



MINISTRY OF NATURAL RESOURCES

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MINERAL AGGREGATE RESOURCE  
REFERENCE MANUAL

**FOR POLICY 2.2 OF THE PROVINCIAL POLICY STATEMENT**

January 2001

**DISCUSSION DRAFT**

## Acknowledgements

This document was prepared by the Ontario Ministry of Natural Resources (MNR) based on work by \_\_\_\_\_ with the support of a technical review team which consisted of representatives from \_\_\_\_\_.

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## 1.0 INTRODUCTION

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This document, the Mineral Aggregate Reference Manual, is a guide for those who require additional information on technical issues relative to the application of the portion of Section 2.2 of the Provincial Policy Statement (PPS) that deals with Mineral Aggregate Resources. (See Table 1.1). The PPS provides policy direction on matters of provincial interest in municipal land use planning under the *Planning Act*. Section 3 of the *Planning Act* requires that planning authorities "shall have regard to" the PPS when exercising any authority that affects a planning matter.

The Mineral Aggregate Reference Manual should not be read in isolation from the PPS or other support documents. This document is advisory only and may be updated as technology or techniques improve. It provides information to assist in understanding the policy and does not add to or take away from policy. Except as otherwise specified (e.g., where requirements are established by legislation or regulation), they do not represent the only acceptable approaches. There may be other ways to achieve the end results established in the PPS. However, in all cases the planning authorities must have regard to PPS.

This manual was developed for municipalities, planning boards and other planning or approval authorities, all of which are referred to as planning authorities, in the remainder of the document. Users of this manual will also include consultants, landowners, land developers, aggregate producers, environmental and resource management agencies, community based organizations, non-government organizations (NGO's), interested citizens and the Ontario Municipal Board.

This manual is intended for use by those who have a basic understanding of the *Planning Act* requirements and the intent of the PPS. It will be of most interest to those involved in:

- the development and review of policy documents; and
- the review and approval of development applications.

The Mineral Aggregate Resources Reference Manual does not provide the user with all of the information needed to undertake the detailed technical studies that may be required to deal with a mineral aggregate planning matter. However, it does provide other information sources that can be consulted. The manual also provides guidance relative to additional technical information that may be obtained from experts or other sources. In addition, the Manual provides examples of approaches that have been used by planning authorities in dealing with mineral aggregate planning matters.

This document replaces the Non-Renewable Resources Training Manual Part A Version 1.1 March 1997.

**Table 1.1 : Mineral Aggregate Component of the Provincial Policy Statement**

<p>2.2</p> <p>2.2.1</p> <p>2.2.3</p> <p>2.2.3.1</p> <p>2.2.3.2</p> <p>2.2.3.3</p> <p>2.2.3.4</p>	<p><b>Mineral Resources: Mineral Aggregates, Minerals, Petroleum Resources</b></p> <p>Mineral resources (<i>mineral aggregates, minerals and petroleum resources</i>) will be protected for long term use.</p> <p><b>Mineral Aggregates</b></p> <p>As much of the mineral aggregate resources as is realistically possible will be made available to supply mineral resource needs, as close to markets as possible.</p> <p><i>Mineral aggregate operations</i> will be protected from activities that would preclude or hinder their expansion or continued use of which would be incompatible for reasons of public health, public safety or environmental impact. Existing mineral aggregate operations will be permitted to continue without the need for official plan amendment, rezoning or development permit under the <i>Planning Act</i>.</p> <p>In areas adjacent to or in known <i>deposits of mineral aggregates, development</i> which would preclude or hinder the establishment of new operations or access to the resources will only be permitted if:</p> <ul style="list-style-type: none"> <li>a) resource use would not be feasible; or</li> <li>b) the proposed land uses or development serves a greater long term public interest; and</li> <li>c) issues of public health, public safety and environmental impact are addressed.</li> </ul> <p><i>Wayside pits and quarries and portable asphalt plants</i> used on public authority contracts will be permitted, without the need for official plan amendment, rezoning, or development permit under the <i>Planning Act</i> in all areas, except those areas of existing development or particular environmental sensitivity which have been determined to be incompatible with extraction and associated activities.</p> <p>(Italicized text is defined in the Provincial Policy Statement 1997)</p>
<p>Definition of Development:  Development means the creation of a new lot, a change in land use, or the construction of buildings and structures, requiring approval under the <i>Planning Act</i>; but does not include activities that create or maintain <i>infrastructure</i> authorized under an environmental assessment process; or works subject to the <i>Drainage Act</i>.</p>	

This manual is intended for use in policy development, and application review and approval. It deals with matters specific to approvals under the *Planning Act*. However, it may also be useful in considering applications that must fulfill other approval processes (e.g., environmental assessments, Niagara Escarpment Plan amendment applications).

This document discusses in a general way the requirements of the *Aggregate Resources Act* 1998 (A.R.A.) since application for the establishment of mineral aggregate operations requires the processing of applications under both the *Planning Act* and the *Aggregate Resources Act*.

The Manual consists of six parts: –

- Section 1 – Introduction
- Section 2 – Aggregate Resources and the Aggregate Industry
- Section 3 – The Statutory and Policy Framework
- Section 4 – Addressing Mineral Aggregates in the Municipal Planning Process
- Section 5 – Performance Indicators
- Section 6 – References

Section 2 describes the nature and character of mineral aggregate resources as well as the industry that develops and supplies those essential building materials to the market.

Section 3 reviews the statutory, regulatory and policy under which mineral aggregates are protected, managed and covered within Ontario. It also outlines key roles and responsibilities of various participants in the mineral aggregate planning process.

Section 4 describes how mineral aggregates are identified, protected and developed through Ontario's planning process. It also describes approaches that are used to ensure the requirements of the Provincial Policy Statement is addressed.

Section 5 provides general information on performance indicators relative to the protection of natural heritage features and areas.

Section 6 provides references that may be consulted for further technical information and advice.

## 2.0 Aggregate Resources and the Aggregate Industry

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Aggregate resources consist predominately of sand, gravel, clay and bedrock (including stone used in cement, lime, clay brick or tile). They are an essential construction material. They are literally the foundation of all built structures in Ontario, including the foundation and walls of our homes, schools and offices and in the roads, highways, bridges and other highway structures. The province's transportation network requires continual supplies of aggregates for new roads and the renewal of existing roads. Road construction is the major consumer of aggregates in Ontario and it has been estimated that 60 percent of the aggregates consumed go into various forms of road construction.

### Definition from PPS

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

Aggregate resources are supplied through the establishment of pits and quarries collectively referred to as mineral aggregate operations. When such operations are located in unconsolidated materials such as sand gravel and clay they are referred to as pits; in consolidated bedrock materials they are referred to as quarries. Pits and quarries tend to concentrate in certain areas of Ontario where the mineral aggregate deposits are located.

### Definition from PPS

**"Mineral aggregate operation** means:

- a) lands under license or permit, other than for a *wayside pit or quarry*, issued in accordance with the *Aggregate Resources Act*, or successors thereto;
- b) for lands not designated under the *Aggregate Resources Act*, established pits and quarries that are not in contravention of municipal zoning by-laws and including adjacent land under agreement with or owned by the operator, to permit continuation of the operation; and
- c) associated facilities used in extraction, transport, beneficiation, processing or recycling of *mineral aggregate*, or the production of secondary related products.

The remainder of the section will briefly review the characteristics of mineral aggregates that are most relevant to land use and resource management interests.



## **2.1 Mineral Aggregates Are Essential Construction Materials**

Mineral aggregates provide the building materials needed to support Ontario's construction industry. There is currently no substitute material that provides alternate materials of the same quality or quantity or at the same reasonable price.

## **2.2 Mineral Aggregates Are Non-Renewable Resources that are Finite and Geographically Limited**

Because mineral aggregates are the products of special geological processes, they are limited as to location, quality and quantity. Mineral aggregate operations concentrate in mineral deposits that possess the necessary quality and quantity of materials and accessibility to the marketplace. For this reason, aggregates are a geographically limited and finite resource.

## **2.3 Transportation Represents The Largest Component Of The Cost Of Mineral Aggregate Production.**

In the majority of circumstances the largest part of the cost of aggregate materials is the cost of shipment from the pit or quarry to the construction site. The bulk of aggregate is transported by truck along Ontario's road network. The further the material has to be transported, the greater cost of the material to the marketplace.

A key to ensuring reasonable cost of aggregate is locating mineral aggregate resources as close to the marketplace as possible.

## **2.4 Future Availability of Aggregates at Reasonable Cost is Being Threatened**

The availability of mineral aggregates is threatened by :

- the depletion of near market supply,
- the sterilization of mineral aggregate deposits by incompatible land use, and
- the imposition of restrictive planning and development standards that render the cost of expanding or establishing new mineral aggregate operations prohibitively expensive

As such trends continue, the consumer is required to seek aggregate supplies at greater distances from the marketplace. This trend results in an increased cost of aggregate due to the increased transportation cost. Increased social and environmental costs will also occur since increased transportation translates into increased fuel consumption, increased emissions of pollutants, and greater volume of truck traffic.

To ensure the long-term availability of mineral aggregates as close to the marketplace as possible, municipal planning authorities need to maintain a planning and development environment that ensure:

- existing mineral aggregate operations are protected from incompatible land uses that would hinder their continuance or where appropriate expansion
- as much of the aggregate resource as is possible is protected for future use, including appropriate restrictions to land uses that could preclude access to these resources, and
- mechanisms for establishing or expanding mineral aggregate resources that are clear, reasonable and necessary to ensure these resources are made available at reasonable cost.
- designation and protection of haulage routes

## ***2.5 Need to Adequately Assess Impact of Aggregate Extraction***

Notwithstanding the importance of mineral aggregates to Ontario's economy, mineral aggregate extraction does require the large scale modification of the environment in a local planning context. Careful planning and care is required to ensure that such changes do not result in the degradation of the environment or the creation of unacceptable land use conflicts.

The expansion or creation of new mineral operations should be done as part of an approval process that carefully assesses –

- the potential impact on the environment and adjacent land use,
- potential mitigation techniques to lessen these impacts, and
- a final rehabilitation plan that ensures that impacts are eliminated or reduced to acceptable levels.

There may be situations where social, economic and environmental considerations result in the refusal of the proposed expansion or creation of a new operation. Also there may be decisions where other land uses are approved that result in mineral aggregates not being available for future use.

## ***2.6 Mineral Aggregates as an Interim Use***

Because mineral aggregates are non-renewable, finite resources, all mineral aggregate operations will eventually be depleted. In considering the establishment of a mineral aggregate operation, consideration needs to be given to how the operation will be rehabilitated and returned to an appropriate after use that will be integrated into the surrounding land use fabric.

## 3.0 Statutory and Policy Framework

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### 3.1 Overview

Ontario has developed a dual approach to mineral aggregate resource management.

Planning and locational control of mineral aggregate operations are addressed through the *Planning Act*. Municipal planning authorities have been provided the authority for the protection and long-term planning of land uses and natural resources on private land including mineral aggregate resources and mineral aggregate operations. Through the adoption of official plans and zoning by-law, municipalities and or planning boards can –

- control the location of new or expanding pits and quarries,
- require evaluation of new or expanding pits and quarries to assess impact on municipal and provincial interests,
- protect mineral aggregate deposits from incompatible land uses, and
- prescribe end uses for pits and quarries once they are depleted.

Under section 3 of the *Planning Act (1996)*, the province has adopted a Provincial Policy Statement outlining the provincial interest in this process. Municipal planning authorities must have regard to these interests when developing their plans or making land use decisions. As elaborated in Section 4.0 of this manual, the Provincial Policy Statement includes specific policy direction on how municipal planning authorities shall have “regard to” mineral aggregate resources and mineral aggregate operations.

The actual regulation of the mineral aggregate operations are administered under different statutes. The *Aggregate Resources Act (1998)* applies to the majority of mineral aggregate operations established in the province. In areas of Ontario designated under this legislation a licence is required to establish a new pit or quarry. A permit is required to establish temporary wayside pits or quarries for road construction purposes or to establish a pit or quarry on Crown Land. In areas not designated under the *Aggregate Resources Act*, municipalities may adopt by-laws under the *Municipal Act* to regulate pits and quarries within its jurisdiction.

### 3.2 The Planning Act

The provisions of the *Planning Act* provides municipalities, planning boards and other municipal planning authorities with a strong basis for the long-term protection and management of mineral aggregate resources.

In developing an effective approach to mineral aggregate resource management, municipal planning authorities should ensure the following four components have been addressed :

- (1) Official Plan – This policy document provides a strong policy basis for –
  - identifying and protecting mineral aggregate resources and mineral aggregate operations from incompatible land uses,
  - providing a clear, reasonable mechanism for expanding or establishing mineral aggregate operations,
  - providing clear directions on the preferred end use once mineral aggregate resources are completed, and
  - protection of haul routes
  
- (2) Zoning By-Laws – Under Section 34 of the *Planning Act* municipalities have the ability to prescribe permitted land uses on certain areas within their jurisdiction.

In developing such by-laws municipalities should ensure that –

- (i) existing pits and quarries are placed in appropriate zones permit continuance of the existing use, and
- (ii) incompatible land uses are not permitted in areas that have been set aside for the long-term protection of aggregate resources.

This approach also provides an appropriate mechanism for assessing new or expanding mineral aggregate operations, which will require an amendment to the zoning by-law.

- (3) Development Application Review  
Based on the evaluation criteria developed in the official plan and the technical controls provided in the zoning by-laws, municipalities should ensure they are in a strong position for evaluating the impact of land use changes in areas of mineral aggregate interests.

There will be basically two types of applications:

- non aggregate applications that need to be assessed on the basis of their potential impact on mineral aggregate deposits and operations, and
- application to expand or establish a mineral aggregate operation that needs to be assessed on the basis of impact on adjacent land uses and the environment.

Development applications can come in a variety of planning forms including amendments to the official plan, amendment to the zoning by-laws, severance and subdivision plans.

#### (4) Licencing process under the *Aggregate Resources Act (ARA)*

In situations where mineral aggregate operations are licenced under the *ARA*, the municipal planning authority needs to develop a close working relationship with the applicant to ensure:

- that consultation opportunities available through the *ARA* can be fully and effectively used,
- MNR is aware of its specific planning and development concerns, and
- opportunities to co-ordinate and streamline approval processes under the two separate approval processes of the two agencies are explored.

Where the area in question is not designated under the *ARA*, the municipality should consider developing its own regulatory by-law under the *Municipal Act* (Section 210.143) to ensure that the operation of pits and quarries is conducted in a safe, and effective manner. This by-law should follow a process similar to the process outlined in the *Aggregate Resources of Ontario Provincial Standards Version 1.0 (1997)*.

### **3.3 The Provincial Policy Statement (1997)**

This Policy Statement was first issued in 1996 and amended in 1997 under the authority of Section 3 of the *Planning Act*. It provides direction on matters of interest related to land use planning and development. Section 3 of the Act requires that in exercising any authority that effects planning matters, planning authorities, shall "have regard to" this policy statement.

The policy statement speaks in several sections to the need to protect and properly manage mineral aggregate resources.

More specifically:

The second principle of the PPS recognizes that:

"Ontario's long term economic prosperity, environmental health and social well-being depend on:....protecting resources for their economic use and/or environmental benefits."

Policy 1.1.1 (b) recognizes that "rural areas will generally be the focus of resource activity, resource based recreational activity, and other rural land uses."

Policy 1.1.3 (f) recognizes that "long term economic prosperity will be supported by:....optimizing the long term availability and the use of agricultural and other resources."

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

Policy 2.2.3 provides extensive policy direction on how mineral aggregate deposits and mineral aggregate operations should be protected and managed (see Table 1.1). These policies will be discussed in more detail in Section 4 of this manual.

### **3.4 The Aggregate Resources Act**

#### **Mineral Aggregate Operations Designated Under the Aggregate Resources Act**

The definition of mineral aggregate operations includes:

*“lands under license or permit, other than for a wayside pit or quarry, issued in accordance with the Aggregate Resources Act, or successors thereto”. Any extraction on private land in parts of the province designated under the ARA is regulated in accordance with a licence issued under this Act. Aggregate permits are issued for the extraction of aggregates from Crown land or for extraction from lands under water, whether it is on private or Crown land.*

The operational aspects of aggregate extraction on private property are regulated for those areas designated under the Aggregate Resources Act (see Figure 1) and for all lands under water or on Crown Lands. The Aggregate Resources Act makes it clear that there is no municipal jurisdiction to regulate the operational activities directly related to extraction. The province has reiterated this position under amendments to the Act, approved in December of 1996. The province has complete jurisdiction over the issuance and control of aggregate extraction on Crown Lands or for lands under water.

The recent changes to this Act have considerably enhanced the process for approving licenses and permits for aggregate extraction, including improved standards for consultation, impact assessment, mitigation of impacts, compliance reporting and penalties for non-compliance.

#### **Mineral Aggregate Operations Not Designated Under the Aggregate Resources Act**

The definition of operation under the policy also includes aggregate extraction operations that are on private lands in areas not designated under the ARA and therefore not regulated by the ARA as follows:

*“for lands not designated under the Aggregate Resources Act, [operation includes] established pits and quarries that are not in contravention of municipal zoning by-laws and including adjacent land under agreement with or owned by the operator, to permit the continuation of the operation”.*

The province does not regulate operations on private property in areas not designated under the Aggregate Resources Act although the province has indicated that it intends to designate the whole province when resources permit. In the meantime municipalities are encouraged to regulate operations on private in non-designated areas pursuant to the authority of the Municipal Act. To ensure a consistency of regulation for all operations in the province and to facilitate the transfer of regulation of these operations under the ARA when new areas are designated, municipalities should adopt a regulatory process for these operations that is similar to that under the ARA.

### **Industry/Community Liaison**

Some municipalities have established successful joint industry/community liaison committees to address issues concerning active aggregate operations. The use of these committees is encouraged as an open forum to discuss and resolve local residents and community concerns about the operations as well as related activities such as truck traffic. An expanded role that includes planning for resource availability is encouraged. These committees may be jointly, municipally or industry led and should include representatives from local concerned community groups and local operators. The Ministry of Natural Resources will participate where appropriate but encourages active operators and the municipalities to take the lead roles on these committees.

### ***3.5 Co-ordination of Approvals under the Planning Act, the Aggregate Resources Act and other Legislation***

The establishment of new aggregate operations often requires approvals under a myriad of statutes including; the Planning Act, Re Aggregate Resources Act; the Environmental Protection Act, The Ontario Water Resource Act and the Niagara Escarpment Planning and Development Act.

Because each of these approvals has its own individual information requirements, timelines, and consultation statutes, there is a need to carefully co-ordinate the various approval processes to ensure that an application is not subjected to confusion, duplication of information, needless delays or inappropriate use of government staff, time and resources.

When an applicant is considering proceeding with an application to create or expand a mineral aggregate operation, he should consult with all approval authorities to determine opportunities to co-ordinate and consolidate the various approval processes.

This would include:

- identifying information requirements of all approval authorities at the front end of the process to ensure information is collected in one step,
- establishing opportunities to conduct public meetings which meet the consultation requirements of all applicable legislation,
- consolidating hearings or appeals that meet the requirement of all applicable legislation, and
- holding joint meetings with affected approval authorities and stakeholders to identify and address issues and mitigation's needs in a coordinated manner.

Some planning jurisdictions, in Ontario, are currently exploring the development of review protocols whereby multiple approvals can be better coordinated. Some of the ideas being discussed include:

- the establishment of an extensive pre-consultation process where information requirements and concerns are discussed beforehand by effected planning authorities and stakeholders,
- the establishment of joint intergovernmental review teams
- the establishment on consolidated and streamlined review procedures
- joint submission, circulation and review
- Joint public meetings
- Joint agency review and analysis of comment
- Joint appeal board hearings

Such approaches should be encouraged whenever possible because they:

- reduce confusion among the public, government bodies and the aggregate industry
- direct/focus efforts of the aggregate industry on the relevant issues
- co-ordinate/streamline government staff action
- ensure a more effective participation by the public in the process, and
- facilitate effective and efficient consideration and decision-making by the affected municipalities, government Ministries, and appeal bodies (i.e. OMB, EAB, Cabinet)



## 4.0 Addressing the Mineral Aggregate Resources in the Municipal Planning Process

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### 4.1 Addressing the Mineral Resource Interest in Official Plans

**Note:** This section describes approaches used in the past by the province, municipalities and the Ontario Municipal Board to meet the intent of the Provincial Policy Statement in official plan policies. This is not to infer that other approaches may not be developed that meets this intent.

Official Plans should include policies that:

1. Protect known mineral aggregate deposits
2. Protect existing mineral aggregate operations
3. Provide clear, reasonable and necessary mechanisms to establish or expand mineral aggregate operations
4. Include mechanisms for evaluating preclusive land uses
5. Provide for wayside operation
6. Provide for rehabilitation
7. Provide for mineral aggregate operations in prime agricultural lands
8. Haul routes

#### 4.1.1 Protect the Known Mineral Aggregate Deposits

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

Municipalities and the Ontario Municipal Board decisions have generally interpreted this to mean that the official plan should:

- identify and protect as much of the known mineral aggregate deposits in its jurisdiction as is realistically possible,
- clearly identify the locations of these resources, and
- include policies that protect these resources from land uses that could preclude their potential use for aggregate extraction.

##### ***a) Identify As Much of the Known Deposits of Mineral Aggregates As Possible***

The first step in protecting mineral aggregate resources is determining what portion of the resource within a municipality will be protected. In identifying such areas, municipalities must identify as much of the resource as is

reasonable in the context of other social, economic or environmental considerations. This is usually done in a three step process.

*Step 1:*

All known mineral aggregate deposits are identified on the basis of their type, quality, quantity and distribution. This information can usually be derived from existing soil, geology and aggregate resources inventory information.

Figure 2 provides a more detailed description of available aggregate inventory sources.

*Step 2:*

Mineral aggregate deposits are identified that may not be feasible for extraction including:

- areas of existing urban development – meaning areas totally dominated by urban uses (i.e., buildings and structures) where costs of removal of urban structures render extraction of the aggregate prohibitively expensive. These resource areas are considered sterilized and no longer available for extraction. Scattered forms of rural residences in the countryside (e.g., non farm severance) can cause impediments in local situations but are not generally considered to constitute uses that would sterilize the resource,
- areas of environmental sensitivity where aggregate extraction would cause significant long term negative impacts on natural heritage features or ecological functions. Natural areas should not be eliminated from consideration for aggregate extraction if there is reasonable potential that these sites could be accessed and then restored to a comparable or better ecological condition through rehabilitation. In addition, there may be situations where it is determined that it is in the greater long term interest to protect these areas for possible future extraction than it is to maintain the particular natural heritage feature or function,
- areas where other social, cultural or economic factors render extraction unfeasible; for example, significant historic sites, and sensitive land uses. However, in many cases proper site design, mitigation and rehabilitation works can usually satisfactorily address social and cultural concerns,
- areas where aggregate deposits are of too low a quality or quantity to be economically used for aggregate extraction.

*Step 3:*

Based on the evaluation carried out in Step 2, the municipality would identify the potentially available known deposits that should be protected in the official plan for possible future extraction. As a minimum, all aggregate resources where no significant limitation to extraction are identified should be protected in the official plan for possible future extraction.

Where environmental, social, or cultural limitations are identified that may not be addressed through rehabilitation, a decision will be required as to which interests takes precedence in the context of requirements of the PPS and the local planning environment.

Municipalities are expected to exercise a high degree of objectivity in Step 2 and not identify limitations as to unduly restrict the amount of resource that will be protected for possible future extraction.

The three-step process should be carried out in a highly consultative environment. Local interest groups, MNR and aggregate producers should be involved in identifying the aggregate resource and the potential limitations to extraction. A more detailed explanation of this process is attached as Appendix B.

Since mineral aggregate resources are non-renewable resources that will be needed beyond the time horizon of the official plan, municipalities should not attempt to limit areas to be protected only to those areas needed to meet the demand expected within the planning period of the official plan.

***b) Identify the Known Deposits of Mineral Aggregates in the Official Plan***

Official plans must clearly identify the location of the mineral resources in the plan. This ensures that the user is clearly aware of where these resources are located and can determine if a proposed land use change is likely to affect the protected mineral aggregate resource.

The best method of achieving this is by including a map in the official plan that identifies the distributions of these resources. Approaches used in many official plans include placing these resources in,

- an aggregate resource extraction designation in the land use schedule,
- an overlay on the land use schedule, or
- a separate resource protection map.

A map that is clearly not part of the official plan such as an appendix or an information map is generally not considered an acceptable form of identification because it is not part of the official plan.

In limited cases, these resources have been identified by textual reference or description; for example, in a policy plan, where broad planning direction is provided to guide development of subordinate planning documents. This sometimes occurs in Regional or County level official plans where more detailed land use mapping is deferred to the official plan of the lower tier municipality. This is acceptable provided the textual description clearly identifies the nature, extent, and importance of the resource and there is a clear requirement for the lower tier municipality to identify the mineral aggregate resources in their official plans. (Note: a textual description can refer to a known map source such as an "Aggregate Resources Inventory Paper")

In some municipalities in Northern Ontario, the lack of good geological information makes the identification of mineral aggregate areas difficult. In these areas, a municipality can place rural areas suspected of containing aggregate resources in a general "rural" or "resource protection" designation. The precise delineation of aggregate resources can be deferred to a more detailed planning phase (e.g., official plan amendment).

### ***c) Protecting the Resource From Preclusive Land Uses***

Policies should be included in the official plan that limit permitted uses in and adjacent to, mineral aggregate resource areas to mineral aggregate operations and/or other uses that are compatible with and do not preclude the option of aggregate extraction.

As a general guide, a land use or activity would be "preclusive" or incompatible" if it entailed:

- the placement of buildings and structures on top of a resource that would be prohibitively expensive to remove for the purposes of establishing a mineral aggregate operations (e.g., residential subdivisions, industrial parks, retail establishments. Minor structural components of the land use such as houses and barns associated with a farm operation are generally not considered serious impediments to the establishment of new operations,
- activities that could not effectively function in close proximity to active mineral aggregate extractive operations (e.g. long term care facility), and

- activities that would create land use conflicts that hinder the continuous operation or potential expansion of mineral aggregate operation (e.g., residential severances), and
- a permanent commitment for a continued use in which extraction would not be permitted (e.g., provincial, municipal parks, etc.).

Where the quality of information is such that the municipality has been able to identify mineral aggregates that are:

- high quality and will likely be needed for extraction in the future and,
- not encumbered by any significant planning constraints;

The municipality is strongly encouraged to place these areas in an “aggregate extraction” category. This makes it clear to existing and prospective landowners that it intended that these lands are likely to be converted to mineral aggregate operations. Since there are no significant planning constraints, this approach pre-empts the need for an amendment to the official plan and avoids needless delays and expenses.

Most municipalities provide the needed protection by placing the resource area in a land use designation that limits permitted uses to those that are compatible with extraction and transportation of the resource. Many rural and agricultural designations generally meet this requirement. In addition, the plan should include policies that prohibit the creation of lots that would support land uses that are incompatible with aggregate extraction and transportation (e.g., residential severance and estate residential subdivisions).

#### **4.1.2 Protect Existing Mineral Aggregate Operations (MAO’s)**

Sub-section 2.2.3.2 of the PPS states: “Mineral aggregate operations will be protected from activities that would preclude or hinder their expansion or continued use or would be incompatible for reasons of public health, public safety or environmental impact”. Existing mineral aggregate operations should be permitted to continue without the need for the official plan amendments, rezonings or development permits under the *Planning Act*. To ensure the intent of this sub-section has been met, the official plan should:

- identify existing mineral aggregate operations
- permit the continuation of these operations, and
- restrict incompatible land uses on adjacent lands

**a) *Identify Existing Mineral Aggregate Operations***

In most cases, legally existing pits and quarries should be identified on a map in the official plan that clearly shows the location and external boundaries of mineral aggregate operations.

For areas under licence or aggregate permit issued under the *Aggregate Resources Act*, external boundaries should conform to the limits of the licence or permit. In areas, not regulated under the *Aggregate Resources Act*, the external boundaries should encompass the existing pit or quarry area and the adjacent land areas that are either owned by the operator or subject to an agreement between the operator and the landowner.

Some municipalities have used symbolic representations (i.e., stars or squares) together with textual descriptions to identify the operations by lot, concession and/or area. If these approaches are used, the policies of the plan should make provision for more detailed mapped representation in subordinate planning documents (i.e., lower tier official plans and comprehensive zoning by-laws).

In rare cases, these operations may be identified by a textual reference with a policy requiring specific location maps on a subordinate planning document (i.e., lower tier official plans or zoning by-laws). This may be acceptable, where the plan is a policy document (i.e., some Regional OP) that provides general strategic direction to lower tier documents.

**b) *Permit the Continuation of Existing Mineral Aggregate Operations***

Policies must be included in the official plan that recognize existing operations including associated facilities as permitted uses. This includes recognition that the operation will be appropriately zoned in the zoning by-law or Minister's zoning order.

**c) *Restrict Incompatible Land Use On Adjacent Lands***

Policies should be included in the official plan that prohibit new land uses adjacent to existing mineral aggregate operations that could prohibit or constrain the continued operation or expansion of these operations. This is usually accomplished by placing adjacent lands in a land use designation that limits permitted uses to rural, open space or environmental land uses that are compatible with mineral aggregate extraction and its associated uses.

Policies should also be included in the official plan that make the establishment of new uses in these adjacent lands conditional on satisfying

the municipality that the proposed land use will not adversely affect the continuation or expansion of the mineral aggregate operation.

#### **4.1.3 Provide Clear, Reasonable, and Necessary Mechanisms to Establish or Expand Mineral Aggregate Operations**

Section 1.1.1 of the PPS states that “cost effective development patterns will be promoted”. and “Rural areas will generally be the focus of resource activity...”. Section 2.2.3.1 adds that “as much of the mineral aggregate resource as is realistically possible will be made available to supply mineral resource needs, as close to the market as possible”.

To ensure this intent has been met, the municipalities generally include policies in the official plan that,

- identify clear approval mechanisms for establishing or expanding operations, and
- identify support documents that are reasonable and necessary to assess a proposal for a new or expanded mineral aggregate operation

##### ***a) Identify Clear and Reasonable Approval Mechanisms***

Policies should be included in the official plan which clearly describe the types of approvals or permissions required from the municipality to permit the establishment or expansion of a mineral aggregate operation. Generally, an amendment of the official plan and/or zoning by-law is required to effect such changes.

Where geological investigations have confirmed the presence of high quality aggregate deposits that will be in demand in the future, municipalities are encouraged to consider pre-designating such areas in an aggregate extraction category in the official plan. This will make it clear to existing and prospective landowners in the municipality that it is the long term intent that these lands will support a mineral aggregate operation. In such circumstances, only a zoning by-law amendment is required to establish a new operation or expand an existing one.

In areas designated under the *Aggregate Resources Act*, municipalities should not require detailed controls such as “site plan control” or “landowner agreements” since these represent a duplication of controls that are already addressed through the “licence” and “permit” procedures required under the A.R.A.

***b) Identify Support Documents Needed For Assessing An Application To Establish Or Expand A Mineral Aggregate Operation***

Policies should be included in the official plan, that clearly identify the types of background information that should accompany a request to permit a new or expanded mineral aggregate operation.

Information requested should be limited to that which is necessary for example:

- to assess the impact on adjacent land uses and facilities including roads,
- to assess the impact on adjacent natural and cultural heritage features and ecological functions,
- to assess the impact on public health, public safety and the social and economic well being of the community, and
- to demonstrate how potential negative impacts on adjacent land uses may be mitigated or minimized.

***c) The Public Need Issue***

An applicant should not be required to justify the “public need” for a new or expanded mineral aggregate operation. The PPS has already established that there is a need to make mineral aggregate resources available to Ontarians. Similarly, studies asking the applicant to explore alternate supplies in other jurisdictions are inappropriate since the PPS is premised on the concept that all municipalities must assume a share of responsibility in making mineral aggregates available; consequently no one aggregate resource is preferred over another.

Similarly, municipalities cannot request “public need” studies that tie needs to the life of the planning document or the needs of the residents of that municipality. The PPS recognizes that mineral aggregates are a non-renewable resource whose availability should be maximized for the benefit of all Ontario and not the benefit of a single municipality.

***d) Comprehensive Studies***

Although municipalities are able to ask that the impacts of a new operation are assessed in the context of other operations in the area, they cannot reasonably expect an applicant to conduct studies that require data collection and analysis beyond the zone of influence of the application. An applicant can be requested to identify and where appropriate mitigate the impact of increased truck traffic from the operation in the context of background truck traffic generated by other operators in the area. However, studies requiring the development of broad traffic pattern analysis



or market place patterns across the municipality are generally considered inappropriate for an individual applicant to provide. Such broad requirements are generally beyond the abilities of individual landowners in terms of both cost and information requirements and are strategic in nature being more appropriately addressed by the municipality as broad municipal or sub-provincial issues.

#### **4.1.4 Include Mechanisms For Evaluating Preclusive Land Uses**

Sub-section 2.2.3.3 of the PPS states “In areas adjacent to or in known *deposits of mineral aggregates, development* which would preclude or hinder the establishment of new operations or access to the resources will only be permitted if:

- a) resource use would not be feasible; or
- b) the proposed land uses or development serves a greater long term public interest; and
- c) issues of public health, public safety and environmental impact are addressed.”

If a municipality wishes to consider potentially preclusive or incompatible use in or adjacent to a protected mineral aggregate resource area, the official plan should establish a clear mechanism to assess and control applications for land use change that may preclude or hinder the establishment or expansion of new mineral aggregate operations.

Policies should be included that require an amendment to the official plan to permit the establishment of the new land use. This is assuming the municipality has already placed these areas in a land use designation in the official plan where land uses that could preclude the option of mineral extraction are not permitted. As a condition to the amendment, policies should be included requiring the applicant to explain why a proposed change should be permitted that would potentially preclude or limit the availability of known deposits of mineral aggregates.

Policies should also be included that specify that the municipality will only consider such an amendment where it is satisfied that:

- the use of the mineral aggregate resource is not feasible, or
- the proposed land use or development serves a greater long term public interest, and
- issues of public health, public safety and environmental impact are addressed.
- the use does not adversely affect the availability of aggregate resources in adjacent areas

#### **4.1.5 Provide For Wayside Operations**

Section 2.23.4 of the PPS states: “*Wayside pits and quarries and portable asphalt plants* used on public authority contracts will be permitted, without the need for official plan amendment, rezoning, or development permit under the *Planning Act* in all areas, except those areas of existing development or particular environmental sensitivity which have been determined to be incompatible with extraction and associated activities”.

Accordingly policies should be included in the official plan which provide for such exclusion of requirements for wayside operations.

#### **4.1.6 Provide For Rehabilitation**

Section 2.2.3.5 of the PPS states: “Progressive rehabilitation to accommodate subsequent land uses will be required”.

Accordingly, policies should be included in the official plan which require rehabilitation, in general, and progressive rehabilitation, in particular, as requirements of mineral aggregate operations.

#### **4.1.7 Provide For Mineral Aggregate Operations On Prime Agricultural Lands**

Section 2.2.3.6 of the PPS states: “in *prime agricultural areas, on prime agricultural land, extraction of mineral aggregates* is permitted as an interim use provided that rehabilitation of the site will be carried out whereby substantially the same areas and same average soil quality for agriculture are restored”.

On these *prime agricultural lands*, complete agricultural rehabilitation is not required if:

- a) there is a substantial quantity of *mineral aggregates* below the water table warranting extractions;
- b) the depth of planned extraction in a quarry makes restoration of pre-extraction agricultural capability unfeasible; and

- c) other alternatives have been considered by the applicant and found unsuitable; and
- d) agricultural rehabilitation in remaining areas will be maximized”.

Policies should be included in the official plan which address the need to ensure rehabilitation to agricultural uses in accordance with Section 2.2.3.6 of the PPS for mineral aggregate operations proposed on prime agricultural areas.

## **4.2 Addressing the Mineral Resource Interest in Zoning By-laws**

**Note:** This section describes approaches used in the past by the province, municipalities and the Ontario Municipal Board to meet the intent of the Provincial Policy Statement in zoning by-law provisions. This is not to infer that other approaches may not be developed that meets this intent.

Zoning By-laws should include components that:

- protect existing mineral aggregate operations
- protect mineral aggregate resources from incompatible land uses
- permit wayside operations

### **4.2.1 Protect Mineral Aggregate Operations**

In accordance with the requirements of Section 2.2.3.2 of the PPS, the zoning by-law should include provisions that clearly identify and protect legally existing pits, quarries, wayside pits and wayside quarries. This includes:

- a definition of a pit, quarry, wayside pit and wayside quarry. The definition for Mineral Aggregate Operations in the PPS may help in preparing an appropriate definition.
- placing all legally existing pits and quarries in a specific extractive zoning category that permits a mineral aggregate operation and associated activities or a general land use zoning category that permits mineral aggregate operations and prohibits all incompatible uses.

### **4.2.2 Protect Mineral Aggregate Resources**

Areas adjacent to existing pits and quarries and areas identified in the official plan as mineral aggregate resources areas should be placed in zoning category which limits permitted uses to legally existing uses and those that are considered compatible with mineral aggregate operations.

In areas without an official plan, aggregate resource lands that have been identified in conjunction with MNR should be placed in zoning categories where permitted uses are limited to those that are compatible with extraction. One way of proceeding in such a circumstance is to place the aggregate resource lands in an extraction zone that permits pits and quarries associated compatible uses and precludes incompatible land uses. This allows pits and quarries to be established throughout the zone without the municipality exercising any site specific location control, and it does not identify or define individual pits and quarries.

Some municipalities, without official plans, have attached maps to their zoning by-law for information purposes. This is to advise landowners and prospective purchasers where mineral aggregate deposits exists and new mineral aggregate operations might locate. This approach is a useful notification for prospective landowners.

#### **4.2.3 Provide For Wayside Operations**

In accordance with Section 2.2.3.4 of the PPS, zoning by-law should permit wayside pits and quarries in all zoning categories, “ except those areas of existing development or particular environmental sensitivity which have been determined to be incompatible with extraction or associated activities”.

### ***4.3 Assessing Development Applications on or within Mineral Aggregate Resource Areas***

Where a development application occurs within:

- 300 metres<sup>1</sup> of a known unconsolidated deposit (e.g., sand, gravel, clay) or a mineral aggregate pit operation; or
- 500 metres<sup>1</sup> of a known bedrock deposit or a bedrock quarry operation,

The applicant should be required to assess the impact of the proposed development on the mineral aggregate resource and the mineral aggregate operation(s).

This will require the applicant to provide information on the potential impact of the proposed development on

- the continued use or expansion of any mineral aggregate operation or adjacent land, and

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<sup>1</sup>These are recommended distances. In lieu of information that will identify the different influence area, these minimums or the minimums set out by MOEE standards, should be applied. The municipality or the approval authority may wish to conduct studies or analyses to permit the development of different standards for defining adjacency.

- the long term availability of mineral aggregate resources on the site of the development applicant and adjacent lands

#### **4.3.1 Information Requirements**

The planning authority may require the applicant to provide some or all of the following information and analysis in support of the application.

##### **a) Nature and Extent of Mineral Aggregate Operation**

The applicant should describe the location and nature of existing aggregate operations including:

- the outside limits all existing mineral aggregate operations. The outside limits of such operations are usually defined as the limits of the licensed property in areas designated under the ARA, or in areas outside ARA jurisdiction. The outside limits the existing pit or quarry area and the adjacent lands that are either owned by the operator or subject to an agreement between the operator and the landowner;
- the location of existing or past wayside pits or quarries, if known;
- existing and potential existing activities (e.g., washing and screening, crushing, stockpiling, blasting in a bedrock operation, asphalt processing, truck movements on-site and on adjacent roadways);
- associated potential impacts on adjacent land (e.g., noise, dust, and vibration); and
- based on the above, the zone of influence of existing and potential mineral aggregate operations.

##### **b) Nature and Extent of Mineral Aggregate Deposits**

The applicant should identify the location of all known deposits outside of existing aggregate operations and include a description of the type of aggregate deposit. Known deposits of mineral aggregate resources are identified on maps (at scales of 1:50,000) contained in Aggregate Resource Inventory Papers (ARIP's) in Open File Geological Reports or other similar geological or geotechnical studies. The Ministry of Natural Resources (MNR) may be contacted to determine what information is available including:

- a) the location and type of mineral aggregate resources located within the planning area; and
- b) studies carried out on the identification and protection of areas of mineral aggregates located in the plan area.

The applicant and planning authority may wish to rely on the information available from MNR or alternatively may wish to prepare more detailed information concerning:

- a) the area extent of the deposit(s);
- b) the type of the deposit (e.g., bedrock, sand and gravel, clay);
- c) the quality of the deposit (e.g., granular A, B, C and its general suitability for use in construction or as an industrial material;
- d) the quantity of the material (e.g., quantity total or on a per hectare basis)
- e) the demand for the material within the local, regional and/or provincial market area.

In situations, where MNR information is determined to be too general, the applicant will be responsible for providing more detailed information that may be required. This would be through an evaluation of the resource potential of an area or site by means of a thorough geological assessment prepared by a person qualified to do these studies. This evaluation process and studies required are more fully discussed below.

### **c) Potential Impacts on Future Mineral Aggregate Operations**

Where aggregate deposits exist that do not have an existing mineral aggregate operation, the applicant must assume that at some future date these deposits may be the location of a new aggregate operation. Therefore in assessing the compatibility of the applicant's development proposal with mineral aggregate extraction, the applicant must assume that activities associated with extraction will occur on these lands, at some point in the future.

Based on the knowledge of the nature of the aggregate deposits and activities of existing operations in similar types of deposits, the applicant must identify potential impacts of future operations and likely zones of influence if such operations were to be established (this is to include the expansion of existing operations).

### **d) Compatibility Analysis**

The applicant must provide a summary of the type of land and the associated activities and structures or facilities that would result if the application were approved.

Known and potential land use conflicts that may occur if the application proceeds should then be identified. This would include:

- direct sterilization of mineral resources where buildings, structures or incompatible land uses will be located directly on top of a known mineral aggregate deposit;

- land use conflicts resulting from incompatibility of the activities of existing or future aggregate operations and activities of the land use(s) resulting from the proposed development (application)
- off site land use conflicts resulting from the competing demands of the two land uses (e.g., conflicts in road traffic, cumulative demand/impact on water resources)
- increased potential for restrictions to the operation of an existing pit or quarry or a new aggregate operation (e.g., cessation of water pumping, additional setbacks for washing, screening and processing sites from the property boundary, public pressure to restrict certain activities within the operation).
- increased difficulty in obtaining licenses to expand existing aggregate operations or to create new operations by the increased resistance of new residents in adjacent areas. Experience has shown that the increase of residential uses adjacent to aggregate production areas significantly increases the difficulty and cost of successfully processing a new aggregate licence application.

#### **e) Mitigation Analysis**

Where it is determined that significant conflict with existing and/or future aggregate operations may occur, the applicant will identify mitigation measures that must be used to reduce or eliminate any negative impacts. Such mitigation measures may include:

##### - Identification of Development Restrictions in the Zone of Influence

Based on the potential land use conflicts identified in the compatibility analysis, specific building or activity restrictions may need to be applied in the zone of influence adjacent to an existing or potential aggregate operation (e.g., no habitable buildings permitted within x metres of a deposit or a licensed site).

##### - Lot Relocation or Redesign

Where a consent or subdivision is involved, lots can sometimes be relocated or reconfigured to reduce potential conflicts with mineral resource interests. For example:

- a severed parcel in a consent application can be relocated to a portion of the remainder parcel further away from the mineral resource interest;
- lots in a subdivision next to a mineral resource interest can be enlarged to allow increased setbacks for buildings within the lot; and services, buildings and structures that would otherwise sterilize the resource. This would require co-operation between the applicant, adjacent landowners, the municipality and the aggregate industry; and
- lots and open space blocks within a subdivision can be arranged to place the open space block between the building lots and the mineral resource interest.

- Establishment of Building Setbacks

Where a property is sufficiently large, the distance between the buildings and structures within the proposal and the mineral resource interest should be maximized through the establishment of building setbacks or envelopes.

- Establishment of Landscape or Buffer Strips

A landscape strip consisting of vegetative planting and/or establishment of berms may be required along the portion of a property abutting the aggregate operation to reduce visual or noise related conflicts.

- Establishment of Noise Attenuation Design Features

Where possible, buildings and structures should be designed to attenuate noise effects of adjacent aggregate operations.

- Avoidance of Truck Traffic in Road Design

Where the option exists, access to public roads should be directed to portions of the road system less likely to be used by trucks transporting aggregate materials.

Where access to a truck route is anticipated, the applicant should examine means to reduce conflicts such as:

- paving roads where gravel is hauled
- controlled access through establishment of traffic lights
- properly designed entrance and exit ramps
- establishment of noise barriers along the portion of the road that abuts the development application

- Working with the Owner of the Mineral Aggregate Resource Operation

It is sometimes possible to work with the owner of the aggregate resource operation to identify things that the operator is willing to do to reduce impacts on adjacent land as follows:

redesign of the phasing schedule of the operation to ensure mineral resource

- material close to the proposed development is removed first,
- establish landscape buffers and berms along portions of the operation closest to the proposed development,
- modify internal operations to reduce dust or noise generation, and
- set schedules and advance notice of high impact activities such as blasting

The applicant should be willing to consider assuming these costs where his development proposal is the prime beneficiary.



