sites are proposed and that community impacts are minimized.

Specific high and medium capacity arterial roads used by the industry to transport aggregates from existing active resource areas were identified and incorporated into Schedule J of the Town of Caledon Official Plan. The identification of the existing arterial network used by the aggregate industry was a recommendation of the CCRS in order to provide the industry with direction on where haulage traffic should be directed and to minimize future land use conflicts with regard to traffic issues. The policy framework that implemented the CCRS in the Town of Caledon Official Plan provides for existing and future aggregates extraction operations to be planned and managed in a way that minimizes their impact on municipal infrastructure, communities and the natural environment while recognizing the economic and other benefits and opportunities which are provided through aggregate extraction.

The Peel Goods Movement Strategic Plan 2017-2021 provides a blueprint of actions to support goods movement in Peel. The plan sets out several goals, including managing and mitigating adverse community impacts of goods movement operations and support environmental stewardship. To implement the goals, the plan contains nine actions to be completed. A key action identified in the plan is understanding and managing aggregates goods movement. By understanding the movement of aggregate resources, the Region can develop evidence based and actionable strategies that bettersupports both the industry and minimizes impacts on the local community.

As a separate component of the Joint Aggregate Policy Review, a technical report will be prepared to provide information on aggregate truck movements to identify the current state of aggregate truck movementsin Peel Region. The origins of aggregate movements in Peel are located primarily in Caledon—to the south and west of Caledon Village, south of Orangeville and west of Cheltenham. Other high priority mineral resource areas are located along the northern Caledon boundary, along Highway 9, west of Inglewood and south of Caledon East.

The report includes a map of existing haul routes, designated truck routes, and observed truck patterns as well as sensitive land uses (such as residential, community centres, schools, recreational areas, and places

of worship) to highlight areas where the impacts of truck traffic are most significant. A review of collision summaries and map collision locations will identify corridors where there has beena historical pattern of collisions involving trucks. The mapping exercise will also highlight any issues in accessing resource areas that have been identified for protection and long-term use.

The report will identify the implications of aggregate movements on road infrastructure, congestion, safety, air quality, and noise. This aggregate resource policy review will support future work identified in the Region's Goods Movement Strategic Plan to undertake an in-depth aggregate movement study. The addition of a haul route policy in the Region of Peel Official Plan as part of the mineral aggregates section addressing the evaluation of new applications for aggregates extraction regarding the consideration of haul routes, their adequacy and safety, and the means by which improvements are to be funded, is recommended.

Policy considerations to address aggregates goods movement/haul route requirements include:

- Adding policies specific to aggregates goods movement and haul routes to the Region of Peel Official Plan's mineral aggregate resources and/or transportation sections of the Plan including criteria to be considered when determining whether Regional roads identified in the Region's Major Road Network may be appropriate to be identified as a new haul route when reviewing applications for mineral aggregate extraction.
- Reviewing the Town of Caledon Official Plan to determine if revisions are needed to the aggregates haul route and traffic impact study policies including determining if revisions to the recommended road classification for haul routes and identification of the Town's road network on Schedule J require updating to reflect current information and the results of the aggregates goods movement technical study and Town of Caledon Multi-Modal Transportation Master Plan.

6.5 Aggregate Recycling

The PPS introduced a policy in 2014 related to mineral aggregate resource conservation which specifically supports aggregate recycling facilities. This policy is unchanged in the 2020 version of the PPS.

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

The primary source of recycled aggregate is reclaimed concrete and asphalt. Once reprocessed, the recycled materials can be used as an aggregate incorporated into granular base or sub-base in road construction. When used as an aggregate, the recovered asphalt is first crushed and screened and stored in stockpiles for future use. Reclaimed concrete materials are typically processed and stockpiled as crusher run aggregates and are used as an alternate to pit run or quarried granular materials such as Granular A and B. No special equipment or procedures are required for the material handling.

The benefits of using recycled aggregates include:

- preserves land – reduces the demand for virgin aggregates from pits and quarries,
- reduces waste – reusing aggregates reduces the amount of waste going to landfill,
- reduces costs – in many cases, recycled aggregates cost less than virgin aggregates and transportation costs are reduced.

Reusing concrete and asphalt materials makes sense from both an environmental and economic perspective. The use of recycled aggregates preserves non-renewable resources, reduces the need for new quarries and pits, reduces energy use and greenhouse gases associated with longer truck hauling, and can be supplied locally and less expensively than primary aggregate.

The MNRF's recent review of the ARA framework included mandatory reporting and record-keeping for removal of recycled aggregate from sites. This will allow for annual tracking of aggregate recycling occurring at sites regulated under the ARA and can provide trends in the use of recycled aggregate over time. Moreover, this should help increase transparency on the part of both government and industry, which is critical for keeping the public aware of how aggregate operations impact the environment.

Despite the enhanced record keeping, concerns regarding the impact of the aggregate recycling process on the natural environment have been raised in the past by community members. As noted above, recycled aggregate includes materials such as concrete, asphalt and other construction materials. This leads to the need to ensure materials imported into pits and quarries are carefully controlled to avoid siting of material stockpiles in proximity to sensitive environmental areas and features. Municipalities should consider potential impacts to water resources and human health impacts resulting from dust and fine particulate matter associated with aggregate recycling.

An initial review of literature on environmental risks and the potential of contaminants to enter groundwater and surface water as a result of stockpiling and processing of recycled aggregate material suggests that proposals to include aggregate recycling stockpiles and processing within aggregate sites should be evaluated and appropriate conditions implemented to address risks. Considerations for the safe

handling and stockpiling of recycled material in proximity to sensitive surface water and ground water features and areas could include ensuring that:

- stockpiles are appropriately separated above ground water tables;
- sufficient separation distances/buffers from surface water features are maintained;
- proper management of stormwater runoff from stockpiles is considered and implemented;
- ground water and surface water sampling and reporting is included in the monitoring requirements for the licence; and,
- recycling operations and stockpiles are secondary and accessory to the aggregate operation, limited in size and volume and removed when extraction is complete as part of final site rehabilitation.

Aggregate resources are considered an interim land use. Once extraction is complete, the lands are rehabilitated. Recycling of aggregate materials in mineral aggregate operations is required to be permitted as an accessory use to a mineral aggregate operation, wherever feasible (PPS Policy 2.5.2.3). The inclusion of accessory or associated recycling uses potentially adds another dimension to this process. Municipalities should consider the potential that aggregate licences may be extended to facilitate aggregate recycling and ensure that activities are phased out when extraction is completed. Appropriate conditions can be included in ARA site plans to regulate the amount of recycled materials on site, and ensure the timing of the removal of recycling stockpiles and associated activities.

Aggregate Recycling as an Industrial Use in Urban Areas

In many municipalities, including Peel Region, aggregate recycling is often defined as an industrial use as a stand-alone activity, and typically permitted within an industrial area in urban locations, and outside of an ARA licensed site. The City of Mississauga developed a zoning by-law policy in the mid-1990's (Zoning By-law Amendment 376-94) to address an increasing interest in recycling facilities, including aggregate recycling. The by-law amendment included inserting aggregate recycling under the definition of "waste processing station".

More recently, in 2017, Mississauga implemented an interim control by-law to temporarily prohibit 33 specified industrial land uses within certain employment areas while the City undertook a land use compatibility assessment. The emerging vision for the area being assessed included proposed residential and other sensitive land uses. The study helped to understand the types of existing industrial uses and

their compatibility with proposed non-employment uses. The study concluded that of the 33 industrial uses assessed, 12 specific industrial uses were deemed incompatible with the future vision for these areas and should not be permitted within the employment areas. Waste processing stations (which encompasses aggregate recycling facilities) were not excluded and therefore deemed to be appropriate land uses and are permitted within employment areas as noted below.

Currently, the Mississauga Official Plan and Zoning By-law continue to consider aggregate recycling facilities as a "waste processing station", which are generally permitted in the E-2 Employment and E-3 Industrial zones. In the Mississauga Official Plan, an aggregate recycling facility is considered a "waste processing station" use. A waste processing station is defined as "a facility that receives, stores and/or processes waste materials for the purpose of creating new products or materials" and is permitted to locate in Business Employment and Industrial designations, unless otherwise removed through Character Area or special site plan polices.

In the City of Brampton, aggregate recycling facilities are permitted to locate in the M2 Industrial zone. Permitted uses in the M2 Industrial Zone must be located a minimum of 300 metres from all Residential Zones, Open Space (OS) Zones and Institutional (I1 and I2) Zones.

In the Town of Caledon, aggregate resources recycling facilities are defined as Waste Processing Facility meaning a facility that receives, stores and/or processes waste materials for the purpose of creating new products or materials. The use is permitted in "MD-Waste Management" Industrial Zones. The current practices implemented by municipalities to regulate aggregate recycling operations in industrial zones provide a framework for managing this land use activity close to source materials.

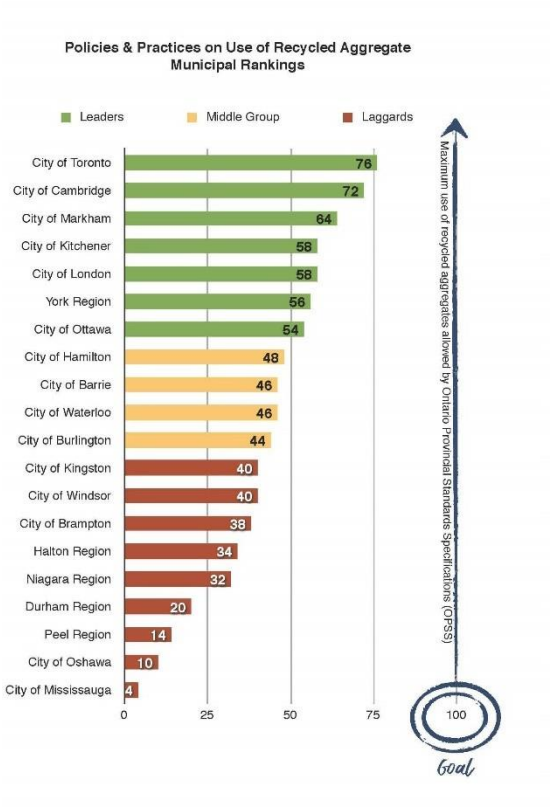
Promoting the Use of Recycled Aggregate

While this report is focused on planning policy considerations associated with aggregate recycling operations, it is important to understand the policies that influence the use of recycled aggregates by municipalities in order to truly make aggregate conservation policies effective.

As part of their sustainable roads strategy, the Region reported that it has successfully rehabilitated 100 kilometers of road surface including portions of the Gore Road, Charleston Side Road, Airport Road and Kennedy Road using cold-in-place recycling. And, in 2012 the Region evaluated the performance of recycled aggregates in road construction projects at a number of pilot sites. Despite these efforts, a 2018 report on Aggregate Recycling by Ontario Municipalities identified room for improvement in the policies and practices related to use of recycled materials in Peel.

The Town of Caledon OP includes a policy that will "support initiatives by the aggregate industry and the Province to conserve aggregate resources, through such measures as recycling, and matching aggregate quality requirements to specific job specifications" (Caledon OP Section 5.11.2.9.7).

The Town of Caledon Official Plan policy 5.11.2.9.7 supports initiatives by the aggregate industry and the Province to conserve aggregate resources, through such measures as recycling. The local plan also includes a definition for 'Mineral Aggregate Operation' that references associated facilities used in the extraction, processing and recycling of mineral aggregate or the production of related by-products. The policy framework governs the permissions and restrictions of mineral aggregate operations.



Currently, the Region of Peel Official Plan does not have policies that specifically address accessory aggregate recycling. The current policy direction requires that all extraction, processing and ancillary or accessory uses be located, designed and operated to minimize environmental, community and social impacts. Additional policy approaches to address mineral aggregate resource conservation, including aggregate recycling as an accessory use associated with mineral aggregate operations include:

- Adding or revising policies in the Region of Peel Official Plan to provide that mineral aggregate resource conservation shall be undertaken, including through the use of accessory aggregate recycling facilities within operations, wherever feasible and subject to demonstrating that social, economic and environmental impacts are minimized and acceptable, consistent with direction provided in the PPS (ROP Section 3.4).
- Retaining the existing policy requirement that all extraction, processing and ancillary or accessory uses be located, designed and operated to minimize environmental, community and social impacts.
- Adding policy that supports and promotes the recovery and recycling of manufactured materials derived from mineral aggregate resources for reuse in construction, manufacturing, industrial, or

maintenance projects as a substitute for new mineral aggregate resources extracted from natural deposits, wherever feasible and appropriate.

- Adding a new definition for "Mineral aggregate resource conservation".

Given that the municipalities within Peel are effectively managing aggregate recycling activities, both on licensed sites and on stand-alone sites in industrial designations and zones, no additional policy considerations other than as outlined above, are recommended as part of this review.

6.6 Adaptive Management Plans

Adaptive management plans (AMP) are becoming more common as a tool to manage potential environmental impacts. In the context of an aggregate operation, adaptive management plans are used to consolidate requirements for monitoring and mitigation actions related to groundwater, surface water and the natural environment into a single coordinated document. The use of adaptive management plans came about in response to uncertainty and the difficulty of anticipating all the environmental consequences of a project on the basis of existing information. The adaptive aspect refers to adjustments to operations, monitoring and mitigation to reflect actual conditions that are experienced. AMPs can provide a mechanism for aggregate operators to modify or adapt operations or proposed mitigation over time in response to actual conditions experienced. The Halton Region Official Plan defines adaptive management plans as "an approach to managing complex natural systems by continually improving management policies and practices based on learning from the outcomes of operational programs that include monitoring and evaluation."

In addition to the site plan requirements, an AMP can potentially provide flexibility to identify and implement new mitigation measures or to modify existing ones during the life of a pit or quarry. In most cases, monitoring and mitigation programs are established at the time the licence was issued. The adaptive management approach is not mandated by any legislation. There are no policies in the Provincial Standards that specifically require an adaptive management plan or identify the required content of an adaptive management plan. However, the Provincial Standards already require technical reports to identify monitoring plans, mitigation measures, trigger mechanisms, and contingency plans and do not preclude the consideration of adaptive management plans in the planning and ARA licencing approval processes.

Although there are adaptive elements to the monitoring and mitigation required at some existing aggregate operations, there are very few formal adaptive management plans. Some examples of where an AMP has been required are Dufferin Aggregates' Milton Quarry Extension, Walker Aggregates Duntroon Quarry, and Hanson Brick's Tansley Quarry in the City of Burlington.

The Rockfort Quarry proposal in Caledon proposed the use of an AMP to set certain milestones before subsequent phases of the quarry extraction could proceed. The Region of Peel hired a consultant to complete a peer review of the hydrogeological submission, which relied on an AMP for long-term environmental protection. Based on the peer reviewed information, the Region identified concerns related to gaps in available information and understanding of ecological functions on which to make a decision. Concerns regarding enforcement of conditions and cost implications associated with future risk and mitigation measures were identified. In the Rockfort Quarry OMB hearing, the Board was not satisfied that there was sufficient evidence to demonstrate that the natural heritage features would be protected in accordance with the PPS, and ruled that it would be improper to leave that determination to a future time.

If deemed acceptable, an adaptive management plan can be included as a requirement of a licence and site plan under the ARA. If included as a site plan requirement, enforcement mechanisms under the ARA can be used to ensure that the pit or quarry is operated in accordance with the adaptive management plan. However, concerns have been noted regarding monitoring and enforcement of adaptive management plan requirements.

In the Dufferin Aggregates (Holcim Canada Inc.) Milton Quarry Extension, the adaptive management plan was both a condition of the licence and a site plan note that required that the quarry be operatedin accordance with the adaptive management plan. In addition, the proponent entered into agreements with the Region of Halton and Conservation Halton which dealt with mitigation and a number of aspects of the adaptive management plan. The agreements were developed as part of a settlement. Many of the matters dealt with in those agreements related to complex interactions between the proponent and the agencies regarding matters that went beyond the operation of the quarry.

The Halton Region Official Plan includes a requirement to consider the risk of public financial liability during and after extraction where continuous active on-site management is required and a specific policy which discourages the use of adaptive management plans or similar measures that will require continuous or perpetual active on-site management post rehabilitation (see below). The Halton policy is the only

example of a specific policy in a municipal official plan on the use of adaptive management plans in mineral aggregates planning that was identified through the best practices review.

Halton Official Plan Part III (excerpts)

110. (8) Evaluate each proposal to designate new or expanded Mineral Resource Extraction Areas based on its individual merits and consideration of all the following factors:

e) risk of public financial liability during and after extraction where continuous active on-site management is required.

110. (8.2) Discourage the use of adaptive management plans or similar measures that will require continuous or perpetual active on-site management post rehabilitation.

The Halton ROP also includes the following definition:

ADAPTIVE MANAGEMENT PLAN means an approach to managing complex natural systems by continually improving management policies and practices based on learning from the outcomes of operational programs that include monitoring and evaluation (Part VI, Section 212.2)

Halton staff described the AMP agreements as providing specific thresholds and performance measures with clear protocols in place to determine whether the plan is functioning as predicted. The AMP is intended to be a monitoring and management plan to gauge impacts in real time on water quality, quantity, ecology, etc. with provisions that aggregate extraction operations are to cease if requirements and thresholds set out in the AMP are not being met based on monitoring.

The AMP is implemented through a separate legal agreement, much like a development agreement, and is managed by Regional staff. The agreement spells out deliverables and includes a requirement for financial securities to be in place.

While not required as part of a provincial plan conformity exercise, given the previous concerns with the AMP proposed for the Rockfort Quarry, and based on the approach in municipalities like Halton Region, there may be merit in considering a policy that sets out expectations in terms of the criteria to be met to determine if an AMP is an acceptable tool to manage risk and impacts of an aggregate operation, and the requirements regarding municipal agreements, monitoring, financial securities, responsibilities and enforcement that would establish a policy basis for those aggregate applications where an AMP is proposed. Matters regarding enforcement of conditions and cost implications associated with future risk and mitigation measures should be addressed when considering AMPs and agreements.

Policy considerations for the ROP to address adaptive management planning requirements relating to mineral aggregate resource extraction include:

- Providing general policy direction and criteria for the evaluation of adaptive management plans when adaptive management plans are proposed as a part of an application to establish or expand a mineral aggregate operation.
- Setting minimum criteria for the content of adaptive management plans and appropriate mitigative measures to be incorporated into license applications, pursuant to the *Aggregate Resources Act* and/or associated municipal planning approvals.
- Adding a new definition for "adaptive management plan".

6.7 Managing Impacts of Quarry Blasting/Fly Rock

Fly rock is rock that is ejected from a blast site in a controlled explosion. The term refers in particular to rock that flies beyond the blast site, with a potential risk of injuries to people and damage to property. The issue of fly rock dangers associated with quarry operations has gained attention in recent years in response to applications for new quarries. The MNRF regulates blasting, including fly rock, in quarries through the *Aggregate Resources Act* and its regulations.

On January 1, 2022, Rule 28 of subsection 0.13 (1) in Ontario Regulation 244/97 of the Aggregate Resources Act, came into effect. It stipulates that the licensee of an aggregate quarry shall ensure that the quarry is in compliance with the Rule as follows: a licensee or permittee shall take all reasonable measures to prevent fly rock from leaving the site during blasting if a sensitive receptor is located within 500 metres of the boundary of the site. The condition will apply to existing and proposed aggregate licences which include blasting as part of their operations. In an application for a licence to extract more than 20,000 tonnes of aggregate annually, ARA Standards also require a Blast Design Report to be submitted if a sensitive receptor is located within 500 metres of the limit of extraction. The Report must demonstrate that provincial guideline, NPC-119-blasting, for blast overpressure and ground vibration can be satisfied. It should be noted that neither the ARA Standards nor the NPC-119 guideline currently require an analysis of fly rock be included in a blast impact analysis or that a setback or exclusion zone be implemented specific to fly rock.

Fly rock discharge from blasting can occur at quarries and road construction projects and is considered to be a contaminant under the *Environmental Protection Act (EPA)*. This Act and its Regulations apply to prevent and minimize the risk of accidental impact of fly rock. Since the licensee is required to keep fly rock on the site during blasting, any discharge of fly rock beyond the controlled blast environment that is not a normal event, i.e. it would have been prevented, must be reported forthwith to the MECP, if the contaminant may likely cause an adverse effect. In such cases, the Ministry may issue an order for remediation and preventive measures.

The PPS also requires that development, and activities being considered near existing aggregate operations and aggregate deposits, consider and address "…issues of public health, safety and environmental impact." In reviewing development applications, municipalities are required to consider public health and safety for new developments in relation to existing mineral aggregate operations and resources areas. Planning authorities need to ensure that new development near existing operations, or known resources, do not create or exacerbate public health and safety issues in accordance with provincial standards, guidelines and procedures. With respect to regulating fly rock risks within aggregate operations, in addition to meeting minimum provincial standards under the ARA and EPA, recommendations to require blasters to be licenced and supervised by a professional engineer can be requested as a requirement of the blasting procedures and design requirements attached to the site plan.

With respect to fly rock and blasting assessments, policy options that may be considered by the Region include:

- Listing recommended impact assessment study requirements for applicants proposing new or expanding aggregate operations and including a Blasting Impact Assessment study requirement with reference to the appropriate provincial regulations and standards.

- Ensuring that the Region of Peel Official Plan provides an enabling policy framework for the local municipalities to develop policy, criteria and application requirements for the review of local official plan amendments to designate new or expanded mineral aggregate extraction operations (Section 3.4).

6.8 Cumulative Impacts

Cumulative effects are the result of multiple activities whose individual direct impacts may be relatively minor but in combination with others may result in significant effects. The multiple impacts of different activities may have an additive effect on one another and with natural processes. With respect to

aggregate resource development, cumulative impacts generally refer to environmental effects, for example on natural features and water resources. The cumulative effects on air quality, noise and traffic are also relevant in the context of aggregate resource operations.

The concept is relevant in areas like Caledon, where aggregate activity is concentrated geographically.

The ARA process requires applicants to assess impacts of an individual license proposal but does not specifically require an assessment of cumulative impact. Both the Peel ROP and the Town of Caledon OP contain numerous policy references emphasizing the need to assess cumulative impacts of development including specific policies for cumulative impact of aggregate development.

The ROP recognizes that "Mineral aggregate operations have the potential to significantly and cumulatively impact on Peel's communities, natural environment, cultural heritage and other economic activities. Proper siting, design, management, operation and rehabilitation of mineral aggregate operations area essential to minimize these impacts". (Peel ROP, Section 3.4 Preamble). The existing regional policies provide direction to "conduct such studies and address, as it considers appropriate, jointly with the area municipalities, the cumulative effects of the establishment and expansion of mineral aggregate extraction sites on Peel's communities, natural environment and cultural features."

The Town of Caledon OP also includes policies requiring consideration of cumulative impacts for various types of development, including aggregate resource development. The Caledon OP includes a definition for "cumulative impact assessment" and "cumulative environmental effects".

The scope and detailed requirements for a cumulative impact assessment is generally determined in consultation with municipal staff as part of pre-consultation on an aggregate application. While this review did not identify any gaps in OP policy related to cumulative impact, it may be useful to explore where a guidance document for assessing cumulative impacts would be beneficial as a policy implementation tool.

Within the Grand River watershed, the local conservation authority has worked with the local municipalities, the MNRF and the Ontario Stone Sand and Gravel Association to develop a best practice approach for assessing cumulative effects on water resources and water balance for below water table aggregate operations. The intent of the initiative was to provide the municipalities within the watershed with a consistent and scientifically defensible approach to assess potential cumulative effects of below water extraction. The initiative resulted in guidance and a general approach to assessing potential cumulative effects on water quantity and quality associated with below-water sand and gravel extraction

operations.[8] A similar approach can be encouraged in the Regional and Caledon Official Plans. Examples from other municipalities include embedding cumulative impact evaluation as a criteria for evaluating a proposal or requiring a cumulative impacts study to be addressed as part of a complete application (e.g. Niagara Region OP includes cumulative impacts in the matters to be addressed in an Environmental Impact Study and Hydrologic Evaluation).

Suggested policy approaches that may be considered to address cumulative impact assessment requirements related to mineral aggregate resource extraction include:

- Retaining or updating the current policy direction to conduct studies jointly with the local municipalities and conservation authorities to address, as appropriate, the cumulative impacts of mineral aggregate extraction on Peel's communities and natural environment.
- Updating and clarifying the policy direction to establish policies and criteria for the evaluation of applications proposing new or expanding mineral aggregate resource uses to require the consideration of cumulative impacts of the proposal, as appropriate.
- Consider including new definitions for "cumulative impacts" and "cumulative impact assessment".

6.9 Implementation Tools and Monitoring

To support the implementation of their ROP, Halton Region has developed a series of Guidelines to provide more detailed directions in the implementation of its policies. They guide processes and outline approaches including studies and methodologies that would satisfy the relevant policies of the ROP.

Halton's Aggregate Resources Reference Manual provides a complete list of aggregate resources policies (provincial and local) and details on submission requirements for aggregate applications. The Manual is supported by a comprehensive policy checklist that is intended to assist reviewers and decision makers with the making of a decision on an application.

The Halton ROP also includes a policy requiring preparation of a biannual "State of Aggregate Resources" report which provides details on extraction and rehabilitation trends, license activity, as wellas a record of complaints and compliance issues for specific aggregate operations in the Region. An interesting

[8] Grand River Conservation Authority (2010) Cumulative Effects Assessment (Water Quality and Quantity) Best Practices Paper for Below-Water Sand and Gravel Extraction Operations in Priority Subwatersheds in the Grand River Watershed available at https://www.grandriver.ca/en/Planning-Development/Policies-and-guidelines.aspx.

element of this report is a section which provides an assessment of the cumulative impact of extraction operations on the NHSs in the Greenbelt and the Region, with a focus on rehabilitation progress in areas in and adjacent to the NHS.

It should be noted that this unique approach for aggregate resources in Halton is supported by dedicated staff resources to manage and monitor the reporting requirements as set out in the ROP.

In 1999, Peel Region staff developed the "Impact on HPMARA Study Guidelines" document. The purpose of the proposed guidelines was to assist applicants when assessing the possible impacts of a development on lands in or adjacent to HPMARA. The proposed guidelines complimented the then 1998 ROP policies which provided long-term protection of resource areas for possible use, in accordance with the PPS. Although not finalized and implemented, the draft guidelines provided insight into the analysis which the Region expects the applicant to undertake, including establishing current site conditions, understanding potential permitted land uses, and determining the difference in impacts of existing, permitted and proposed land uses. The HPMARA impact assessment guideline should be reviewed and updated to provide clear direction and recommended terms of reference when applicants are proposing development of land uses that may preclude or hinder access to identified resource areas.

7.0 UPDATES TO OFFICIAL PLAN MAPPING

As set out in the PPS municipalities are required to identify and protect aggregate resource areas in order to ensure that any future development on such lands would not hinder or preclude extraction from occurring.

As discussed, the Province provides mapping of Sand and Gravel Resources and Bedrock Resources in the ARIP. Potential sand and gravel resources are classified as deposits of primary, secondary or tertiary significance (See Figures 6 and 7). The evaluation of these classifications is determined based on primarily on resource quality, with primary deposits suitable for producing a range of aggregate products with suitable characteristics (gradation and chemistry) for use in asphalt and concrete products.

The ARIP reports also identify "selected bedrock resources" which generally includes limestone and dolostone deposits suitable for producing a range of crushed stone, building stone and chemical stone products (See Figures 8 and 9). In some areas of the province, including Peel Region, the ARIP reports also identify shale resources for the production of brick, and sandstones suitable for unique building applications. Bedrock resource mapping takes into consideration the depth of overburden covering the

resource and distinguishes areas where the overburden depth is less than 8 metres. This is based on the rationale that accessing bedrock areas with thick overburden cover would not be economically viable given the costs of removing large quantities of material to access the resource.

The Peel ROP identifies High Potential Mineral Aggregate Resources Areas (HPMARA) on Schedule D-2. The Regional HPMARA represents the lands which contain primary and secondary sand and gravel resource areas and selected bedrock resource areas that are not constrained by provincial or municipal policies which prohibit aggregate resources extraction. The Caledon High Potential Mineral Aggregate Resources Areas mapping in the Caledon Official Plan further refines the HPMARA at the local level to reflect the Town's local environmental, cultural, social and other planning considerations. The HPMARA and CHPMARA maps were initially developed in the late 1990's as part of the CCRS.

The existing mapping in the Region of Peel and Town of Caledon Official Plans is being reviewed and updated to consider the revised aggregate resource mapping that was recently updated by the Province. In addition, the mapping updates will reflect the latest provincial plan mapping of significant environmental features and other constraints identified by the Region. In addition to updated to the ARIP mapping, the provincial plan mapping has also been updated. For example, the NEC released updated mapping with the 2017 Plan updates. An evaluation of current constraints will help to identify recommended changes to the HPMARA and CHPMARA schedules.

A review of the Region's mapping update methodology will be prepared as a supporting component of the Joint Aggregate Policy Review project. The purpose of this task is to review the methodology that was used to update and refine the identification of HPMARA and CHPMARA mapping in the official plans. The mapping will reflect the most recent provincial updates to the aggregate resource mapping for Peel along with more recent information on constraints to exclude areas where aggregate extraction would be prohibited. The mapping and policy revisions that were recently approved by ROPA 32 (Northwest Brampton, shale resourcearea) will not be subject to any further review or refinement.

8.0 CONCLUSION AND NEXT STEPS

8.1 Aggregate Resource Policy Gaps and Opportunities

Based on a review of the current Official Plan policies in Peel and Caledon and the current provincial policy framework for aggregate resources, the following highlights key findings for discussion:

- Peel Region's current policies are generally well laid out and easy to understand but could be reorganized to deal with key policy directions in a structured order that addresses resource identification and protection of HPMARA and existing operations, followed by policies and key Regional evaluation criteria for the review of new or expanded operations and concluding with key policy direction to the local municipalities along with any final additional supporting/implementing policy initiatives.

- Regional Official Plan policies should address Regional policy needs and new provincial direction including setting out key Regional criteria for the review of mineral aggregate proposals, policy for aggregate recycling, cumulative impact assessment, comprehensive rehabilitation planning and adaptive management plans.
- As part of the OP conformity exercise, reference to the Growth Plan should be added and consideration should be given to the new constraint (prohibition) that the Growth Plan and NEP applies to new mineral aggregate operations in the Natural Heritage System for the Growth Plan and NEPA.
- Further to the policy direction from the Ontario Ministry of Agriculture, Farming and Rural Affairs, policy options should be considered which ensure that, in prime agricultural areas, policy direction is provided to the Town of Caledon that the prime agricultural designation is to be maintained with a hybrid or site specific designation allowing mineral aggregate operations in the prime agricultural area.
- The Town Caledon has a very thorough set of aggregate policies, laying out in detail the tests that need to be met in considering new applications.
- Given the recent changes to the PPS, Caledon should revisit the separate designations for above and below water extraction ("Extractive A" and "Extractive B") in the OP.
- Some revisions to the application study requirements for mineral aggregate operations should be considered to reflect terminology in the current ARA regulations which came into effect April 1, 2021 and to addressed identified issues (e.g., blasting impact studies and management of fly rock).
- There is some overlap in certain sections of the Caledon OP with ARA requirements (e.g., design and operations of processing and accessory uses) which may conflict with Section 66 of the ARA.
- New policies for management of excess soils should be considered to be consistent with direction in the PPS and provincial plans.
- New definitions for mineral aggregate operations, and aggregate conservation, consistent with the PPS, are recommended.

8.2 Other Considerations

In terms of bringing the aggregate policies into conformity with the current Provincial Policy framework, there are several policy changes as indicated through the Discussion Paper. Beyond the conformity exercise, there are also a number of issues related to aggregate operations which may benefit from clearer policy direction, such as issues related to aggregate recycling, cumulative impact assessment, comprehensive rehabilitation, adaptive management plans and land use compatibility. The Discussion Paper explored how selected municipalities have developed policies to address these issues in their Official Plans. Peel and Caledon may consider incorporating additional policy to increase clarity in the municipal position and provide guidance on these aggregate related issues.

Given the complexity in Peel and Caledon that results from the multiple layers of Provincial Planning policy that need to be considered (Growth Plan, ORMCP, NEC, Greenbelt Plan), implementation tools, such as the Aggregate Resources Manual used in Halton Region, may provide practical guidance for aggregate applications, that would benefit applicants, the public and municipal staff in reviewing proposals.

Concerns also relate to issues that arise after approvals are in place, such as compliance with operating and monitoring requirements, and pace and quality of rehabilitation. These matters are the purview of MNRF as the agency responsible foradministering and enforcing the ARA license requirements, including rehabilitation. However, considering the value of Halton Region's approach in producing a biannual "State of the Aggregates" report may assist in gauging progress in addressing these types of issues.

The objective of these policies is to balance the provincial interests in protecting the mineral aggregate resource and to protect the community interest through municipal planning.

Next Steps

Following a review of the Discussion Paper with municipal staff and stakeholders, the next phase of the project will introduce draft policies based on the gaps analysis and conformity and consistency analysis which was initiated during the development of the Discussion Paper.

The methodology for updating HPMARA and CHPMARA mapping, as referenced in this report, is summarized in a separate technical memorandum.

A related component focused on transportation of aggregates is a technical paper on Good Movement prepared to examine theimpacts of aggregate operations on Peel's road infrastructure, traffic congestion, traffic safety, local economy, air quality, noise level and other aspects of community safety.

APPENDIX 1:

AGGREGATE POLICY HIGHLIGHTS FROM TAPMO MUNICIPALITIES

AGGREGATE POLICY REVIEW:

HIGHLIGHTED OFFICIAL PLAN POLICIES EXAMPLES FROM TAPMO MUNICIPALITIES

MUNICIPALITY	AGGREGATE RECYCLING
County of Oxford (policies also apply to lower tier including Zorra Twp, and Southwest Oxford)	3.4.1.3.1.2 During the operational life of the sand and gravel extraction operation, aggregate recycling operations and uses ancillary to the extraction of sand and gravel, such as asphalt and concrete batching plants, aggregate transfer stations and similar uses, may be permitted within licensed extraction operations subject to site-specific zoning. 3.4.1.3.2 For proposals to rezone lands to permit an aggregate recycling use, an aggregate transfer station or a use that is ancillary to and not essential to the extraction of limestone and sand and gravel, Area Municipal Council shall be satisfied that: □ the proposed ancillary use is adequately buffered to ensure land use compatibility; □ issues such as noise, dust, particulate emissions, odour, vibration, lighting and storage have been adequately addressed; □ no significant adverse effects on the quantity and quality of surface water and groundwater and on domestic and municipal water supplies will result; □ no significant negative impacts on natural heritage features and areas and on the broader natural heritage system will result; and □ where extraction is proposed below the water table, a permitted aggregate recycling use, aggregate transfer station and/or ancillary use shall be located in such a way that surface and groundwater resources will not be significantly impacted. 3.4.1.3.1.4 The County and/or Area Municipality may consider the use of Temporary Zoning provisions for aggregate recycling facilities or for uses that are ancillary to and not essential to support mineral aggregate extraction operations, including asphalt or concrete batching plants, aggregate transfer stations or related facilities that are not required for the mineral aggregate extraction operations, to ensure that such uses are established and operated only in conjunction with licensed operations.
Township of Oro-Medonte	C12.3 Permitted uses on lands designated Mineral Aggregate Resources include: a) the extraction of stone, gravel, sand and other aggregates and associated operations such as crushing, screening, washing aggregate storage and accessory uses including an aggregate transfer station and the recycling of used concrete and asphalt

MUNICIPALITY	AGGREGATE RECYCLING
Township of North Dumfries	5.2.1.4 The Township will regulate uses associated with aggregate extraction through the Zoning By-law as follows: a) permit accessory uses associated with aggregate extraction operations and processing activities such as crushing, screening, washing, stockpiling, blending with recycled asphalt or concrete material, equipment storage, weigh scales, parking and office facilities; b) require site specific zoning to permit ancillary land uses such as asphalt plants, concrete plants, aggregate depots that blend and stockpile aggregate materials with salt and aggregate transfer stations except where otherwise prohibited by the policies of this Plan, subject to: i) the protection of adjoining lands from the negative effects of a reduced water supply, noise, dust, odour, lighting and outdoor storage; ii) the protection of the environment from negative effects of dust, chemical spills, run-off, or contamination of surface or groundwater; iii) access being obtained directly to a road capable of carrying the anticipated truck traffic; and c) notwithstanding b) above, ancillary land uses will be prohibited in Source Water Protection Areas, as illustrated on Map 4, in accordance with Chapter 8 of the ROP. 5.2.8.5 The Township will ensure that mineral aggregate resource conservation will be undertaken, including through the use of aggregate recycling facilities within operations, wherever feasible. The Township will define and regulate aggregate recycling facilities in the General Zoning By-law.

MUNICIPALITY	AGGREGATE RECYCLING
Halton Region	109 Subject to other policies of this Plan, applicable policies of the Greenbelt Plan and Niagara Escarpment Plan, applicable Local Official Plan policies and Zoning By-laws, and site plan and conditions of the licence under the Aggregate Resources Act, the following uses may be permitted: associated facilities to a mineral aggregate operation used in extraction, transport, beneficiation, processing or recycling of mineral aggregate resources and derived products such as asphalt and concrete, or the production of secondary related products, provided that such associated facilities are: a) [Section number not in use]. b) directly associated with the extraction of mineral aggregate resources from an integrated mineral aggregate operation, which may consist of more than one Aggregate Resources Act License; c) designed to be temporary and not to be utilized after extraction has ceased; and d) located in a manner that does not affect the final rehabilitation or enhancement of the site in accordance with an approved rehabilitation and enhancement plan.
Grey County	5.6.3 Mineral Resource Extraction Permitted Uses Policies 1) Lands identified as Mineral Resource Extraction on Schedule B represent sites licensed under the Aggregate Resources Act. Permitted uses in this land use type include those uses listed in the license, and accessory uses such as; extracting, crushing, screening, blending, washing, transporting, beneficiating, processing, stockpiling, office/parking, recycling of mineral aggregate resources and derived products such as asphalt and concrete or the production of secondary related products together with, agriculture, forestry, wildlife and fisheries management. 5.6.5 Mineral Resource Extraction Development Criteria Policies 1) Where an applicant wishes to undertake a sand and/or gravel or quarry operation other than a wayside pit and quarry, the local municipality or the County of Grey, may require the applicant to enter into a development agreement with the municipality or the County. The agreement shall be entered into prior to local Council's enactment of the implementing zoning by- law amendment, or as a condition of a holding ‘h’ symbol in the by-law. Such an agreement may include: 6) Measures to conserve and recycle mineral aggregate resources are encouraged including the utilization or extraction of on-site mineral aggregate resources prior to development. Where environmental and locational site conditions are feasible, such as being located on suitable roads, extractive operations are encouraged to include aggregate recycling facilities where the public, businesses, and/or municipal waste collection systems may deposit aggregates, stone, porcelain, asphalt, concrete, and similar substances for processing for reuse as aggregates.

MUNICIPALITY	COMPREHENSIVE REHABILITATION
County of Oxford (policies also apply to lower tier including Zorra Twp, and Southwest Oxford)	3.4.1.1 Comprehensive rehabilitation in areas with concentrations of mineral aggregate operations shall be encouraged. 3.4.1.3.6 The County and Area Municipalities will work jointly and cooperatively with the aggregate industry, the Ministry of Natural Resources and Forestry, Conservation Authorities and the community to develop integrated rehabilitation plans that focus on restoration and enhancement of the agricultural, rural and ecological resources within a particular resource area. Where integrated rehabilitation plans have been developed and endorsed by County and Area Councils, all subsequent applications for new or expanded extraction operations shall be required to prepare detailed site rehabilitation plans that are consistent with the integrated rehabilitation plan for the area and the requirements of the Aggregate Resources Act. Notwithstanding the foregoing, County and/or Area Municipal Council may consider alternative rehabilitation plans that are not strictly consistent with the municipal integrated rehabilitation plan where the proponent can demonstrate that the proposed alternative plan will contribute positively to the restoration and enhancement of the resource area. Where an integrated rehabilitation plan has not been completed for a particular resource area, the applicant shall demonstrate how the proposed rehabilitation and after-use of the extractive operation will be coordinated and compatible with adjacent licensed extractive operations and other surrounding land uses, to the extent that this is practical and feasible.
Region of Waterloo	9.F.3 Where multiple mineral aggregate operations are located in close proximity to one another, the Region will collaborate with the Province, Area Municipalities, the Grand River Conservation Authority and the affected owners/applicants to jointly develop comprehensive rehabilitation plans for multiple properties.
Township of North Dumfries	5.2.8.2 Where multiple mineral aggregate operations are located in close proximity to one another, the Township will collaborate with the Region, the Province, the GRCA and the affected owners/applicants to jointly develop comprehensive rehabilitation plans for multiple properties. 5.2.8.3 c) comprehensive rehabilitation will be carried out, to the extent possible, where a proposed new mineral aggregate operation abuts one or more existing licensed mineral aggregate operations;

MUNICIPALITY	COMPREHENSIVE REHABILITATION
Region of Durham	9.D.2.13 In addition to site-by-site rehabilitation programs, as specified in the Aggregate Resources Act, rehabilitation plans shall be considered in conjunction with adjacent and/or groups of operations in an area, in order to provide for more comprehensive rehabilitation planning. The rehabilitation of Aggregate Resource Extraction Areas on the Oak Ridges Moraine will provide for a regional trail and continuous forest cover where possible. In addition, rehabilitation plans shall be reviewed in conjunction with an environmental impact study in accordance with Policy 2.3.43. Within the Greenbelt Protected Countryside, rehabilitation shall also be subject to the relevant provisions of the Greenbelt Plan.
Town of Uxbridge	1.9.9.1 The Township and the mineral aggregate industry shall work together to develop and implement comprehensive rehabilitation plans for parts of the Oak Ridges Moraine Conservation Area that are affected by mineral aggregate operations.
Town of Mono	12(3) a The uses permitted in Phase II shall be quarrying or the extraction of sand, gravel, or other aggregates, plus accessory operations associated with material mined on the site, such as crushing, screening, recycling, aggregate storage and topsoil stockpiling. In addition, any necessary progressive rehabilitation shall be permitted.
Grey County	5.6.5 10) Comprehensive rehabilitation is required between neighbouring pit or quarry operations where feasible.

MUNICIPALITY	ADAPTIVE MANAGEMENT PLANS
Town of Mono	12(2)d pits and quarries within the Town, by requiring aggregate licensees comply with all rehabilitation conditions, specifically to require progressive rehabilitation and final rehabilitation as per the site plan and conditions of the licence issued under the Aggregate Resources Act (ARA). Council will work with aggregate licence holders and Ministry of Natural Resources & Forestry (MNRF) to ensure that all new licenses have appropriate progressive rehabilitation plans and adaptive management plans.
Halton Region	110 (8.2) Discourage the use of adaptive management plans or similar measures that will require continuous or perpetual active on-site management post rehabilitation. 110 (12) Provide to Regional Council no less frequently than every two years a State of Aggregate Resources in Halton report that contains, among other things: f) status of the operation and implementation of approved adaptive management plans,

MUNICIPALITY	CUMULATIVE IMPACTS
County of Oxford (policies also apply to lower tier including Zorra Twp, and Southwest Oxford)	3.4.1.3.2 (see section for detailed policy requirements) Impacts, and cumulative impacts, as applicable, have been assessed and found to be acceptable relative to the potential adverse effects on: the municipal transportation system; the natural heritage features and areas and on the broader natural heritage system; the quantity and quality of surface water and groundwater and on domestic and municipal water supplies; agricultural resources and operations; potentially affected residents and the community regarding noise, dust, particulate matter, air quality, traffic and other potential social and economic impacts; and cultural heritage resources;
Halton Region	110 (8) Evaluate each proposal to designate new or expanded Mineral Resource Extraction Areas based on its individual merits and consideration of all the following factors: c.1) cumulative impacts of the proposal and other extractive operations in the general area, 110 (12) (12) Provide to Regional Council no less frequently than every two years a State of Aggregate Resources in Halton report that contains, among other things: g) an assessment of the cumulative impact of extractive operations on both the Greenbelt and Regional Natural Heritage Systems, 110 (3.1) It is the *policy* of the *Region* to: Develop and maintain, in consultation and partnership with *public agencies*, aggregate industry and citizen groups, an Aggregate Resources Reference Manual which serves as a guidance document for *Halton*, which contains, among other things: a) data, information and results of credible research on the Greenbelt and Regional Natural Heritage Systems, and surface and ground water systems in Halton, especially as these relate to the cumulative impacts on those systems of extractive operations in Halton and neighbouring municipalities,

MUNICIPALITY	CUMULATIVE IMPACTS
Region of Waterloo	9.C.4 The studies noted in Policies 9.C.3 and 9.D.1 will take into account the potential cumulative impacts that may result from a proposed new mineral aggregate operation when added to other past, present and proposed future mineral aggregate operations in the vicinity of the proposed new operation. The appropriate level of detail, analysis boundaries and baseline data to be used in the cumulative impact assessment will be determined by the Region, Area Municipalities, the Grand River Conservation Authority and the owner/applicant as part of the pre-submission consultation meeting
Region of Durham	9.D.1.2 In the consideration of new or expanded Aggregate Resource Extraction Areas, potential impacts, and cumulative impacts on existing development and on residents located nearby, shall be fully assessed, with negative effects minimized to the fullest extent possible
Township of North Dumfries	5.2.4.3 The studies identified in Section 5.2.4.1 and 5.2.6.1 will be required to take into account the potential cumulative impacts that may result from a proposed new mineral aggregate operation when added to other past, present and proposed future mineral aggregate operations in the vicinity of the proposed new operation. The appropriate level of detail, analysis boundaries and baseline data to be used in the cumulative impact assessment will be determined by the Township, the Region, the GRCA and the owner/applicant as part of the pre-submission consultation meeting provided for in policy 5.2.4.2.
Grey County	5.6.4 Policies for the Establishment of New Mineral Resource Extraction *Land Use Type*s 3) Where pit or quarry operations are being proposed in close proximity to one another, in a similar timeframe, cumulative impacts need to be addressed. Background and technical reports will be reviewed simultaneously and a joint third party peer reviewer may be requested to review the studies. If a pit or quarry operation is being proposed in an area where there are already existing pit and quarry operations within close proximity, cumulative impacts such as traffic and noise may be considered in the technical reports. These requirements will be outlined further at the time of pre-submission consultation.

MUNICIPALITY	CUMULATIVE IMPACTS
City of Ottawa	Establishing or Expanding Pits or Quarries 9. As part of a complete application, studies and the site plans required under the Aggregate Resources Act will also be required by the City. The areas of influence generally are 500 metres around quarries, 150 metres for pits above the water table and 300 metres for pits below the water table and the proposed haul route. The required studies, as are determined to be appropriate considering the type of extraction proposed, may include those identified in the Aggregate Resources Act and will be defined in a pre-consultation process. Studies may include those described elsewhere in this Plan as well as, but are not necessarily limited to additional information on: 5. Any proposed water diversion, water taking, storage and drainage facilities on the site and points of discharge to surface waters. An impact assessment will address the potential effects on the following features on or adjacent to the site, where applicable: ivii. The cumulative effects of two or more bedrock quarries with 1 km of each other.