

Niagara Escarpment Commission

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*Ontario's Niagara Escarpment
A World Biosphere Reserve*

April 7, 2010

STATUS REPORT

RE: State of the Aggregate Resource in Ontario Study

Recommendation:

That the Niagara Escarpment Commission (NEC) receive this report and provide a copy to the Minister of Natural Resources.

Background:

In December 2008, the NEC was invited by the Ministry of Natural Resources (MNR) to participate in an update of the State of the Aggregate Resource in Ontario Study (SAROS) with other stakeholders. The basic objective was to update the information contained in the 1992 "State of the Resource" Study to inform the Minister as to whether there was sufficient aggregate supply available to support the development that would come from the implementation of the provincial Growth Plan.

Two committees were formed, the Aggregate Resource Advisory Committee (ARAC) which Chair Scott participated in and the Technical Expert Panel which Nancy Mott-Allen participated in. The Committees met on numerous occasions separately and together to provide input and feedback to MNR and to consultants retained by MNR to prepare six background papers. Mr. Brian Hollingsworth, who is giving a presentation to the Commission on April 14, was the project lead.

The SAROS report was released on February 18, 2010 and presented at the OSSGA annual meeting.

The purpose of this report to the NEC is to provide a brief overview of the "Consolidated Report", (see Attachment 1).

Discussion:

Project Purpose

As outlined in the SAROS Project Charter, the primary purposes of the study were:

- Gain a better understanding of aggregate resources by gathering the most up to date information and current science on the demand, availability, transportation, recycling, rehabilitation, economic and social value of aggregates to the province of Ontario
- Utilize the new information to develop potential solutions to address pressures on the resource which could include: a Provincial Aggregate Resource Strategy and/or an Aggregate Resource Conservation Strategy.

Stakeholders

A complete list of all the participants of the two Committees is listed in the SAROS report. While the membership represented a cross section of government ministries and interest groups, because of the time commitments of the study, not all stakeholders were well represented on the Committees. Furthermore, there was concern amongst some stakeholders that aggregate interests were overly represented on the Committees.

MNR characterised each stakeholder's expectations in the Project Charter. The NEC was described as follows: "Expectations are that alternative sources of aggregate will reduce extraction within the NEPA."

Process

At the outset of the Study, all members of the two committees were asked to commit to complete secrecy about the work and findings regarding SAROS. This was difficult as many of the stakeholders report to a board or committee and were unable to solicit input from others prior to providing comments and advice to the project lead on behalf of their respective organisations.

Equally challenging was the limited time available for the overall project as well as to adequately review and comment on the large amount of information that was gathered. It will however be useful information once it is more broadly released and made available to the public.

Another element of SAROS which was constrained was the overall scope of the study. Participants were told at the start that issues relating to the aggregate industry or operators, existing legislation (Aggregate Resources Act), policy (PPS) or legislation and policies of other Ministries were not being considered even though these were topics that many wanted to address. Stakeholders and MNR staff made efforts to respect each others divergent opinions but consensus was not reached on all topics of discussion.

Consultants

In addition to the concern about the stakeholder representation, there was concern from some of the Committee members that the consultants selected to complete the background papers were in large part the same consultants who work for the aggregate industry. Due to the short time frame available to complete SAROS, it was unavoidable that the consultants selected had to be ones with previous aggregate resource experience.

The six background papers were:

- The Value of Aggregates
- Aggregate Consumption and Demand
- Reuse and Recycling
- Aggregate Reserves in Existing Operations
- Future Aggregate Availability and Alternatives Analysis
- Rehabilitation.

A short summary of the findings of each study is found in the following section of this report.

Study Findings

The Value of Aggregates – The SAROS report makes it clear that aggregates are used for many purposes and that they are resource that cannot be substituted in many of its applications. According to the study findings, the aggregate industry contributed in 2007 (the latest year figures are available):

- \$2.9 billion of gross output
- \$1.6 billion of GDP
- \$827 million of labour income
- 16,600 full time jobs.

Lacking in this analysis however is a comparison of the contribution of other sectors of the economy in order to properly evaluate the overall contribution of aggregates to Ontario's economy. Although requested by several stakeholders, no information was gathered about the economic cost of aggregates especially in terms of environmental costs of extraction although a public survey conducted as part of the SAROS study, showed that environmental effects are viewed as the main costs of aggregate extraction.

A survey of 31 aggregate licences as part of the study suggested that environmental features were "almost entirely preserved" and that affected habitat "will be replaced through rehabilitation". It is NEC staff's view (which is reflected in the NEP) that replaced habitat is not the same as the original environment and also that the Rehabilitation Paper showed that 40% of licences are not meeting their rehabilitation requirements.

Aggregate Demand and Consumption – This paper predicts that more aggregate will be consumed in the next twenty years than the prior twenty year period due to predicted growth. Ontario's consumption is similar to other provinces but higher than Western Europe due to factors such as lower population density, higher population growth, lower temperatures and less use of recycled material.

Reuse and Recycling – SAROS acknowledges the benefits of recycling of aggregates and shows that the use of recycled aggregate is improving. How much is recycled is not accurately recorded and a survey of municipalities showed that improving the tracking of recycled aggregate would require a database and funding for its development and staff training.

Aggregate Reserves in Existing Operations – This Paper showed that aggregate reserves are declining because the approval of new licences has not kept up with consumption. A study of 97 licences showed of 3.44 billion tonnes of limestone and dolostone, of which 1.47 billion tonnes are of high quality. Hampering the analysis was the fact that only 30 of the 97 quarries had no geological information about what was contained in the licensed area making it difficult to accurately determine the useful quantity of aggregate in reserves. SAROS also indicated that the amount of the available materials within 75 kilometres of the GTA is declining. This information will likely be used as a justification for new licences close to the GTA which

conflicts with the need to maintain an adequate supply of urban land, agricultural areas and environmentally sensitive features.

Future Aggregate Availability and Alternatives Analysis – This paper represents a constraint analysis on the future supply of aggregate. The high bulk of aggregate and its low unit value limit the distance that aggregate producers wish to transport the product, however the report states that this is a reason to “unnecessarily transfer the effects of extraction to other jurisdictions”. One could argue that if alternative means were developed to transport the material, there could be other jurisdictions that would benefit economically from the improved transportation infrastructure with less environmental cost if only resources could be brought to bear to locate alternative aggregate supplies outside the GTA and the NEP, which have been a source of supply for many decades. This paper did look at international jurisdictions and noted that some also took the policy approach of finding aggregate close to the market. However, some of the jurisdictions examined had chosen to import material or transport longer distances if it meant supporting a tourism industry or resulted in preserving natural features.

Another aspect of this paper was an analysis of planning, environmental and agricultural constraints for southern Ontario. The findings of this analysis were that 93% of the selected bedrock resource had constraint challenges. The remaining 7% which was less constrained was largely found in eastern Ontario.

Looking at alternative sources of aggregates, such as mine tailings, river or lake dredging, manufactured sands, underground bedrock mining and mega-quarries, all were found to have limitations due to cost or environmental concerns except for mega-quarries. These were defined as having 150 million tonnes of reserves and annual production capacity of 10 million tonnes. A concern with mega-quarries is the larger zone of impact and the need to “require greater mitigation of social and environmental impacts”. The number of current (and past) applications in the NEP to expand existing quarry operations is indicative of the mega-quarries trend.

Alternatives to truck transport were considered as part of this paper and included long distance trucking, shipping and rail. Difficulties identified were higher costs, lack of infrastructure suited to the transport of heavy bulky materials and lack of locations to transfer the aggregate from one method of transport to another. Long distance trucking was discounted due to higher greenhouse gas emissions but no consideration was given to alternative fuels in those vehicles that could offset the emissions.

Rehabilitation – This paper looked at the actual successes of rehabilitation of licensed properties as well as the expectations of stakeholders with respect to rehabilitation. It was found that of 50 selected sites, 58% had begun some rehabilitation but 40% had not started any remediation. The paper suggested that the larger aggregate companies were more knowledgeable on how to undertake rehabilitation than the smaller operations.

A review of licences that had been surrendered showed that agriculture, open space and recreation were the predominant after uses but that the end use often differed from the one proposed on the licence because a long time passes between the inception of quarrying and final rehabilitation (often decades). Therefore, from the NEC staff perspective, the rehabilitation plan championed on an application for a new or expanded quarry may not be the one that actually is implemented in the end. It was noted that MNR documentation of surrendered licences “is inconsistent and in many instances incomplete”.

It was suggested by the Rehabilitation paper that the quality of comprehensive rehabilitation plans would improve with “incentives and a clear planning process”, implying that the problem of unmet expectations relating to rehabilitation of aggregate sites resulted from the need to have a “streamlined and consistent review process” and more public engagement. This conclusion is of concern to NEC staff as this may be used to attempt to curtail a thorough evaluation of aggregate applications in order to fast track aggregate approvals.

The paper did acknowledge that there have been some excellent and innovative rehabilitation projects in other countries due in part to significantly higher per tonne fee collected to fund rehabilitation and research.

Conclusion

Overall, SAROS portrays a very positive image of and economic benefit from the aggregate sector while downplaying the controversial issues such as environmental costs and impacts, poor track record on progressive rehabilitation and the nature of promised rehabilitation over time. It is the view of NEC staff that there is a need to begin investigating supplies outside the GTA and alternative means to transport them to market to reduce the pressure on the Niagara Escarpment as a source of supply. SAROS does recognise that policy and legislative change may be needed in the future and that more research is necessary and NEC staff support continued involvement in the process of addressing these issues.

Next Steps

The six background papers will be released by MNR to the public. There may be further consultation between MNR and the Committees in order to finalise the recommendations of the Aggregate Resource Advisory Committee to the Minister and move forward on additional research on aggregate resources, policy and legislation. NEC staff will continue to inform the Commission of any new developments relating to SAROS or any new strategic direction relating to aggregate management and conservation that may arise as a result of the study findings.

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