

July, 2006

Ministry of Natural Resources

Environmental Bill of Rights – File No. R2003008

Review of the Aggregate Resources Act  
with respect to

**“Rehabilitation of land from which aggregate has been  
excavated”**



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## Summary

On November 12, 2003, MNR received, from the Environmental Commissioner of Ontario's (ECO) office, an application for review (File No. R2003008) under the *Environmental Bill of Rights* (EBR). MNR determined that the public interest warranted a Ministry review of the matters raised in the application.

The review applicants allege that less than half of the lands disturbed in aggregate operations in the last decade have been rehabilitated as required. Consequently, the review applicants believe that the intention of the *Aggregate Resources Act* (ARA), is not being achieved and the applicants are requesting that the ARA be enforced and modified to provide rehabilitation in a more open and accountable manner. The review applicants requested a review of the existing provisions of the ARA with respect to:

- The purpose of the Act (as it relates to rehabilitation and in particular to section 2(c));
- Section 48 regarding rehabilitation; and
- Section 6.1 (as it relates to the Aggregate Resources Trust and rehabilitation security deposits).

In addition to requesting a review of the above provisions of the ARA, the review applicants identified the following concerns:

- Statistics show that rehabilitation over the past ten years is being exceeded by newly disturbed area, therefore, the intent of the Act is not being met;
- Rehabilitation security deposits are required as an incentive system to promote rehabilitation; and
- The partnership arrangement with the Ontario Stone, Sand and Gravel Association (OSSGA) (formerly the Aggregate Producers' Association of Ontario) and The Ontario Aggregates Resources Corporation (TOARC) violates MNR's Statement of Environmental Values (SEV) pledge for openness with the public.

In accordance with the EBR, MNR undertook a review and the review has concluded that:

- The fundamental principles of the ARA, and the specific sections of the Act, provide a solid foundation for achieving the purpose of carrying out progressive and final rehabilitation of aggregate sites.
- The ARA has the enforcement tools necessary for aggregate inspectors to ensure that progressive rehabilitation is carried out according to the ARA, the regulations, the site plan, and the condition(s) of the licence or permit. The tools available include the use of suspensions, charges, and subsection 48(2) Minister's Orders (the latter being the preferred method to enforce the aggregate industry's requirement to perform progressive rehabilitation);
- Although there are many examples of companies performing excellent progressive rehabilitation, it is apparent that a significant component of the aggregate industry is not making sufficient efforts to progressively rehabilitate their aggregate sites as evidenced by an inventory of licences conducted on the Oak Ridges Moraine and from discussions held with aggregate inspectors. The

report recommends for sites, where the site plan does not have specific requirements to progressively rehabilitate or is sufficiently vague or too flexible as to render the plan unenforceable, the use of site plan amendments to more definitively establish the timing of rehabilitation requirements for some sites;

- Newly disturbed area has exceeded the area rehabilitated for the ten-year period examined but not to the extent (2:1 ratio) alleged by the applicants. The review applicants' analysis did not consider all extenuating factors including regulating additional areas of the province disturbed prior to being regulated under the ARA, lack of integrity in the data (i.e. unreliable/unsubstantiated), and the failure of rehabilitation data to capture licences surrendered within a calendar year. MNR believes that the statistics do not indicate a significant increasing trend in disturbed area over the past ten years once all relevant factors are considered. However, the extent that these individual factors affected the actual ratio is uncertain as MNR did not maintain a statistical database to document areas disturbed at the time the sites were designated under the ARA;
- MNR, in collaboration with key stakeholders, will examine in detail, within 2 years, the merits of a rehabilitation incentive system, including the re-introduction of the former rehabilitation security deposit system.
- There has been a lack of rehabilitation of revoked sites being performed by TOARC. The existing authority under the ARA or within the MNR/TOARC agreement (hereinafter referred to as the Indenture Agreement) does not allow MNR to direct TOARC or the Management of Abandoned Aggregate Properties (MAAP) program staff to undertake rehabilitation of specific sites. MNR has been assured by the Board that TOARC will be rehabilitating more of these sites in the future. The report recommends that MNR continue to monitor the rehabilitation efforts of sites where licences have been revoked, and if required, seek an amendment to the Indenture Agreement (including whether the current governance structure of the Board is appropriate), to ensure that satisfactory results are achieved, in co-operation with TOARC and the OSSGA.
- The allegations that the transparency of The Ontario Aggregate Resources Corporation (TOARC) is not adequate and that MNR's partnership with TOARC violates MNR's SEV for openness, were both determined to be unfounded. TOARC is transparent in its dealings under the ARA and in its relationship with the MNR. This relationship is not in violation of the Ministry's SEV. TOARC's, Board of Directors (consisting of eight members representing a variety of interest groups) publishes quarterly reports and an annual report with respect to the Corporation and the Trust in accordance with an Indenture Agreement. TOARC also produces an annual report regarding the Abandoned Pits and Quarries Rehabilitation Fund; known as the MAAP program. MNR recognizes and supports the need to ensure transparent public access to information and data about environmental performance. The report recommends that MNR seek an amendment to the Indenture Agreement to ensure transparent public access to as comprehensive a range of information and data as possible by applying the principles of the Freedom of Information and Protection of Privacy Act (FIPPA) to all TOARC Board decisions (including how sites are evaluated and selected for rehabilitation). In addition, public transparency may be further increased by

- broadening the partnership with the scientific, research and technical communities.
- The existing rehabilitation data does not allow MNR to accurately analyze the effectiveness and efficiency of the existing management of rehabilitation efforts across the province. The report recommends changes to improve the reliability of the data including recommendations related to:
    - more education and training for industry;
    - establishing mechanisms for data sharing between TOARC and MNR;
    - the creation of base-line data;
    - the use of new technologies (i.e. GIS technology, satellite imagery) to determine landscape changes (i.e. disturbed area) within licenced and/or permitted sites and to track those changes over time. A pilot project will be established for sites within the GTA, by April 1, 2007;
    - the feasibility of developing an electronic filing system for the compliance assessment reports and improving efficiencies to data management for new licence and permit applications and existing reporting requirements under the ARA (e.g. production, rehabilitation) by April 1, 2007; and
    - developing mechanisms by April 1, 2006 to improve the accuracy of reported rehabilitation information including the merits of requiring licensees and permittees to annually report (i.e. rehabilitation report) on their compliance with respect to their rehabilitation requirements.
  - Transparent public reporting plays a key role in driving the transition of companies, industries, and economies towards the ultimate goals of continuous improvement and sustainable development. This strategy should also increase industry awareness of their responsibilities and act as a deterrent to those poorly performing members of the aggregate industry. The report recommends the creation of a central database of sites where rehabilitation orders have been issued and for MNR to provide a list of these sites on their internet website, by December 2006.
  - Additional matters for improvement will be considered by the government including options to address limited (and decreasing) capacity (staff and support dollars) which has challenged the ministry's ability for inspection and enforcement obligations. To be effective, an integrated environmental compliance assurance strategy must maintain a strong abatement and enforcement presence and be backed up by the threat of credible enforcement action. Amendments to the ARA and the regulations may also be required, depending on which options are implemented to promote/ensure rehabilitation, and improve its reporting, monitoring and enforcement. MNR will undertake an assessment of its capacity for monitoring and enforcement including ensuring the rehabilitation of sites by April 1 2007.
  - MNR is more actively issuing orders and shifting the focus to rehabilitation as a priority. For example, in fiscal years 2003-2004 and 2004-2005, 15 and 26 rehabilitation orders were issued, respectively, in contrast to the previous year when only 4 orders were issued. However, even without solid data, it can be argued that many more rehabilitation orders are required.

Recent government initiatives such as the policies of the Oak Ridges Moraine Conservation Plan and the Greenbelt Plan, which require strict adherence to enhanced rehabilitation standards including maximizing rehabilitation areas and minimizing disturbed area on an on-going basis during the life-cycle of aggregate operations, and determining the maximum allowable disturbed area for each of the existing 88 mineral aggregate operations within the Protected Countryside Area of the Greenbelt Plan, demonstrates the governments' renewed commitment to rehabilitation and ensuring the protection of the environment. MNR has also recently implemented a new compliance leadership model that will improve how MNR carry out compliance activities and realign enforcement services to support government priorities and the strategic direction and priorities outlined in MNR's "Our Sustainable Future" document. Changes to be implemented include: establishing an integrated "Compliance Steering Committee" and the development of an improved framework to support risk-based compliance planning. Better risk assessment will ensure enforcement resources are focused and in support of MNR's strategic priorities.

## **1.0 Background:**

### **1.1 EBR Application for Review**

In accordance with section 61 of the *Environmental Bill of Rights (EBR)*, two residents in Ontario who believe that a policy, act, regulation or instrument should be amended, repealed or revoked in order to protect the environment may apply to the Environmental Commissioner of Ontario (ECO) to request a review.

On November 12, 2003, MNR received from the office of the ECO an Application for Review – File No. R2003008 under the *Environmental Bill of Rights (EBR)*. MNR determined that the public interest warranted a Ministry review of the matters raised in the application. The review applicants allege that less than half of the lands disturbed in aggregate operations in the last decade have been rehabilitated as required. Consequently, the review applicants believe that the intention of the Aggregate Resources Act (ARA), is not being achieved and the applicants are requesting that the ARA be enforced and modified to provide rehabilitation in a more open and accountable manner. The applicants requested that MNR undertake a review of certain aspects of the ARA (see section 1.2).

### **1.2 Scope of Review Request:**

In accordance with the EBR, this review focused on the specific concerns raised by the applicants in their request for review and the sections specified were reviewed in the context of whether or not the ARA should be amended, repealed or revoked.

The applicants have requested a review of the existing provisions of the ARA with respect to:

- The purpose of the Act (as it relates to rehabilitation and in particular to section 2(c));
- Section 48 regarding rehabilitation; and
- Section 6.1 (as it relates to the Aggregate Resources Trust and rehabilitation security deposits).

The purposes of the ARA are stated under section 2 as follows:

#### **Aggregate Resources Act, Purposes of Act**

2. The purposes of this Act are,
- (a) to provide for the management of the aggregate resources of Ontario;
  - (b) to control and regulate aggregate operations on Crown and private lands;
  - (c) to require the rehabilitation of land from which aggregate has been excavated; and
  - (d) to minimize adverse impact on the environment in respect of aggregate operations. R.S.O. 1990, c. A.8, s.2.

Section 48 of the ARA states:

**Aggregate Resources Act, section 48**

**Duty to rehabilitate site**

48. (1) Every licensee and every permittee shall perform progressive rehabilitation and final rehabilitation on the site in accordance with this Act, the regulations, the site plan and the conditions of the licence or permit to the satisfaction of the Minister. R.S.O. 1990, c. A.8, s. 48 (1).

**Minister's order requiring rehabilitation**

(2) On being satisfied that a person is not performing or did not perform adequate progressive rehabilitation or final rehabilitation on the site in accordance with subsection (1), the Minister may order the person to perform, within a specified period of time, such progressive rehabilitation or final rehabilitation as the Minister considers necessary, and the person shall comply with the order. 2000, c. 26, Sched. L, s.1 (5).

ARA section 6.1 states the terms of the Aggregate Resources Trust (the Trust) as follows:

**Aggregate Resources Trust**

6.1 (1) The Minister shall establish in writing a trust to be known in English as the Aggregate Resources Trust and in French as Fonds des ressources en agregats. 1996, c. 30, s. 4.

**Terms of Trust**

- (2) The Trust shall provide for the following matters, on such terms and conditions as may be specified by the Minister:
1. The rehabilitation of land for which a licence or permit has been revoked and for which final rehabilitation has not been completed.
  2. The rehabilitation of abandoned pits and quarries, including surveys and studies respecting their location and condition.
  3. Research on aggregate resource management, including rehabilitation.
  4. Payments to the Crown in right of Ontario and to regional municipalities, counties and local municipalities in accordance with the regulations.
  5. Such other matters as may be specified by the Minister. 1996, c. 30, s. 4.

**Trustee**

(3) The Minister shall appoint a person who is not employed by the Crown as trustee of the Trust and may provide for the trustee's remuneration from the funds of the trust. 1996, c. 30, s. 4.

ARA section 6.1 specifies the trust's obligations with respect to rehabilitation security accounts as follows:

**Transfer from former rehabilitation security accounts [section 6.1]**

- (11) On the day section 4 of the Aggregate and Petroleum Resources Statue Law Amendment Act, 1996, comes into force, all money held in an account described in section 52 of the Act, as it read immediately before the coming into force of section 4, is transferred to the Trust. 1996, c. 30, s. 4.
  
- (12) On or before the first anniversary of the coming into force of section 4 of the Aggregate and Petroleum Resources Statue Law Amendment Act, 1996, the Trust shall refund to the person in whose name the account was held such amount to the Minister may direct. 1996, c. 30, s. 4.

In addition to requesting a review of the above provisions of the ARA, the review applicants identified the following concerns:

- Statistics show that rehabilitation over the past ten years is being exceeded by newly disturbed area, therefore, the intent of the ARA is not being met;
- Rehabilitation security deposits should be reinstated as an incentive system to promote rehabilitation; and
- The partnership arrangement with the OSSGA and TOARC violates MNR's SEV pledge for openness with the public.

Each of these concerns is individually considered in the balance of this review report.

### **1.3 The Aggregate Resources Program**

To understand the scope of aggregate resource extraction and rehabilitation issues in the Province of Ontario, it is also important to understand the Aggregate Resources Program and the applicable statutes which guide the management and rehabilitation of aggregate sites (see sections 1.3 to 1.4).

In 2004, aggregate production in the province totaled approximately 173 million tonnes. Of the 173 million tonnes produced in 2004, 150 million tonnes were produced under licences, 7 million tonnes under aggregate permits, 4 million tonnes by the forest industry and an estimated 12 million tonnes from private land in areas of the province that are not regulated under the Aggregate Resources Act. Aggregate resources are key ingredients in the production of construction products (e.g. ready-mix concrete, concrete blocks, asphalt pavements, building stone products), and in the manufacture of pharmaceutical, cosmetic, paint and plastic products. Approximately 60 % of the aggregate produced is consumed by government (municipal and provincial).

The aggregate industry employs an estimated 7,000 people directly and some 34,000 people indirectly in sectors such as transportation and suppliers of processing,

extracting, hauling and ancillary equipment. Aggregates also provide the basis of a \$30 billion construction industry that employs over 270,000 people in Ontario.

MNR has primary responsibility for the management of aggregate resources in Ontario. MNR's Aggregate Resources Program is largely focused on:

- minimizing adverse impacts of aggregate operations on the environment and contributing to ecological sustainability by administering the provisions of the ARA; this includes the role of inspections and enforcement efforts by MNR inspectors to ensure compliance;
- influencing land-use planning decisions to ensure that any consideration of aggregate resources is balanced between protection and availability; and
- ensuring Ontarians receive a fair return for use of Crown-owned aggregate resources.

Legislative direction for the Aggregate Resources Program comes from the ARA.

The ARA outlines the necessary requirements throughout the life-cycle of an aggregate operation, including public consultation, monitoring, inspection, enforcement and site rehabilitation.

All aggregate operations on Crown land are automatically subject to the requirements of the ARA. An aggregate site on private land is only subject to the requirements of the ARA if the site is in an area designated, by regulation, under the Act. At present, private lands in most of southern Ontario are designated under the ARA; the only private lands currently designated in northern Ontario are in the Sudbury, Wawa and Sault Ste. Marie areas (refer to Map 1).

There are approximately 2800 pits and quarries under licence on private land in designated areas and 3200 under permit on Crown land.

Mineral aggregates are a non-renewable resource and critical to the province's social and economic well-being and to fostering vibrant, strong communities. The wise management of this resource is fundamental for housing and infrastructure (e.g. roads and utility corridors) that will be needed to support growth and development in the future.

Map 1



Administration of the provincial Aggregate Resources Program involves the following functions:

- processing applications for licences, permits, transfers, site plan amendments (the site plan is the primary instrument used by MNR to regulate how an aggregate extraction site is operated and rehabilitated), and issuing related documents;
- to work with stakeholders and the public to ensure that aggregate operations are in environmental compliance;
- collection and administration of overdue fees and royalties paid under the ARA;
- inspections and audits of aggregate operations;
- compliance and enforcement (e.g. suspensions, revocations, orders and prosecution under the ARA);
- protecting existing aggregate operations and mineral aggregate resources for future availability through the land-use planning process;
- participation in Ontario Municipal Board (OMB) hearings (for private land), or Mining and Lands Commission (MLC) hearings (for Crown land), in cases involving the ARA;
- management of the interrelationship between MNR and the Aggregate Resources Trust;
- review, development and implementation of policies, procedures and statutory changes governing the management of aggregate resources within the Province of Ontario; and
- administration of other aspects of the Aggregate Resources Program (e.g. complaint resolution, education and training).

There are presently 30 positions administering the Aggregates Resources Program across Ontario that are distributed as follows:

- 6 aggregate technicians for administration of approximately 3200 aggregate permits on Crown land, primarily in northern Ontario;
- 17 aggregate inspectors for administration of approximately 2800 aggregate licences and permits on private land, primarily in southern Ontario;
- 7 positions in the Aggregate and Petroleum Resources Section in Peterborough. In addition to a manager and an administrative person, this group includes a senior policy advisor; a policy officer, aggregates; a policy officer, planning; and two policy analysts. These staff:
  - develop guidelines and standards;
  - develop policy, procedures and legislation with respect to the management of aggregate resources;
  - provide interpretation to field staff, industry, the public and senior management;
  - participate in education and training; and
  - liaise with stakeholders and other ministries, boards and agencies.

The review applicants are concerned primarily with the program objective, of minimizing environmental impacts of aggregate extraction through the rehabilitation of pits and quarries.

## **1.4 Applicable Statutes:**

### **1.4.1 Aggregate Resources Act (ARA):**

The ARA provides for strict protection of the environment and, where applicable, requires technical studies on noise, dust, natural environment, cultural heritage, and for extraction proposals below the water table, a hydrogeological assessment.

In 1996, the government's emphasis was on re-engineering provincial ministry programs and exploring opportunities for public-private sector partnerships. In 1997, Bill 52, the *Aggregate & Petroleum Resources Statute Law Amendment Act*, was proclaimed to reflect a strategic shift in government and industry roles for the aggregate industry. MNR retained its role of enforcing legislation, approving extraction applications and setting provincial standards.

The aggregate industry, under Bill 52, became more self-reliant and responsible for self-reporting on their compliance. A self-assessment compliance reporting system was developed whereby the industry annually reports to MNR and the respective municipalities on its compliance with the ARA, the regulations, the site plan, and the conditions of the licence. Progressive and final rehabilitation is now a mandatory requirement of the Act. A significant change in the Act was the creation of an alternative service delivery relationship whereby the Aggregate Resources Trust, performs administrative and financial functions previously performed by MNR, including tonnage production documentation, invoicing and collection of licence fees and rehabilitation security, distribution of fees and royalties, initiating research activities and rehabilitating abandoned pits and quarries using specially designated funds. TOARC's function includes the administration of the Management of Abandoned Aggregate Properties (MAAP) program in which the legacy of abandoned pits and quarries from the pre-regulation era are rehabilitated. TOARC, through an agreement with the MNR, acts as the Trustee for the Aggregate Resources Trust. The corporation's sole shareholder is the OSSGA.

Another significant change in 1997 was to replace the former rehabilitation security deposit system with a pooled rehabilitation fund. The former system saw the government holding approximately \$60 million in rehabilitation security distributed between more than 5000 accounts, one for each pit and/or quarry site. In 1997, approximately \$48 million in security deposit money was refunded to licensees and permittees and the remaining \$12 million was dedicated to a single pooled fund managed by TOARC. Licensees and permittees are still responsible for the full cost of rehabilitating their sites. The money retained by TOARC, and the investment income from it, is intended to fund the corporation and to administer the responsibilities that were agreed upon in the Indenture Agreement between TOARC and MNR, and section 6.1 of the ARA.

### 1.4.2 Planning Act:

Part 1, section 2 (c) of the *Planning Act* (PA) outlines provincial interests and specifically “the conservation and management of natural resources and the mineral resource base”. This recognition in the Act is further supported by a Provincial Policy Statement (PPS) on mineral aggregates.

The PA and the PPS, which is given legal effect under section 3 of the PA, are important tools in the implementation of the ARA. The location of aggregate extraction is controlled through the zoning by-law of an individual municipality, in conjunction with their Official Plan. Conflicts sometimes arise on the best use of lands and MNR involvement is required to bring knowledge and expertise to planning matters related to aggregates. The Ministry of Municipal Affairs and Housing (MMAH) has adopted a “one window” approach in plan review. However, the responsibility to provide details on mineral aggregate deposits and their protection is often deferred to MNR.

Given that land-use planning is a municipal responsibility and the implementation of the ARA is provincial, differences, largely with respect to future land uses, may result in an OMB hearing under the ARA and/or the PA.

The PA is an important tool, with respect to aggregate operations, because it determines where a pit or quarry will be established.

### 1.4.3 Other Acts:

The ARA places considerable responsibility on both applicants and respondents under the application process to undertake specified actions within prescribed timeframes.. The legislation requires significant information on many aspects of the environment, including cultural and heritage resources. Technical studies and reports may also be required under other provincial or federal legislation. A summary of other legislation affecting aggregate extraction is presented in the following table:

<u>Legislation</u>	<u>Purpose</u>	<u>Effect on Aggregate Extraction Activities</u>
<i>Environmental Protection Act</i>	<ul style="list-style-type: none"> <li>To provide for the protection and conservation of the natural environment</li> </ul>	<ul style="list-style-type: none"> <li>Dust emissions must meet the standards as set out in Regulations</li> <li>Noise is considered a contaminant and should meet the requirements under the Municipal Noise Control By-law</li> <li>Regulates crushers, asphalt plants, concrete-batching plants, screeners, drilling and blasting etc.</li> </ul>
<i>Ontario Water Resources Act</i>	<ul style="list-style-type: none"> <li>To provide for the protection of water supplies</li> </ul>	<ul style="list-style-type: none"> <li>Aggregate operations require permits to take water and discharge water off site</li> </ul>
<i>Occupational Health and Safety Act</i>	<ul style="list-style-type: none"> <li>Identifies the responsibilities of owners, constructors, employers and employees in all matters of health and</li> </ul>	<ul style="list-style-type: none"> <li>Requires protection for inadvertent access to a pit or quarry</li> <li>Regulates the maximum vertical heights of pit &amp; quarry faces</li> </ul>

	safety.	<ul style="list-style-type: none"> <li>Regulates the storage of explosives and magazines containers</li> <li>Provides for worker safety around equipment</li> </ul>
<i>Conservation Authorities Act</i>	<ul style="list-style-type: none"> <li>To establish a program to conserve, restore, develop and manage watersheds</li> </ul>	<ul style="list-style-type: none"> <li>Restricts alterations to rivers, streams, and creeks through the Lakes and Rivers Improvement Act, administered by the Conservation Authority</li> </ul>
<i>Endangered Species Act</i>	<ul style="list-style-type: none"> <li>Provide for the conservation, protection, restoration and propagation of species of fauna and flora that are threatened with extinction</li> </ul>	<ul style="list-style-type: none"> <li>Approximately 1600 species have been catalogued as being at risk</li> <li>29 have been listed as endangered (e.g. Loggerhead Shrike, Blue Racer Snake, Bald Eagle, Prickly Pear Cactus, American Ginseng)</li> </ul>
<i>Public Transportation and Highway Improvement Act</i>	<ul style="list-style-type: none"> <li>Placing structures or buildings adjacent to a Class 1 highway</li> </ul>	<ul style="list-style-type: none"> <li>Regulates the approval of entrances and exits to a pit or quarry site adjacent to provincial highways through a permit process</li> </ul>
<i>Technical Standards and Safety Act</i>	<ul style="list-style-type: none"> <li>To enhance public safety by providing for efficient and flexible administration of technical standards</li> </ul>	<ul style="list-style-type: none"> <li>Regulates placement of fuel storage tanks and fuel handling in aggregate sites</li> </ul>
<i>Environmental Bill of Rights (EBR)</i>	<ul style="list-style-type: none"> <li>To protect and restore the natural environment and to protect people's right to a healthy environment</li> </ul>	<ul style="list-style-type: none"> <li>Requires posting of certain licenced aggregate extraction proposals and decisions on the Environmental Registry under the EBR</li> </ul>
<i>Oak Ridges Moraine Conservation Act</i>	<ul style="list-style-type: none"> <li>To protect the ecological and hydrogeological integrity of the Oak Ridges Moraine area</li> </ul>	<ul style="list-style-type: none"> <li>Restricts development of sand and gravel operation in certain areas</li> <li>Ensures strict adherence to rehabilitation standards</li> <li>No below water extraction can take place on new sites</li> </ul>
<i>Greenbelt Act</i>	<ul style="list-style-type: none"> <li>To provide protection to the land base needed to maintain, restore and improve the ecological and hydrogeological functions of the Greenbelt Area</li> <li>The Greenbelt Plan identifies where urbanization should not occur in order to provide protection to the agricultural land base and the ecological features and functions occurring on this landscape.</li> </ul>	<ul style="list-style-type: none"> <li>Mineral aggregate operations may be subject to additional requirements including enhanced rehabilitation requirements.</li> <li>Restriction of new operations within key natural heritage and hydrogeological features; significant wetlands, significant habitat of endangered and threatened species and significant woodlands.</li> </ul>
<i>Planning Act</i>	<ul style="list-style-type: none"> <li>Provide for land use planning</li> </ul>	<ul style="list-style-type: none"> <li>Must be consistent with provincial policy statements issued under this Act</li> </ul>
<i>Niagara Escarpment Planning &amp; Development Act</i>	<ul style="list-style-type: none"> <li>Provide for the maintenance of the Niagara Escarpment as a continuous natural environment</li> </ul>	<ul style="list-style-type: none"> <li>Strict planning approvals in place</li> <li>Also designated as a "World Biosphere Reserve" by UNESCO</li> </ul>
<i>Migratory Birds Convention Act</i>	<ul style="list-style-type: none"> <li>Protection of migratory birds and nests</li> </ul>	<ul style="list-style-type: none"> <li>Ensures that habitat sites are not disturbed or destroyed during nesting periods (e.g. Swallows, Great Blue Herons)</li> </ul>
<i>Fisheries Act</i>	<ul style="list-style-type: none"> <li>No alteration or destruction of fish habitat</li> </ul>	<ul style="list-style-type: none"> <li>No net-loss of habitat must be demonstrated prior to approval of any aggregate operation</li> </ul>

In addition, other government initiatives with respect to source water protection, and a provincial Growth Plan, will also have implications for resource management and the future availability of aggregate resources.

## **2.0 Discussion of Issues**

### **2.1 Is rehabilitation being undertaken in accordance with the requirements of the Act?**

The applicants believe that annual reported statistics show that new disturbance in licenced pits and quarries exceeds rehabilitation by a ratio of 2:1 over the past ten years and, therefore, the intent of the Act is not being met. They believe that this constitutes a clear, continuing and extensive damage to the environment and that section 48 should be amended so it becomes effective in guaranteeing that rehabilitation actually takes place. In addition, they believe that the appropriate regulations, policies and instruments under section 48 should be revised, instituted and enforced by the MNR to guarantee that the clear intention of accomplishing progressive and final rehabilitations carried out.

The fundamental principles of the ARA, and the specific sections of the Act, provide a solid foundation for achieving the purpose of carrying out progressive and final rehabilitation of aggregate sites.

The life-cycle of aggregate operations is governed by the ARA from design and start-up to completion of extraction and final rehabilitation. The initial approval process involves a rigorous environmental review. A detailed site plan is appended to the licence for each site and provides details on how the site will be sequentially mined and ultimately rehabilitated. Each site plan is designed based on whether the site is a pit or quarry, extraction is above or below the water table and the type of licence (Class A vs. Class B). Quantity and quality of material and the surrounding land uses also play major roles in the development of the site plan and ultimately determine the specific rehabilitation requirements of the site. In designing and approving a site plan to meet the requirements of the ARA (as prescribed in detail under the AROPS), the proponent must address how the site will be progressively rehabilitated (i.e. sequentially during the lifetime of the operation and not just at the end). A progressive rehabilitation schedule is influenced by many factors such as the size and nature of the operation, the depth and variability in quality of the aggregate resource on the site and the intended after-use (e.g. aquatic or terrestrial).

A licence/permit may not be surrendered until rehabilitation has been completed in accordance with the Act, the regulations, the site plan, and the conditions of the licence/permit. MNR is responsible for enforcing ARA rehabilitation requirements on licenced/permitted sites under the ARA. TOARC is responsible for the rehabilitation on sites where the licence/permit has been revoked and for abandoned pits and quarries under the MAAP program (see section 2.2).

There are many examples of companies performing excellent progressive rehabilitation. However, a significant component of the aggregate industry is falling behind as

evidenced by an inventory of licences conducted on the Oak Ridges Moraine and from discussions held with aggregate inspectors, consultants who prepare site plans, and industry staff who implement them. The review of aggregate sites within the Oak Ridges Moraine determined that 39 of 121 sites could be subject to a subsection 48 (2) Minister's Order to require rehabilitation (hereinafter referred to as a subsection 48 (2) rehabilitation order).

The Aggregate Resources Program faces a number of challenges in reliably analyzing the effectiveness and efficiency of the existing management of rehabilitation efforts across the province. Firstly, there is a concern that rehabilitation data, which should be the key performance indicator, may generally not be accurately reported to TOARC by the aggregates industry (see section 2.1.1). MNR Aggregate Inspectors no longer annually inspect each site (previous legal requirement) including verification of the amount of new area disturbed and rehabilitated, or the total areas disturbed and rehabilitated to date. A site might only be inspected once every 5 years or more. Since aggregate inspectors only target a percentage of their sites (priority based on their risk assessment of the site) for annual auditing purposes, it is difficult for MNR to maintain an up-to-date assessment of the situation. Verification by TOARC is also not a viable solution as they have neither the staff nor the mandate to conduct an on-site inspection to verify reported rehabilitation information. Options to improve data reporting and information management are discussed within sections 2.1.1.2 and 2.1.1.3 of this report.

It has been observed by MNR that many site plans could be more definitive regarding progressive rehabilitation. Site plans, especially for pit operations, have often been vague with respect to phasing of operations and hence progressive rehabilitation. This approach is often due to the variability of the quantity of the aggregate resource and therefore the need to blend materials from various parts of the licenced/permitted area.

Another challenge for MNR is ensuring that rehabilitation efforts are being maximized. Where progressive rehabilitation is not voluntarily undertaken by the licensee in accordance with their individual site plan, enforcement action needs to be taken by MNR aggregate Inspectors through the issuance of rehabilitation orders under section 48 of the ARA (see section 2.1.1.4).

The public, during the Greenbelt Task Force stakeholder consultation process, also voiced concerns regarding MNR's Aggregate Resources Program and its capacity to properly administer and enforce the legislation (e.g. rehabilitation requirements). In response, the Greenbelt Task Force made two recommendations to Ministry of Municipal Affairs and Housing (MMAH) related to mineral aggregates. Those recommendations are:

- *“That mineral aggregate extraction in the Greenbelt should be subject to more rigorous requirements for rehabilitation, and more recycling of aggregate material should be strongly encouraged; and that monitoring take place to ensure rehabilitation proceeds as required;” and*

- *“That the province should review the licencing process to facilitate new supply, as well as to ensure the integrity of hydrogeological and ecological systems, and natural features and functions, taking into account the requirement to rehabilitate.”*

(source: Toward a Golden Horseshoe Greenbelt - Task Force Advice and Recommendations to the MMAH - August 2004).

The Greenbelt Act, which was proclaimed on February 25, 2005, authorized the government to establish a greenbelt plan containing broad objectives and detailing the types of land uses that will be permitted and not permitted. The Greenbelt Plan includes lands within the Niagara Escarpment Plan (NEP) and the Oak Ridges Moraine Conservation Plan (ORMCP). More than 1 million additional acres in the Golden Horseshoe region (i.e. land stretching from the Niagara Peninsula in the southwest to Rice Lake in the east) will be protected by the greenbelt, for a total of 1.8 million acres, more than doubling the areas protected by the NEP and ORMCP.

The Greenbelt Plan 2005 (p. 3 and 4) states that:

*“Protected Countryside lands identified within the Greenbelt are intended to enhance the spatial extent of agriculturally and environmentally protected lands currently covered by the NEP and the ORMCP while at the same time improving linkages between these areas and the surrounding major lake systems and watersheds.”*

For new mineral aggregate operations falling within the “Protected Countryside Area”, the plan policies require that the MNR ensure rehabilitated area is maximized and disturbed area is minimized on an on-going basis during the life-cycle of aggregate operations; and rehabilitation efforts contribute to the goals of the Greenbelt Plan. Furthermore, MNR will determine the maximum allowable disturbed area of each of the existing 88 mineral aggregate operations prior to September 2006. Under the authority of the ARA, any excess disturbed area above the maximum will be required to be rehabilitated. For existing operations this will be completed within 10 years from the date of approval of the Greenbelt Plan, and 50% completed within six years.

The Greenbelt Plan requirements could be applied to all existing licenced and permitted sites within the province. However, due to the anticipated increased requirement in resources (i.e. MNR staff time, support dollars), it is considered prudent to treat the Greenbelt Plan approach as a pilot area, at this time, before applying the approach province-wide. To further explain, the Greenbelt plan approach may require a number of site plan amendments. Any site plan amendment request, initiated by MNR, can be appealed, by the licensee, to the Ontario Municipal Board (OMB). Furthermore, the final decision regarding the amendment resides with the OMB. A more practical approach is the issuance of a subsection 48 (2) rehabilitation order (see section 2.1.2). However, there may still be a need on problem sites to amend individual site plans, on a case-by-case basis.

## **Recommendations:**

1. Effective immediately, Aggregate inspectors, through reinforced policy direction, be directed to determine what progressive rehabilitation, in accordance with the site plan, is being performed whenever they are inspecting a pit or quarry to ensure compliance with the Act, the regulations (including the Aggregate Resources of Ontario Provincial Standards (AROPS)), the site plan, and the conditions of the licence.
2. Effective immediately, Aggregate inspectors, when determining inspection priorities, will include sites with historical rehabilitation compliance issues and/or sites with significant portions of the site disturbed as a priority.
3. Effective immediately, Aggregate inspectors, when carrying out the process for approving and/or reviewing a site plan for a new application, will ensure that progressive rehabilitation of the site is clearly illustrated and/or described on the plan and the disturbance of site is minimized.
4. Effective immediately, Aggregate inspectors, undertake a review of the existing site plan while performing an audit of a site, will determine whether the requirement to progressively rehabilitate the site is enforceable. For problem sites, where the site plan does not have this specific requirement or is sufficiently vague or too flexible as to render the plan unenforceable, MNR will initiate a site plan amendment request.
5. The Greenbelt Plan will be treated as a pilot area to assess whether the approach should be applied province-wide (to all existing aggregate operations).

### **2.1.1 Related Issues:**

#### **2.1.1.1 Data Integrity and Rehabilitation Statistics:**

The applicants' arguments regarding rehabilitation of pits and quarries on private land in "designated" areas of the province are based on statistics obtained from the publication "Mineral Aggregates in Ontario – Overview and Statistical Update" for the period 1992-2001. MNR produced the annual reports up until 1997, at which time, TOARC assumed this responsibility. The applicants allege that the statistics (see Table 1) demonstrate that newly disturbed area has been exceeding the area rehabilitated by a 2:1 ratio for the ten-year period examined. For example, from 1992 to 2001, the amount of newly disturbed area was reported to be 10,549 hectares (an annual average of 1,055 hectares). During the same period, the amount of rehabilitated area was 4,612 hectares (an annual average of 461 hectares). The difference in reported newly disturbed area and newly rehabilitated area was 5,937 hectares.

## Rehabilitation Statistics for Licenced Sites (Hectares)

Table 1

Production Year	Total Licences	Total Licenced Area	Disturbed Area (Beginning of Year)	New Disturbed Area	New Rehabilitated Area	Disturbed Area (End of Year)
1989	N/A	76,917.58	19,337.18	N/A	344.44	N/A
1990	2768	81,185.00	20,030.00	N/A	355.00	N/A
1991	2755	81,542.00	20,836.00	N/A	528.00	N/A
1992	2728	74,034.30	18,922.70	1,312.30	494.90	19,740.10
1993	2792	78,286.70	20,031.50	1,295.50	548.90	20,778.10
1994	2683	82,057.74	20,846.64	1,760.63	393.80	22,213.47
1995	2887	79,610.25	19,878.91	1,133.41	327.11	20,685.21
1996	2696	90,922.57	23,329.62	748.31	394.62	23,683.31
1997	2727	87,443.61	22,086.85	643.86	232.81	22,497.91
1998	2798	89,431.91	19,687.81	1020.89	597.18	20,121.52
1999	2807	92,694.97	22,718.11	819.38	585.81	22,951.68
2000	2799	93,119.67	22,815.28	836.04	468.36	23,182.96
2001	2786	92,598.82	23,104.60	978.51	568.91	23,514.21

MNR supports the applicants' belief that newly disturbed area exceeded the area rehabilitated for the ten-year period examined but not to the extent (2:1 ratio) alleged by the applicant. However, the data cannot be correlated as proposed by the review applicants. The review applicants are statistically correct that overall the area disturbed has exceeded area rehabilitated by a 2:1 ratio, however, this disparity is not entirely the result of new disturbance exceeding rehabilitation. The review applicants' analysis did not consider all extenuating factors including regulating additional areas of the province (areas disturbed prior to being regulated under the ARA), lack of integrity in the data (e.g. unreliable/unsubstantiated), and the failure of rehabilitation data to capture licences surrendered within a calendar year. Consequently, conclusions derived from an analysis of this data are suspect. A significant portion of the reported newly disturbed area is a consequence of regulating new areas under the ARA. MNR believes that the statistics do not indicate a significant increasing trend in disturbed area over the past ten years once all relevant factors are considered. However, the extent that these individual factors affected the actual ratio is uncertain as MNR did not maintain a statistical database to document areas disturbed at the time the sites were designated under the ARA and for the reasons discussed below.

New Designations - For example, there was approximately 74,000 licenced hectares with a disturbed area of less than 19,000 hectares in 1992. During the subsequent ten-

year period (1992-2001) that the review applicants' reference, additional areas of the province were designated, by regulation, and became subject to the ARA. This includes: additional areas around Kingston and Napanee (i.e. parts of Frontenac and Lennox and Addington Counties) and north Victoria County (now the City of Kawartha Lakes) in 1992; most of Renfrew County in 1993; and additional areas around Sudbury and Sault Ste. Marie in 1998.

In 2001, there were 93,000 licenced hectares with a disturbed area of more than 23,000 hectares. The addition of more than 400 licenced sites in these newly designated areas (mostly existing operations with already disturbed area) has resulted in additional licenced area, possibly accounting for the bulk of the additional 19,000 hectares that are now under licence (from 74,000 to 93,000 ha) and possibly 4,000 hectares in disturbed area (from 19,000 to 23,000 ha).

Data Integrity - Each year, TOARC provides blank production reports to all licensees and permittees. For example, licensees/permittees are required to complete and submit production reports for the 2004 calendar year by January 31, 2005. This form is geared to operators reporting their annual production. However, the form also includes information with respect to disturbed and rehabilitated areas.

Prior to changes in 1997 with respect to rehabilitation security deposits, it was important that reported disturbed area for individual licences be accurate. The total disturbed area for a particular site was used in a formula to determine whether security was owing or refundable for that particular year. MNR aggregate inspectors verified the expenditures claimed in rehabilitation as well as the actual area completed.

Since 1997, TOARC has spent a considerable effort in auditing production figures submitted by the industry. However, there is no verification process for disturbed and rehabilitated area. Consequently, there is a low level of confidence in the data published in this regard. Unfortunately, these figures have formed the basis for this application for review.

Part of the aggregate inspector's role is to verify these figures when they perform an audit/inspection on the site to ensure that the annual Compliance Assessment Report has been filled out correctly. However, the target of 20% does not allow the Ministry to verify all licences in any given year and therefore, the figures that TOARC publish have limited reliability. Secondly, there is no protocol/procedure to transfer this information to TOARC, who is responsible for retaining a data system for statistical purposes.

Licence Surrender - In any given year, there is a turnover in licences, with new ones being issued and others surrendered (i.e. once rehabilitation has been completed). It is these surrendered licences where the most significant amounts of rehabilitation are achieved. However, this data is not currently recorded and therefore, not captured in the published statistics.

MNR concludes that the statistics do not indicate a significant increasing trend in disturbed area over the past ten years once all relevant factors are considered.

### 2.1.1.2 Options for Improving Data Reporting

MNR recognizes that there is a lack of capacity within the existing program for MNR or TOARC to annually verify information reported by licensees on their production reports submitted to TOARC and on their Compliance Assessment Reports (CARs) submitted to MNR with respect to rehabilitation and disturbed areas. To address the issue of unreliable data being submitted to TOARC and MNR, the following options have been considered:

- additional training for the industry;
- build additional capacity within MNR, or outside MNR (Alternate Service Delivery (ASD)) (see section 3.1.3);
- the creation of a rehabilitation report; and
- the establishment of local or regional aggregate advisory or liaison committees.

MNR acknowledges that CARs completed by the industry have been lacking in detail including rehabilitation information and that there is a need to improve MNR's field auditing activities which have fallen short of targets.

In 2001-03, and 2004-06, MNR provided training to assist aggregate operators with improving their compliance reporting. MNR should continue to periodically provide this training to the aggregates industry to ensure that the information provided to MNR is accurate and the report is completed properly. TOARC, with its relationship with MNR and the OSSGA, can also play a key role in educating the industry regarding the need to provide accurate information and perform rehabilitation on sites.

MNR will develop mechanisms by April 1, 2007, to improve the accuracy of reported rehabilitation information including the merits of requiring the licensee/permittee to submit an annual rehabilitation report (independent of the CAR). The report could be made available to the public (and possibly a summary posted on MNR's internet website).

In addition, there could be a requirement that the report be prepared by a certified/approved person (e.g. consultant, independent person). The report could be submitted to either MNR centrally, or TOARC, to be integrated into their database. An individual could be required to complete a training course and be certified, by MNR, to be qualified to prepare this report. Individuals submitting poor quality reports or false information could lose their certification and ability to prepare reports.

Alternatively, the CAR form and AROPS could be amended to enhance the rehabilitation aspects and to require the author of the report to be certified/approved. However, both options impose an additional financial burden on aggregate companies and in particular, small operators.

MNR will also explore the feasibility of developing an electronic filing system for compliance assessment reports (CARs) and improve efficiencies to data and information

management for new licence and permit applications and existing reporting requirements under the ARA (e.g. production, rehabilitation) by April 1, 2007.

A major challenge in implementing an electronic filing system for the program is the client demographics, a significant number of the aggregate resources program clients are small to medium-sized companies and individuals. Many of the small aggregate industry clients have not fully embraced the digital age and could be disadvantaged if faced with an online reporting requirement. It may be difficult to gain acceptance of and compliance with online reporting from these clients.

The review also considered the option of creating local or regional liaison or advisory committees to oversee aggregate operations. The role of the committee could be to verify the areas disturbed and rehabilitated on the site, and to make recommendations to MNR with respect to additional opportunities for rehabilitation. The structure of the committee could include representation from stakeholders or other interest groups, the public (e.g. local ratepayers), local conservation authority, aggregate industry, and local and regional municipalities. However, this option was deemed impractical at this time due to issues related to liability, right to access sites, need for confidentiality (e.g. aggregate reserves), potential conflicts of interest from committee participants, workload to establish committees, and difficulties in obtaining voluntary committee participation. In addition, there could be a significant financial cost to establish and maintain these committees (e.g. expenses for committee members to travel to the sites).

In the interest of driving program efficiencies, MNR will incorporate the use of new technologies (e.g. geographic information system (GIS) technology, satellite imagery) to determine landscape changes within licenced/permitted sites, and to track those changes over time.

For example, MNR currently has satellite imagery (e.g. Quick Bird) for the Greater Toronto Area (GTA). MNR could establish a pilot project to utilize satellite imagery and GIS technology to determine landscape changes (i.e. disturbed area) within licenced/permitted sites in the GTA. The imagery will also need to be correlated with MNR's Natural Resource Values and Information System (NRVIS) which contains the location of these sites.

This approach could be expanded to other areas of the province as imagery became available. However, MNR would still face several challenges to implementing this approach province-wide, including timing of the imagery (adjacent areas are photographed in different years, data maintenance - how often imagery is acquired), expense of maintaining data, and existing imagery coverage (not continuous - limited in extent). On-going maintenance of data within MNR's NRVIS would also need to be considered

The use of MNR's Southern Ontario Land Resources Information System (SOLRIS) is another potential initiative to explore.. SOLRIS is described as a comprehensive, regional mapping program designed to accurately measure the nature and extent of southern Ontario's natural, rural and urban areas (e.g., forest, wetland, agricultural,

urban). SOLRIS is intended to provide a GIS-based information system to aid land management decision making for the Government of Ontario. The system compiles the most current data from provincial and local resource data sources and supplements and/or updates it with information derived from recently acquired remotely sensed imagery (multi-resolution product). An essential data layer of this system is the Ecological Land Classification (ELC), a hierarchical land classification scheme that has been developed by the Government of Ontario. The data classes derived from SOLRIS will reside in the MNR's Natural Resources Values Information System (NRVIS). SOLRIS is also a monitoring system that will be used to track changes that affect the natural, rural and urban landscape. Change Detection is used by SOLRIS to derive the rural land use classes and provide a means for updating the data base and potentially could be utilized to calculate changes in disturbed area within a licenced/permitted site. SOLRIS methodologies also incorporate accuracy assessment and validation at several steps in the process. This technology could provide relatively reliable data and would help to prioritize sites requiring inspection.

Currently, there is no up-to-date, consistent, systematic land cover inventory or resource reporting system for southern Ontario. However, work is currently underway to address this shortcoming and it is anticipated that SOLRIS will inventory all land cover within southern Ontario by October 2006. It is also proposed that SOLRIS would be updated every 5 years with information derived from the latest available source of satellite imagery.

#### **Recommendations:**

6. Effective immediately, information obtained during an audit by MNR of the annual Compliance Assessment Reports or an inspection of a site will include the verification, by the aggregate inspector, of progressive and final rehabilitation and the disturbed area of the site.
7. MNR will establish a protocol, in co-operation with TOARC, by April 1, 2007, to transfer the information referred to in the recommendation above to TOARC.
8. MNR, in collaboration with the OSSGA and TOARC, will continue to educate and train the aggregates industry regarding the importance of providing accurate rehabilitation information and the legal consequences for failing to provide that information.
9. MNR, in consultation with the OSSGA, will develop mechanisms, by April 1, 2007, to improve the accuracy of reported rehabilitation information including the merits of requiring the licensee/permittee to submit an annual rehabilitation report.
10. MNR will explore the feasibility of developing an electronic filing system for compliance assessment reports (CARs) and improving efficiencies to data and information management for new licence and permit applications and existing reporting requirements under the ARA (e.g. production, rehabilitation) by April 1, 2007.

11. MNR will incorporate the use of new technologies (e.g. GIS technology, satellite imagery) to determine landscape changes (i.e. disturbed area) within licenced/permitted sites and to track those changes over time. A pilot project will be established for sites within the GTA by April 1, 2007.

### **2.1.1.3 Information Management:**

The ability to support, analyze or review any program is dependent on the availability of reliable information. Traditionally, government has emphasized the importance of information and data, as opposed to the ability to create, manage, and use external and internal knowledge (Valerie Gibbons Report, *Managing the Environment*, 2001). Discussions with industry, government and non-governmental organizations clearly indicated the need for an improved information management system. Furthermore, there is an increasing demand by the public to access information and data regarding environmental performance and for government, to understand the cumulative impacts or implications from other government initiatives (e.g. Oak Ridges Moraine Plan, Greenbelt Plan, and Places to Grow) on the Aggregate Resources Program. Government is committed to sharing information pertaining to either good or bad performance. The current system, ALPS (Aggregate Licence Production System), lacks sufficient data to adequately analyze areas of rehabilitation. Some of this information is collected by TOARC. Compatible systems and sharing of data could be improved by shared or common platforms. TOARC has indicated that improved databases and an increase in research and development efforts would result in industry's increased desire to promote rehabilitation.

ALPS is not currently equipped to store information and monitor rehabilitation progress. Discussions with systems development officers within MNR also indicated that increasing capability (i.e. fields) in the ALPS program would probably not be completed within a reasonable time frame and not without significant costs. However, this would require further analysis.

The creation of base line data to monitor the progress of rehabilitation would be beneficial. This data could be collected by utilizing new technologies (e.g. satellite imagery), or throughout the summer months by summer employment staff. A rehabilitation inventory would improve the context for decision making on these issues. This option requires further consideration of staff requirements, training and supervision responsibilities.

TOARC (through the MAAP program) supports research for the advancement of rehabilitation and reclamation of aggregate sites. TOARC has funded a number of research initiatives, such as, biodiversity of abandoned aggregate sites on the Oak Ridges Moraine in partnership with MNR, Quarry-to-Alvar and cliff ecology in partnership with the University of Guelph, and fish and aquatic habitat in partnership with the federal Department of Fisheries and Oceans and others. TOARC is also currently developing a rehabilitation guidance manual.

The focus of MNR's aggregate rehabilitation field research is the re-establishment of native ecosystems on extraction sites. An initial objective was to determine the types of natural ecosystems that are possible on extraction sites. This has been accomplished using a chronosequence approach. The vegetation communities of 36 pit and quarry sites from across southern Ontario were quantified. These sites varied widely in age since rehabilitation or abandonment so that conclusions about successional processes could be made. A wide variety of native ecosystem types were found in both pit and quarry sites. Developing marsh, fen, meadow, shrub swamp, woodland, alvar and tall grass prairie plant communities have been found. This work indicates the great opportunities that exist for establishing native ecosystems as part of the rehabilitation of aggregate sites.

What is still unclear is how to guide the trajectory of a naturalizing extraction site towards a specific ecosystem type and how to speed this recovery process. Current experimental work is examining the role of various rehabilitation components including macro and micro topography, hydrology, soil fertility, species composition and planting techniques in influencing successional processes. The goal of this work is to develop rehabilitation guidelines for establishing specific types of ecosystems. Another component of this work is the development of a spatial tool that can be used to predict and model the successional processes on aggregate extraction sites within a specific landscape context. This will be useful for planners, ecologists and aggregate operators particularly in areas where aggregate sites are clustered together in the landscape. This work is being done in conjunction with Sir Sandford Fleming College. Additional opportunities will be maximized to further increase public transparency by broadening the partnership with the scientific, research and technical communities.

**Recommendation:**

12. MNR will work with TOARC to conduct more research and education regarding techniques to promote better rehabilitation of pit and quarry sites (e.g. more efficient or effective techniques or materials, cost saving methods).
13. MNR has, and will continue to enhance their role in research initiatives (e.g. improved database system, promoting rehabilitation) by maximizing opportunities to partner with TOARC and the scientific, research and technical communities.
14. MNR and TOARC will establish a formal cooperative approach, as soon as practicable, to improve information management systems including the creation of base-line data, ensuring compatibility of the data and the ability to generate data to monitor and promote rehabilitation.

#### **2.1.1.4 Enforcement Tools:**

MNR has over the past two years increased the issuance of subsection 48(2) rehabilitation orders. Additionally, MNR has introduced training sessions on the use of various enforcement tools to increase rehabilitation. A relatively new directive on the use of Minister's Orders (rehabilitation order) has also been developed and the focus for aggregate inspectors is to look at progressive rehabilitation as a priority. This direction supports a corporate approach to risk-based compliance that will ensure that priority matters are given adequate attention (as advocated in the Gibbon's report). The approach will also provide directed attention to those considered to be chronic violators. MNR inspection priorities should include consideration of sites with historical rehabilitation compliance issues and sites with significant portions of the site disturbed. Over the fiscal years 2003-2004 and 2004-2005, 15 and 26 rehabilitation orders were issued, respectively, by aggregate inspectors in contrast to the previous year that only saw 4 orders issued. The fact that MNR is now actively issuing orders is an indication that the focus on rehabilitation is a priority. However, even without solid data, it can be argued that many more rehabilitation orders are required.

This enhanced focus on a risk-based approach to compliance should increase the amount of progressive rehabilitation and final rehabilitation completed, but it is premature at this time to evaluate the impact. A subsection 48 (2) rehabilitation order is a valuable enforcement tool to ensure that progressive and final rehabilitation is completed in accordance with the site plan. Currently, the number of charges, along with the court assessed penalty, is summarized on MNR's internet web site. This public transparency could be applied to the issuance of rehabilitation orders and broadened to include a listing of individual companies. This strategy may increase industry awareness of their responsibilities and act as a deterrent to those poorly performing members of the aggregate industry.

#### **Recommendations:**

15. Effective immediately, Aggregate inspectors will be directed to continue to issue subsection 48(2) rehabilitation orders, where applicable, as a priority when inspecting aggregate operations.
16. MNR, in collaboration with TOARC and the OSSGA, will continue with the recent enhanced efforts to educate and train the aggregates industry regarding the importance of performing progressive rehabilitation, methods to enhance rehabilitation and the legal consequences for failing to perform the required rehabilitation.
17. MNR will create a central database of sites where a rehabilitation order has been issued and provide a list of those sites on their internet website, by December 2006.

### **2.1.1.5 Capacity Issues:**

Many stakeholders including industry, environmental groups, municipalities, the Ontario Municipal Board (OMB) and the Environmental Commissioner of Ontario have voiced concerns over the existing aggregates program and its capacity to properly administer and enforce the legislation (e.g. rehabilitation requirements). These concerns were also echoed by the public during the Greenbelt Task Force stakeholder consultation process.

Program capacity issues include the following:

- A lack of enforcement and progressive rehabilitation of pits and quarries;
- Inspector performance targets to audit 20% of private land licences and 10% of Crown aggregate permits are not being met. Actual numbers achieved in 2003/04 were 10% and 5% respectively;
- The aggregate industry has been critical of MNR for the length of time to consider and approve site plan amendments (e.g. 6 months to 5 years);
- Lack of staff and visibility in the field by inspectors has resulted in an increase in illegal operations and numerous complaints to MNR district staff;
- OSSGA have indicated the need to increase inspections/audits and provide adequate support such as funds for vehicles, gas, meals, etc.;
- Within the Oak Ridges Moraine, an inventory was completed to assess licensee compliance with the ARA and the result indicated that 100 sites out of 121 had compliance problems; and
- Many aggregate inspectors are responsible for too many sites (see section 2.1.1.5.1).

In addition, a coroner's inquest into the 1997 deaths of two boys in a Sudbury-area pit resulted in a recommendation to "reduce the geographic area assigned to each ministry inspector" and "that appropriate funding be provided to increase the percent of pits to be audited and therefore increase the frequency".

Based on discussions with consultants who prepare site plans, MNR staff who review these plans, and industry staff who implement them, it is apparent that the requirements for rehabilitation need to be supported. If more enforcement is required to increase rehabilitation, MNR must also consider options to address capacity and funding issues.

#### **2.1.1.5.1 Staffing:**

The number of aggregate inspectors within the aggregate resources program is currently 20. The number of aggregate inspectors in 1997 was 41. In addition to the loss of greater than 50% staffing levels, support dollars to maintain the program were also reduced. MNR staff levels are low relative to the number of aggregate operations in the province (e.g. some inspectors are responsible for as many as 600 aggregate operations, whereas the preferred number is 150; the latter is the estimated average number of sites that can be effectively administered by one staff person). At the time that legislative and regulatory changes were made in 1997 (e.g. creation of the Trust,

delegation of certain functions), it was assumed that MNR staff workload would be significantly reduced. However, despite these changes staff workload remained high.

A number of factors contributed to this workload including the increased complexity and controversial nature of aggregate issues such as:

- conflicts with other land uses;
- environmental issues (e.g. source water protection);
- citizen opposition to new applications and amendments to existing operations; and
- an increased public awareness and concern with respect to decisions that they believe may affect the environment.

#### **2.1.1.5.2 Program Funding:**

Many changes have occurred over the past 8 years in addition to the transfer of some responsibilities to TOARC. Since the 1995/96 fiscal year, the aggregate resources program has seen a decrease in its base funding from a high of \$5.2 M to its present level of \$1.7 M and associated staff reductions to carry out the core functions. In light of the numerous concerns raised by the public and stakeholders regarding the lack of program delivery, MNR will need to consider whether additional funding of the program is required.

#### **2.1.1.5.3 Program Delivery Options:**

Traditionally, compliance has focused on inspection, abatement, investigation and enforcement of minimum standards. The Valerie Gibbons Report 2001 states that worldwide, there is an emerging trend to shift from a “command and control” delivery model where government dictates what industry must do, to an integrated approach to environmental compliance assurance. This emerging approach is *“performance-based, recognizes leaders, provides incentives and supports the regulated community to go beyond the minimum standards.”* The Valerie Gibbons Report 2001 also states that:

- *To be effective, an integrated environmental compliance assurance strategy must maintain a strong abatement and enforcement presence;*
- *Cooperative compliance initiatives are effective if they are backed up by the threat of credible enforcement action and*
- *Leading jurisdictions are enhancing their enforcement and abatement functions through a risk-driven targeting to set priorities for multimedia investigations.*

The Valerie Gibbons Report 2001 was prepared for the Government of Ontario to provide a review of best practices with respect to how environmental departments in other jurisdictions meet current challenges and execute their various management responsibilities.

MNR has recently implemented a new compliance leadership model that will improve how MNR carries out compliance activities and realign enforcement services to support government priorities and the strategic direction and priorities outlined in MNR's "Our Sustainable Future" document. Changes to be implemented include:

- An integrated "Compliance Steering Committee" will be established to strengthen compliance leadership. This committee will ensure integration of compliance standards, policies and training across all program areas. This committee will also serve as our ministry's direct link and support mechanism to the Inspections, Investigations and Enforcement (II&E) Secretariat that continues to champion improved integration and modernization of regulatory responsibilities across ministries.
- An improved framework has been developed to support risk-based compliance planning. Future compliance priorities will be based on an integrated planning approach across all program areas. Better risk assessment will ensure enforcement resources are focused and in support of MNR's strategic priorities.

This new direction will also better support other II&E initiatives and projects that are integrated across ministries with regulatory responsibility. For example, a pilot project has commenced to develop and establish a model for sharing observations within the aggregate sector among the ministries of Labour, Transportation, Natural Resources and Environment which will initiate compliance activity at high-risk workplaces.

Program reviews of MNR Districts, by the Aggregate and Petroleum Resources Section (Lands and Waters Branch), have confirmed capacity issues for staff resources in some areas and that the level of service is not meeting expectations. An analysis by MNR Southern Region (SR) management concurs with the findings of program staff and that the program for private land regulation of pits and quarries is understaffed by at least 3 positions.

In the interim, MNR's Southern Region has funded one additional aggregate inspector position in Aurora District. Furthermore, MNR, during the review, has increased program allocations by \$250,000 which has been used to hire 3 additional aggregate inspectors and increased support dollars for all inspectors.

Since the establishment of TOARC in 1997, MNR has continued to look for efficiencies in the delivery of the aggregate resources program. It is important that MNR continue to consider options which address concerns with the goal of improving customer service (e.g. response time) and environmental protection. Amendments to the ARA and the regulations may be required, depending on which options are implemented to promote/ensure rehabilitation, and improve its reporting, monitoring and enforcement.

MNR is also currently working on drafting amendments to Category 14 (and 9) of the Aggregate Resources of Ontario Provincial Standards (AROPS), to increase forest sector competitiveness and ensure site rehabilitation (EBR registry number RB05E6808). The proposed changes include provisions to improve public safety and reduce liability to the Crown. Category 14 of the AROPS exempts the forest industry from the requirement for an aggregate permit in defined situations and subject to

particular conditions including adherence to rehabilitation standards. It is estimated that the forest industry currently has approximately 1,000 sand and gravel pits under the category 14 exemption producing 4 million tonnes per year and approximately 900 sand and gravel pits under aggregate permits (predominantly known as category 9 permits) producing 2 million tonnes per year. The number of permitted sites is expected to be significantly reduced and the number and duration of Category 14 sites to be increased. An additional benefit of the proposed changes could be a potential reduction in work load (i.e. reduce number of sites) for aggregate technicians in northern Ontario and improve program efficiencies. MNR will continue to explore the option of transferring administrative responsibility for these sites to forestry staff, who already inspect the area to determine compliance with the *Crown Forest Sustainability Act*.

### **Recommendations:**

18. MNR will immediately undertake an assessment of its capacity for monitoring and enforcement including ensuring the rehabilitation of sites.

### **2.2 Should Rehabilitation security deposits be reinstated as an incentive to promote rehabilitation?**

The review applicants claim that the dismantling of the rehabilitation security deposit system removed the incentive for operators to rehabilitate their pit and quarry sites. They believe that amendments are necessary to institute an effective system of rewards and punishments so that rehabilitation actually occurs and the environment will not continue to be left in a costly, disturbed and damaged state. The review applicants also expressed a concern about the lack of rehabilitation being performed by TOARC for abandoned sites (through the MAAP program) and revoked sites due to the resulting environmental harm and potential financial costs to the public and aggregate industry.

Prior to 1997, individual rehabilitation security accounts, administered by MNR, were established for every licenced site under the ARA. Licensees were required to pay into this account, an annual deposit of 8 cents for every tonne of aggregate removed from the site. A minimum (\$500 per hectare) and maximum (\$6,000 per hectare) amount was to be maintained within the account. If the amount being held on account was less than the minimum security required, the eligible expenses incurred by the licensee would be credited until such time as the amount was above the minimum. Security was not collected for accounts in excess of the maximum amount. To access the account, licensees had to complete rehabilitation work, annually complete a rehabilitation report, and apply to MNR for reimbursement from their account.

Most program staff are of the opinion that the rehabilitation security mechanism was relatively successful and provided a financial incentive for achieving rehabilitation. However, the system was labour intensive for MNR aggregate inspectors to verify rehabilitation expenditures and the area rehabilitated. A significant portion of the aggregate inspectors' time was allocated to this function. It is not possible that this same

system could be implemented with the resources currently available to the aggregate resources program.

Staff also expressed concern that this approach sometimes promoted inflated rehabilitation claims and inefficient rehabilitation expenditures. For newly designated sites or sites with limited production, there was often no financial incentive to complete rehabilitation, as insufficient funds had accumulated. Where licences were revoked, largely due to bankruptcies of licensees, there was rarely sufficient security for MNR to complete adequate rehabilitation of those sites. Another limitation pertained to the maximum amount (i.e. \$6,000 per hectare) which could be retained on account, which often was insufficient to offset the full cost of rehabilitation. The MAAP program reported in their 2003 Annual Report that for the period 1992-2003, the average rehabilitation cost per hectare was \$14,523.28 with costs ranging from \$3,225.81 (1992) to \$32,078.67 (1993) per hectare.

In 1997, changes to the ARA, under Bill 52, resulted in TOARC assuming responsibility for the rehabilitation of abandoned sites (through the MAAP program) and revoked sites. As part of this change, a portion of the rehabilitation security was converted to a pooled fund, managed by TOARC. The fund now acts as a type of insurance whereby the fund can be used to offset the cost of rehabilitating sites where licences have been revoked. Following rehabilitation, TOARC may attempt to recover costs from the former licensee/permittee. This approach (i.e. one large fund, as opposed to a number of small individual accounts) does have the advantage in situations where the licensee has gone bankrupt and there are insufficient funds to rehabilitate the site. Financial responsibility for rehabilitation is assumed by the industry as a whole.

Any initiative to reinstate the security deposit system or any other similar mechanism (e.g. security bond) would need to consider the ability of the aggregates industry to finance the system to a level where rehabilitation would be an effective incentive. In addition, MNR's ability to assume additional workload would need to be considered. MNR would also need to take into account that licensees have already forfeited a portion of their security deposit to create the pooled fund, from which the investment income finances the Aggregate Resources Trust.

There are approximately 6900 abandoned sites on private land (i.e. within designated areas), from the pre-regulation era which were not rehabilitated, and of those 2700 sites are considered candidate sites for restoration (but only 70 are high priority sites). Many of the 2700 sites do not require further rehabilitation efforts. Even at the time of the inventory in the early 1990's, natural regeneration had already brought these sites to a state where the benefits of further rehabilitation efforts would not be cost-effective or particularly beneficial to the environment. The MAAP program staff inspects each site and rates them from low to high level of concern based on safety, aesthetics, ecological function, and size and proximity to a road. Currently, source water protection is not one of their selection criteria for rehabilitation. The MAAP program annually rehabilitates 10 - 20 sites per year and in 2005 intends to increase this to 30 sites per year.

To date, TOARC has only rehabilitated 3 of 70 revoked licenced sites and 0 of 68 permitted sites, for a total of 3 of 138 sites. There was a flurry of revocations in a post-Bill 52 era when a number of licences for small, largely inactive sites were revoked due to non-compliance with regulatory requirements. The number of revocations can also be expected to decline because many of these sites were “grandfathered” at the time of designation and may have never had the aggregate reserves remaining to warrant licencing.

Presently, the TOARC Board and the MAAP program staff have sole discretion to require rehabilitation, determine requirements and prioritize site selection. The existing authority under the ARA or within the Indenture Agreement does not allow MNR to direct TOARC or MAAP program staff to undertake rehabilitation of specific sites. MNR’s ability to influence rehabilitation performance is through their ex-officio representative on the TOARC Board. MNR asked the TOARC Board of Directors to take a more proactive approach to rehabilitation of revoked licence and permit sites. MNR has been assured by the Board that TOARC will be rehabilitating more of these sites in the future.

**Recommendations:**

- 19. MNR, in collaboration with key stakeholders will examine in detail, within 2 years, the merits of a rehabilitation incentive system including the re-introduction of the former rehabilitation security deposit system.
- 20. MNR will seek an amendment to the Indenture Agreement (and legislative amendments, if required), as soon as practicable, to ensure that the protection of source water is included as one of their selection criteria for rehabilitation candidates under the MAAP program.
- 21. MNR will continue to encourage TOARC to perform more rehabilitation of revoked licence and permit sites.
- 22. MNR will continue to monitor TOARC’s rehabilitation efforts of sites where licences have been revoked and if required, seek an amendment to the Indenture Agreement (including whether the current governance structure of the Board is appropriate), to ensure satisfactory results are achieved.

**2.3 Does the partnership arrangement with TOARC violate MNR’s SEV pledge for openness with the public?**

The review applicants claim that TOARC’s affiliation with the OSSGA, a registered lobbyist, is a conflict of interest and violates MNR’s SEV for “openness”. The review applicants also allege that decisions by TOARC and the MAAP program are not open and publicly accountable.

MNR recognizes and supports the need to ensure transparent public access to information and data about environmental performance. The Valerie A. Gibbons Report

2001, promotes this strategy and states that “transparent public reporting is felt to play a key role in driving the transition of companies, industries, and economics towards the ultimate goals of continuous improvement and sustainable development.”

MNR staff is confident that there is transparency with respect to how TOARC is operating. Both TOARC and the MAAP program publish annual reports and maintain internet web sites. TOARC is governed by a Board of Directors that includes representation from interests outside the aggregate industry. Representation includes the municipal sector (represented by the Association of Municipalities of Ontario) and environmental NGOs (represented by the Conservation Council of Ontario). MNR is represented by a non-voting ex-officio member on the board.

TOARC’s decisions with respect to rehabilitation are more transparent to the public than those made by government prior to the changes being implemented, under Bill 52, in 1997. In 2001, TOARC and MNR entered into a Memorandum of Understanding (MOU) to facilitate data sharing. Under this agreement, there is recognition that TOARC’s records pertaining to the implementation and operation of this data sharing agreement is subject to the *Freedom of Information and Protection of Privacy Act* (FIPPA). In 2004, the 1997 Indenture between the Crown and TOARC was amended to allow MNR, and any such other persons as designated by MNR, to inspect and audit the books and records of the Trust. This change increases the Trust’s accountability by allowing the Crown to independently verify reported financial transactions and decisions. However, not all decisions of the TOARC board (e.g. selection of sites to be rehabilitated) are subject to the provisions of FIPPA.

With the well-defined structure and permitted activities under the MNR/TOARC “Indenture” Agreement, the publishing of annual reports and the governance structure of the Board of Directors with varied interests represented, it is concluded that TOARC operates with transparency. However, changes to the MNR/TOARC agreement to further increase openness may reduce any perceived conflicts by the public.

Furthermore, contracts to rehabilitate abandoned or revoked sites are awarded in an open and transparent manner, TOARC adopts a public tender process which includes publication in the Daily Commercial News (DCN) and local municipal newspapers (typically tenders are received from between 3 and 8 companies). However, TOARC does have some discretion on contracts less than \$20,000, and may forego the normal public tender process, provided the proposed expenditures are within normal costs.

**Recommendation:**

23. MNR will seek an amendment to the Indenture Agreement to ensure transparent public access to as comprehensive a range of information and data as possible by applying the principles of FIPPA to all TOARC Board decisions (including how sites are evaluated and selected for rehabilitation), in co-operation with TOARC and the OSSGA.

24. MNR (through MNR's representative on the Board and staff liaison) will ensure that TOARC makes greater efforts to educate the public and stakeholders regarding the trust's rehabilitation efforts and to publicize (e.g. news releases, educational videos for schools, website) their results.

### **3.0 Other Considerations:**

#### **3.1 Designation:**

Private land must be designated, by regulation, to be subject to the ARA and the regulations (i.e. AROPS), and its provisions aimed at rehabilitation and minimizing environmental impacts from such operations. Not all areas of the province are currently designated (see section 1.3). The province is currently divided into areas designated under the Act and areas not designated.

This situation has led to inconsistent results related to operations and rehabilitation and financial inequities across the province (e.g. operations within Haliburton County (non-designated) and the adjacent designated municipality, the City of Kawartha Lakes). Pits and quarries in close proximity to each other (e.g. across the road) may be operated in an entirely different manner; one site would have rehabilitation requirements and may have conditions to mitigate impacts and the other may have little or no requirements. Another consideration for designating an area is the ability to rehabilitate abandoned sites. Abandoned aggregate sites within non-designated areas are not eligible for rehabilitation under the MAAP program. It is not reasonable to expect aggregate producers within designated municipalities to fund rehabilitation of sites in non-designated areas through their licence fee.

If the ARA was to be consistently applied across the province, it would reduce inconsistencies and increase rehabilitation in areas not currently regulated. However, this would have staffing, budgeting, and organizational implications for MNR, TOARC, and the OSSGA.

#### **Recommendation:**

25. The government will explore the feasibility of designating, by regulation, under the ARA all significant aggregate resource areas in Ontario (i.e. non-designated private land) as soon as is reasonably possible to create a "level" playing field and to ensure rehabilitation requirements and environmental safeguards under the ARA are applicable throughout the province.

### **4.0 Recommendations for Consideration:**

1. Effective immediately, Aggregate inspectors, through reinforced policy direction, will be directed to determine what progressive rehabilitation, in accordance with the site plan, is being performed whenever they are inspecting a pit or quarry to ensure

compliance with the Act, the regulations (including the Aggregate Resources of Ontario Provincial Standards (AROPS)), the site plan, and the conditions of the licence.

2. Effective immediately, Aggregate inspectors, when determining inspection priorities, will include sites with historical rehabilitation compliance issues and/or sites with significant portions of the site disturbed as a priority.
3. Effective immediately, Aggregate inspectors, when carrying out the process for approving and/or reviewing a site plan for a new application, will ensure that progressive rehabilitation of the site is clearly illustrated and/or described on the plan and the disturbance of the site is minimized.
4. Effective immediately, Aggregate inspectors, undertake a review of the existing site plan while performing an audit of a site, to determine whether the requirement to progressively rehabilitate the site is enforceable. For problem sites, where the site plan does not have this specific requirement or is sufficiently vague or too flexible as to render the plan unenforceable, MNR should initiate a site plan amendment request.
5. The Greenbelt Plan will be treated as a pilot area, to assess whether the approach should be applied province-wide (to all existing aggregate operations).
6. Effective immediately, information obtained during an audit by MNR of the annual Compliance Assessment Reports or an inspection of a site, will include the verification, by the aggregate inspector, of progressive and final rehabilitation and the disturbed area of the site.
7. MNR will establish a protocol, in co-operation with TOARC, by April 1, 2007, to transfer the information referred to in recommendation #6 above to TOARC.
8. MNR, in collaboration with the OSSGA and TOARC, will continue to educate and train the aggregates industry regarding the importance of providing accurate rehabilitation information and the legal consequences for failing to provide that information.
9. MNR, in consultation with the OSSGA, will develop mechanisms, by April 1, 2007, to improve the accuracy of reported rehabilitation information including the merits of requiring the licensee/permittee to submit an annual rehabilitation report..
10. MNR will explore the feasibility of developing an electronic filing system for compliance assessment reports (CARs) and improving efficiencies to data and information management for new licence and permit applications and existing reporting requirements under the ARA (e.g. production, rehabilitation) by April 1, 2007.

11. MNR will incorporate the use of new technologies (e.g. GIS technology, satellite imagery) to determine landscape changes (i.e. disturbed area) within licenced/permitted sites and to track those changes over time. A pilot project will be established for sites within the GTA by April 1, 2007.
12. MNR will work with TOARC to conduct more research and education regarding techniques to promote better rehabilitation of pit and quarry sites (e.g. more efficient or effective techniques or materials, cost saving methods).
13. MNR has, and will continue to enhance their role in research initiatives (e.g. improved database system, promoting rehabilitation) by maximizing opportunities to partner with TOARC and the scientific, research and technical communities.
14. MNR and TOARC will establish a formal cooperative approach, as soon as practicable, to improve information management systems including the creation of base-line data, ensuring compatibility of the data and the ability to generate data to monitor and promote rehabilitation.
15. Effective immediately, Aggregate inspectors will be directed to continue to issue subsection 48(2) rehabilitation orders, where applicable, as a priority when inspecting aggregate operations.
16. MNR will create a central database of sites where a rehabilitation order has been issued and provide a list of those sites on their internet website, by December 2006.
17. MNR, in collaboration with TOARC and the OSSGA, will continue with the recent years enhanced efforts to educate and train the aggregates industry regarding the importance of performing progressive rehabilitation, methods to enhance rehabilitation and the legal consequences for failing to perform the required rehabilitation.
18. MNR will immediately undertake an assessment of its capacity for monitoring and enforcement including ensuring the rehabilitation of sites.
19. MNR, in collaboration with key stakeholders, will examine in detail, within 2 years, the merits of a rehabilitation incentive system, including the re-introduction of the former rehabilitation security deposit system.
20. MNR will seek an amendment to the Indenture Agreement (and legislative amendments, if required), as soon as practicable, to ensure that the protection of source water is included as one of their selection criteria for rehabilitation candidates under the MAAP program.
21. MNR will continue to encourage TOARC to perform more rehabilitation of revoked licence and permit sites.

22. MNR will continue to monitor TOARC's rehabilitation efforts of sites where licences have been revoked, and if required, seek an amendment to the Indenture Agreement (including whether the current governance structure of the Board is appropriate), to ensure that satisfactory results are achieved.
23. MNR will seek an amendment to the Indenture Agreement to ensure transparent public access to as comprehensive a range of information and data as possible by applying the principles of FIPPA to all TOARC Board decisions (including how sites are evaluated and selected for rehabilitation), in co-operation with TOARC and the OSSGA.
24. MNR (through MNR's representative on the Board and staff liaison) will ensure that TOARC makes greater efforts to educate the public and stakeholders regarding the trust's rehabilitation efforts and to publicize (e.g. news releases, educational videos for schools, website) their results.
25. The government will explore the feasibility of designating, by regulation, under the ARA all significant aggregate resource areas in Ontario (i.e. non-designated private land) as soon as is reasonably possible to create a "level" playing field and to ensure rehabilitation requirements and environmental safeguards under the ARA are applicable throughout the province.