

Aggregate Extraction in Ontario: A Strategy for the Future

Executive Summary



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Executive Summary

Aggregate extraction continues to be one of the most controversial land use issues in Ontario. Demand for aggregate resources in fast growing municipalities in the province, combined with a policy and legislative framework promoting extraction of aggregates close to the markets where they will be consumed, has resulted in substantial resistance to new aggregate extraction operations when they are proposed.

In 1992, the Ministry of Natural Resources (MNR) developed a State of the Resource Report on aggregate reserves, consumption trends, conservation and recycling, with a primary focus on Southern Ontario. The report informed the development of policies and programs, and provided guidance to municipal planning processes. The Environmental Commissioner of Ontario (ECO) has repeatedly called for MNR to update its State of the Resource Report and the ECO's 2006/07 Annual Report specifically recommended that MNR also develop an aggregates conservation strategy. In 2007, MNR stated in response that, while it was committed to developing a strategy, it needed first to update its 1992 State of the Aggregate Resource in Ontario Study (SAROS).

A new SAROS was completed in 2009. It updated information in the 1992 report, included research on new subject matters and expanded the geographic scope to include all regions of Ontario. The subject matter was divided into six components and contracted out to independent consultants, who produced a series of papers; many of the findings from these papers were ultimately consolidated into a final report authored by the Ministry of Natural Resources. It is anticipated that, with the completion of the SAROS reports, MNR now has the background information it needs to soon develop a broader strategy to conserve aggregates, improve environmental safeguards and oversight and reform transportation methods, while recognizing the numerous economic benefits that the resource provides to the province.

This report is intended to provide commentary on the 2009 SAROS and additional research that will inform the development of an improved Ontario aggregates strategy. It is hoped that this research will assist various stakeholders to work together to create a strategy for aggregates in Ontario that reflects environmental and social values, as well as economic interests.

Authors of the SAROS reports suggest that high quality aggregates located in close proximity to the Greater Toronto Area (GTA) are growing scarce and shortages may be experienced within 10 to 20 years if new licences are not approved in close-to-market areas. If this scenario is realized, reliance on aggregate reserves located further from high demand areas will surely increase. At the same time, long term alternatives to the current close-to-market approach, such as transportation of aggregates by rail or barge from northern Ontario, are described in the SAROS as having serious social, environmental and economic implications.

Some sections of the SAROS reports do suggest that improved demand management for aggregates may be possible through changes in urban design and greater recycling, but both of these options are currently hindered by a lack of data. The net impact of trends in urban planning and design, such as the smart growth principles prescribed under the province's Growth Plan for the Greater Golden Horseshoe Region, on the demand for virgin aggregates is not fully

known. Basic data on the types, quantities and locations of materials that could be used as substitutes for virgin aggregate are also currently lacking.

At the same time, a constraints analysis undertaken for the SAROS reports indicates that large amounts of aggregate could still be extracted from the bedrock of Southern Ontario, but that 93% of these deposits that are currently unlicensed overlap with environmental or agricultural features. A likely outcome of these SAROS findings will be increased pressure to open additional areas in the Greenbelt, Oak Ridges Moraine and Niagara Escarpment Plans, where much of the aggregate that supplies the GTA is currently extracted. These three land use plans will be undergoing a 10-year consolidated review in 2015 and aggregates will likely be a central focus of this process.

In particular, the Oak Ridges Moraine Conservation Plan (ORMCP) anticipates that heightened demand for close-to-market aggregates may mean that new aggregate extraction is permitted in its Natural Core Areas, where it is currently restricted in order to protect key natural heritage features. Numerous licensed aggregate pits exist across the Oak Ridges Moraine, many in close proximity to Natural Core Areas, which could potentially be candidates for expansion if current restrictions were eased. Also, communities just beyond these protected areas such as Simcoe will likely continue to see an increase in demand for aggregates to supply GTA markets. Overall, the SAROS study suggests that if the *status quo* for managing aggregates in the province is maintained, future supplies of aggregate for the GTA market will come from sites located within or just beyond regional conservation plan areas.

The social and economic benefits provided by Ontario's aggregates in various applications are well understood and are discussed in depth in the SAROS reports. The importance of aggregate resources to the province is also reflected in a planning policy framework supporting close-to-market extraction of aggregates, which has been in place in one form or another since the 1970s. Regarding the current provincial approach to aggregate resource management, some of the stakeholders interviewed for CIELAP's research believe that there is a tipping point at which the need to preserve remaining natural heritage features should outweigh the benefits of close-to-market aggregates management. Several respondents also pointed to a need for better accounting of social and environmental costs related to aggregate extraction. The province's current fee of 11.5 cents per tonne of aggregate extracted, does not address all of these costs and in some cases only covers the cost of road maintenance for municipalities hosting aggregate operations. Also, this relatively low fee means that the use of recycled material is not an attractive alternative from a financial perspective.

Better accounting of the full cost of aggregate extraction, including social and environmental impacts is required. Once this has been achieved, the provincial government needs to ensure that such costs are reflected in the total price paid for aggregates.

An aggregates strategy for Ontario must address these seemingly conflicting interests with a comprehensive approach that manages current demand, but also takes a long-term view that contemplates the potential for the future use of rail or marine transportation from areas where there may be less land use conflict. For example, in the United States and the UK, transportation

of aggregates by rail has seen modest growth in recent years, suggesting that this is both feasible and, in some contexts, an appropriate solution.

Inter-ministerial cooperation is needed to:

- enable transportation reform to allow for the growth of rail infrastructure over the long term and reduce dependence on continual, large-scale highway expansion projects;
- develop sufficient government staff capacity to apply and enforce the *Aggregate Resources Act (ARA)* in all areas with significant resources throughout the province;
- establish both incentives for greater recycling, rehabilitation and information sharing among stakeholders and disincentives targeting waste and bad practices that perpetuate a negative public perception; and
- reform the current framework for rehabilitation of worked out pits and quarries by establishing both incentives and requirements to improve the quality and quantity of rehabilitation throughout the province.

The UK provides one of the strongest examples of what can be achieved in terms of sustainable aggregate resource management, as was acknowledged in several areas of the SAROS report and by MNR. However, a levy charged on virgin aggregates in the UK is currently 2.00 GBP (approximately \$3.22 CDN) per tonne of aggregate extracted. Ontario's current fee of 11.5 cents per tonne would likely not be sufficient to support the development of similar initiatives. A long-term aggregates strategy must begin to examine other, more comprehensive ways to define the value and appropriate price of the resource. Increased aggregate royalties could also improve staff capacity in MNR to allow for greater compliance with and enforcement of the *ARA*, and to develop programs that promote knowledge sharing between government, industry and interested stakeholders. Other jurisdictions, such as Sweden and the Netherlands, have faced similar land use conflicts and environmental challenges within their own aggregate industries and their responses include the establishment of taxes on virgin aggregate; taxes or bans on the landfilling of wastes that are suitable for use as aggregate; and financial incentives to make greater use of recycled materials in construction.

The SAROS report should be viewed as an important step toward a long term aggregates strategy. It should be the catalyst for a broad, open debate on which elements will be needed in a new strategy that will be most beneficial for Ontario from economic, social and environmental perspectives. The report should also lead to ongoing research on the environmental impacts and costs of extraction, jurisdictional review and improved data sharing and analysis.

Summary of Recommendations

Section 4 – Environmental, Social and Human Health Impacts of Aggregate Extraction in Ontario

Continue to study environmental impacts of aggregate extraction. The Ontario government should identify an efficient means of undertaking a comprehensive study of the environmental, social and cultural heritage impacts of aggregate extraction in an Ontario-specific context that

includes cumulative impacts, and provides a broader understanding of land use change issues such as the loss of agricultural land. This study should be led an independent body, but with extensive input by MNR and the Ministry of the Environment (MOE), as they have direct access to critical field data for determining trends. The study should also include input from other stakeholders such as environmental non-profit organizations, municipalities and the public. In addition, MNR should make a database of field audit information collected by aggregate inspectors available to the public in order to allow third parties to track trends in environmental impacts and identify potential problem areas that need greater attention.

Section 6.1 – Balancing the need for Mineral Aggregate with other Land Use Interests in a High Growth Region

Increase producer requirements for monitoring and reporting. MNR should use additional provincial funding to increase enforcement of the *ARA*. At the same time producer requirements, especially for larger, more complex operations should be increased by requiring more detailed monitoring under the Compliance Assessment Report system, as well as more frequent site visits from MNR inspectors. MNR should issue fines against aggregate producers who submit incomplete or inaccurate Compliance Assessment Reports.

Introduce sunset clauses on aggregate licences. MNR should introduce a sunset clause on aggregate licences. While sunset clauses could be phased in gradually for the entire province, at minimum the use of sunset clauses for aggregate operations in the Oak Ridges Moraine, Greenbelt and Niagara Escarpment areas should be considered during the 2015 consolidated review of the three regional plans.

Section 6.2 – Supply and Demand for Aggregates

Determine the impact of urban development on the demand for aggregates. As a first step towards creating an aggregates conservation strategy, MNR in collaboration with the Ministry of Transportation (MTO) and the Ministry of Municipal Affairs and Housing (MMAH) should undertake further research on the impact of different urban development approaches on the demand for virgin aggregates. Once urban design approaches that can reduce the need for virgin aggregate over the long term have been identified, these should be incorporated as requirements where feasible in an aggregates conservation strategy. For example, provincial infrastructure funding could be made conditional on the use of materials and/or designs that minimize the need for virgin aggregate.

Section 6.3 – Underutilization of Recycled Aggregate

The provincial government should promote and where possible, require the use of recycled aggregate to the fullest extent possible without compromising safety or durability of infrastructure by doing the following:

- a) **Follow the SAROS recommendation to create an inventory of recycling activity and available materials.** MNR should pursue all recommendations provided in *SAROS Paper 4: Reuse and Recycling* to improve the rate of aggregate recycling in the province.

- b) **Establish provincial targets for recycling aggregate.** As a component of the province's proposed Aggregates Conservation Strategy, adopt a recycling target of 10 to 15% substitution of virgin aggregate for recycled/secondary material. Recycling targets should also be increased incrementally over time as knowledge on the availability of suitable materials and recycling practices improve.
- c) **Remove municipal barriers to recycling aggregate.** MMAH, in collaboration with the Ministry of Infrastructure and MNR, should use provincial legislation to address municipal official planning barriers to the use of recycled aggregate. For example, municipalities designated as urban growth centres under the *Places to Grow Act, 2005* should be required to accommodate recycling facilities and encourage the use of recycled aggregate in infrastructure, as appropriate.
- d) **Introduce a landfill tax to reduce unnecessary landfilling of usable material.** As a component of a long-term aggregates strategy, the Ontario government should combine an aggregates royalty increase for virgin aggregate with a provincial landfill tax that will reduce the disposal of waste products that have the potential to act as a substitute for virgin aggregate.

Section 6.4 – Site Plan Amendments

Make major changes to aggregate operations conditional on use of best practices. MNR should revise the current procedure for major site plan amendments to encourage producers to implement best practices. Approval of requests, such as for tonnage increases, increases in the depth of extraction, removal of setbacks or addition of new equipment to a site should be conditional on evidence of successful progressive rehabilitation to date and/or a tightened timeframe for resource depletion and final rehabilitation.

Section 6.5 - Rehabilitation

MNR should commit to implementing all key recommendations already identified through their EBR review of rehabilitation in 2006 and in *SAROS Paper 6: Rehabilitation*.

MNR should strongly consider reintroducing the security deposit model for rehabilitation of worked out pits and quarries. As recommended in *SAROS Paper 6: Rehabilitation*, MNR should consider reintroducing the security deposit model for aggregate licences to increase the financial incentive to rehabilitate worked out sites.

Section 6.6 – Compliance Monitoring

Increase the number of aggregates field inspectors. The Ontario government should make funding available to restore the number of aggregate field inspectors to a level that will enable more frequent and thorough monitoring of a greater number of pits and quarries in the province.

Section 6.7 – Pricing and Accounting for the Cost of Aggregates

Gradually increase the current aggregate royalty rate and licence fees to fund reforms.

MNR should increase the current per tonne licence fees and royalties charged on the extraction of aggregates. As a starting point, the rate should be increased to a level sufficient to continue to fund additional staff capacity within MNR. Additional revenue from future increases should be used to further recycling efforts, extend the geographic areas covered by the ARA, improve rehabilitation efforts and support further research into how the industry can improve practices. The royalty rate and fee increases should be phased in incrementally over time.

Section 7 – Long-Term Considerations for Aggregates Management in Ontario

Continue to investigate long term alternatives to close-to-market aggregate extraction supported by truck transportation. MNR, in collaboration with MTO, should continue to lead research into using rail transportation from as a long-term option for the movement of aggregates to high demand areas. This research should include an analysis of various transportation alternatives that will take into account a broad range of costs and benefits including social and economic benefits and environmental factors. This research should inform the eventual development of a provincial rail strategy.

Improve knowledge of how different types of aggregate are used and how they move from the extraction site to the job site. MNR, in collaboration with the Ontario Aggregate Resources Corporation (TOARC) and the Ontario Sand, Stone and Gravel Association (OSSGA), should make information on annual tonnage and transportation routes of existing operations available to municipalities and to third party bodies.