

AGGREGATE IMPACT ASSESSMENT

2285 BATTERSEA ROAD

1

January 27, 2020

Mr. James Bar, MCIP, RPP
Senior Planner
City of Kingston, Planning Division

RE: 2285 Battersea Road
Aggregate Impact Assessment
OPA and ZBA Applications, File No. D35-003-2019

Dear Mr. Bar,

The following letter has been prepared by Fotenn Consultants Inc. on behalf of BPE Development Inc. related to 2285 Battersea Road in the City of Kingston. This letter is submitted in response to first round technical comments from City of Kingston staff and the Ministry of the Natural Resources and Forestry regarding how the proposed development potentially impacts aggregate operations. This letter reviews the potential impacts of the proposed development on aggregate sand and gravel reserve area, limestone plain resources, and bedrock reserves identified on Schedule 12 Mineral and Aggregate Reserve Areas of the City's Official Plan, which is further detailed in Aggregate Resources Inventory Paper 187 (ARIP 197), and reviews Section 2.5.2.5 of the Provincial Policy Statement.

Site Description, Surrounding Area + Geological Setting

The subject site is located on the northwestern corner of the intersection of Battersea Road and Unity Road, approximately five kilometres north of Highway 401 and two kilometres east of Glenburnie. The rural site consists of three lots, with a combined area of approximately 13.7 hectares, approximately 295 metres of frontage on Battersea Road, and approximately 115 metres of frontage on Unity Road.

Currently, the subject site contains a one-and-a-half storey single-detached limestone dwelling and two wood-frame construction accessory buildings. The remainder of the site consists of ploughed fields and a wooded area located in the northern portion of the site. An existing easement permits a hydro-line to cross over the site, extending from the northeastern corner of the subject site towards the southwestern corner. There are no buildings located within the hydro easement.

The Hydrogeological Study submitted in support of the applications assessed the existing terrain of the site. The terrain is generally described as thin with typically less than 0.5 – 2 m of sandy silty/clayey silt overburden. Test pits were excavated which identified heterogeneous overburden deposits consisting primarily of fine sand material with some gravel and boulders. Generally, the thickness of overburden ranges from approximately 0.35 metres to approximately 1.7 metre depth where refusal to excavating was encountered on inferred limestone/shale bedrock. The majority of the test pits were found to be less than 1 m depth.



Figure 1: Site Context (Source: Kingston K-Maps)

In a letter from the Ministry of Natural Resources and Forestry (MNRF) dated April 18, 2019, it was noted that the Ontario Geological Survey's Mineral Deposits Inventory (MDI) database identifies a mineral occurrence, the Fairmount Quarry #2 which is a limestone quarry, within the southern half of the subject site. The MNRF acknowledged that while the location may not be accurate, as the MDI point plots in the farm field, with no visual evidence of an abandoned quarry, the MDI record indicates the quarry location as Lot 33, Concession 6, Kingston Township. The MNRF's topographical mapping was reviewed and the boundary of Lot 33, Concession 6, Kingston Township was plotted in relation to the subject site (Figure 2). While the site is located within this boundary, it is unlikely that Fairmount Quarry #2 is located within the subject site as identified by the MNRF due to the large remaining area of Lot 33, Concession 6 and the more appropriate topography located in the northern portion of Lot 33.

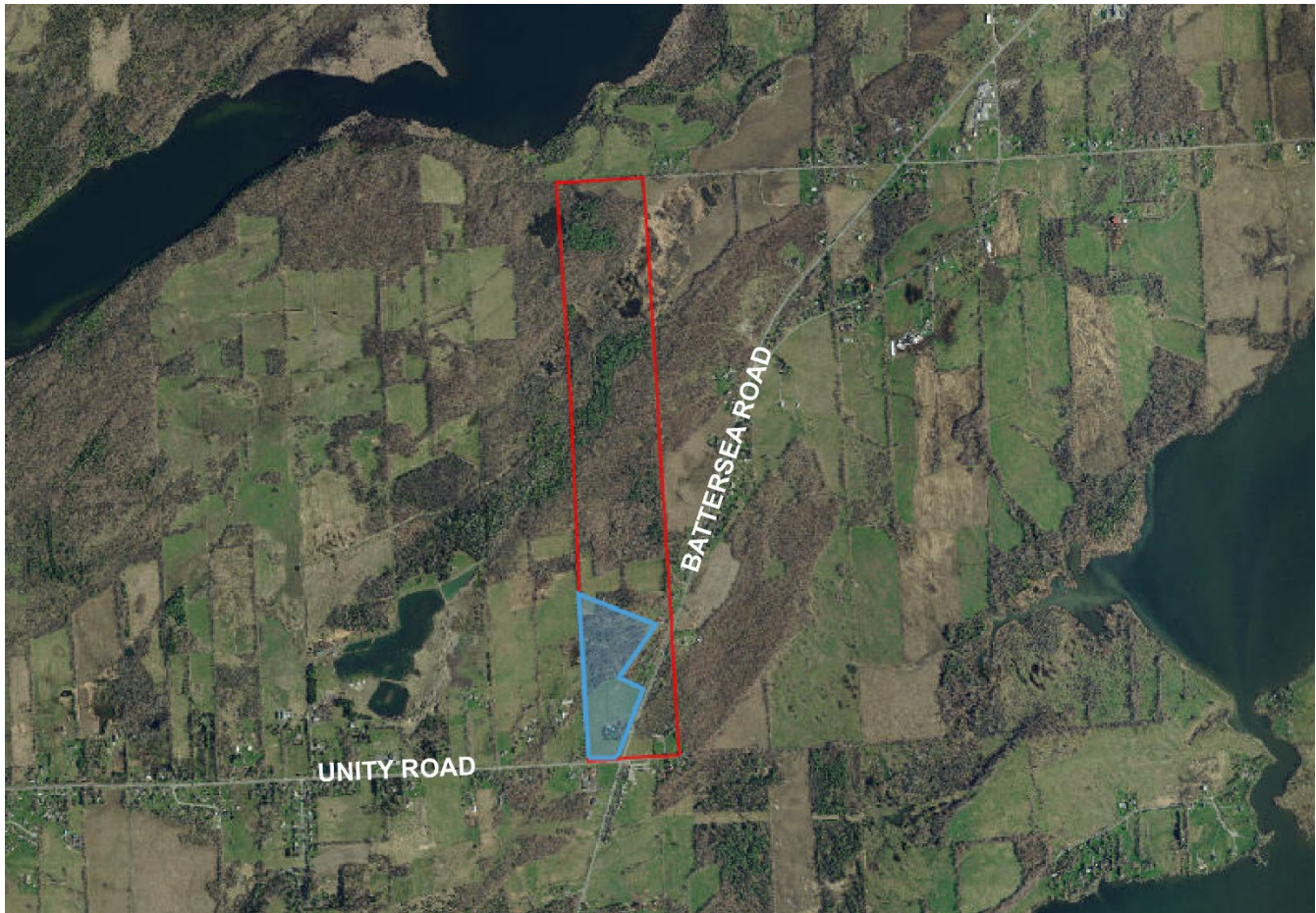


Figure 2: Lot 33, Concession 6, Kingston Township (red outline) and 2285 Battersea Road (blue shading) (Source: Ministry of Natural Resources and Forestry Topographical Mapping)

Approximately 385 metres to the west of the subject site there are two Class-B Licensed Pits, approximately 25.7 hectares and 8.54 hectares in area respectively, owned by McKendry, Wm. J. and Sons Limited. While both pits are licensed by the Ministry of Natural Resources, only the larger pit is operational based on the current zoning.

A Hydrogeological Study, Servicing Options and Terrain Analyses and a Stormwater Management Report were prepared and submitted in support of the planning applications. Information related to the Ministry of the Environment, Conservation and Parks well water records can be found in the previously noted Hydrogeological Study. A Grading Plan will be required to be submitted in support of the site plan control process.

The subject site is identified as containing Sand and Gravel Resource Area (Tertiary) in the southeast and northwest portions of the site and Limestone Plain and Aggregate – Bedrock Reserve Area in the remaining portion of the site on Schedule 12 Mineral and Aggregate Reserve Areas of the City's Official Plan. As such, this aggregate impact assessment is required to review the potential impacts of the proposed development on aggregate resources.

Provincial Policy Statement (2014)

The 2014 Provincial Policy Statement (PPS), in effect since April 30, 2014, provides high-level land use policy direction on matters of Provincial Interest as they relate to land use planning in Ontario municipalities. Decisions of municipal councils must be consistent with the PPS, which provides direction for issues such as the efficient use of land and infrastructure, maintaining of a housing stock that appropriately addresses the demographic and economic diversity of households, supporting long-term economic prosperity, and conserving natural and cultural heritage resources for the future. Policies that are directly relevant this Aggregate Impact Assessment are discussed below, with the policy cited in *italics*:

Section 2 of the PPS deals with wise use and management of resources such as significant natural heritage features and areas, watersheds, prime agricultural areas, mineral and petroleum resources, and significant built and cultural heritage. The subject property contains significant natural and cultural heritage features due to the presence of the wooded area and existing built heritage resources on the subject site as well as adjacent agricultural uses. Section 2.5 of the PPS provides policy direction related to mineral aggregate resources and seeks to provide long-term protection of resource supplies.

Section 2.5.2.5 provides criteria for protection of known deposits of mineral aggregate resources:

In known deposits of mineral aggregate resources and on adjacent lands, development and activities which would preclude or hinder the establishment of new operations or access to the resources shall only be permitted if:

a) resource use would not be feasible; or

The subject site contains significant physical, cultural, and man-made constraints that limit the aggregate extraction potential of the subject site. The subject site is abutting two existing roads and existing residential and agricultural development. The site is also in proximity to two Class-B Pit License Areas. As well, the site contains an existing built heritage resource. Each of these constraints limits the aggregate extraction potential of the site and render the resource use unfeasible. Therefore, the subject site does not meet the criteria required to establish a new aggregate resource extraction operation on the subject site.

b) the proposed land use or development serves a greater long-term public interest; and

c) issues of public health, public safety and environmental impact are addressed.

As demonstrated, the subject site does not comply with policy a), and as such, policies b) and c) do not apply to the subject site.

City of Kingston Official Plan

The City of Kingston approved a five-year update to its Official Plan in effect on August 29, 2017 with the approval of Official Plan Amendment (OPA) 50.

Section 2 of the Official Plan provides broad direction for the growth of different areas of the City. Section 2.3 establishes the goals and policies dealing with the principles of growth in Kingston. The goal of this section is to strategically and efficiently manage future growth in urban and rural areas. The principles in this section seek to optimize infrastructure and public investment, promote diverse economic activity and prosperity, support an attractive, accessible, safe and sustainable City, protect cultural and natural resources, provide a variety of housing options and help achieve “smart” growth.

Cultural Heritage 2.3.8. Cultural heritage resources will continue to be valued and conserved as part of the City’s defining character, quality of life, and as an economic resource that contributes to tourism in both the urban and rural portions of the City.

Section 2.3.8 identifies the City’s intention to value and conserve cultural heritage resources. The subject property contains a one-and-a-half storey single-detached limestone dwelling which is identified as a Listed Property of

Cultural Heritage Value on the City of Kingston's Heritage Register. The proposed development seeks to maintain and repurpose this cultural heritage resource.

Rural Areas 2.3.12. The planning for the lands shown as Rural Areas on Schedule 2 of this Plan must balance the resource protection objectives for agriculture, aggregates and minerals with the environmental objectives of the natural heritage features and areas and watershed management and the social objectives of protecting rural communities and the rural way of life.

Section 2.3.12 states that lands shown as Rural Area must balance resource protection related to agricultural and aggregate and mineral resources with environmental protection. The proposal seeks to establish a rural commercial use on the subject site. The proposed use seeks to respect the surrounding agricultural uses and existing wooded area on the site while supporting a new and complementary rural commercial use.

Section 3 of the Official Plan establishes and describes the land use designations regulating the character and intended function of lands within the municipality. Schedule 12 of the Official Plan identifies mineral resource areas in the City. The subject site is identified as containing Sand and Gravel Resource Area (Tertiary) in the southeast and northwest portions of the site and Limestone Plain and Bedrock Reserves on the remaining portion of the site on Schedule 12 Mineral and Aggregate Reserve Areas of the City's Official Plan.

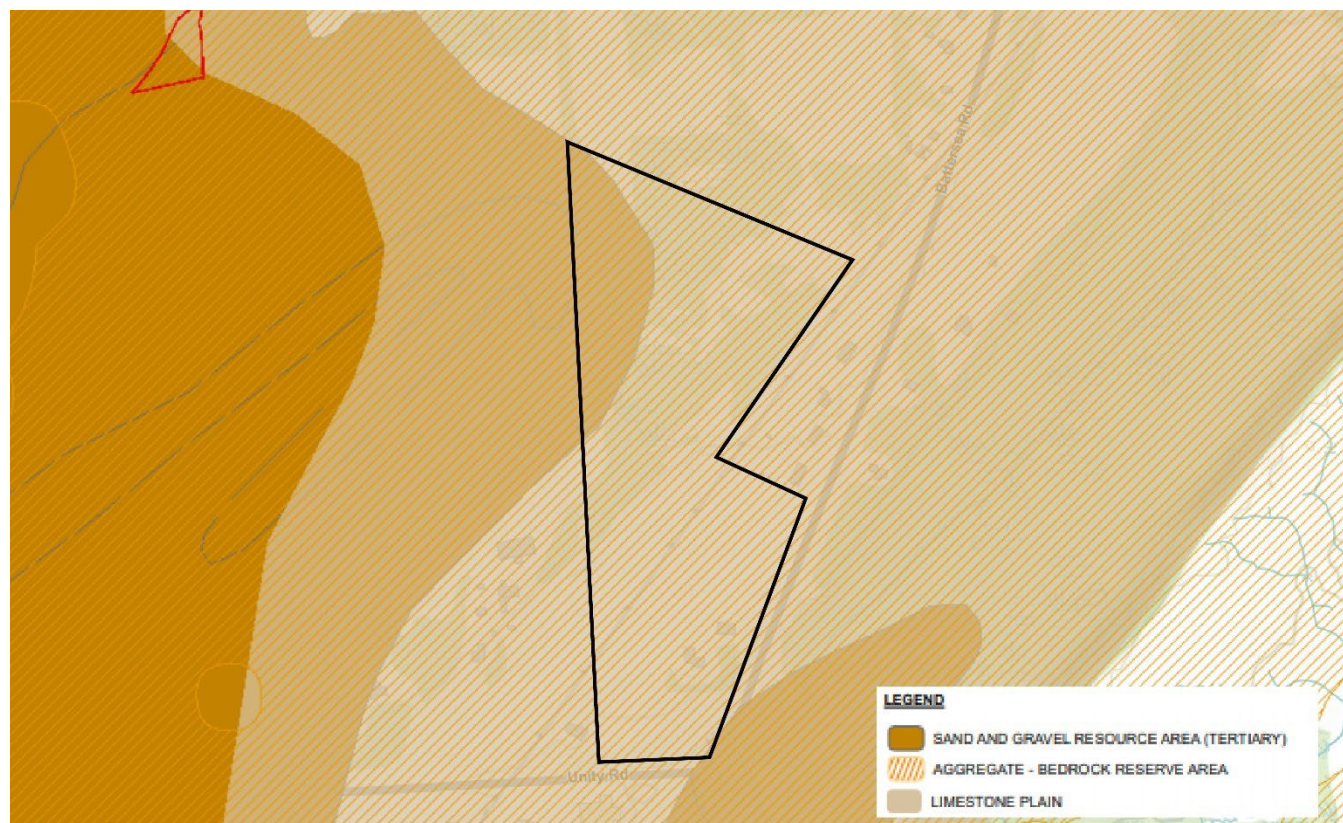


Figure 3: Official Plan Schedule 12 – Mineral and Aggregate Reserve Areas (Source: Kingston K-Maps)

Section 3.16 provides policy direction for mineral resource areas in order to protect and identify resources and guide their future use. Section 3.16.3 provides direction for new aggregate operations, which states:

Any new mineral or mineral aggregate operation, or the expansion of a current activity in an area designated as a Mineral Resource Area, will require an amendment to the zoning by-law. When determining whether such an amendment is appropriate, the following must be considered:

- a. the location of the proposed site and its impact on adjoining communities;*
- b. the compatibility of the proposed extraction or primary processing activity with existing and planned land uses within 500 metres of a quarry or 300 metres of a pit;*
- c. the advice of the appropriate provincial ministry with respect to resource potential;*
- d. the size, scale, and nature of the proposed use, and any land uses and activities that are accessory uses to the extractive or processing operation;*
- e. the ease of access of the proposed site with respect to the location of entrances and exits, road patterns and traffic volumes;*
- f. the location of proposed haulage routes and their impact on communities or residents along those routes, and the impact on the transportation system relying on those routes; and, g. submission of materials listed below for the purpose of information for the municipality, including:*
 - a detailed site development survey indicating dimensions of the site, all existing or proposed structures and their dimensions, topography and soils, and also land uses and buildings or structures within 500 metres of a quarry or 300 metres of a pit. Site plans prepared consistent with the Aggregate Resources Act are acceptable for the purposes of this policy;*
 - the surface and groundwater characteristics of the site, its drainage, as well as the hydrogeological impact of the proposed mining or extraction use on the groundwater quality and quantity within a minimum 500 metres of the site;*
 - confirmation that the surface water, watercourses and environmental features of the site and the surrounding area will not be adversely affected by the proposal, through the submission of an environmental impact assessment, or other studies as may be deemed necessary;*
 - the operational plan for the proposed site including roads, driveways, the location of materials storage, stockpiles of the resource, and any water diversion or storage location;*
 - the general conditions under which the proposed operation will function, including hours of operation, seasonality of operation, and the timing and scale of any blasting or crushing operations; and,*
 - the proposed landscaping, screening and buffering related to the planned use of the site after rezoning.*

The subject site does not currently contain a mineral resource extraction operation. A future extractive use is not permitted on the site and would require Provincial approval under the Aggregate Resources Act, an Official Plan Amendment, and a Zoning By-law Amendment, subject to conformity with the criteria outlined above. The site is located adjacent to existing residential and agricultural uses. A mineral extraction operation would be required to demonstrate conformity with Section 3.16.3.a. As well, since the site is within 500 metres of existing sensitive uses that would not be compatible with a sand, gravel or limestone extraction operation, it is highly unlikely that such operation would be permitted at this location.

It should also be considered that an aggregate extraction operation on the subject site would require extensive mitigation measures, including berms, buffering and planting areas. This buffering would further reduce the site's area appropriate for mineral extraction. Once the area required for buffering, as well as constraint areas is considered, the area capable of aggregate extraction is severely limited and not suitable for an extraction operation. Based on a review of the City's Official Plan policies, the location of the site abutting existing agricultural and residential uses, the site is subject to additional constraints beyond the identified AIRP 187. As such the proposed rural commercial development of the subject lands will not impact or hinder future aggregate operations on the site.

Aggregate Resource Inventory Paper (ARIP) 187

The purpose of the Aggregate Resources Inventory Program is to provide the basic geological information required to include potential mineral aggregate resource areas in planning strategies. Aggregate Resource Inventory Paper (ARIP) 187 provides an evaluation of the aggregate resources for the County of Frontenac. Detailed field assessments were completed in the preparation of ARIP 187 to delineate and determine the quantity and quality of aggregate resources within the area, as well as ensure sufficient aggregate resources are available for future use. ARIP 187 states: “*Selected Resource Areas are not intended to be permanent, single land use units that must be incorporated into an official planning document. They represent areas in which a major resource is known to exist. Such resource areas may be reserved wholly or partially for extractive development and/or resource protection within the context of the official plan.*”

Map 1A and 1B of ARIP 187 show the extent and quality of sand and gravel deposits within the County of Frontenac. The subject site contains a small portion of identified sand and gravel deposit of tertiary significance in the southeast and northwest corner of the site.

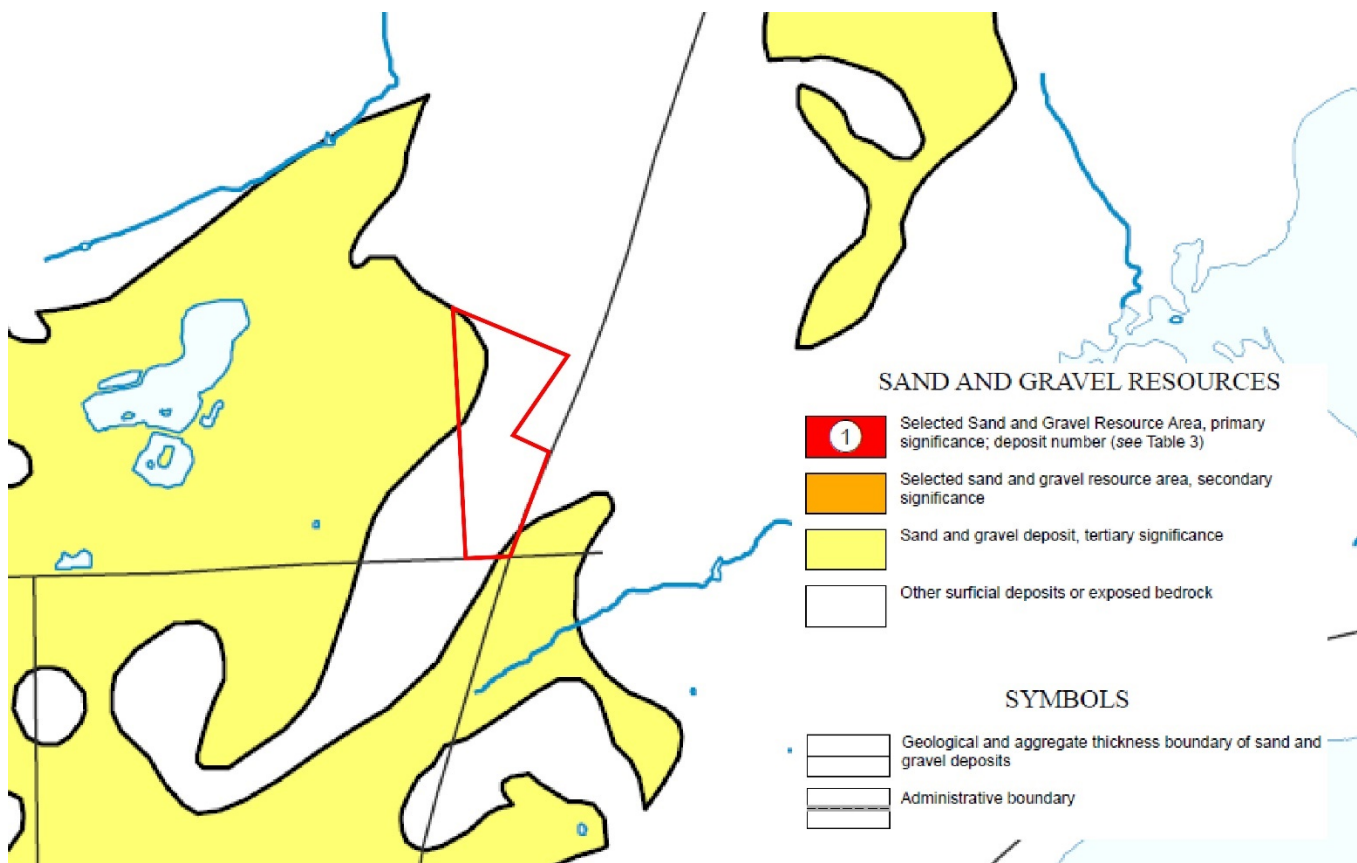


Figure 4: Map 1B – Sand and Gravel Resources for the County of Frontenac (Source: ARIP 187)

Map 2 of ARIP 187 is an interpretative map derived from bedrock geology, drift thickness and bedrock topography maps, water well data from the Ontario Ministry of the Environment, Conservation and Parks, oil and gas well data from the Ontario Ministry of Natural Resources and Forestry (MNR), and from geotechnical test hole data from various sources. As identified on Map 2 Bedrock Resources for the County of Frontenac (Southern portion) in ARIP 187, the subject site contains bedrock with a thin, less than 1 metre, layer of drift or rock debris.

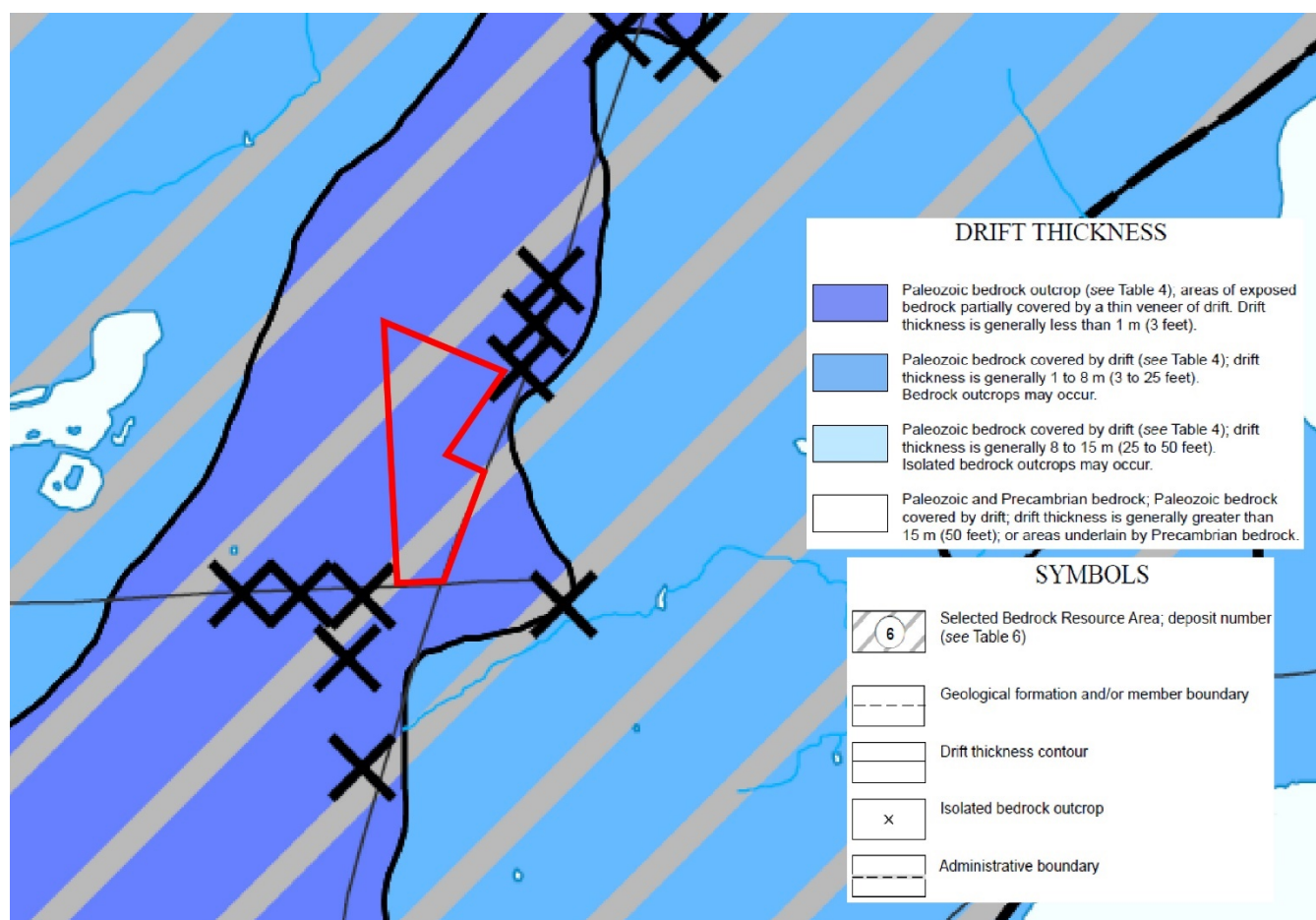


Figure 5: Map 2 – Bedrock Resources for the County of Frontenac (Southern portion) (Source: ARIP 187)

ARIP 187 provides location and setting criteria for determining the potential extraction value of resources, and states: *“The evaluation of a deposit’s setting is made on the basis of natural, environmental and man-made features that may limit or prohibit extractive development”*. Page 6 of ARIP 187 provides location and setting criteria for sand and gravel resources. Page 8 states: *“Criteria equivalent to those used for sand and gravel deposits are used to select bedrock areas most favourable for extractive development”*. As such, the following location and setting criteria apply to the identified bedrock resource areas:

(Pg 6) First, the physical context of the deposit is considered. Deposits with some physical constraint on extractive development, such as thick overburden or high water table, are less valuable resource areas because of the difficulties involved in resource recovery. Second, permanent man-made features, such as roads, railways, power lines and housing developments, which are built on a deposit, may prohibit its extraction. The constraining effect of legally required setbacks surrounding such features is included in the evaluation. A quantitative assessment of these constraints can be made by measurement of their areal extent directly from the topo-graphic maps. The area rendered unavailable by these features is shown for each resource area in Table 3 (Column 3).

In addition to man-made and cultural features, certain natural features, such as provincially significant wetlands, may prove to be constraints. In this report, such constraints have not been outlined and the reader is advised to consult with municipal planning staff and the local office of the MNR for information on these matters. Depending on the number and type of constraint applicable, anywhere from 15 to 85%

of the total resources in a municipality may be unavailable for development (Planning Initiatives Limited 1993).

The subject site contains significant natural constraints due to the existence of wooded area as well as cultural constraints due to the existence of the built heritage resource on the site, both of which would cause difficulties for resource recovery. The subject site has 295 metres of frontage on Battersea Road and 115 metres of frontage on Unity Road, permanent man-made features. The site also abuts and is adjacent to residential and agricultural uses. Table 6 on page 22 of ARIP 187 states that “*Cultural setbacks include heavily populated urban areas, road (including a 100 metre wide strip centred on each road), water features (e.g. lakes, streams), 1 hectare for individual houses*”. Therefore, an approximately 50-metre wide strip along both road frontages of the subject property as well as a one (1) hectare area surrounding dwellings is considered unavailable for extraction.

As such, the subject site contains significant physical, cultural, and man-made features which limit aggregate extraction potential. The subject site has a gross area of approximately 13.6 hectares and the entirety of the subject site is constrained by the above noted features, as shown in Figure 6. Depicted in Figure 6 is the required 500 metre setback from residential uses, one (1) hectare buffer surrounding residential dwellings, and the 50-metre setback from the street centreline. The red 500 metre circles show the setback required from existing residential dwellings by the City’s Official Plan for new aggregate operations. The grey one (1) hectare boxes show the setback from existing residential dwellings required by ARIP 187. The 50-metre buffer depicts the setback from the street centreline as required by ARIP 187.



Figure 6: Constraint Assessment (Source: Fotenn)

Conclusion

The proposed development of a boutique inn, spa, and restaurant on the subject site with frontage on Battersea Road and Unity Road will not further impact or hinder future aggregate operations on the site. The subject site contains significant physical, cultural, and man-made constraints that limit the potential extraction area of the site. ARIP 187 excludes aggregate within an environmental constraint area, surrounding cultural resources, 50 metres of a street centreline, and 1 hectare surrounding individual houses, and the City's Official Plan further excludes development within 500 metres of a mineral aggregate resource. The combined constraints and required buffering apply to the majority of the site and severely compromise the ability of the site to be developed as a mineral aggregate resource operation.

We trust that this assessment addresses any outstanding concerns regarding mineral resources in proximity to the subject property and associated planning applications. Should you have any questions or comments, please contact the undersigned at 613.542.5454.

Respectfully,



Mike Keene, MCIP RPP
Principal, Planning + Development
Fotenn Consultants Inc.



Youko Leclerc-Desjardins, MCIP RPP
Senior Planner
Fotenn Consultants Inc.