Ministry of Municipal Affairs and Housing
Municipal Services Office
Central Ontario
777 Bay Street, 2nd Floor
Toronto ON M5G 2E5
Phone: 416-585-6226
Fax: 416-585-6882
Toll-Free: 1-800-668-0230

Ministère des Affaires municipales et du Logement
Bureau des services aux municipalités
Centre de l'Ontario
777, rue Bay, 2nd étage
Toronto ON M5G 2E5
Téléphone: 416-585-6226
Télécopieur: 416-585-6882
Sans frais: 1-800-668-0230

Ontario

November 8, 2005

RECEIVED
NOV 15 2005 SH

Stan Holiday, MCIP, RPP
Senior Planner
Planning and Economic Development Department
Development and Real Estate Division
City of Hamilton
City Hall, 71 Main Street West
Hamilton ON L8P 4Y5

Dear Mr. Holiday:

Re: **Proposed Lowndes Quarry Official Plan Amendment and Zoning Amendment Application**
Applicant: Lowndes Holdings Corp.
Municipality: City of Hamilton (formerly Town of Flamborough)
Hamilton File No.: OPA-04-17 and ZAC-04-89
MMAH File No.: 25-DP-0190-04010

Please find enclosed a copy of the Ministry of Municipal Affairs and Housing (MMAH) 'One-Window' comments on the above-mentioned application.

Yours truly,

Louis Bitonti
Planner

Encl. Ministry Preconsultation Staff Report

c. Barbara Ryter, Environmental Assessment & Planning Coordinator (MOE)
Mike Stone, District Planner (MNR)

MINISTRY PRECONSULTATION STAFF REPORT

Planning System:	Bill 20, PPS 1997, Greenbelt Act, 2005, Greenbelt Plan, O. Reg. 61/05
File Number(s):	25-DP-0190-04010
Upper Tier:	N/A
Municipality:	City of Hamilton
Applicant:	Lowndes Holdings Corp.
Date Rec'd by Approval Authority:	September 28, 2004
Date Rec'd by Ministry:	November 4, 2004
Date Determined Complete:	November 4, 2004
Related Files:	N/A
OP Conformity:	No
PPS/Greenbelt Issues:	Yes

PROPOSAL:

Lowndes Holdings Corp. (the proponent) is proposing an application to amend the former Town of Flamborough Official Plan and Zoning By-law through a redesignation from "Rural" to "Extractive Industrial" and a change in zoning from "A" Agricultural and "CM" Conservation Management to "EI" Extractive Industrial to permit a Category 2 dolostone quarry. Specifically, the proponent is proposing to develop a below-water Amabel dolostone quarry for the production of mineral aggregate on the site.

The application does not require an amendment to the former Region of Hamilton-Wentworth Official Plan.

The proponent is also required to submit an application for a Category 2, Class A pit license under the *Aggregate Resources Act* (ARA). MNR advises that no application has been submitted to date.

BACKGROUND:

On September 28, 2004 the proponent submitted applications for an Official Plan Amendment to the former Township of Flamborough Official Plan and a related Zoning By-law Amendment application. These applications propose a redesignation from "Rural" to "Extractive Industrial" in the Flamborough Official Plan and a change in zoning from "A" Agriculture and "CM" Conservation Management to "EI" Extractive Industrial to permit a dolostone quarry for a 154 ha (380 ac) parcel of land. The proposed excavation area is about 62%, an estimated 96 ha (238 ac).

The applications propose a limestone quarry, processing plant, conveyors, scales and house, and a utility plant. The maximum rate of extraction is estimated at 3 million tonnes per year. The aggregate material is to be used for road construction, structural concrete, concrete and asphalt paving aggregates.

The subject lands front on the 11th Concession Road East and Milburough Line. They are described as Part of Lot 1 and Lots 2 and 3, Concession 11, Geographic Township

of East Flamborough, now the City of Hamilton, municipally known as 475-515 11th Concession Road East.

The subject lands are comprised of three former property holdings on the north side of the 11th Concession Road East. Current land uses include residential homes, barns and fields that have been used for agricultural purposes. The site also includes watercourses, provincially significant wetlands and wooded/vegetated areas. The proponent has also indicated in its application that it owns an additional 62 ha (154 ac) directly adjacent to the west of the subject lands for potential future expansion of the quarry.

ONE WINDOW REVIEW/CONSULTATION:

This report is in response to a request from the City of Hamilton for Provincial comments on the Lowndes Quarry proposal. The following is the Ministry of Municipal Affairs and Housing's preliminary "One Window" response to the City on behalf of the Province, including technical comments from the Ministry of the Environment (MOE) and the Ministry of Natural Resources (MNR) in the context of their respective mandates.

The following assessment is based on a review of the *Planning Act*, Provincial Policy Statement, 1997, *Greenbelt Act, 2005* and Greenbelt Plan as well as the former Region of Hamilton-Wentworth and former Town of Flamborough Official Plans. The proponents Planning Report dated August 25, 2004 and hydrogeological/groundwater studies were also reviewed.

Comments from MOE and MNR are attached to this letter as part of the "One Window" provincial response and should be referred to for detailed technical comments. The following is a summary of provincial comments:

MINISTRY ASSESSMENT:

Subject Lands

The surrounding land uses comprise a mixture of rural residential, natural areas and agricultural. The subject lands are bounded by rural residential development to the north and agriculture, residential development and agricultural land (horse farm) to the west, forest and rural residential to the east and rural residential and agriculture bordered by Concession Road 11 to the south. Access to the site is by the 11th Concession Road East or from Milburough Line.

Portions of the Lower Mountsberg Swamp Complex are located in the northern portion of the site. The Lower Mountsberg Swamp Complex has been designated a Provincially Significant Wetland (PSW) by the MNR.

Provincial Policy Statement, 1997

The Provincial Policy Statement, 1997 (PPS) applies to these applications as they were submitted on September 28, 2004. Ontario Regulation 385/04, as amended by Ontario Regulation 63/05 which deals with "transition" provides that subsections 3(5) and (6) of the Act, as they read immediately before section 2 of the *Strong Communities (Planning Amendment) Act, 2004* comes into force apply with respect to a request for an official

plan amendment or an application for an amendment to a zoning by-law if they are commenced on or before February 28, 2005. Therefore, planning authorities must "have regard to" policy statements issued by the Province when exercising any authority that affects a planning matter. All PPS policies were reviewed. Some of the policies relevant to this proposal include the following:

Rural Areas

The following PPS policies apply:

"1.1.1 b) Rural areas will be the focus of resource activity, resource-based recreational activity and other rural land uses."

Rural areas (lands in the rural area which are not prime agricultural areas) constitute the lands subject to the proposed quarry application, as they are designated "Rural" in both the HWOP and Flamborough Official Plans.

"1.1.3 Long term economic prosperity will be supported by:

f) optimizing the long-term availability and the use of agricultural and other resources; and
g) planning so that major facilities (such as airports, transportation corridors, sewage treatment facilities, waste management systems, industries and aggregate activities) and sensitive land uses are appropriately designed, buffered and/or separated from each other to prevent adverse effects from odour, noise and other contaminants."

Mineral Aggregates

The following PPS policies apply:

"2.2.1 Mineral resources (mineral aggregates, minerals and petroleum resources) will be protected for long term use.

"2.2.3.1 As much of the mineral aggregate resources as is realistically possible will be made available to supply mineral resource needs, as close to markets as possible."

"2.2.3.5 Progressive rehabilitation to accommodate subsequent land uses will be required."

In light of the foregoing, the wise use and protection of mineral resources over the long term is a key provincial interest. The planning report states that, "the geographic Township of Flamborough East contains significant areas of the dolostone bedrock of the Guelph, Lockport and Amabel Foundations." However, other PPS policies also apply to ensure the long-term health and safety of the population and environmental considerations such as the protection of the Province's natural heritage and water resources.

Water Quality and Quantity

Policy 2.4.1 of the PPS states, "quality and quantity of ground water and surface water and the function of sensitive ground water recharge/discharge areas, aquifers and headwaters will be protected or enhanced."

MOE has reviewed the background documentation provided in support of the applications, which relate to groundwater protection. Specifically, MOE has reviewed the Preliminary Hydrogeological Assessment, Proposed Dolostone Quarry, Township of Flamborough, prepared for Lowndes Holdings Corp. by Gartner Lee Limited, August 2004. Based on a review of the preliminary hydrogeological assessment completed at this site, technical comments are provided as **Attachment "1"** to this report.

MOE has requested clarification/confirmation with respect to the borehole logs and raised issues regarding methodology used to assess impacts and the pumping test conducted. Based on the deficiencies in the report and methodology used, MOE is not satisfied that an acceptable hydrogeological investigation has been completed to demonstrate that the operation of the quarry will not impact the area's water resource. More reliable data and analysis is required to show that nearby water wells, streams and the wetland will be protected or enhanced to maintain the natural functions of the ecosystem.

Further to the circulation of the original documentation in October 2004, the Ministry was circulated the following reports in July and August, 2005:

- Volume 1 – DRAFT - Hydrogeological Level 2 Report, prepared for Lowndes Holdings Corp. by Gartner Lee Limited, dated June 2005 (received by MAH on July 5, 2005).
- Volume 2 – DRAFT – Groundwater Flow Model, prepared for Lowndes Holdings Corp. by Gartner Lee Limited, dated June 2005 (received by MAH on August 2, 2005).
- Volume 3 – DRAFT – Appendices, prepared for Lowndes Holdings Corp. by Gartner Lee Limited, dated June 2005 (received by MAH on August 2, 2005).

MOE was circulated these additional reports for review and comment. Specifically, MOE has reviewed the DRAFT – Volume 1 – Hydrogeological Level 2 Report and technical comments are provided as **Attachments "2" and "3"** to this report.

As Volume 2, Groundwater Model and Volume 3, Appendices were not circulated at the same time as Volume 1; a comprehensive technical groundwater review could not be completed at the time. Therefore, the review and comments focus on whether or not it appears that the appropriate content will be included in the Final Hydrogeological Level 2 Report. The comments do not include evaluation of the consultant's data analysis, results, potential impacts related to the proposed quarry operation or proposed mitigation measures. MOE requests the proponent to clarify how these technical comments are addressed and a further review will be undertaken once the Final Report has been completed.

Overall, MOE advises that it appears the majority of the comments expressed in their letter dated January 19, 2005 will be addressed in the Final Level 2 Hydrogeological Report. However, MOE raises technical concerns to be addressed such as the pumping

test, nearby Permits to Take Water, potential thermal effects related to the proposed quarry operation, issues related to groundwater modelling that was completed utilizing MODFLOW and proposed mitigation measures, etc. In addition, MOE advises that due to potential impact of the proposed quarry on wetlands and surface water bodies, the MOE Technical Support Surface Water Group will also be required to complete a review of the Final document. Therefore, two copies of the Final report are requested to allow for simultaneous review by both Ground and Surface Water staff.

Cultural Heritage

Policy 2.5.1 of the PPS states, "Significant built heritage resources and cultural heritage will be conserved." Further, Policy 2.5.2 states, "Development and site alteration may be permitted on lands containing archaeological resources or areas of archaeological potential if significant archaeological resources have been conserved by removal and documentation, or preservation on site."

From a review of the planning report, the proponent retained a consultant to undertake a cultural heritage assessment of the subject lands, including a field assessment. This assessment resulted in the identification of four previously unregistered sites. The report notes that the artifacts were recovered, catalogued and delivered to the Ministry of Culture. The report also notes, that in a letter dated July 15, 2004 the Ministry accepted the report and concurred with its recommendations.

Hamilton-Wentworth Official Plan

Land Use - Rural Area

The Hamilton-Wentworth Official Plan (HWOP) designates the subject lands as "Rural Area" (Map 1 – Regional Development Pattern). It includes specific policies for the rural area and mineral aggregate resources.

The Rural Area contains a mix of sub-designations (Prime Agricultural Lands, Rural Settlements, Environmentally Significant Areas and Mineral Aggregate Areas). It contains a variety of existing land uses and activities including residential, commercial, rural industrial and the primary activity of farming. Section 3.2.2 states that, "Agriculture will continue to be the predominant use in the rural areas of the Region." However, the Plan recognizes that there are limited uses, which may be considered in the Rural Area that must be related to agriculture use or natural resources found in the rural area, require extensive land holdings and are not suitable for the Urban Area.

Mineral Aggregates

Section 2.2 of the HWOP identifies areas for mineral aggregate operations as essential, non-renewable resources that should be available with minimal environmental and social disruption. Section 2.2.1 of the HWOP also includes policies to designate Mineral Aggregate Resource Areas on Map 5, to protect these areas for future mineral aggregate extraction and that the location of these areas may be refined, without amendment to the HWOP. A portion of the subject lands is designated on Map 5 – Mineral Aggregate Areas for "Gravel & Sand". The HWOP also includes a "Stone Aggregates" designation, however no portion of the lands has been designated this.

The HWOP also requires that mineral aggregate resources be identified in area municipal official plans, that policies be included for the protection of these areas from land uses which are incompatible with possible future extraction and that municipal official plans include policies for the establishment of new, and the expansion of existing pits.

Natural Heritage Resource Protection

Map 4 – Environmentally Significant Areas (ESAs) designates portions of the subject property as ESA No. 1 – Mountsberg Wetlands and Wildlife Centre and ESA No. 2 – Carlisle North Forests. The HWOP includes policies to protect natural features, including ESAs, and policies to maintain and improve groundwater quality in the rural area.

Town of Flamborough Official Plan

The Flamborough Official Plan (OP) designates the subject lands as "Rural." The predominant use of land in the Rural Area is agriculture and related uses, however rural settlement areas and natural and environmental resources of regional, provincial and local significance occur throughout the rural area.

As directed by the HWOP, area municipal plans are to provide policies in their OP's for the establishment of new, and expansion of existing pits and quarries. The Flamborough OP includes such detailed policies in Section B.7, specifically Sections B.7.4 and B.7.5. Section B.7, Extractive Industrial recognizes the local, regional and provincial significance of mineral aggregate resources within the Town and provides for the establishment of extractive operations and their long-term protection from incompatible land uses. The establishment or expansion of pits and quarries shall only by amendment to the OP and the Town's Zoning By-law.

Previous Site-Specific Applications Adjacent to the Subject Lands

Official Plan Amendment No. 26 applies to lands northeast of the subject lands fronting on Mountsberg Road that have been developed as a Rural Estate Residential Development consisting of 18 lots.

Official Plan Amendment No. 33 covers lands west and adjacent to the subject lands, Bronte Creek Estates also known as Site Specific Area #15 approved by the Ontario Municipal Board in April 1994. The approved plan permits up to 130 mobile and manufactured dwellings, subject to a 76 unit first phase with private communal water and wastewater systems.

Greenbelt Act, 2005

On February 24, 2005, the *Greenbelt Act, 2005* received Royal Assent and the Greenbelt Plan was approved on February 28, 2005. The Greenbelt Plan builds on the existing policy framework established in the PPS and its implementation through municipal official plans and maps. The Greenbelt Plan also relies on municipal official plan mapping to delineate prime agricultural areas and rural areas.

The *Greenbelt Act, 2005* also sets out transition provisions for land-use planning related matters. Applications, matters or proceedings made under the *Ontario Planning and Development Act, 1994*, the *Planning Act* and the *Condominium Act*, that commenced on or after December 16, 2004 within the area designated "Protected Countryside" in the Greenbelt Plan are required to conform with the plan except as otherwise may be prescribed.

Section 24 of the *Greenbelt Act, 2005* specifies when applications are subject to the Greenbelt Plan. Under the Act, the Lieutenant Governor in Council may, by regulation, prescribe applications, matters or proceedings that commenced before December 16, 2004, which shall conform to such policies of the Greenbelt Plan as may be prescribed.

The subject lands are located within the Protected Countryside Area of the Greenbelt Plan and the proposed application commenced before December 16, 2004, however this application is subject to the Greenbelt Plan because it's proposed use has been prescribed by regulation.

Ontario Regulation 61/05 (made under the *Greenbelt Act, 2005*)

On February 28, 2005 the Province filed Ontario Regulation 61/05, which "prescribes" certain applications, matters, proceedings and policies for the purposes of subsection 24(3) of the *Greenbelt Act*. The Regulation requires conformity to the Greenbelt Plan relating to an official plan or an official plan amendment to permit mineral aggregate uses, which commenced between December 16, 2003 and December 16, 2004 where no decision has been made as of February 28, 2005.

The official plan amendment application is subject to the Greenbelt Plan because the application was commenced in September 28, 2004 and no decision has been made. As such, the subject lands are located within the Protected Countryside of the Greenbelt Plan and are subject to the policies of the entire Greenbelt Plan.

Greenbelt Plan – Agricultural System

The subject lands of the proposed quarry are designated as "Protected Countryside" on Schedule 1: Greenbelt Plan Area. The Agricultural System is a key geographic policy in the Protected Countryside that applies to the subject lands.

Under Section 3.1, the Agricultural System is described as one "that provides a continuous and permanent land base necessary to support long-term agricultural production and economic activity." The agricultural system is also integral to long-term sustainability of the Natural Heritage System within the Protected Countryside as there are many natural heritage and hydrologic features within agricultural areas. The Agricultural System is made up of specialty crop areas, prime agricultural areas and rural areas.

The Greenbelt Plan defers to municipal official plans for the delineation of prime agricultural areas and rural areas. As stated earlier, the subject lands are designated "Rural" in both the HWOP and Town of Flamborough OP's.

In the Greenbelt Plan, section 3.1.1 describes rural areas as "those lands outside of settlement areas which are not prime agricultural areas and which are generally designated as rural or open space within municipal official plans."

Section 3.1.4 of the Greenbelt Plan outlines the applicable policies for lands falling within the rural area of the Protected Countryside. Section 3.1.4.1 says, "Rural areas support, and provide the primary locations for a range of recreational, tourism, institutional and resource-based commercial/industrial uses." Other uses are also permitted subject to the General Policies of sections 4.1 to 4.6.

Further, Section 4.1 of the Greenbelt Plan states that the "rural areas of the Protected Countryside are intended to continue to accommodate a range of commercial, industrial and institutional uses serving the rural resource and agricultural sectors." In light of the foregoing, resource-based uses are permitted by the Greenbelt Plan in the Rural Area. Resource uses include renewable and non-renewable resources of which the latter includes mineral aggregate resources.

Greenbelt Plan - Natural System

The Natural System is another key geographic specific policy in the Protected Countryside that applies to the subject lands. The Greenbelt Plan includes policies for the protection of the Natural Heritage System in Section 3.2. The Natural System is made up of a Natural Heritage System and a Water Resource System that often coincides given ecological functions between terrestrial and water based functions. A review of the Greenbelt mapping indicates that the entire subject lands lie within the Natural Heritage System identified in Schedule 4 of the Greenbelt Plan.

Section 3.2.4.1 provides that development and site alteration is not permitted in key natural heritage features and key hydrologic features within the Natural Heritage System, including any associated vegetation protection zone, with the exception of aggregate, among other uses, as described by and subject to the general policies of Section 4 of this Plan. Notwithstanding these policies, within the Natural Heritage System, mineral aggregate operations are subject to specific policies in section 4.3.2.3.

MNR will not be providing mapping of key natural heritage features/key hydrologic features, however, MNR will be providing digital data of natural heritage features to assist the City with the review of this application and its Greenbelt conformity exercise as part of its comprehensive new Official Plan review. As part of the Greenbelt conformity exercise and the implementation of the Greenbelt Plan, municipalities should identify key natural heritage and key hydrologic features and associated vegetation protection zones in official plans or amendments thereto.

Section 3.2.2.6 of the Greenbelt Plan provides municipalities with a one-time opportunity to refine the boundaries of the Natural Heritage System, with greater precision as long as they are consistent with the Natural Heritage System identified in Schedule 4 of the Greenbelt Plan. This is a one-time opportunity at Greenbelt conformity, however this policy also recognise that municipalities and conservation authorities can undertake detailed delineation of these zones when dealing with development applications under the *Planning Act* such as this application.

Natural Resources

Section 4.3.2 of the Greenbelt Plan includes policies specific to non-renewable resources, including mineral aggregate resources. The Greenbelt Plan permits non-renewable resources in the Protected Countryside, subject to all other applicable legislation, regulations and municipal official plan policies and by-laws. Further, the availability of mineral aggregate resources for long-term use will be determined in accordance with the PPS, with the exception of specific Greenbelt Plan policies for mineral aggregate operations within the Natural Heritage System.

Section 4.3.2.2 describes non-renewable resources as "those non-agriculture based natural resources that have a finite supply, including mineral aggregate resources. Aggregates, in particular, provide significant building materials for our communities and infrastructure, and the availability of aggregates close to market is important both for economic and environmental reasons." The proposed Lowndes quarry is for dolostone limestone that is utilized for construction purposes, among other uses.

Section 4.3.2.3 outlines specific policies for mineral aggregate operations and wayside pits and quarries within the Natural Heritage System. Specifically, no new mineral aggregate operation and wayside pit and quarries, or any ancillary or accessory use thereto will be permitted in the following key natural heritage features (KNHF) and key hydrologic features (KHF):

1) significant wetlands;
2) significant habitat of endangered species and threatened species; and
3) significant woodlands unless the woodland is occupied by young plantation or early successional habitat (as defined by the Ministry of Natural Resources). In this case, the application must demonstrate that the specific provisions of policy 4.3.2.5 c), d) and 4.3.2.6 c) have been addressed and that they will be met by the operation.

There is an existing provincially significant feature on or within 120 metres of the site, which is described as the Lower Mountsberg Creek Provincially Significant Wetland Complex (PSW). This PSW includes 32 wetlands that cover almost 285 ha. A portion of this PSW, comprising 16.5 ha is located within the northern portion of the site. A second portion of this PSW is located on the southeast area of the site. This onsite portion contains a tributary of Flamboro Creek, which enters Bronte Creek south of Concession 9.

Accordingly, there is no provision for a new mineral aggregate operation and no wayside pit and quarries, or any ancillary or accessory use thereto to be permitted, in significant wetlands as per Section 4.3.2.3 a) of the Greenbelt Plan. Therefore, the limits of the PSW should be confirmed with MNR, in consultation with the City and conservation authority and the proposed extraction area must not extend into the PSW or vegetation protection zone. The policies of the Greenbelt Plan also provide additional detailed requirements that also must be met which are outlined in Sections 4.3.2.3 b), c) and d).

There are also woodlands/vegetated areas on the site. In the case of significant habitat and significant woodlands these features will have to be assessed utilizing technical guidelines developed by the MNR and if determined to be significant, the limits of the proposed extraction area established accordingly.

Section 4.3.2.3 b) provides that an application for a new mineral aggregate operation may only be permitted in other key natural heritage features and key hydrologic features and any vegetation protection zone associated with such other feature where the application demonstrates how the **water resource system** will be protected or enhanced and how the key natural heritage features and key hydrologic features will be maintained, restored or improved. Requirements for rehabilitation of any mineral aggregate extraction that occurs in a feature and the rehabilitation of aquatic areas remaining after extraction must also be met. Rehabilitation is also to be implemented so that connectivity of the key natural heritage features and key hydrologic features on the site and on adjacent lands will be maintained, restored or improved. These specific provisions are detailed in sections 4.3.2.5 c), d) and 4.3.2.6 c) of the Greenbelt Plan and are discussed below.

A review of the Groundwater Reports (Hydrogeological Level 2 Report and Groundwater Flow Model) prepared by Gartner Lee Limited and referenced earlier has also been completed by the MNR in terms of potential impacts on the wetland features. It appears from a review of the material that the impact to the wetlands would be significant. In order to reduce or eliminate this impact, mitigation will be required to preserve the wetland features. MNR indicates that many details of the mitigation plan are missing in its comments which are provided as **Attachment "4"** to this report.

MNR advises that since the final site plans and mitigation measures, will, by necessity, be completed for the ARA application process, further detailed review of these items will occur at that time.

MNR advises that the proponent needs to demonstrate what the thermal impact will be to the wetlands (Mountsberg Creek) and associated discharge zones. The recirculation of water will create a thermal warming and since the media is fractured rock, the impact from this warming may be felt a significant distance away from the Groundwater Re-Circulation System (GRS). This needs to be discussed in detail including thermal plume description as well as time of travel.

Water Resource System

Section 3.2.3 of the Greenbelt Plan includes policies for the protection of the water resource system, which apply throughout the entire Protected Countryside. The policies speak to a comprehensive, integrated and long-term approach for the protection, improvement or restoration of the quality and quantity of water. Section 3.2.3 states, "Municipalities shall, in accordance with provincial direction related to the protection of source water, protect vulnerable surface and ground water areas, such as wellhead protection areas, from development that may adversely affect the quality and quantity of ground and surface waters." In light of the foregoing, the previous comments in this report on groundwater and water quality apply. In addition, the City should also be identifying these through its studies/mapping of wellhead protection areas and vulnerable aquifer areas as part of its new comprehensive Official Plan review and Greenbelt conformity exercise.

Conclusion

The proposed applications are to permit a new mineral aggregate operation. The subject lands are designated "Rural" in both the HWOP and Town of Flamborough OP's. The Greenbelt Plan permits non-renewable resources such as mineral aggregate uses within "rural areas" in the Protected Countryside, subject to all other applicable legislation, regulations and municipal official plan policies and by-laws. Further, the availability of mineral aggregate resources for long-term use will be determined in accordance with the PPS, with the exception of specific Greenbelt Plan policies for mineral aggregate operations within the Natural Heritage System.

The subject lands are located within the Natural Heritage System of the Greenbelt Plan and portions of the Mountsberg Creek PSW occur on the subject lands, as well as vegetated areas and forested areas. The Greenbelt Plan does not permit new mineral aggregate extraction within significant wetlands; therefore extraction is precluded within the limits of the Mountsberg Creek PSW. Further, new mineral aggregate operations may only be permitted in other key features and any associated protection zone where the application demonstrates how the Water Resource System will be protected or enhanced; that connectivity between key features will be maintained during and after the extraction of mineral aggregates; and, rehabilitation will be implemented so that key features on the site or on adjacent lands will be maintained or restored, and improved.

A review of the background studies submitted raise significant issues concerning water quality and groundwater impacts on the wetlands. More detailed work is required relating to water quality and protection. Specifically, additional data and analysis is required to show that nearby water wells, streams and the wetland will be protected or enhanced to maintain the natural functions of the ecosystem.

While these constitute the Ministry's preliminary comments on this matter, the *Greenbelt Act, 2005* requires that a decision by the City of Hamilton with respect to this application must conform to the policies of the entire Greenbelt Plan. Further One-Window comments will be forthcoming from the MNR with respect to the natural heritage aspects of this proposal.

Prepared by:

Louis Bitonti
Planner

Date: Nov. 8/05

Approved by:

Victor Doyle, MCIP, RPP
Manager, Community Planning and Development

Date: Nov 8, 2005

ATTACHMENT # 1

Ministry of the Environment

119 King Street West
12th Floor
Hamilton, Ontario L8P 4Y7
Tel.: 905 521-7640
Fax: 905 521-7820

Ministère de l'Environnement

119 rue King ouest
12e étage
Hamilton (Ontario) L8P 4Y7
Tél.: 905 521-7640
Téléc.: 905 521-7820

Ontario

January 19, 2005

Mr. L. Bitonti, Municipal Planning Advisor
Ministry of Municipal Affairs and Housing
Municipal Services Office – Central Ontario
2-777 Bay Street
Toronto, Ontario
M5G 2E5

Dear Mr. Bitonti:

Re: Lowndes Holdings Proposed New Quarry in Flamborough
Proposed Official Plan Amendment
City of Hamilton (Former Town of Flamborough)
475-515 11th Concession Road East
MMAH File No. 25-DP-0190-04010

As per your request, we have reviewed the documentation provided in support of this amendment, focusing only on those sections of the Planning Report by Long Environmental Consultants Inc., dated August 25, 2004 which relate to groundwater protection. Accordingly, we have reviewed the *Preliminary Hydrogeological Assessment, Proposed Dolostone Quarry, Township of Flamborough*, prepared for Lowndes Holdings Corp. by Gartner Lee Limited, August 2004.

For this investigation, a number of boreholes were drilled at the site and installed with groundwater monitors, piezometer nests were installed in the wetland areas, staff gauges were placed at each surface water course leaving the site, water well records were plotted, packer tests were completed to find permeable zones in the fractured dolostone bedrock and a pumping test was completed. With respect to the hydrogeological assessment completed at this site, we offer the following comments according to the implications/ramifications of the observation:

Report Clarification/Confirmation:

1. Some borehole logs were provided as were maps indicating the location of all of the on-site monitoring locations, however, the borehole logs were numbered differently than the site locations indicated on the map. We simply assumed that the borehole log "GLL-1" was location "1" on the map but this may be incorrect. This data should be clarified.

2. Logs for the boreholes labeled A through F were not provided, only the depths of these boreholes were provided in a chart but the physical unit each is screened in and the screened length in each are not known. This data should be provided.

Issues regarding methodology used to assess impacts:

3. No comments were made regarding vertical gradients observed at the site or how these may be altered due to the proposed quarrying and dewatering.

4. The section describing the site geology does not appear to be based on what was actually observed during this investigation or on information available from MOE water well records in the area, but on literature available for the area. With the amount of local information available, this is not an accurate assessment of the *site specific* geology.

5. Packer testing was completed, however, the results of this testing were not provided in the report. Which boreholes were these tests performed on? What was the packer spacing? At what depth was the 'more conductive zone' encountered in each borehole? What does the hydraulic conductivity profile look like for each well tested?

6. With respect to the pumping test conducted we offer the following comments:

   a) The design of the test was acceptable, however, meteorological data, other than atmospheric pressure, was not included. Historical data from Environment Canada's National Climate Archive(1) indicates that it rained on both the 18th and 19th of April (pre-test period) at all nearby Environment Canada meteorological stations. Rainfall also occurred on the 21st, which was on the second day of pumping. During the recovery period of the test, another rainfall event is recorded on the 25th and 26th. These precipitation events affect the results of the pumping test in that:

      i. Many of the pre-test water levels were in a state of change due to the rainfall that occurred on the days prior to the test, as such, observed drawdown of the water table is not necessarily representative.

      ii. The effect of the rainfall on the 21st (during the test) is observed in the majority of the monitored wells and creeks, sometimes quite significantly, through increased water levels. Therefore, maximum drawdown as a result of this pumping was not likely achieved, and the estimated zone of influence is likely underestimated.

   Due to the above, the actual effects of pumping this well on nearby wells, streams and the wetland are not known, nor can accurate calculations be made regarding aquifer properties. The rainfall does, however, provide some information regarding the rapid response of this area to infiltration events.

b) A confined aquifer scenario was utilized for analysis of the pumping test data which, based on the rapid response of all wells to the precipitation events, the shallow water table and the relatively thin overburden layer, is not the case. This is an unconfined aquifer in a unique, fractured rock environment. If this were a confined scenario, the response of the aquifer to rainfall events would not be so evident. This rapid response in both the 'shallow' and 'deep' boreholes suggests an unconfined environment where infiltration is rapid through the overburden to the dolostone aquifer.

c) This report states that the results from the two methods used for data analysis (Cooper-Jacob and Walton) were similar. We disagree with this comment. For example, in borehole 5 there is a 2-order of magnitude difference between the hydraulic conductivity values determined from the two methods. This can lead to significant differences in determining groundwater velocities at this site.

d) It is stated that the results of the pumping test give a preliminary indication of the extent and degree of impact that may be experienced through quarry dewatering. We do not agree with this due to the comments above and because the pumping test and the assessment to date does not consider the water table drawdown due to groundwater replacing the volumes of dolostone removed, which is often quite a significant effect.

7. Based on the data obtained, Gartner Lee concludes that only 6 of the 102 nearby wells will be impacted by the dewatering, and others *may* be impacted; these 6 wells were not explicitly indicated in the report. It is also stated that the wetland and stream *may* exhibit some impact due to the quarrying and dewatering. This requires further assessment and proposed mitigation measures require further exploration by a qualified individual.

   Specifically, how much and what kind of impact (water levels, geochemistry, temperature...) will this operation actually have on the groundwater system, streams and wetlands? How can these specific impacts be successfully mitigated to ensure minimal impact to the natural environment and nearby users? It should be noted that for mitigation, actions such as augmenting the wetland with water from quarry dewatering may alter the geochemistry and temperature and hence, the ecology and natural function of the wetland and possibly the streams, this type of scenario should be addressed.

8. Permits to Take Water (PTTW) in the area were not indicated in this report. There are currently 2 PTTWs to the southwest of this site, one agricultural and one a public supply. Due to the proximity of these PTTWs to the proposed quarry (within approximately 200 m), the impact on these takings requires evaluation as well as a discussion of the cumulative impact of quarrying below the water table and dewatering in light of the current approved uses.

9. Thermal effects related to quarrying are not discussed. This proposed operation is in very close proximity to a sensitive wetland as well as streams and many domestic wells. A thermal plume may be created due to this operation which would be undesirable to the nearby natural environment and possibly to the users of this water source. This should be addressed.

Conclusions:

Has a sufficient hydrogeological investigation been completed to demonstrate that the operation of the quarry will not result in an unacceptable level of impact to the area's water resource? Based on the deficiencies in the report and methodology used, we do not feel that the investigation was acceptable. More reliable data and analysis is required to show that impact would, in fact, be minimal to nearby water wells, streams and the wetland, or that it can successfully be mitigated while maintaining the natural functions of the ecosystem.

To summarize:

- The data provided was minimal and did not provide a sufficient overview of this actual site.
- The pumping test did not provide enough accurate information to predict the potential effects of quarrying and dewatering, or to determine accurate aquifer properties, mainly due to the rainfall prior to and on day two of pumping.
- It was concluded that some impact to nearby wells, streams and the wetland should be expected, but the level of expected impact was not discussed, nor were mitigation measures discussed in any detail.
- Many factors were not considered in this assessment such as decline in the local water levels due to the removal of the limestone and the subsequent replacement with an equivalent volume of groundwater, temperature plumes, vertical gradients, nearby Permits to Take Water, etc.

Therefore, further information and assessment is required for this Ministry's evaluation in order to establish the anticipated level of impact related to such an operation. Should you wish to discuss these comments further, please feel free to contact me at (905) 521-7864.

Sincerely,

Barbara Ryter

Barbara Ryter
Environmental Assessment and Planning Officer
Air, Pesticides and Environmental Planning

(1) Environment Canada National Climate Archive, www.climate.weatheroffice.ec.gc.ca

ATTACHMENT #2

Ministry of the Environment
119 King Street West
12th Floor
Hamilton, Ontario L8P 4Y7
Tel.: 905 521-7640
Fax: 905 521-7820

Ministère de l'Environnement
119 rue King ouest
12e étage
Hamilton (Ontario) L8P 4Y7
Tél. : 905 521-7640
Téléc. : 905 521-7820

Ontario

MoE Comms
Volume 1 Hydro

July 27, 2005

Mr. Louis Bitonti, Planner
Municipal Services Office Office – Central Ontario
2-777 Bay Street
Toronto, Ontario
M5G 2E5

Dear Mr. Bitonti:

Re: Lowndes Holdings Proposed New Quarry in Flamborough
Proposed Official Plan Amendment
City of Hamilton (Former Town of Flamborough)
475-515 11th Concession Road East
MMAH File No. 25-DP-0190-04010

As requested, we have completed our review of the following report and offer these comments for your consideration:

- *DRAFT – Volume 1 Hydrogeological Level 2 Report*, prepared for Lowndes Holdings Corp., by Gartner Lee Ltd., June 2005.

As this is a ***DRAFT*** document and as we were not provided with neither Volumes 2 and 3, which consist of the groundwater modeling data and all appendices containing the raw data and a number of key figures, *a comprehensive technical groundwater review cannot be completed at this time*. This review, therefore, will only comment on whether or not it appears that the appropriate *content* will be included and discussed in the Final Level 2 Hydrogeological Report. This review will not include evaluation of the consultant's data analysis, results, potential impacts related to this proposed operation or proposed mitigation measures. A thorough technical review will be completed once the Final Report, which must be signed by a qualified individual (a Professional Geoscientist or Professional Engineer of Ontario). is received.

Comments

1. At this time, it appears that the majority of the comments expressed in the letter dated January 19, 2005 review will be *addressed* in the Final Level 2 Hydrogeological Report. However:

   a) Similar to the initial pumping test, there was again a significant amount of rainfall during the most recent pumping test conducted. This may again account for a number of

inaccuracies in the interpretation of these results which in turn, may not satisfy the requirements of the Ministry of the Environment. The pumping test report will be reviewed at the same time as the hydrogeological review of the Final Level 2 document.

b) Nearby Permits to Take Water still do not appear to be addressed.

c) Potential thermal effects related to this proposed operation still do not appear to be addressed. These impacts can be very long-term in nature and must be sufficiently addressed, especially due to the proximity of the proposed quarry to creeks and wetlands.

2. Information regarding the anticipated pumping rates, potential locations of dewatering sumps, rates of extraction below the water table, and any other relevant information with respect to proposed dewatering activities should be included in the Final report. Inclusion of this information will allow for a better assessment of potential interference issues, the potential impact to the natural environment and applicability of the locations selected for the pumping tests completed.

3. It is noted that groundwater modeling was completed utilizing MODFLOW. Due to the limitations of this finite difference model, MODFLOW does not have the ability to accurately model groundwater systems on a local scale in fractured rock environments, especially if the fracture network (size, connectivity, orientation) is essentially unknown. Use of the equivalent porous medium approach in MODFLOW generally oversimplifies these complex networks on the local scale. It is expected that all assumptions made will be thoroughly discussed in the Final Report; the various limitations of the model in this type of environment also warrant discussion in the Final Report. These will both cause some error in the analysis and predictions and again, warrant discussion. Due to the error that accompanies the many assumptions and limitations required to model this environment, we recommend that manual calculations and predictions, based on the local physical system, also be performed and discussed in the Final Report.

4. Based on the DRAFT report, it appears that only one mitigation measure has been proposed. We recommend that other mitigation plans be set forth in the event that the one proposed proves not to be feasible.

5. In the Final Report, larger figures of the site should be provided. The information included on the various site figures in the DRAFT document is difficult to discern.

6. It is expected that the Final Report will include *all* volumes, figures, tables and appendices referred to in the main document.

7. Due to potential impact on nearby wetlands and surface water bodies, the MOE Technical Support Surface Water Group will also be required to complete a review of the Final document. Accordingly, we request that **two** copies of the Final Report be provided to allow for a simultaneous review by both Ground and Surface Water staff.

With the inclusion of the above requested information, it appears that the *scope* of the Final Level 2 Hydrogeological Report will be acceptable. This *does not*, however, indicate that the results and analysis will be sufficient to warrant MOE acceptance or provide any concurrence on approvals related to this proposal. If you have any questions, please feel free to contact me at (905) 521-7864 or email Barbara.ryter@ene.gov.on.ca.

Sincerely,

Barbara Ryter

Barbara Ryter
Environmental Assessment & Planning Coordinator
Air, Pesticides and Environmental Planning

ATTACHMENT #3

Ministry of the Environment
119 King Street West
12th Floor
Hamilton, Ontario L8P 4Y7
Tel.: 905 521-7640
Fax: 905 521-7820

Ministère de l'Environnement
119 rue King ouest
12e étage
Hamilton (Ontario) L8P 4Y7
Tél. : 905 521-7640
Téléc. : 905 521-7820

Ontario

August 31, 2005

Mr. L. Bitonti, Planner
Municipal Services Office
Ministry of Municipal Affairs and Housing
2-777 Bay Street
Toronto, Ontario
M5G 2E5

Dear Mr. Bitonti:

Re: Lowndes Holdings Corporation – Proposed Quarry Operation
475-515 11th Concession Road East
City of Hamilton
MMAH File No. 25-DP-0190-0410

We are in receipt of your request for comments, and the circulation of Volumes 1, 2 and 3 of the Gartner Lee reports prepared in support of the planning approval being sought for the Lowndes Quarry. As you have noted, the Volume 1 document is the same as that having been submitted to us for review in July. And as you will recall, we provided you with comments on July 27 2005. I will be referring to those comments to form the basis of this correspondence as follows:

We previously indicated that as we were not provided with either Volumes 2 or 3, which consist of the groundwater modeling data and all appendices containing the raw data and a number of key figures, *a comprehensive technical groundwater review* could not be completed at that time. While we appreciate that we have been provided with Volumes 2 and 3, it is unclear as to whether the concerns that we raised in July have been addressed. This does not appear to be the case, as Volume 1 appears to be the same document that we have already reviewed. If this is not the case, we request that the proponent clarify how our previously outlined concerns have been addressed. If our comments have not yet been addressed, no further review will be undertaken until such time as the final report has been completed.

For your information, I have restated our previous technical concerns which we expect to be addressed:

a) Similar to the initial pumping test, there was again a significant amount of rainfall during the most recent pumping test conducted. This may again account for a number of inaccuracies in the interpretation of these results which in turn, may not satisfy the requirements of the Ministry of the Environment. The pumping test report will be reviewed at the same time as the hydrogeological review of the Final Level 2 document.

b) Nearby Permits to Take Water still do not appear to be addressed.

c) Potential thermal effects related to this proposed operation still do not appear to be addressed. These impacts can be very long-term in nature and must be sufficiently addressed, especially due to the proximity of the proposed quarry to creeks and wetlands.

d) Information regarding the anticipated pumping rates, potential locations of dewatering sumps, rates of extraction below the water table, and any other relevant information with respect to proposed dewatering activities should be included in the Final report. Inclusion of this information will allow for a better assessment of potential interference issues, the potential impact to the natural environment and applicability of the locations selected for the pumping tests completed.

e) It is noted that groundwater modeling was completed utilizing MODFLOW. Due to the limitations of this finite difference model, MODFLOW does not have the ability to accurately model groundwater systems on a local scale in fractured rock environments, especially if the fracture network (size, connectivity, orientation) is essentially unknown. Use of the equivalent porous medium approach in MODFLOW generally oversimplifies these complex networks on the local scale. It is expected that all assumptions made will be thoroughly discussed in the Final Report; the various limitations of the model in this type of environment also warrant discussion in the Final Report. These will both cause some error in the analysis and predictions and again, warrant discussion. Due to the error that accompanies the many assumptions and limitations required to model this environment, we recommend that manual calculations and predictions, based on the local physical system, also be performed and discussed in the Final Report.

f) Based on the DRAFT report, it appears that only one mitigation measure has been proposed. We recommend that other mitigation plans be set forth in the event that the one proposed proves not to be feasible.

g) In the Final Report, larger figures of the site should be provided. The information included on the various site figures in the DRAFT document is difficult to discern.

h) It is expected that the Final Report will include *all* volumes, figures, tables and appendices referred to in the main document.

i) Due to potential impact on nearby wetlands and surface water bodies, the MOE Technical Support Surface Water Group will also be required to complete a review of the Final document. Accordingly, we request that **two** copies of the Final Report be provided to allow for a simultaneous review by both Ground and Surface Water staff.

If you have any further questions, please feel free to contact me at (905) 521-7864 or email Barbara.ryter@ene.gov.on.ca.

Sincerely,

Barbara Ryter

Barbara Ryter
Environmental Assessment & Planning Coordinator
Air, Pesticides and Environmental Planning

ATTACHMENT #4

Ministry of
Natural Resources

Ontario

Southern Region
300 Water St. 4th Floor
Peterborough, Ontario
K9J 8M5

Telephone: (705) 755-2000
Facsimile: (705) 755-3291

September 30, 2005

Mike Stone
Ministry of Natural Resources,
Guelph District
1 Stone Road West
Guelph ON N1G 4Y2

Dear Mr. Stone:

Re: Proposed Dolostone Quarry, Lowndes Holdings Corp., Part Lots 1, 2 and 3, Concession 1, Township of East Flamborough.West

As discussed I have reviewed the reports (Hydrogeological Level 2 Report and Groundwater Flow Model) prepared by Gartner Lee Limited dated June 2005 regarding the above-referenced site. Included below are my comments.

The proponent has stated clearly that the impact to the wetlands would be significant. After looking at the data this seems clear. In order to reduce or eliminate this impact, mitigation will be required to preserve the wetland features. The mitigation plan discussed may be sufficient but many aspects of the plan are missing. Additional site plan details required include:

- Locations of sumps
- Volume of water extracted from the sumps
- Cross-sectional drawings of the GRS
- Location and number of "drilled conduits". This is especially important since it is presented that these conduits are the key to mitigating the drawdown cone's effect. What's required here are details on the construction of these holes (depth, diameter, etc), drilling method proposed, and spacing.
- The efficiency of the "drilled conduits" needs to be determined. To do this it is likely that prototypes will need to be installed and tested.
- Modeling of the GRS and conduits wells is not sufficient in itself since we are dealing with very specific conditions. Along with modeling, each conduit (well) will need to be drilled and tested much like a supply well. If it is found that the well cannot handle the water input from the sump, or that the GRS is not able to mitigate the drawdown effects, new or additional wells will need to be drilled. If the GRS is shown not to be able to mitigate the drawdown effects and preserve the wetlands and surface water features, quarry development will have to be re-assessed.

Since the final site plans and mitigation measures will, by necessity, be completed for the ARA application process, further detailed review of these items will take place at that time.

The proponent needs to demonstrate what the thermal impact will be to the wetlands and associated discharge zones. The recirculation of water will create a thermal warming and since the media is fractured rock, the impact from this warming may be felt a significant distance away from the GRS. This needs to be discussed in detail including thermal plume description as well as time of travel.

Impact to Mounstberg Creek from quarry water pumped to the creek needs to be described in better detail. What is the thermal impact, the impact of precipitation, scouring, etc?

More detail and discussion needs to be centred around the overburden soils which support the wetland. Section 2.2 states that the organic soils of the wetland lie directly over the bedrock. Additional work should be conducted regarding the effects of de-pressurizing the underlying bedrock and the resultant flux of surface water through the organic soils. A pump test was conducted in November, 2004 in an attempt to stress the groundwater system and produce a response in the wetland mini-piezometers. This however, was inconclusive since precipitation events obscured the data. This test should be repeated during a time period when hopefully there will be no precipitation events.

Please contact me if you require additional information.

Sincerely,

David N. Webster, P.Geo.
Regional Hydrogeologist
Ministry of Natural Resources
Southern Region
Phone: (705) 755-3253
Fax: (705) 755-3291