

**JUNE 2010**

**TERMS OF REFERENCE: PEER REVIEW ASSIGNMENT FOR  
HYDROLOGICAL, HYDROGEOLOGICAL AND QUARRY DESIGN OPERATIONS  
ZONING APPLICATION REVIEW**

The City of Brampton is seeks to retain the services of a consultant to peer review of the hydrological, hydrogeological and design and operations aspects related to a proposal for a new shale quarry near the Norval community in the north-west part of the City of Brampton (Region of Peel). The site is adjacent to the Town of Halton Hills (Region of Halton).

[Please see attached study area map]

**Background**

Brampton Brick has submitted a re-zoning application to the City of Brampton to rezone a 34.9 ha property to permit a shale extraction operation (requiring industrial zoning). The proposed operation would include a 9.35 ha extraction area, to be excavated in two phases, a separate stockpile area, and access from Winston Churchill Boulevard. The proponent has submitted a planning report and draft site plan and a number of technical reports, including a hydrological and a hydrogeological report (both prepared by Golder Associates) in support of its application. An application under the Aggregate Resources Act (ARA) for a Category 2 Class "A" license for a quarry operation involving extraction below the water table is proposed to be submitted later in 2010.

The proponent is preparing a Hydrogeological Level 2 report as required by the Aggregate Resources Act (ARA) Provincial Standards. The overall objectives of the hydrogeological investigation should at least satisfy the following objectives:

- Determine if the hydrological and a hydrogeological reports properly considers the existing hydrogeological and hydrological characteristics of the site;
- Determine if the hydrological and a hydrogeological reports have identified surface water features and users of groundwater in the study area (e.g. water supply wells, wetlands, fisheries);
- Determine if the hydrological and a hydrogeological report have assessed the potential effects of the operation on water resources throughout the life cycle of the quarry;
- Determine if the hydrological and a hydrogeological reports have assessed the potential impacts to existing users of groundwater;
- Determine if the hydrological and a hydrogeological reports have established an appropriate monitoring program for the purpose of monitoring changes to the groundwater system and potential impacts to groundwater users over time;
- Determine if the reports outline feasible mitigation measures and contingencies, where required, to protect groundwater resources.

The site is currently identified in the Official Plan as North West Brampton Policy Area, North-South Corridor Protection Area and Shale Resource Area. The site is also within the Natural Heritage System of the Greenbelt Plan, 2005.

The site is bisected by a perennial tributary to the Credit River, and also includes an area identified as an unevaluated wetland. A significant woodland has been identified along the valley of the tributary. The area is also a significant wildlife habitat and although unevaluated, the wetlands are a significant hydrological and natural heritage feature under the Greenbelt Plan. The proposal includes a crossing of the woodland and tributary to connect the excavation and stockpile areas. There are three notable features found on the subject site:

- One perennial tributary of the Credit River which drains the agricultural lands to the northeast of the property boundary;
- Two ephemeral drainage features which direct surface run-off from the east of the main tributary and are allocated within the proposed excavation area; and
- Three drainage features (one perennial, two ephemeral) which drain the property to the west of the main tributary.

The proposed quarry is within the Queenston Formation that is located in a broad band in the lower terraces north east of the Niagara Escarpment. This red shale is the primary raw material for brick manufacturing.

There are a number of residences in the locality that are dependent on groundwater, and the proponent has indicated that the excavation and dewatering of the quarry will likely affect water supplies from domestic wells. They have suggested that the municipal water supply in Norval be extended to these residences. One neighbouring private well that may experience an impact to water level, as a result of the Quarry operation, is Well #33 (located N/E of the proposed quarry property border).

There is potential for the aggregate and / or planning applications to be the subject of an Ontario Municipal Board hearing.

The City has formed an Aggregate Review Committee comprising City Councillors and staff, and has also formed a Joint Aggregate Review Team (JART) comprising other affected agencies including the Ministry of Municipal Affairs and Housing, Ministry of Natural Resources, Region of Peel, Region of Halton, Town of Halton Hills, and Credit Valley Conservation. It is proposed that the City and JART will hold a number of Joint Public Information Meetings to assist the public to better understand the application and the results of the peer reviews.

An aggregate planning advisor, Mark Dorfman RPP, has been retained by the City to assist in coordinating the peer review and provide support to staff in the processing of the re-zoning application. The peer review results on the

hydrology, hydrogeology and design and operations, as well as, the contributions of other members of the peer review team, will become an important resource to the City and the other JART agencies/stakeholders to guide decision making (where applicable) and to formulate responses and on the zoning and ARA applications.

## **Requirements**

The role of the hydrology, hydrogeology and design and operations peer reviewer is to ensure the completeness and accuracy of submitted technical information in these areas of expertise, provide recommendations on the acceptability of the proposal and necessary mitigation or enhancements and provide input to the public consultation process. A geomorphology review will be included in this peer review exercise. The work from the peer review will assist the JART in the evaluation of the application/studies and provide recommendations for additional work/studies of deficiencies in data collection and evaluation.

The Guideline Principles and Questions for Brampton Peer Reviewers are attached to provide a complete understanding of the approach to be undertaken in this peer review. Each peer reviewer is part of a team responsible to the City.

The Consultant will recommend a phased work plan that includes the following components as a minimum and provide details of a budget:

- Peer reviewers are encouraged to attend one initial site visit. However, if required for further iteration, up to two site visits may be reasonable; ;
- Review the material, Preliminary Hydrogeological Assessment (2), provided by the applicant against the policy framework (provincial, regional and area municipalities) and the requirements of the ARA, Ontario Aggregate Standards, the Provincial Policy Statement, the Planning Act, the Greenbelt Act and other relevant legislation and accepted best practices. A summary of Provincial, Regional and City planning policies is attached;
- The peer reviewer will evaluate the compliance of the technical report with applicable Provincial guidelines. The peer review will evaluate if the technical report is “complete” (any areas where you feel there are gaps in the data or available information). The peer reviewer will assess whether the proposed mitigation measures (short term and long term) are satisfactory. The peer reviewers may identify the gaps in the supporting studies (the studies provided by the Applicant). Mitigation measures that are not considered in the original studies should not be proposed by the peer reviewers;

- Meetings and discussions between the applicant's consultants and the City's peer reviewers are not required prior to the completion of the preliminary peer review report. Interaction between the peer reviewer and the report/study author is to be "open", allowing the peer reviewer the opportunity to ask questions and to request additional information for clarification once their preliminary review is complete. Any interaction will occur via email and will be documented. The need and scope of any meetings and discussions between the consultants will be determined by the City and the team;
- The City's peer reviewers will be encouraged to interact to establish interlinkages and collaboration;
- Review a further iteration of the preliminary technical studies (assume one) and the Level 2 Hydrology Report to determine whether and how any deficiencies have been addressed, and the acceptability of the applications;
- Cooperate with and provide input to City staff, JART members, the aggregate planning advisor and other experts and peer reviewers in the hydrology, hydrogeology and other disciplines regarding technical findings and the proposed design and operation of the quarry, and attend technical and team meetings as required. A minimum of five half-day meetings will be conducted. For example, the proposed peer review team would include a natural heritage consultant with expertise in aquatic biology, and there is a clear need for cooperation with that consultant and with JART agencies that have interests in hydrology, hydrogeology and aquatic biology;
- Provide presentations for two public forums and two City Planning, Design and Development Committee/Council Meetings and/or Brampton's Aggregate review Committee as required and participate in other consultation meetings as required;
- Provide input to Council reports and written responses to the applications and supporting material;
- Participate in the consultation process set out in the Ontario Aggregate Standards;
- Provide a report detailing final conclusions on the technical study supplied by the Applicant. Three hard copies, and one digital copy, are required;
- Provide expert testimony at hearings under the Planning Act and / or Aggregate Resources Act if required. One or both of the applications may be heard before the Ontario Municipal Board. The Consultant should not include preparation for or attendance at hearings in the proposed budget,

but should provide hourly rates per diem for those who would be involved in this work should involvement in hearings be required;

- Obtain approval from the City's Project Manager prior to proceeding with any work beyond the approved work pan and budget set.

**Minimum Qualifications**

- The successful peer reviewer shall provide information demonstrating experience and expertise in the area of Hydrological, Hydrogeological assessment and Quarry Design Operations.