

Aggregate Resources

Position Paper

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Muskoka
WATERSHED COUNCIL

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EXECUTIVE SUMMARY

There is pressure on the watersheds that lie wholly or partially within the District of Muskoka for new and expanded aggregate and dimensional stone operations. While continued prosperity in Muskoka is dependent, in part, on a long-term supply of aggregates at a reasonable cost, it is also heavily dependent on a vibrant, healthy natural environment to support native natural systems, provide a wide range of goods and services, and to ensure Muskoka remains a recreational and tourist destination.

A healthy aggregates extraction industry need not be mutually exclusive to a healthy natural environment. By looking at Muskoka strategically and identifying both the commercially viable aggregate resources and the natural values necessary to maintain current lifestyles and environmental health a collaborative development approach can be achieved. Muskoka Watershed Council encourages municipalities, community groups and local aggregate producers to work together to develop a watershed based strategy and development standards for aggregate extraction similar to those being proposed by the Socially and Environmentally Responsible Aggregate Association (SERA) in southern Ontario.

SERA is a not-for-profit organization that aims to create, administer and promote widespread support for certification of responsibly sourced construction materials, with an initial focus on responsibly sourced aggregates. Responsibly sourced aggregate refers to stone, sand and gravel that would be extracted in compliance with SERA's standards for aggregate siting, rehabilitation, operation and use.

Through the development of industry standards the following watershed health issues can be addressed:

- 1) The strategic development of aggregate resources, especially consolidated aggregate, in relation to other social and environmental values;
- 2) Habitat fragmentation and protection of large undisturbed natural areas;
- 3) Water quality of lakes and inflowing creeks and streams;
- 4) Protection of surface water flow regimes; and
- 5) Protection of groundwater quality and quantity.

The position of the Muskoka Watershed Council is that a comprehensive strategy for aggregate extraction that includes both consolidated and unconsolidated material, coupled with sound planning policies and a detailed database, are critical to providing a balanced approach to the regulation of aggregate operations throughout the watershed and the province as a whole. Additionally, it is the position of the Muskoka Watershed Council that dimensional stone should not receive the same level of priority under the Provincial Policy Statement (PPS) as aggregate required for road and building construction and other infrastructure needs.

Analysis of provincial policies that deal with the extraction of aggregate resources within the context of environmental, economic and social parameters has shown that there is a lack of base information upon which to develop a comprehensive strategy for resource extraction in Muskoka. Current policies do not adequately address all issues associated with resource extraction, and there are insufficient tools to ensure that other competing and legitimate interests are addressed. Similarly, Muskoka Watershed Council's analysis of local planning policies suggests that these are also incomplete in terms of providing the protection, control and direction necessary to balance aggregate extraction with competing land uses and social interests.

Muskoka Watershed Council supports:

- 1) *The province and municipalities within the watersheds of Muskoka developing a coordinated, comprehensive strategic vision for aggregate resources (both consolidated and unconsolidated) and extractive operations that is compatible with other social, economic, land use and environmental interests.*
- 2) *That municipalities, community groups and local aggregate producers work together to develop socially and environmentally responsible standards for aggregate extraction.*

Position Summary

It is the position of the Muskoka Watershed Council that:

- 1) The Province amends the Provincial Policy Statement to require a regional strategic level analysis of provincial, regional and local aggregate needs. The strategic analysis should identify:
 - a) Deposits of provincially significant consolidated and unconsolidated aggregate resources,
 - b) Sufficient areas to meet the present and long-term need while taking into consideration environmental issues, infrastructure investment and other land use priorities,
 - c) Priority aggregate deposits for protection and areas where extraction should be restricted in order to best meet the needs of the community and the province, and
 - d) The cumulative effect of extraction operations on the socio-economic and environmental values of the area.
- 2) Where aggregate deposits are not of provincial significance, that the Province amend the PPS to require new extractive operations to be considered in accordance with regional long-term values and interests.
- 3) Aggregate extraction should not be permitted in Heritage Areas with significant biological values or on locally significant agricultural lands.
- 4) The Province amend the Provincial Policy Statement to redefine the terms *Mineral aggregate operation* and *Mineral aggregate resources* to specifically exclude aggregate extraction for dimensional stone.
- 5) The Province properly fund background studies for a regional strategic analysis including the completion of consolidated aggregate mapping for Muskoka.
- 6) The Province amend the Aggregate Resources Act (ARA) to require that the cumulative environmental effect of multiple operations be analyzed and addressed. The Act does a reasonable job of assessing local environmental impacts but does not address the cumulative environmental impacts of multiple operations.

- 7) The Province properly funds the ARA for proposal review and enforcement. Level of detail in the ARA Class license requirements is good; the underlying issue is the lack of provincial resources for review, enforcement and rehabilitation.
- 8) Municipalities within the watersheds of Muskoka develop a comprehensive, strategic vision of the aggregate resource and extractive operations that is compatible with other social, economic, land use and environmental interests while being mindful of provincial legislation, regulation, direction and priorities. This strategy should address both large and small-scale operations, as well as commercial and private use.
- 9) Local aggregate producers work with municipalities and community groups to develop socially and environmentally responsible standards for aggregate extraction.
- 10) Areas of no extraction and areas of limited extraction be identified. It is recommended that net replacement ratios where operations are proposed in areas of limited extraction be implemented.
- 11) Municipalities consider new extractive operations in accordance with regional and local long-term values and interests, where aggregate deposits are not of provincial significance.
- 12) Municipal official plans be updated to require a regional level analysis of provincial, regional and local aggregate needs that identifies the following:
 - a) Appropriateness of the location with respect to municipal infrastructure such as roads,
 - b) Impact on wildlife or other sensitive features, including wildlife corridors and habitat fragmentation,
 - c) The cumulative impact of the proposed pit and quarry on the socio-economic and environmental values of the area,
 - d) Visual impacts, including existing and final contours,
 - e) Surface drainage and the potential impact on water quality and quantity of surrounding groundwater and waterbodies,
 - f) Potential impact of the pit or quarry on drinking water sources, and
 - g) Clear identification of environmental impacts.
- 13) Zoning by-laws be updated to:
 - a) Limit extraction to the operating area of the subject property, thereby requiring a municipal planning review prior to any major expansion,
 - b) Specifically zone for types of aggregate operations, and
 - c) Consider compatibility with surrounding uses and proximity to existing, serviceable roads.
- 14) All municipalities properly fund enforcement.

BACKGROUND

The Muskoka Watershed Council (MWC) is a volunteer-based organization whose stated mission is to *Champion Watershed Health*. Health and sustainability are defined by the social, economic and environmental well being of the area. Where potential threats to the watersheds have been identified, MWC has developed position papers based on well-researched background documents. Often the recommendations of these position papers cannot all be easily implemented under the current political climate or existing law and stated policy, but MWC challenges governments, industry and the public to strive for what is desirable as well as what can be implemented in today's environment.

Recently, the pressure for new and expanded pits and quarries, both for consolidated and unconsolidated aggregate resources and dimensional stone, has been identified as an issue to explore with respect to the sustainability of the watersheds of Muskoka. The Muskoka Watershed Council has identified a concern with the impact of pits and quarries on the health of our watersheds as it relates to:

- 1) The strategic development of aggregate resources, especially consolidated aggregate, in relation to other social and environmental values;
- 2) Habitat fragmentation and protection of large undisturbed natural areas;
- 3) Water quality of lakes and inflowing creeks and streams;
- 4) Protection of surface water flow regimes; and
- 5) Protection of groundwater quality and quantity.

It is important to emphasize that while the Muskoka Watershed Council is concerned about the impacts of pits and quarries on the watershed, those concerns are being addressed within the context of a comprehensive watershed health model that views environmental, social and economic well-being as connected components of a healthy watershed. Prosperity in our watershed is dependent on a vibrant and healthy natural environment that continues to provide necessary goods and services and ensures that Muskoka remains a recreational and tourist destination. It is also dependent, in part, on a long-term supply of unconsolidated aggregates and crushed granite at a reasonable cost. The Muskoka Watershed Council is of the view that a healthy environment and strong economy can co-exist and that a healthy aggregates industry and a healthy environment need not be mutually exclusive.

Economy and Social Structure

Muskoka is a tourism and recreation-based area with an economy that relies on a healthy environment. The forested landscape surrounding the many lakes and rivers supports a vibrant tourism industry and second home population. Annually, over one million tourists visit the area and enjoy the many resorts, lodges and attractions offered throughout the region. Two thirds (2/3) of the population are seasonal residents that escape to the area to enjoy the peace and tranquility of a quiet lake environment and its associated recreational opportunities. The protection of our land and water resources is vital to the continued prosperity in this area.

The natural environment also provides required services such as purification of air and water, sequestration of carbon, nutrient cycling, erosion control, and flood mitigation to name a few. Sands and aggregates are also required in the installation of septic and advanced waste

treatment systems necessary to many watershed residents. In addition, the natural environment provides society with a range of goods, including aggregate resources, but also including forest products, hunting and fishing opportunities, and agricultural production, etc. A balance is required to support the long term sustainability of the communities of Muskoka.

The recently completed vision of The District Municipality of Muskoka supports growth within strong environmental guidelines. With growth comes construction and the need for raw materials. In particular, aggregate resources are needed to build new roads, maintain old ones and construct buildings. Therefore, continued prosperity also depends, in part, on a long-term supply of aggregates at a reasonable cost. It is this dichotomy between landscape preservation and maintaining natural areas, and the need for the raw materials to fuel economic growth that challenged the Muskoka Watershed Council to develop a clear and practical position on aggregate extraction.

Inventory of Aggregate Resources

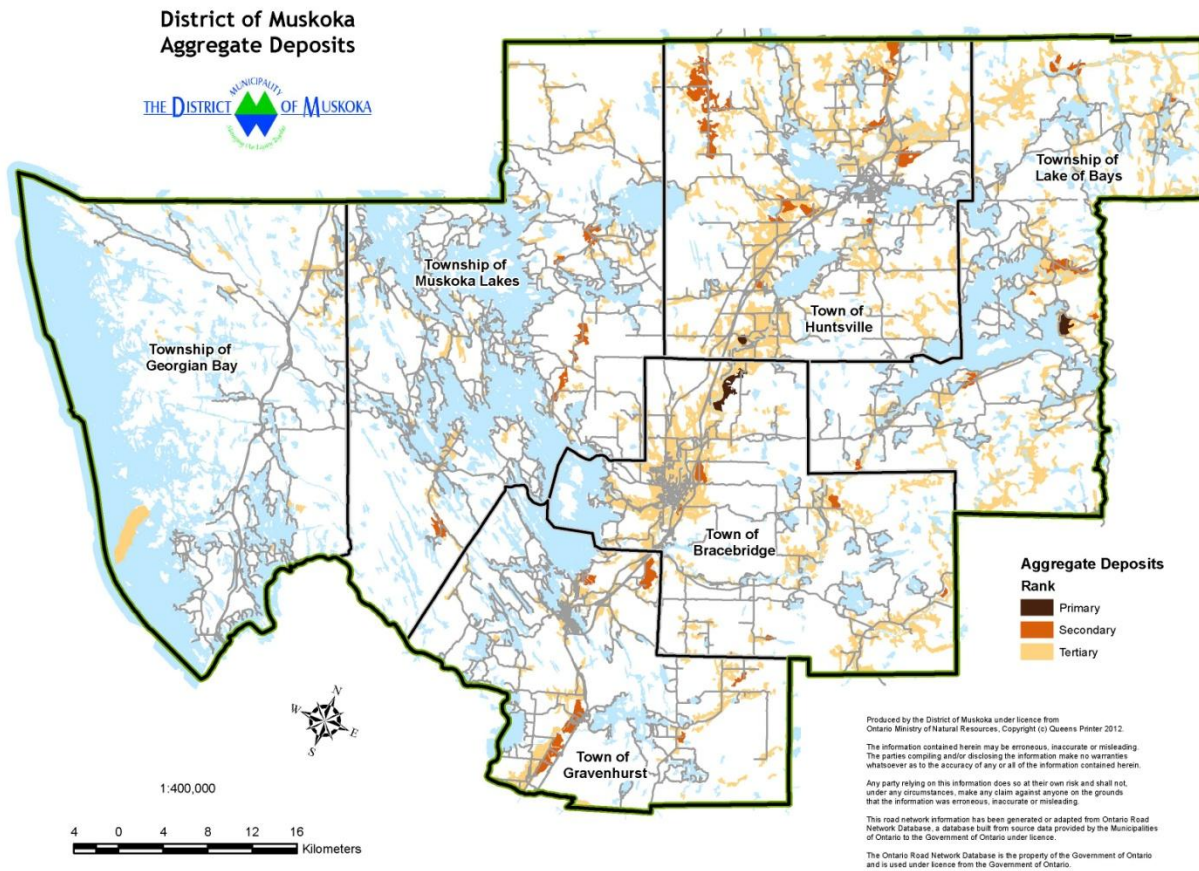
Solid mineral aggregate, which includes bedrock-derived crushed stone and quarried rock, and naturally formed unconsolidated aggregate such as sand and gravel, constitute the major raw materials in Ontario's road building, construction and landscaping industries. Although mineral aggregate deposits are plentiful in Ontario, they are fixed-location, non-renewable resources that can be extracted only in those areas where they occur.

In 1983, The District Municipality of Muskoka and the Ministry of Natural Resources produced a background information report that identified areas of unconsolidated aggregate resource potential. Mapping was produced to show unconsolidated aggregate resource areas of primary, secondary, and tertiary significance (see map 1).

The report noted that there is an acute shortage of natural sand and gravel within the Township of Georgian Bay and the Township of Muskoka Lakes. The northern portion of the Town of Gravenhurst contains very limited aggregate reserves. The Towns of Huntsville and Bracebridge and, to a lesser extent the Township of Lake of Bays, have appreciable high quality sand and gravel reserves. No similar report is available for the Parry Sound, Nipissing and Haliburton portions of the watersheds.

A follow-up study by the Ontario Geological Survey in 2004 determined that easily accessible sand and gravel deposits are nearly depleted and that there are no remaining identified and undeveloped resources capable of supplying large volumes of crushable granular materials. Pit expansions and the opening of new pits in remote areas to satisfy the demand for aggregates locally and elsewhere will likely follow the depletion of easily accessible unconsolidated aggregates.

No inventory of consolidated mineral aggregate resources has been conducted in Muskoka. It is assumed, however, that most granite outcroppings across the watershed would be suitable for extraction, which makes all of the watersheds susceptible to aggregate extraction in the form of a quarry.



Dimensional Stone

Dimension stone is natural stone or rock that has been selected and fabricated (i.e. trimmed, cut, drilled, ground, or other) to specific sizes or shapes. Color, texture and pattern, and surface finish of the stone are also normal requirements.

Quarries that produce dimension stone or crushed stone (used as construction aggregate) are interconvertible since most quarries can produce either one. A crushed stone quarry can be converted to dimension stone production; however, first the stone shattered by heavy and indiscriminate blasting must be removed. Dimension stone is separated by more precise and delicate techniques or light and selective blasting with a weak explosive.

Dimension stone, which is worked and often polished, is used in sculpture and to produce cut-stone panels, tiles, and veneers. Rough or roughly dressed stone is used to produce cobblestones, patio and paving stones. Favoured in local and national construction and landscaping projects, the rocks most commonly used for this are granite, limestone, marble, and slate. Significant outcroppings and layers of granite can be found across Muskoka.

According to the Ontario Ministry of Northern Development and Mines, "there has been an increased level of exploration for dimension stone and subsequent new quarry development in Ontario over the past decade. In recent years, there has been greater interest in the use of natural stone in commercial and residential construction....there is an active interest in developing Ontario's stone resources to cater to growing demand....There remain many new opportunities to exploit deposits of excellent quality stone in Ontario."¹

Given that there are ample opportunities from which to extract and produce dimensional stone throughout Muskoka and the increasing popularity of dimensional stone, it is anticipated that there will be an increase in the number of quarry proposals across Muskoka. In order to provide Area Municipalities with the ability to properly regulate the quarrying of dimensional stone, it is recommended that dimensional stone not receive the same level of priority under the Provincial Policy Statement (PPS) as aggregate required for road and building construction and other infrastructure needs.

Summary

The impact of new pits and quarries for either construction purposes or dimensional stone can be significant in terms of landscape alteration, visual impact, water quality, and habitat fragmentation. With the shift to extracting and crushing solid granite for construction purposes and the increase in demand for dimensional stone, all parts of the watershed may experience quarry development in the future. If not planned and managed properly, the cumulative impact of this development may have a negative effect on the provision of necessary environmental services such as air and water purification or carbon sequestration and on recreational and tourism environmental values that are the foundation of the economy of the watershed.

PROVINCIAL POLICY FRAMEWORK

The Province's legislative and regulatory tools with respect to aggregate extraction are found under the Planning Act (land use planning), the Municipal Act (operations details), and the Aggregate Resources Act (ARA), which is specific to pits and quarries. The Ministry of Natural Resources manages aggregate extraction on Crown land in the watershed under the ARA. In 2007, patent land in the watershed also became regulated under the ARA.

The Provincial Policy Statement, issued under the Planning Act, provides the policy direction for land use decisions by municipalities and has, therefore, been a focal point for MWC's provincial policy analysis.

Planning Act (Provincial Policy Statement)

Since 1946, the Planning Act has established procedures and authority for municipalities to develop official plans and zoning regulations and provided a foundation for decision-making regarding land-use changes on private and municipal lands. Over time, several reviews and many amendments to the Planning Act have resulted in a detailed and complex system of policies, procedures, roles and authorities. Due to increasing concern regarding the Planning Act's effectiveness in addressing environmental and social impacts, the province established

¹ <http://www.mndm.on.ca>

policies in the 1970s for the protection of agricultural land, mineral aggregates, and floodplains. Since that time, these policies have acted as guiding principles for municipal policies and related planning decisions. In the mid 1990s these initial policy statements were incorporated into the Comprehensive Provincial Policy Statement issued under Section 3 of the Planning Act.

In 2005, the Government of Ontario released a revised Provincial Policy Statement (PPS). The 2005 PPS indicates that prime agricultural lands and aggregate resources continue to be singled out for a significantly higher level of protection than natural heritage areas. Policy 2.5.2 directs that mineral aggregate resources are to be protected for long-term use, with the caveat that "extraction shall be undertaken in a manner which minimizes social and environmental impacts." The Muskoka Watershed Council will continue to encourage all municipalities to develop and implement policy that expands on this concept and clearly identifies how social and environmental impacts will be addressed.

Discussion

Ontario does not have a comprehensive and strategic plan for the management of its aggregate resources. The 2005 PPS is limited in scope and protects all aggregate deposits regardless of significance. While the PPS provides the caveat that "extraction shall be undertaken in a manner which minimizes social and environmental impacts," no direction is provided as to the interpretation of this clause. The Muskoka Watershed Council remains concerned that the policies relating to mineral aggregate resources do not provide a balance between competing land uses. In an area that is dependant on natural, scenic and environmental values, unplanned aggregate extraction could have significant environmental, social and economic consequences.

An overall strategy regarding material availability, use and protection is required in order to achieve a balance between the need for aggregate and other competing local, regional and provincial interests. To facilitate the development of such a strategy The District Municipality of Muskoka, the Area Municipalities and adjoining municipalities, representatives from the aggregate industry, and the province should work together to identify priority consolidated and unconsolidated aggregate deposits for protection and encourage extraction in those areas and limit extraction in areas where other uses best meet the needs of the community and the province. This strategic plan should be developed at both a provincial and regional level.

Extraction can have significant short and long-term impacts on natural heritage systems and water resources in terms of habitat destruction and fragmentation, and changes in both surface water and groundwater flows. While regulation under the Aggregate Resources Act addresses some of these concerns, it does not address cumulative impact of multiple operations adequately. Once the Province has identified those aggregate resources that are of provincial significance, rather than excluding extraction from a demonstration of need as detailed in Policy 2.5.2.1 of the PPS, a clear demonstration of need and environmental impact should be required for pit and quarry proposals on deposits that are not identified as having provincial significance. As provided for in Policy 2.5.2.2 of the PPS, this report should balance environmental, social and other economic values against the need for aggregate extraction.

Aggregate Resources Act

The Aggregate Resources Act (ARA) regulates the extraction of aggregates (sand, gravel, clay, earth, limestone, granite) on private land in areas designated under the Act, all Crown land,

and all land under water. In Muskoka, the ARA came into force in 2007 on patent land. The operation and rehabilitation of pits and quarries are controlled by this legislation through the use of licenses; preparations of site plans; an annual license fee of which the majority is returned to the local municipality; and rehabilitation security, which is placed in an interest bearing account in the name of the licensee or permittee and returned as the site is rehabilitated.

According to the Ministry of Natural Resources, "the Aggregate Act lays out the rules and regulations governing the establishment, operations and closure of pits and quarries on all Crown land and designated private land in Ontario. The Act requires progressive and final rehabilitation of land where aggregates have been extracted to ensure minimal impact on the environment. Site plan requirements under the Act also include the establishment of excavation setback areas and buffers and the creation of berms and tree screens, to help reduce the visual impact of pit or quarry operations and protect natural features such as shoreline and streambeds. The terms of the Act also allow for public participation in decisions related to aggregate operations and their environmental impact, and require public notice and consultation on new operations."²

Discussion

Although there are limitations to the ARA, it is generally regarded as an effective and positive piece of legislation to address key site specific environmental concerns regarding aggregate extraction because it contains protection for communities faced with pit and quarry operations and includes setback distances for neighbouring uses, visual screening of the operation, and the necessity for a closure plan in addition to hours of operation and haul routes. In considering whether a licence should be issued or refused, the Minister considers a wide range of environmental, technical and site specific factors.

Critics of the ARA note that the Act is basically self regulated by the industry with only limited audits undertaken by the Province. Pits and quarries are also evaluated in isolation and the cumulative effect of multiple operations is generally not considered in the review. In addition, more and more, municipalities are finding that the financial compensation received for damage to roads is not sufficient to cover the cost of damages and they also have expressed concern with the implementation of the Act. In summary, some of the advantages and disadvantages of the Act are highlighted below.

Advantages of the ARA include:

- 1) A site-specific, comprehensive environmental review of all applications by the Province;
- 2) A level playing field for all operators;
- 3) Enforcement by the Province; and
- 4) Municipal compensation for damage to area roads.

Disadvantages of the ARA include:

- 1) Reduced local control over the review, approval and enforcement of pit and quarry operations;
- 2) Increased cost of operation to small operators;

² <http://www.mnr.gov.on.ca>

- 3) Increased bureaucracy relative to the average size of operations in Muskoka; and
- 4) Inability of the ARA to take a strategic approach to aggregate development, including addressing the cumulative effects of multiple operations.

Industry Response

The aggregate industry, especially in southern Ontario, has experienced significant difficulty in developing new pits and quarries because of public opposition. As a result, they have established a new association in conjunction with key environmental organizations to develop mutually acceptable industry standards. The Socially and Environmentally Responsible Aggregate Association (SERA) is a not-for-profit organization that aims to create, administer and promote widespread support for certification of responsibly sourced construction materials, with an initial focus on responsibly sourced aggregates.

The Muskoka Watershed Council applauds the effort of industry to work with local environmental and community groups to develop standards for aggregate extraction that address many of the concerns expressed in this paper.

It is the position of the Muskoka Watershed Council that:

- 1) The Province amends the Provincial Policy Statement to require a regional strategic level analysis of provincial, regional and local aggregate needs. The strategic analysis should identify:
 - a) Deposits of both consolidated and unconsolidated aggregate resources of provincial significance;
 - b) Sufficient areas to meet the present and long-term need while taking into consideration environmental issues, infrastructure investment and other land use priorities;
 - c) Priority aggregate deposits for protection and areas where extraction should be restricted in order to best meet the needs of the community and the province; and
 - d) The cumulative effect of extraction operations on the socio-economic and environmental values of the area.
- 2) Where aggregate deposits are not of provincial significance, that the Province amend the PPS to require new extractive operations to be considered in accordance with regional long-term values and interests.
- 3) The Province amend the Provincial Policy Statement to redefine the terms *Mineral aggregate operation* and *Mineral aggregate resources* to specifically exclude aggregate extraction for use as dimensional stone.
- 4) The Province properly fund background studies for a regional strategic analysis including the completion of the unconsolidated aggregate mapping for Muskoka.
- 5) The Province amend the Aggregate Resources Act (ARA) to require that cumulative environmental effects be analyzed and addressed. The Act does a reasonable job of assessing local environmental impacts but does not address the cumulative environmental impacts.

- 6) The Province properly funds the ARA for proposal review and enforcement. The level of detail in the ARA Class license requirements is good; the underlying issue is the lack of provincial resources for review, enforcement and rehabilitation.

MUNICIPAL POLICY FRAMEWORK

District of Muskoka Official Plan

The Muskoka Official Plan only permits pits and quarries on lands located within the rural designation. Pits and quarries are not permitted in the Waterfront, Community, or Urban Centre designations. Aggregate resources of primary and secondary significance are to be protected from incompatible uses to allow for potential future extraction. The plan is silent as to whether this policy relates to consolidated or unconsolidated material; however, the relevant schedule identifies only unconsolidated material. This policy ambiguity leaves it open for interpretation when it comes to consolidated material and quarry operations.

The plan goes on to provide some guidance in the development of new operations stating that operations should:

- Minimize the impact on natural, social, and manmade environments and in particular water features should be protected.
- Prohibit extraction that will remove 'significant' landscape feature, especially where the removal may impact tourism.

This policy approach is a start to recognizing the connected social, economic and environmental aspects of the aggregate industry in Muskoka and can likely address most situations where the operation is for unconsolidated material. The regulation of consolidated granite may require additional policy to address potential conflicts in use.

Local Official Plans

The Area Municipalities in Muskoka and adjacent municipalities in the watershed identify and protect aggregate resources through their official plans, although the level of protection varies between municipalities and generally does not specifically address unconsolidated material. Local policy requires that new applications for pits and quarries submit supporting documentation that assesses and evaluates impacts on wildlife, natural features, surface drainage, groundwater, surrounding land uses and visual landscapes. Development proposed adjacent to an existing aggregate area may also be required to demonstrate long-term compatibility including, but not limited to, the impact of traffic, dust, and surface drainage on the proposal.

Municipal Zoning By-laws

Pits and quarries are generally zoned as 'Industrial Extractive' in municipal zoning by-laws. This zone limits the use to activities that are compatible with the aggregate operation and

establishes setbacks and requires buffers to reduce land use conflicts with adjacent uses. Municipalities are encouraged to review pit and quarry applications in parallel with the required application under the ARA in order to ensure that land use issues for the full site can be properly addressed and regulated.

Municipal Pit and Quarry By-laws (Municipal Act)

The Municipal Act enables local municipalities to pass by-laws regulating pit and quarry operations in areas not designated under the Aggregate Resources Act (ARA). As Muskoka and adjacent municipalities are now regulated under the ARA, this Act is not pertinent to the area.

Discussion

Muskoka Official Plan Policy

A comprehensive planning and resource management strategy that addresses both consolidated and unconsolidated aggregate resources for the watersheds totally or partially within the District of Muskoka is required to make the best land use decisions with respect to aggregate extraction as it impacts other socio-economic and environmental concerns. This strategy should be based on sound knowledge of the mineral aggregate resource base at both the local and regional levels.

The establishment of demand for aggregates in Muskoka and the surrounding area has been challenging. Given the proximity to large markets, accessibility to major transportation routes, and the topography, it is anticipated that aggregate operations will expand. The establishment of the supply of aggregates has also been difficult. However, within the last few years, the Province has completed and mapped all the unconsolidated aggregate deposits in the watershed, which will help facilitate better long-term planning for that sector of the industry, including the identification and assessment of its cumulative impact.

No similar study has been conducted for consolidated aggregate. As much of Muskoka is underlain with granite the potential for stone quarries is very real. Additional policy work is required to understand the future potential impact of granite quarries in Muskoka.

The District Municipality of Muskoka and the Area Municipalities should work with both local and provincial agencies to prepare a comprehensive strategy, within the limitations of the available data, for the watersheds of Muskoka. The impact of cumulative development on other socio-economic and environmental issues should be addressed and policy recommendations that provide a balance between aggregate extraction and other local core values should be considered.

Local Official Plan Policy

Historically local regulation tended to be cumbersome with a combination of official plan policy, limited zoning, Municipal Act regulations and securities in order to achieve the level of protection desired by local councils and the community at large for the protection of local socio-economic and environmental values while still facilitating good aggregate development. Under the ARA these onsite controls are now more effectively addressed by the province. Most Area Municipal official plans still need to be updated to reflect the regulation of Muskoka under

the ARA. These official plans may identify pits and quarries as a use of land and regulate their location.

Other issues that should be addressed through the planning process include:

- 1) Preparation of an aggregate strategy, based on a regional level analysis in cooperation with the District of Muskoka that addresses cumulative impacts on a broad range of socio-economic and environmental factors. This strategy should address both large and small-scale operations, as well as commercial and private use.
- 2) Specific zoning that reflects the type of extractive use in order to recognize the varying extraction methods associated with different types of materials. For example, the extraction of dimensional stone may require significant blasting while the removal of loose aggregate does not.
- 3) Updating of zoning by-law provisions to limit extraction to the operating area of the subject property, encourage pit and quarry operations to locate in areas already serviced by necessary infrastructure, and to specifically zone for types of aggregate operations.

It is the position of the Muskoka Watershed Council that:

- 1) Municipalities within the watersheds of Muskoka develop a comprehensive, strategic vision of the aggregate resource and extractive operations that is compatible with other social, economic, land use and environmental interests while being mindful of provincial legislation, regulation, direction and priorities. This strategy should address both large and small-scale operations, as well as commercial and private use.
- 2) Areas of no extraction and areas of limited extraction be identified. It is recommended that net replacement ratios where operations are proposed in areas of limited extraction be implemented.
- 3) Aggregate resource operators undertake aggregate extraction in accordance with the best practices developed by the Socially and Environmentally Responsible Aggregate association.
- 4) Municipalities consider new extractive operations in accordance with regional and local long-term values and interests, where aggregate deposits are not of provincial significance.
- 5) Municipal official plans be updated to require a regional level analysis of provincial, regional and local aggregate needs that identifies the following:
 - a) Appropriateness of the location with respect to municipal infrastructure such as roads;
 - b) Impact on wildlife or other sensitive features, including wildlife corridors and habitat fragmentation;
 - c) The cumulative impact of the proposed pit and quarry on the socio-economic and environmental values of the area;
 - d) Visual impacts, including existing and final contours;
 - e) Surface drainage and the potential impact on water quality and quantity of surrounding groundwater and waterbodies;

- f) Potential impact of the pit or quarry on drinking water sources; and
 - g) Clear identification of environmental impacts.
- 6) Zoning by-laws be updated to:
- a) Limit extraction to the operating area of the subject property, thereby requiring a municipal planning review prior to any major expansion;
 - b) Specifically zone for types of aggregate operations; and
 - c) Consider compatibility with surrounding uses and proximity to existing, serviceable roads.
- 7) All municipalities properly fund enforcement.

CRITERIA FOR EVALUATING PIT AND QUARRY LOCATIONS

In considering appropriate areas for aggregate extraction (consolidated and unconsolidated material), Muskoka Watershed Council recommends the follow criteria be used as a guideline.

No aggregate operations be permitted in:

- 1) Provincially Significant Wetlands (PSW's);
- 2) ANSIs (excluding Earth Science ANSIs designated as a result of the underlying geology and related resource uncovered by aggregate operations);
- 3) Provincial Parks, National Parks, and Crown land conservation reserves; or
- 4) Habitat of Endangered and Threatened species except in accordance with provincial and federal requirements.

Where the following features exist, any proposed aggregate operation should be carefully scrutinized and proceed only if all ecological concerns are addressed and compensation, as proposed in Table 1, is secured.

- 1) Key hydrologic features as defined in District and local official plans;
- 2) Habitat of rare and special concern species;
- 3) Fish habitat in accordance with provincial and federal requirements;
- 4) Significant Wildlife Habitat as defined in District and local official plans; or
- 5) Undeveloped natural areas of 5,000 ha or greater as identified in District and local official plans.

Based on the draft standards prepared by SERA, replacement ratios for different ecological values impacted by aggregate operations in the watershed are proposed (see table 1). The main goals and objectives of offset ecological restoration are to:

- Create replacement features, functions and linkages on-site or in a functionally adjacent area, except where greater benefit is achieved by selecting more distant locations within the same ecological region;

- Replace with the same feature types except where replacement with another type would provide greater benefit while ensuring that “net gain” benefits are not realized years or decades into the future; and with respect to habitat, improve overall habitat, create new habitat of importance to the species, conduct research to improve knowledge of the species, and implement conservation easements for long term habitat protection; and
- Base the ecological design on a site-by-site evaluation, considering functional losses, landscape setting, quality, unique values, and land values.

Table 1: Expected replacement ratios for different ecological values impacted by aggregate operations.

Landscape Feature	Replacement Ratio (Removed : Replaced)
Key hydrologic features	For every 1 ha removed 1.5 ha should be created
Habitat of rare and special concern species	For every 1 ha removed 1.5 ha should be created
Fish habitat in accordance with provincial and federal requirements	For every 1 ha removed 1.5 ha should be created
Significant Wildlife Habitat subject to defined removal and replacement approach described in this document	For every 1 ha removed 1.5 ha should be created
Areas 5,000 hectares or greater	For every 1 ha removed 1 ha should be put into long term protection

CONCLUSION

The District of Muskoka and the surrounding watershed municipalities are an attractive and eminently livable region of Ontario with a distinctive character. In considering the development of the aggregate resource of the area, a number of guidelines must be created to ensure that the unique natural and built character is maintained and enriched. Aggregates and extractive operations are critical to the economic development potential of the watersheds. Insufficient aggregate or aggregate that is not readily accessible will slow or stall economic growth; conversely, indiscriminate extraction may destroy the very scenic and natural areas that are the economic drivers of the region. Finding an appropriate balance is critical since the decisions made today will determine the health of the watershed for generations to come.

An aggregate strategy should be developed to ensure Muskoka's healthy natural environment, its dynamic built environment, and its economic base are sustainable in the future. The cumulative effect of proposed aggregates and extractive operations could then be evaluated within an established framework and policies and programs at the area, district and provincial levels could be designed to address issues on both a site-specific and comprehensive basis.

GLOSSARY

Mineral aggregate resources: gravel, sand, clay, earth, shale, stone, limestone, dolostone, sandstone, marble, granite, rock or other material prescribed under the Aggregate Resources Act suitable for construction, industrial, manufacturing and maintenance purposes but does not include metallic ores, asbestos, graphite, kyanite, mica, nepheline syenite, salt, talc, wollastonite, mine tailings or other material prescribed under the Mining Act.

Primary aggregate resources: represent areas in which a major resource is known to exist, and may be reserved wholly or partially for extractive development and/or resource protection.

Secondary aggregate resources: contain significant amounts of sand and gravel and should be considered as part of the overall aggregate supply of the area.

Tertiary aggregate resources: are not considered to be important resource areas because of their low available resources or because of possible difficulties in extraction. Such areas may be useful for local needs or extraction under a wayside permit, but are unlikely to support large-scale development.