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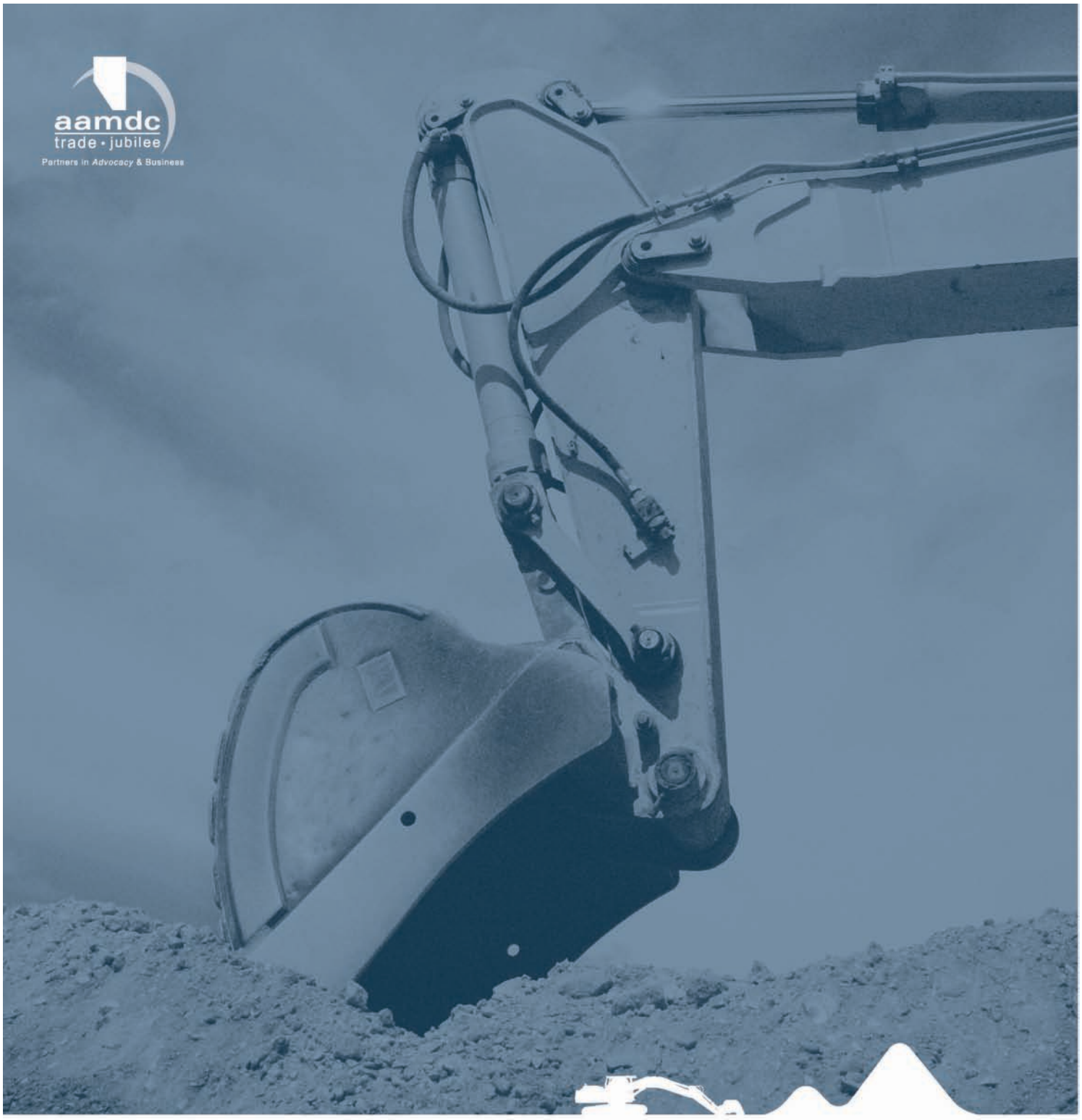

A MUNICIPAL GUIDE TO **SAND** AND **GRAVEL** OPERATIONS IN ALBERTA

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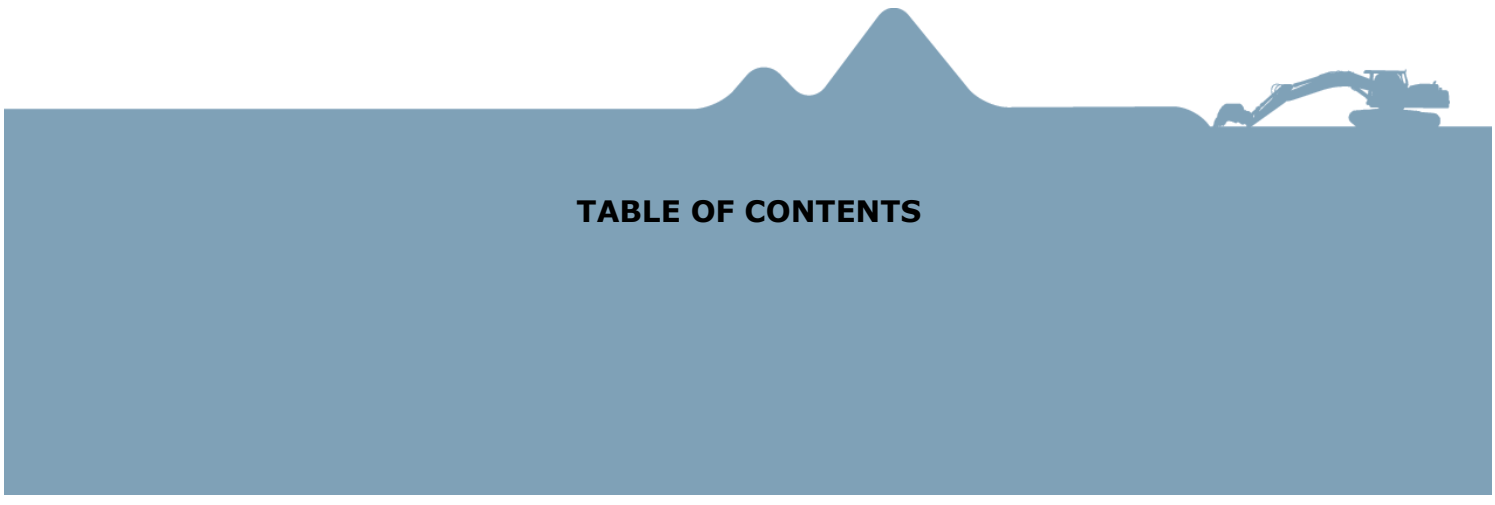


TABLE OF CONTENTS

The *Municipal Guide to the Sand and Gravel Operations in Alberta* was developed to provide a reference on the sand and gravel industry in Alberta for municipalities. The *Guide* compliments and draws from existing documents and resources, specifically sample municipal bylaws, policies and agreements, the *Guide to the Code of Practice for Pits*, the *Guide for Gravel Pit Operators* and the Sand and Gravel Resources Process Checklist.

The information in the *Guide* moves from general background and reference information to more specific information on relevant legislation and roles and responsibilities of the municipality and other stakeholders. The final chapter contains specific checklists and tools that the municipality can use in assessing and managing sand and gravel operations in their communities.

Chapter One – An overview of the importance of aggregate and the nature and extent of the industry.

Chapter Two – A description of the sand and gravel industry, its outlook, roles and responsibilities, and the work of the industry association.

Chapter Three – Information on federal and provincial legislation, policies and regulations that may govern or impact sand and gravel operations.

Chapter Four – Detailed information on the roles, responsibilities and powers of municipal governments in permitting and locating sand and gravel operations under municipal land use planning authority.

Chapter Five – A sand and gravel project assessment and management toolkit for municipalities. The toolkit contains a sample project evaluation framework, process charts, checklists and samples of many forms and agreements referenced in the document.

HOW TO USE THIS GUIDE

Activities Plan – The plan for carrying out activity at a pit that has been authorized in writing by Alberta Environment under the Code of Practice for Pits.

Aggregate – Any sand, gravel, clay or marl that is excavated from a pit, whether in a processed or unprocessed form.

Development Authority – The local municipal government.

Extraction – Includes the stripping and stockpiling of soil, overburden, and aggregate materials and the transport of said materials within the site.

Hauling – The transport of aggregate materials off-site through the local or provincial road network.

Infrastructure – Any works, buildings, structures, facilities, equipment, apparatus, mechanism, instrument or machinery belonging to or used in connection with a pit, and includes any storage site or facility, disposal site or facility, access road, haul road, railway or telecommunication line.

Marl – A soft, loose, earthy material that consists of varying amounts of calcium carbonate, clay and silt-sized materials.

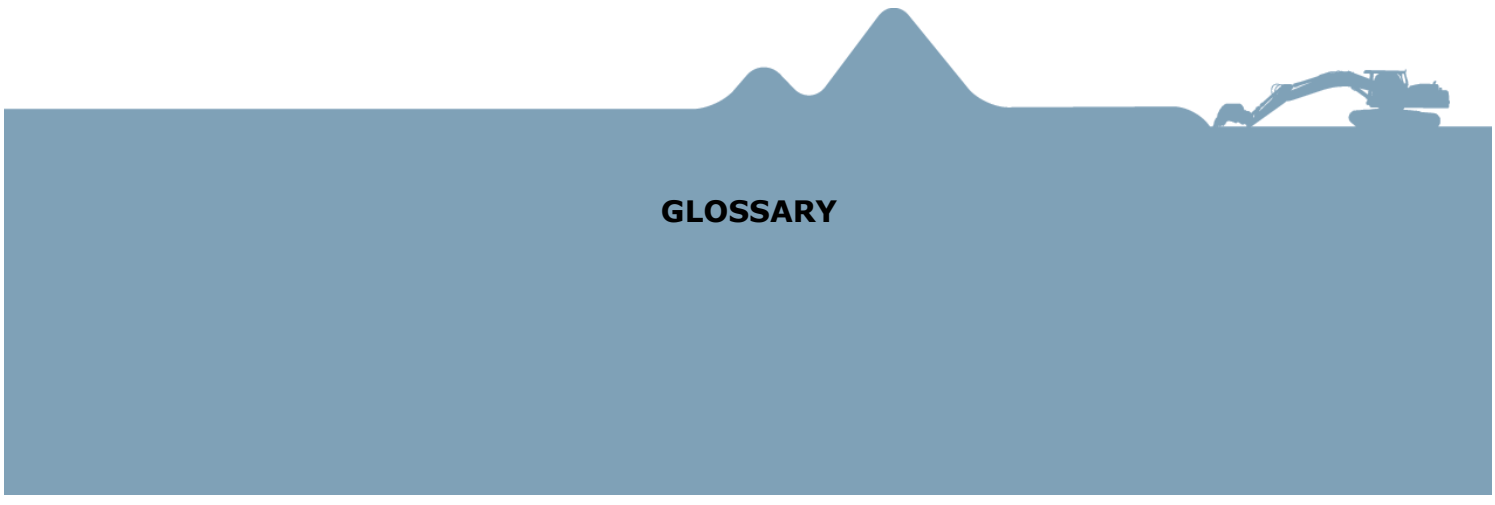
Nuisance – Something harmful, annoying, troublesome, and an inconvenience.

Operator – The private sector individual, industry, municipality or government department who has the authority, permit or approval to operate a sand and gravel pit.

Overburden – The rock, soil, and geological materials in a pit overlying the area or point of economic interest (in this case, the aggregate materials) that does not include topsoil, subsoil, aggregate or reject.

Pit – Under the *Environmental Protection and Enhancement Act* a pit is an excavation in the surface made for the purpose of removing, opening up or proving sand, gravel, clay, marl, peat or any other substance, and includes any associated infrastructure, but does not include a mine or a quarry.

Private Land – Deeded or patent land, Special Areas Board land, Métis Settlements and provincial parks.



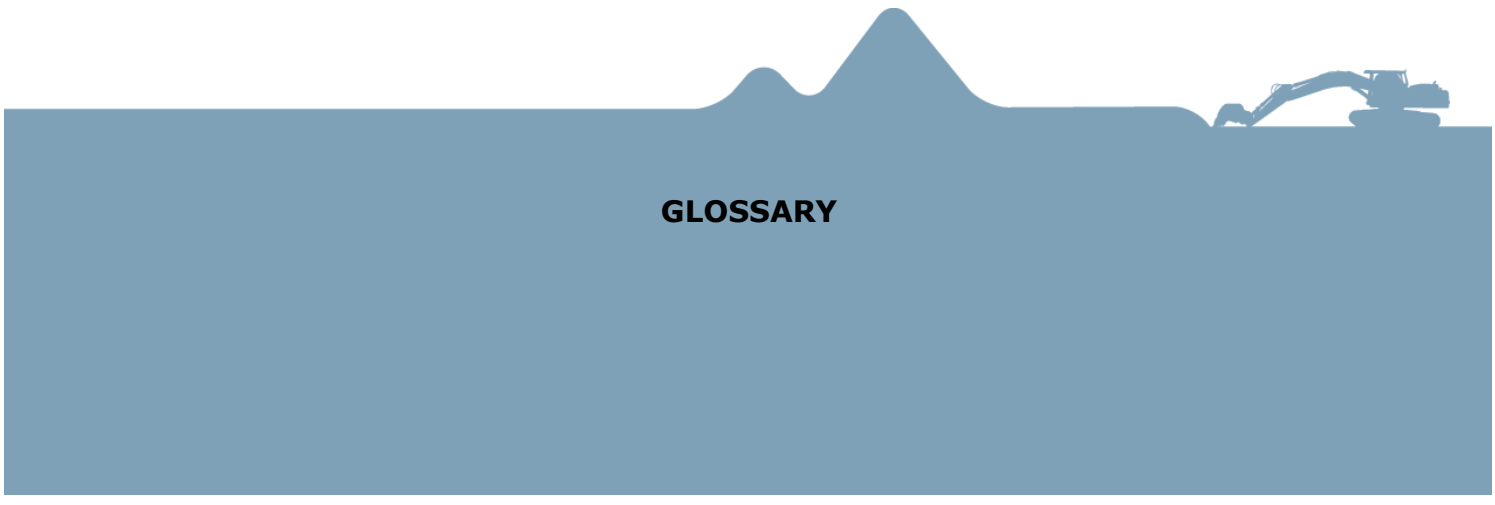
GLOSSARY

Public Land – Land of the Crown in right of Alberta to which the *Public Lands Act* applies. This may also include the bed and shore of waterbodies anywhere in the Province.

Reclamation – The restoration of the site in a manner that will accommodate a designated future land use.

Registration Holder – A person who holds a valid registration for a pit issued by a Director from Alberta Environment. This will be the person who is identified in the application for registration under Schedule 1(a) of the *Code of Practice for Pits*.

Security – A detailed financial calculation that represents the maximum conservation and reclamation cost that would be incurred by a third party to reclaim the pit once pit operations are completed.



GLOSSARY

OVERVIEW OF **ALBERTA'S AGGREGATE INDUSTRY**

The extraction of aggregate (sand and gravel) resources is vital to the growth of Alberta. Readily available supplies of aggregate are essential for development of the roads, buildings and infrastructure on which our society and our economy are built.

Despite the obvious value aggregate extraction brings to Alberta, it has also emerged as an area of potential conflict at the community level. Municipalities and their residents often have concerns with the visual, environmental and economic impacts of sand and gravel operations within their boundaries. The sand and gravel industry has faced situations where municipalities refuse or are unable to issue development approval for a new pit or to renew a permit for an existing operation. The provincial oversight and registration processes for sand and gravel operations can also be confusing and controversial. Provincial codes and regulations have varying requirements for the industry depending on the size of the pit, the ownership of the land on which the pit is located and whether the operator of the pit is public or private sector. Once operations at a pit are completed, the reclamation process and the issuance of a reclamation certificate can be a flashpoint for disagreement between industry, the province, the municipality, and the landowner.

Some of the conflict and controversy associated with sand and gravel extraction can be attributed to a lack of readily available, neutral information on the nature of sand and gravel operations, the standards and registrations under which the sand and gravel industry operates, the role of industry, municipal and provincial authorities, and the absence of a reasonable municipal framework for assessing development impacts. This *Municipal Guide to Sand and Gravel Operations in Alberta* is intended to address some of these issues by providing a comprehensive reference for municipalities that complements and summarizes existing resources on the development approval, regulatory, registration, operating and reclamation processes for sand and gravel operations in Alberta.

PIT STOP

This *Municipal Guide to Sand and Gravel Operations in Alberta* is a comprehensive reference for municipalities that complements and summarizes existing resources on the development approval, regulatory, registration, operating and reclamation processes for sand and gravel operations in Alberta.

BALANCING INDUSTRY, ECONOMIC AND COMMUNITY NEEDS

Sand and gravel deposits are located where natural forces have placed them, not necessarily where they are most needed. The pressure to access new sand and gravel resources is growing and is most likely to occur close to development markets and in high growth areas. As a result, gravel deposits near urban centers and in high growth areas are being depleted much faster than replacement sources are being registered. As readily available aggregate supplies deplete, pressure is increasing across the province to find and develop new aggregate sources. Faced with declining local reserves, the sand and gravel industry will need to work cooperatively with municipal land use planning authorities to identify and access appropriate replacement reserves.

Recognizing the pressure to secure more access to aggregate resources to support development, the sand and gravel industry has emphasized a need: for long-term certainty on land approvals, to access the resource as close as possible to markets to minimize transportation costs, and to increase certainty around the registration and development approval processes. With escalating development pressures in the province and finite gravel resources, there is also growing pressure for industry to mine aggregate from areas that were previously deemed unprofitable or inaccessible.

Provincial land use policies encourage municipalities to establish land use patterns that accommodate natural resource extraction while minimizing potential conflict with nearby land uses and any negative environmental impact. Municipalities generally recognize the necessity and benefits of aggregate extraction to sustain economic growth, build infrastructure, and develop their local communities. The municipality, as the development authority, has the difficult task of balancing the needs of industry, its residents, and the overall economic and environmental well-being of its community through its land use policies and bylaws.

PIT STOP

Provincial land use policies encourage municipalities to establish land use patterns that accommodate natural resource extraction while minimizing potential conflict with nearby land uses and any negative environmental impact.

Operation of a gravel pit can impact the quality of life and the environment in communities. Municipalities find themselves on the front lines in dealing with residents' concerns and the social and environmental impacts of locating sand and gravel operations in their jurisdictions. The location of gravel pits can be a cause of concern for residents, neighbouring urban communities and environmental groups. The expansion of the aggregate industry to meet development and infrastructure demands, growth pressures and industry needs can sometimes result in the approval of sand and gravel pits becoming a serious and controversial local issue.

There is an ongoing need to find the right balance between protecting aggregate resources, making them available to support development and infrastructure needs, and reasonably minimizing or mitigating the social and environmental impacts of aggregate extraction on residents and communities.

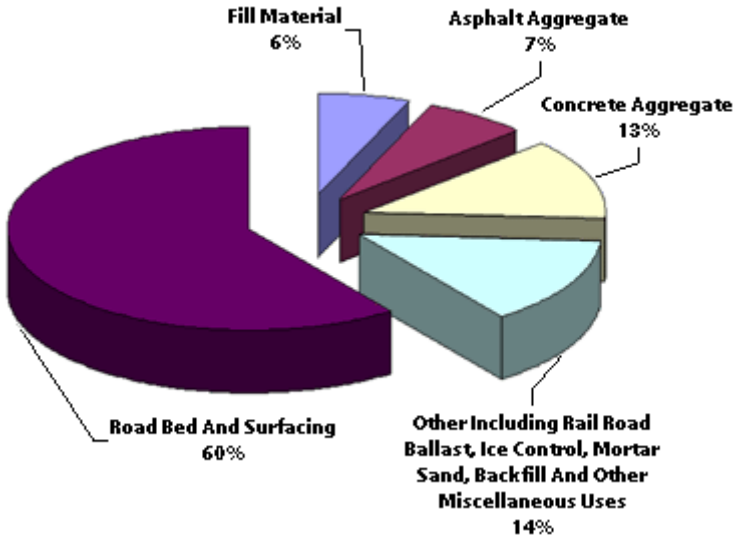
SAND AND GRAVEL INDUSTRY CONTRIBUTIONS

Aggregate is literally the foundation on which our communities and our roads are built. The demand for aggregate materials has been growing in recent years as development pressures have increased across Alberta. Municipalities, the provincial government, various industrial and commercial entities and private citizens all need aggregate to support and sustain development.

The following examples illustrate the importance of aggregate resources for development:

- A typical six-lane highway in Alberta requires as much as 40,000 tonnes of aggregate per kilometer (24,855 tonnes of aggregate per mile). This includes graded gravel for the road base, sand and gravel in asphalt and concrete pavement, plus medians, bridges, overpasses and retaining walls.
- Newly constructed rural roads require approximately 2,172 tonnes (approximately 100 truck loads) of crushed gravel per kilometer (1,350 tonnes per mile).
- Re-gravelling rural roads requires approximately 483 tonnes or 22 truck loads per kilometer (300 tonnes per mile).
- A typical family house uses as much as 160 tonnes (12 truck loads) of gravel beneath the basement floor, for drainage around the foundation, in the construction of lanes and driveways, and for stucco and masonry.
- The aggregate resource is critical to the development of the transportation and structural infrastructure that supports the development of new mineral, oil and gas, forestry and other renewable resources in Alberta.

The chart below outlines a breakdown of how aggregate resources are typically allocated to various applications in Canada.



Aggregate exploration and development can provide other tangible benefits to local communities beyond being a necessary foundation for the development and maintenance of infrastructure. The industry provides a direct financial benefit to landowners where sand and gravel operations are located through royalty and surface rights payments. The local municipality may benefit financially from locating a sand and gravel operation in its jurisdiction through the payment of property taxes, the potential for collecting a community aggregate levy, and through haul agreements. The aggregate industry may also provide indirect financial benefits to the municipality or community in which it operates by providing a local aggregate supply and through corporate citizenship that may include support for community events, charities and initiatives.

NATURE AND EXTENT OF SAND AND GRAVEL INDUSTRY IN ALBERTA

The aggregate industry in Alberta plays a significant economic and environmental role; mineral aggregate has the largest commercial value of any non-energy mineral resource produced in Alberta. The aggregate industry in Alberta represents thousands of employees, and there are estimated to be between 3,500 and 4,000 sand and gravel pits and/or surface material operations located in Alberta. Sand and gravel extraction may include the processes of extracting, crushing, washing and screening (sorting by size) of sand and gravel from pits and surface material operations (on public land).

Under the *Alberta Environmental Protection and Enhancement Act (EPEA),* a pit is defined as "any opening in, excavation in or working of the surface or subsurface made for the purpose of removing sand, gravel, clay or marl, and includes any associated infrastructure but does not include a mine or quarry". Pits are located on both private and public land in Alberta and fall into the following categories:

Class I pits on private land are greater than or equal to five hectares, and are subject to the requirements of the *Code of Practice for Pits* under the *EPEA, the Conservation and Reclamation Regulation* and the land use and development authority of the local municipality. Class I pits require a registration (or a pre-existing provincial approval) and are required to provide full-cost reclamation

security. The *Code of Practice* outlines the registration process and the security requirements for this level of pit. It is estimated there are 600 - 700 Class I pits currently located on private land in Alberta.

Class II pits on private land are less than five hectares. These smaller pits are not currently subject to the provisions of the *Code of Practice for Pits*, although they may be in the future. Class II pits do not require a registration, nor are they subject to full-cost provincial security requirements at this time. Class II pits are subject to the environmental provisions of the *EPEA* and specifically the requirements of the *Conservation and Reclamation Regulation* under the *Act*, as well as the land use and development authority of the local municipality. There are estimated to be approximately 2,000 smaller pits on private land in Alberta.

Pits on public land can be of any size and are subject to the *Public Lands Act (PLA)* under the jurisdiction of Alberta Sustainable Resource Development. Sand, gravel, clay, marl, silt and peat on public land are classified as surface material. All Surface Material operations (pits) on public land require a *Surface Material Lease or Licence (SML)* under the *PLA.* Rent or other fees may be paid to the Crown (the province). There are approximately 45 *SMLs* that are less than 5 hectares and approximately *969 SMLs* that are over 5 hectares in Alberta. There are also approximately 66 public pits, all of which are over 5 hectares in size, and serve multiple domestic, public and commercial users.

PIT STOP

The types of sand and gravel pits in Alberta are:

Class 1 pits on private land – Over 5 hectares. Municipal development approval required. *Code of Practice* requirements (Provincial registration, full-cost security), and reclamation certificate. Subject to *Environmental Protection and Enhancement Act (EPEA)* enforcement.

Class II pits on private land – Under 5 hectares. Municipal development approval required. Subject to *EPEA* enforcement.

Pits on public land – Any size. *Surface Material Lease or License* required. Subject to *Public Lands Act* and *EPEA* enforcement.

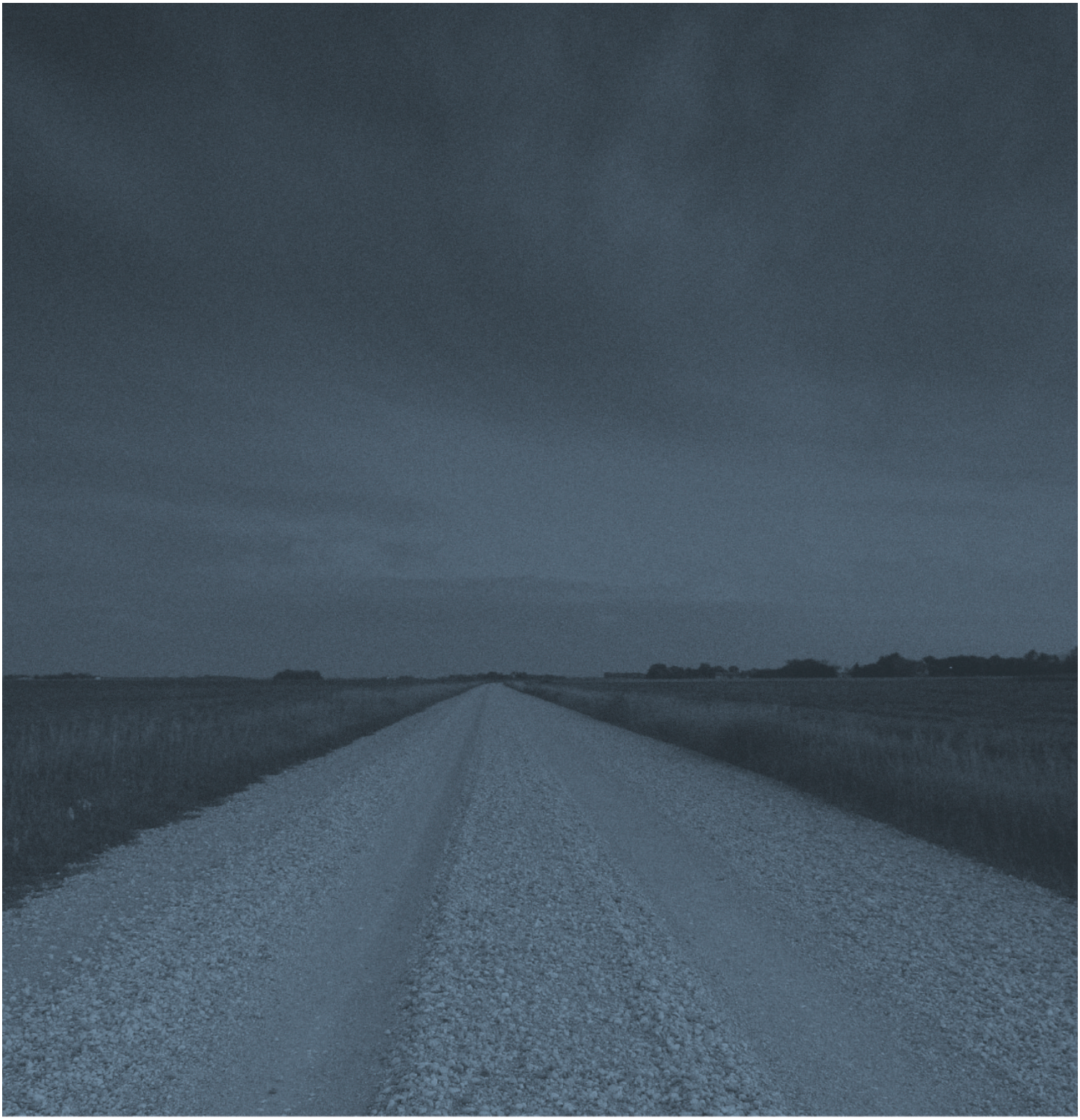
Provincial Pits – Any size. No security. Ownership of land governed by *Public Works Act.*

The provincial government also operates pits. The main function of a **provincial pit** is to support the development and maintenance of a provincial road and highway network, and therefore most provincial pits are operated by Alberta Infrastructure and Transportation (AIT). AIT may delegate the operation of a provincial pit to a contractor. AIT may also sell small crushed piles left over from construction project to municipalities or other users in the region. **Provincial pits** are subject to the environmental provisions of the *EPEA*, but differ from Class 1 and Class II pits on private land in several significant ways:

- Provincial pits are <u>not</u> subject to municipal land use bylaws and the corresponding development authority.
- Provincial pits are <u>not</u> required to provide financial security
- Ownership of land for a provincial pit is governed by the *Public Works Act*. The *Act* gives the provincial government power to either purchase or expropriate any land required for a public work (eg. a provincial pit).
- The *Public Works Act* gives the province authority to construct the necessary sidings, roads or conduits over private land to remove aggregate from a provincial pit.

PIT STOP

Provincial pits are not subject to municipal land use bylaws and development authority.



THE **SAND AND GRAVEL INDUSTRY**

Aggregate is a non-renewable resource. The sand and gravel industry in Alberta is focused on the orderly and responsible development of Alberta's aggregate resources, promoting high standards of workmanship and accountability related to the environment and to the safety of their operations. Further, the sand and gravel industry also seeks to maintain affordable development costs and to find ways to efficiently use resources. Protecting aggregate resources for future development and responding to development pressures are key goals of the industry.

To facilitate the development of new pits and aggregate resources, sand and gravel producers typically engage in several stages of activity through the life of the sand and gravel operation. By forming effective relationships with the local government and the landowner during these various stages, operators are able to reduce potential conflicts and impacts associated with their operations.

- During the **Exploration Stage** the operator gathers information about the location, size, quality, type and nature of a sand and gravel deposit.
- During the **Regulatory Approval Stage** the pit operator obtains all necessary provincial, municipal and environmental registrations, permits, and approvals. This phase may include public consultation, negotiations with landowners, obtaining a municipal development permit, complying with *Code of Practice* requirements for pit registration, meeting requirements under the *Water Act* and other provincial/federal legislation, entering into haul and development agreements and detailed activity planning for the site/operation.
- During the **Site Preparation Phase**, the pit operator adheres to legislative requirements and employs best practices for safe and efficient operation of the pit.
- During the **Extraction and Processing Phase** the extraction area may be benched or contoured for proper drainage and safety. Processing activities may include screening, sorting, washing and stockpiling.
- During the **Site Rehabilitation Phase** reclamation activities may include slope reduction, the removal of garbage, supplies, and equipment, the spreading of topsoil, subsoil and overburden, meeting objectives for the end use of the land, and applying for a reclamation certificate.

According to the United States Department of Agriculture (USDA) Soil Conservation Service, industry should engage in the following design consideration "best practices" for sand and gravel pits:

- Standard practice of preserving topsoil and subsoil (scrape off and stockpile close to the site);
- Consider location of stockpiles prior to extraction (to avoid the need for costly re-positioning later);
- Build necessary structures (culverts, ditches, collection pools, etc.) to drain surface run-off and prevent erosion; and
- Fence the pit (to discourage trespassing, livestock entry, illegal dumping, and theft).

Industry is also well advised to incorporate best management practices into an aggregate operation to:

- Work closely with local authorities and landowners during the lifecycle of the pit operation;
- Provide for effective, economical and safe stormwater management and discharge;
- Provide for effective and safe erosion and sediment control;
- Reduce siltation and sedimentation in aquatic habitats;
- Control dust through minimizing exposed soil areas, re-establishing vegetation and promoting the use of buffers;
- Control noise emissions through reductions in transient noise, buffering structures, etc.;

- Discourage garbage dumping at aggregate operation sites;
- Provide pollution control through equipment management and maintenance, proper fuel handling, spill-avoidance and emergency planning;
- Aid in planning for and implementation of reclamation for subsequent land uses; and
- Promote an ethic of environmental responsibility and land use stewardship.

ALBERTA SAND AND GRAVEL ASSOCIATION

Three decades ago, a group of Alberta contractors and suppliers created the Alberta Sand and Gravel Association, (ASGA) which represents the interests of Alberta sand and gravel operators on key industry-related issues and proposed regulatory changes in Alberta. ASGA has grown to represent over 125 member companies in 2007. On behalf of industry, the ASGA is constantly seeking ways to improve industry performance and accountability.

ASGA Truck Registry

The Truck Registry was developed by the gravel industry in response to public, municipal and industry concerns regarding gravel truck traffic and the negative effects these activities can have on the permitting of gravel resources. The goal of the program is improve industry's operation performance, to make all operators more accountable, and to mitigate the public's concerns through consultation and education. Municipalities now have the option to require all pit operators take part in the ASGA Truck Registry as a condition of the municipal development approval.

To participate in the truck registry program, haulers are required to display a Common Registry Identification decal. If a member of the public or a municipality has a concern about a registered truck, they can call a 1-800 number to register a complaint. The offending hauler is then notified, investigated and tracked. Each producer member must also agree to use only trucks that carry a valid ASGA Truck Registry sticker and comply with the following program standards for their operations:

1. **Common truck registration eligibility**
   - Workers' Compensation Board (WCB) account in good standing.
   - Current Safety Inspection Certificate.
   - Minimum Two Million PL/PD Insurance.
   - Copy of Vehicle(s) Registration(s) on file.

2. **Minimum Operating Standards**
   - No overweight loads and mandatory tarping.
   - Sweep box sides and check end-gate each load.
   - Individual Producer Hauler Agreement in place.
   - Required Municipal Road Use Agreements in place.

3. **Common Truck Identification Sticker**
   - Stickers on back, front bumper, left side-top front corner.
   - 1-800 toll free number on sticker.
   - Each truck has unique 5-digit number.

4. **One Common Complaint Line**
   - Complaint calls go to ASGA Truck Registry Answering Service and complaint is faxed or e-mailed to the producer and ASGA Database Administrator.

5. **Complaint Investigation**
   - The producer agrees to a timely follow-up of complaints on trucks it has registered.
   - Determine which producer the truck was working for and hand-off the complaint to the producer who will complete the investigation.
   - The producer to contact complainant within two days of the incident.
   - Results of investigation forwarded to Database Administrator within one week of complaint.

6. **Tracking (Database)**
   - Complaints are categorized, tracked and performance reports are issued.

7. **Suspensions**
   - Producers notify Database Administrator of any truck given time off for dangerous or legitimate complaints.
   - Database Administrator notifies all producers in area who will honour the suspension.
   - Producer Member notified of any de-registration of haulers.

The sand and gravel industry is primarily regulated by the provincial government in Alberta. The industry must adhere to environmental laws and regulations regarding equivalent land capability (land must be reclaimed to a capability equal to or better than prior to mining), conservation and reclamation planning, municipal development approval and provincial and municipal operating conditions. The industry is also subject to federal Environment and Fisheries and Oceans requirements in certain circumstances. A more detailed discussion of the legislative and regulatory environment for sand and gravel operations in Alberta is contained in Chapter 3 of this guide.

PROVINCIAL AND **FEDERAL REGULATION** OF THE **INDUSTRY**

OVERVIEW OF FEDERAL/PROVINCIAL LEGISLATION AND REGULATION

Under its environmental legislation (the *EPEA* and its associated regulations), Alberta Environment has the most direct regulatory responsibility for sand and gravel operations. Alberta Environment regulates and approves registrations for Class I pits (5 hectares or larger) on private land through the *Code of Practice for Pits* (see the expanded section on the *Code of Practice for Pits* on the following page). Smaller pits on private land (Class II pits) and pits on public land are also subject to the general environmental provisions of the *EPEA* and the *Conservation and Reclamation Regulation* under the *Act*.

Depending on the nature of the pit, its location and its operations, other provincial legislation may also contain certain requirements sand and gravel operations must adhere to. For example, pits on private or public land may require an approval under the provincial *Water Act* if water is used (as for gravel washing) or diverted (as for pit dewatering) or if the pit is within the floodplain, a watercourse or waterbody. Any requirement for an approval under the *Water Act* may create a barrier to the siting and operation of a pit in certain areas of the province. As this *Guide* is being written no additional water licenses are being granted from the South Saskatchewan River and Bow River Basins in southern Alberta. Therefore, sand and gravel pit operations that would require the use or diversion of water could not likely be sited in certain areas of southern Alberta served by the South Saskatchewan and Bow Rivers due to the restriction on new water licenses under the *Water Act*.

Many federal acts and regulations may also need to be considered by the sand and gravel industry, as well as provincial and municipal regulators of the industry. For example enforcement of the provisions of the federal *Fisheries Act*, under the jurisdiction of the Department of Fisheries and Oceans, has resulted in a moratorium on gravel mining from river beds in Alberta in recent years.

Listed in Table 1 are the major provincial and federal legislation (acts), regulations, and codes that may apply to the registration, approval, permitting and operation of sand and gravel operations. Also noted is the provincial or federal department or entity responsible for the regulatory instrument and, a brief description of how the act, regulation or code may apply to sand and gravel operations. *(Disclaimer: Readers should be aware that this may be an incomplete list and that they are responsible for ensuring compliance with all applicable legislation whether listed and discussed in this Guide or not).*

Table 1: Provincial/Federal Legislation/Regulation That May Impact Sand and Gravel Operations

Name of Act, Regulation, Code or Policy	Level of Government/ Department Responsible	Application to Sand and Gravel Operation
Environmental Protection and Enhancement Act (EPEA)	Alberta Environment	All pits in Alberta are required to comply with the EPEA and its associated regulations regardless of size.
EPEA Activities Designation Regulation	Alberta Environment	Identifies activities that require registrations under EPEA (currently applies to Class I pits only)

Name of Act, Regulation, Code or Policy	Level of Government/ Department Responsible	Application to Sand and Gravel Operation
***Code of Practice for Pits* (EPEA)**	Alberta Environment	All Class I pits on private land are currently subject to the *Code of Practice for Pits*
EPEA Conservation and Reclamation Regulation	Alberta Environment	Regulates conservation and reclamation of specified land, including pits, and requires compliance with the *Code of Practice for Pits* (Code applies to Class I pits, reclamation requirements apply to all pits on private and public land)
Municipal Government Act	Alberta Municipal Affairs and Housing	Gives municipalities land use planning and development authority (Class I and Class II pits). Provides for municipal implementation of community aggregate payment (CAP) levy.
Public Lands Act	Alberta Sustainable Resource Development	Regulates pits (surface material leases) on public land. The *Public Lands Act* also applies to pits that are located within or affect the bed and shore of a water body or watercourse.
Water Act	Alberta Environment	The pit operator/proponent for any size of pit may require a *Water Act* authorization if water is used or diverted in pit operations, when the pit is in a floodplain, structures are being constructed on watercourses, water bodies are affected, drainage courses are modified or diverted, or surface water bodies are planned as an end use.
Weed Control Act	Alberta Environment Municipal Weed Inspector	Requires pit operator/ registration holder for all pits to eliminate restricted weeds, control noxious weeds, and prevent the spread of nuisance weeds on the site of the pit. The *Act* includes a provision that empowers the municipality to increase the classification of a weed from nuisance to noxious in the local jurisdiction.
Pipeline Act	Alberta Energy and Utilities Board	Establishes minimum setback distances for all pits from energy pipelines. The municipality needs to be aware of this setback requirement in its development approval process.

Name of Act, Regulation, Code or Policy	Level of Government/ Department Responsible	Application to Sand and Gravel Operation
Oil and Gas Conservation Act	Alberta Energy and Utilities Board	Establishes minimum setback distances for pits from abandoned wells. The municipality needs to be aware of this setback requirement in their development approval process.
Public Highways Development Act	Alberta Infrastructure and Transportation	Pits may have a setback requirement from a provincially controlled highway imposed under this *Act*.
Historical Resources Act	Alberta Tourism, Parks, Recreation and Culture	The province may require pit operators to shut down operations if historic, archaeological or paleontological resources are discovered at the pit.
Fisheries Act	Fisheries and Oceans Canada	Two sections of this *Act*, regarding the deposit of silt and sediment into a water body, and the destruction or alteration of a water body may be relevant to pit operations. There is also currently a moratorium on extraction of aggregate from watercourses (gravel mining from riverbeds) due to the provisions of this federal *Act*.
Navigable Waters Protection Act	Fisheries and Oceans Canada	Works such as bridges or culverts for pit access roads may be subject to the provisions of this federal *Act*.
Canadian Environmental Assessment Act	Canadian Environmental Assessment Agency	CEAA may be "triggered" when a *Fisheries Act* authorization is needed or when a federal authority has a decision making responsibility with regard to a pit.
Species at Risk Act	Environment Canada	Provides for the legal protection of species at risk and their habitat. This federal *Act* may need to be considered if sensitive environmental areas or species habitat may be affected.
Migratory Birds Convention Act	Environment Canada	May restrict the periods in which a pit can operate if migrating birds or their nests may be damaged by pit operations.

PROVINCIAL REGULATION

Alberta Environment has cited several areas of focus for continuous improvement with regard to sand and gravel operations. These areas of focus are the objectives on which the *Code of Practice for Pits* is based:

- Minimizing the footprint of the development;
- Minimizing disturbance of sensitive environments;
- Maximizing resource extraction;
- Minimizing water use;
- Reducing dust, noise and contamination;
- Improving effectiveness of soil handling equipment and processes;
- Maximizing direct placement of reclamation material (i.e., topsoil, subsoil and overburden);
- Maximizing speed of progressive reclamation; and
- Reducing equipment emissions.

CODE OF PRACTICE FOR PITS (currently applies only to Class I pits on private land)

The *Code of Practice for Pits* was developed under the *Conservation and Reclamation Regulation* pursuant to the *Environmental Protection and Enhancement Act (EPEA)*. The *Code of Practice* currently regulates sand, gravel, clay or marl pits that are (or plan to become) five hectares (12.5 acres) or larger on private lands (Class I pits). The *Code of Practice for Pits* does not currently apply to pits located on public land, or to pits that are less than five hectares in size. However, operators of Class II pits (less than 5 hectares) on private land must cease operations once a pit has reached five hectares until the operator has applied for and received a registration from Alberta Environment in accordance with the *EPEA* and the *Code of Practice for Pits*. Alberta Environment has discussed with stakeholders expanding coverage of the *Code of Practice for Pits* to Class II pits. This would mean all pits on private land, regardless of their size, would be subject to the *Code of Practice for Pits* in the future. The *Code of Practice for Pits* is available from the Queen's Printer online at www.qp.gov.ab.ca or from Alberta Environment at www.environment.gc.ab.ca/info/library/6325.pdf. A *Guide to the Code of Practice for Pits* was developed by a stakeholder task group in 2004 and is also available online at www.environment.gc.ab.ca/info/library/5997.pdf.

PIT STOP

The *Code of Practice for Pits* does not currently apply to pits located on public land or to pits on private land (Class II pits) that are less than 5 hectares in size.

In addition to the *Code of Practice for Pits*, registration holders (for Class I pits of 5 ha or greater) must comply with all the requirements of the *EPEA* and its associated regulations and codes of practice, the *Water Act* and its associated regulations and codes of practice, and all other applicable federal and provincial laws. Copies of provincial legislation, regulations, and codes of practice can be obtained from the Queen's Printer on their website at www.qp.gov.ab.ca/catalogue/.

The *Code of Practice for Pits* (and the accompanying *Guide*) are comprehensive documents that set out requirements related to the pit registration process, activities after registration, a pit activities plan, the provision of security, and planning and operating guidance. The *Guide* document also lists federal and provincial legislation that may apply to pits as well as checklists and forms related to the registration application, the activities plan, the security estimate and reporting requirements.

PIT REGISTRATION PROCESS UNDER THE CODE OF PRACTICE FOR PITS (Class I pits)

Prior to the implementation of the *Code of Practice for Pits*, Class I pits required an Alberta Environment approval under the *EPEA*. Certain existing sand and gravel pits are still operating under historic *EPEA* approvals. Pits that were operating under an approval as of November 1, 2004 (the date the *Code of Practice for Pits* came into effect), will continue to be subject to the terms and conditions of their approval until the earliest of:

- The expiry date of the approval;
- The date specified in writing by the Director (Alberta Environment) following a request in writing from the approval holder for an amendment to the approval;
- The date specified in writing by the Director (Alberta Environment) following a request in writing by the approval holder to cancel the approval; or
- November 1, 2008.

Since the *Code of Practice for Pits* came into effect in 2004, new Class I pits (or pits where approvals have expired or been amended) have required a registration. General information on the registration process and the obligations of the registration holder under the *Code of Practice for Pits* can be found on the Alberta Environment website at www3.gov.ab.ca/env/protenf/approvals/factsheets/EPEA_RegistrationProcess.pdf.

Only one person, entity or company may be designated as the registration holder of a Class I pit and the registration holder is responsible for ensuring compliance with the *Code of Practice for Pits* by all users of the pit. No one may carry out any activity at a Class 1 pit on private land unless a registration number has been received from the District Approvals Manager in the local Alberta Environment office. There is nothing in the *Code of Practice for Pits* that prohibits a municipality from being a registration holder for a Class I pit.

The stages of the provincial pit registration process are:

Stage 1 Proponent/operator applies for a Registration.
Stage 2 Alberta Environment reviews the Application.
Stage 3 Alberta Environment decides whether to issue a Registration.

In the application stage (Stage 1), an applicant must include all the information outlined in Schedule 1 (Registration Application) of the *Code of Practice for Pits*. The application information requirements include:

- Date of application;
- Previous *EPEA* approval number for the pit (if any);
- If required, *Water Act* authorization application submitted or *Water Act* authorization number;
- Name of applicant (company or person in whose name the pit will be registered);
- Name of person submitting the application for registration;
- Name of the primary contact for the pit;
- The pit location (legal description);
- Registered owners of the land (name, address and phone number);
- Occupants of the land (name, address and phone number).

An Activities Plan that details the construction, operation, and reclamation plans for the pit must also be submitted with the registration application in Stage 1. The items that must be contained in the detailed Activities Plan are outlined in Schedule 2 of the *Code of Practice for Pits* and are summarized in in the "Pit Activities Plan" section of this Guide on page 3-16.

Alberta Environment takes a minimum of 60 working days to process complete applications for registration. If applications are incomplete, the process will take much longer. Where the pit also requires authorization under the *Water Act*, this authorization may be processed concurrently by Alberta Environment through a streamlined "one window" approach.

During the review stage for the registration of a Class I pit on private land (Stage 2), Alberta Environment reviews the application to determine the overall impact of the sand and gravel activity on the environment. Alberta Environment also ensures activity is in accordance with the *Code of Practice for Pits* and the general provisions of the *Guide* that accompanies the *Code*. The review may include consideration and evaluation of public concerns, design plans, site suitability, proposed monitoring programs, proposed management plans for storage, treatment and disposal of substances, reclamation and conservation plans, impact-mitigation measures, and past performance of the applicant.

At this point in the process, Alberta Environment may:

- Require additional information from the applicant;
- Require the applicant to hold public meetings;
- Ask the applicant to address concerns from the public;
- Require security or insurance; and/or
- Make a decision to issue a registration.

A registration is issued for the life of the pit (as opposed to the previous approval process where approvals expired). The registration for a Class 1 pit on private land is valid until a reclamation certificate application has been submitted and a Reclamation Certificate has been issued by Alberta Environment. The local municipality and other stakeholders such as landowners are notified once a registration has been issued by the province. The local municipality and other stakeholders should also be notified once a Reclamation Certiticate has been issued.

ISSUING A PIT REGISTRATION AND MUNICIPAL APPROVALS

Alberta Environment does not require proof of municipal authorization prior to issuing a registration for a pit. However, since a municipality has the power (through its land use planning authority under the *Municipal Government Act)* to determine whether to allow the pit development in its jurisdiction and to determine where the pit may be located, it makes good sense for operators to work with the municipality at the beginning of the registration process.

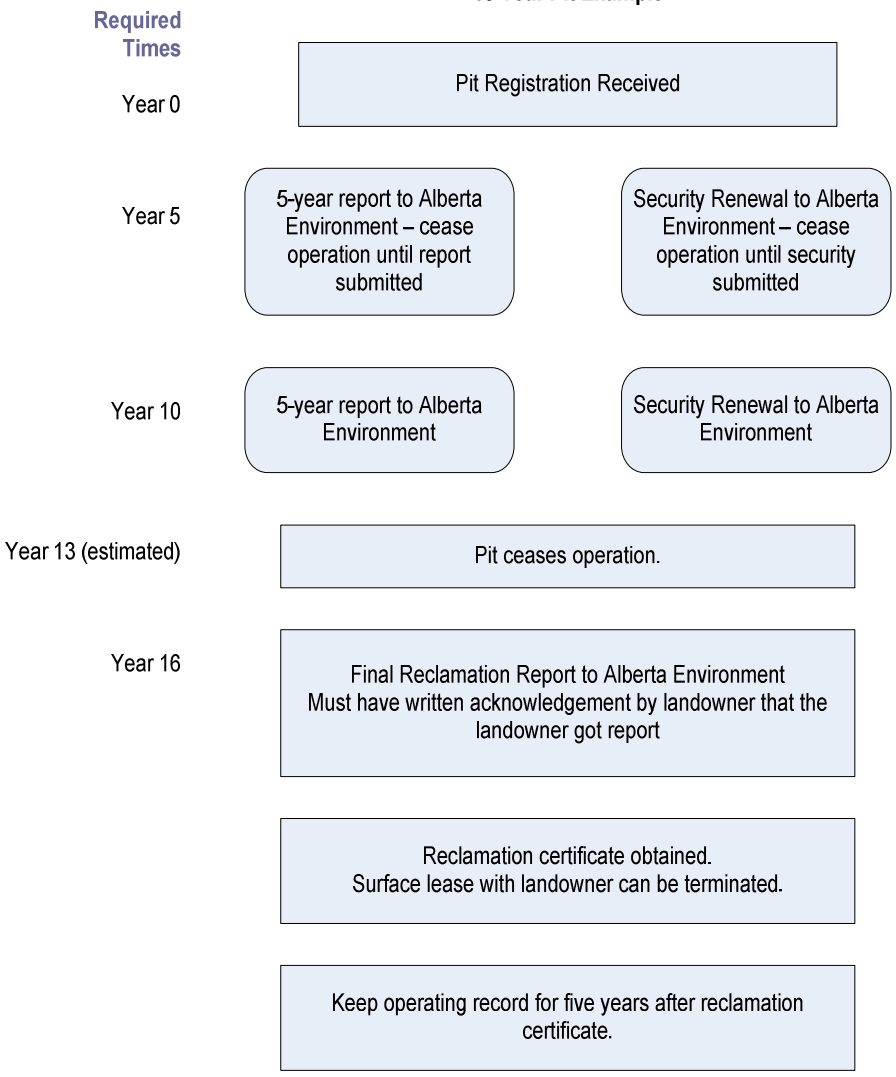
LANDOWNER PERMISSION REQUIREMENT

A registration holder may not carry out any activity at a pit on private land unless they have written permission from all the registered owners of the parcel or parcels on which the pit is located. Permission is also needed for any access roads on private land and other infrastructure that forms part of the pit. If land on which the pit is located changes owners, the registration holder is required to obtain a new permission to operate.

ACTIVITIES AFTER REGISTRATION

The *Code of Practice for Pits* requires the registration holder to perform certain duties during the life of the pit. Although there can be many variables, the following flowchart of responsibilities after registration summarizes the main duties of the registration holder based on a 13-year pit example.

Flowchart of Responsibilities after Registration
13-Year Pit Example



Responsibilities At Various Times as Needed:

Application to amend Activities Plan – Alberta Environment (AENV) approval required each time

Alberta Environment requires updated Activities Plan – AENV approval required each time

Sample pit water during discharge and keep samples.

Request transfer of registration to another person/company – AENV authorization needed

Contraventions of Code reported to AENV. Need to develop and maintain operating record

Provide information to AENV or inspector within 7 days of request

Get new permission to operate if landowners change

Get landowner authorization to import materials for reclamation

Consult in writing with landowner on pit re-vegetation methods and species.

PIT ACTIVITIES PLAN (Required under *Code of Practice for Pits* for Class 1 pits)

The purpose of the Activities Plan (which is required during the application for registration stage) is to clearly describe the characteristics of the site and the sequential plans for construction, operation, and reclamation of the pit. No person may carry out an activity at the pit except in compliance with the most recent Activities Plan on file and authorized by Alberta Environment. If the plans for activity at the pit change, the registration holder is required to obtain approval from Alberta Environment for a new Activities Plan.

Information that would typically be documented in the comprehensive Activities Plan includes the following:

Current Pit Size – This includes the excavation area, stockpiles, and infrastructure.

Thickness of Topsoil, Subsoil, Overburden and Aggregate – This information assists in preparing the security estimate and setting reclamation goals.

Topsoil Texture – According to the System of Soil Classification for Canada. The System differentiates soil types on the basis of measured properties of the profile and uses a hierarchical scheme to classify soils.

Erosion and Dust Control Techniques – The Activities Plan should include a list of mitigative measures to decrease dust and erosion associated with pit operations. These mitigative measures may include:

- Planting vegetation to control erosion;
- Enclosing crushers to minimize dust levels;
- Using fine spray or a misting system on crushing machinery;
- Placing a screening system around the crushing equipment and/or on the upwind side of the operation;
- Placing crushers in the excavated area;
- Paving roads that have intensive or regular use;
- Watering down traffic lanes during dry periods;
- Considering material handling practices and shape of stockpiles (contouring) and wind direction;
- Developing contingency plans for weather events (such as heavy winds); and/or
- The use of dust monitoring equipment.

Local and Regional Air Monitoring Initiatives – Such as the Clean Air Strategic Alliance.

An Inactive Pit Plan – The life expectancy of a pit may be long-term, but activity may shut down for a period of time once a contract is fulfilled or aggregate is depleted from a portion of the pit. A plan must be developed for any pit that will be inactive for more than two years to ensure the site is safe, that soil reclamation materials will be conserved, and to control weeds.

Scale Drawings of Existing Pit Conditions and Proposed Sequence of Activity – These drawings reflect current conditions and planned operations on the site. They should show all major activities including: salvage areas, excavations, stockpile areas, pit water discharge locations, water diversion infrastructure, groundwater discharge and recharge areas, infrastructure and reclaimed areas.

Cross-section Drawings of Existing Pit Site Conditions – The cross-section should clearly show at a minimum the original surface, topsoil and subsoil, overburden, gravel, reject material, bedrock and the water table.

Maximum Pit Size – This includes the total area where aggregate will be removed, any areas where soil will be salvaged and stockpiled, and infrastructure on the site. The pit size should be determined through a survey process.

Depth to Groundwater – Depth to groundwater in any test holes must be reported.

Detailed List of Any of the Following Specific Activities that Will Occur:

- Wet pit excavation;
- Salt mixing, asphalt mixing, and truck box spraying;
- Aggregate washing; and/or
- Use of alternative reclamation materials.

Mitigative Measures - common mitigative measures include:

- Spill containment techniques (dykes, sumps and liners);
- Water management plans;
- Monitoring the success of mitigative plans;
- Contingency planning; and
- Emergency response plans.

Proposed End Land Uses – Options for end land use are documented in *A User's Guide to Pit and Quarry Reclamation.* Some typical end land uses include: cultivation, hayland, pasture, native range, grassland, forest, wildlife habitat, water body, proposed subdivision, etc.

Release of Pit Water – Water movement plans (both on-site and off-site) need to be included in the Activities Plan. Other information that must be documented includes: type of pit water to be discharged, volume to be discharged, discharge rates, timing of discharge, description of monitoring programs and contingency plans.

Soil Replacement Depths – Documentation of topsoil and subsoil replacement depths

Scale and Cross-Section Drawings of Site Conditions After Reclamation

Surface Water Bodies in Reclaimed Landscape – Surface water bodies must only be constructed in areas where there is sufficient natural recharge water to maintain the design volume. The Activities Plan must include information on the design of the surface water body, its intended use, the elevation of the water when the surface water body is filled to design capacity, and the slope of the land one meter above and one meter below the full supply level.

PROVISION OF SECURITY (currently applies to Class I pits on private land)

A registration under the *Code of Practice for Pits* cannot be granted until financial security for the pit in an amount acceptable to the District Approvals Manager of Alberta Environment has been provided to Alberta Environment (unless the registration holder is a municipality or the pit is operated by a provincial department such as AIT). The purpose of financial security is to ensure the provincial government has access to sufficient funds to reclaim the pit if the registration holder is unable or unwilling to carry out its reclamation obligations. This is referred to as full-cost security and is a detailed calculation that represents the maximum conservation and reclamation cost that may be incurred by a third party to reclaim the pit. Schedule 3 of the *Code of Practice for Pits* contains a checklist for the calculation of financial security for a pit.

Full cost security is affected by a number of factors, all of which should be addressed in the estimate of reclamation costs supplied by the registration holder. The affecting factors may include:

- Nature of the pit operation (deep vs. shallow, wet vs. dry);
- Amount and quality of progressive reclamation to be carried out;
- Amount and type of reclamation remaining;
- Presence of any waste materials or contamination on site that will have to be treated or disposed of;
- Location of the pit in the province (equipment availability and mobilization costs may vary considerably);
- Type and amount of equipment required;
- Amount of work required to secure the site for safety purposes; and
- The need for updated site plans.

The *Code of Practice for Pits* requires registration holders to renew security every five years at a minimum. New security may be required at any time if Alberta Environment believes the current security does not adequately represent the liability at the site.

Security can be forfeited when the registration holder refuses to comply with an environmental protection order or an order for conservation and reclamation. Security is generally returned to the registration holder only when the pit has been fully reclaimed and a Reclamation Certificate has been issued. However, under certain circumstances (for example, if reclamation is occurring throughout the life of the pit), the registration holder may make application to Alberta Environment for a partial refund of financial security prior to a Reclamation Certificate being issued.

PIT STOP

In rare cases, municipalities are also requesting that security be paid. This occurs when the municipality is not confident adequate reclamation will take place on the site under the provincial security requirements. When this occurs, the sand and gravel industry refers to the municipal request as "double security".

There are a number of entities that have an exemption from providing full-cost security:

- Under the *EPEA*, provincial government departments are exempt from security requirements (therefore provincial pits are exempt from security);
- Under the *Conservation and Reclamation Regulation*, local authorities such as municipalities are exempt from security requirements; and
- Under the *Conservation and Reclamation Regulation* registration holders who disturbed land pursuant to a historical approval issued under the *Land Surface Conservation and Reclamation Act* are subject to flat rate security of $250/acre for the disturbed area.

RECLAMATION REQUIREMENTS (applies to all pits)

When sand and gravel operations are abandoned, the operators are required to reclaim the land. All sand and gravel operations, regardless of size, must comply with reclamation requirements under the *Environmental Protection and Enhancement Act* and the operator must obtain a Reclamation Certificate. Municipal requirements for reclamation of Class II pits and the intended final use of the site may also be contained in the *municipal development permit* issued at the outset of the sand and gravel operation.

Reclamation should focus on restoring gentle landforms, establishing equivalent drainage and reconstructing an acceptable soil. The end land use for a sand and gravel pit should ideally be determined during the operation's planning stages and progressive reclamation is recommended during the pit's operational phase.

The fundamental principle of land reclamation criteria is that any change to the landscape, soil or vegetation caused by project activities should be measured against the original or similar site conditions. Reclamation criteria should consider:

- Landscape parameters (slope, drainage, erosion, contours, etc.);
- Topsoil and surface soil parameters (depth, quality, compaction, stones);
- Subsoil parameters (quality, compaction, etc.); and
- Vegetation parameters (species, vigour, height, density and cover).

Meeting reclamation criteria for a specific site may involve reclaiming the area so that the pre-development conditions and land use are returned (i.e., returned to agricultural land), or reclaiming the area so that post-development conditions and land use are quite different from before (i.e., conversion to a wetland or waterfowl habitat).

A sand and gravel operator may apply for a Reclamation Certificate at any time when reclamation obligations have been met on a portion of, or all of, the land disturbed by an activity. The review process for the Reclamation Certificate considers the reclamation requirements at the time of disturbance, including approved plans and conditions in any original registration or surface disposition.

Information requirements for an application for a Reclamation Certificate are outlined in the *Conservation and Reclamation Regulation*. They include:

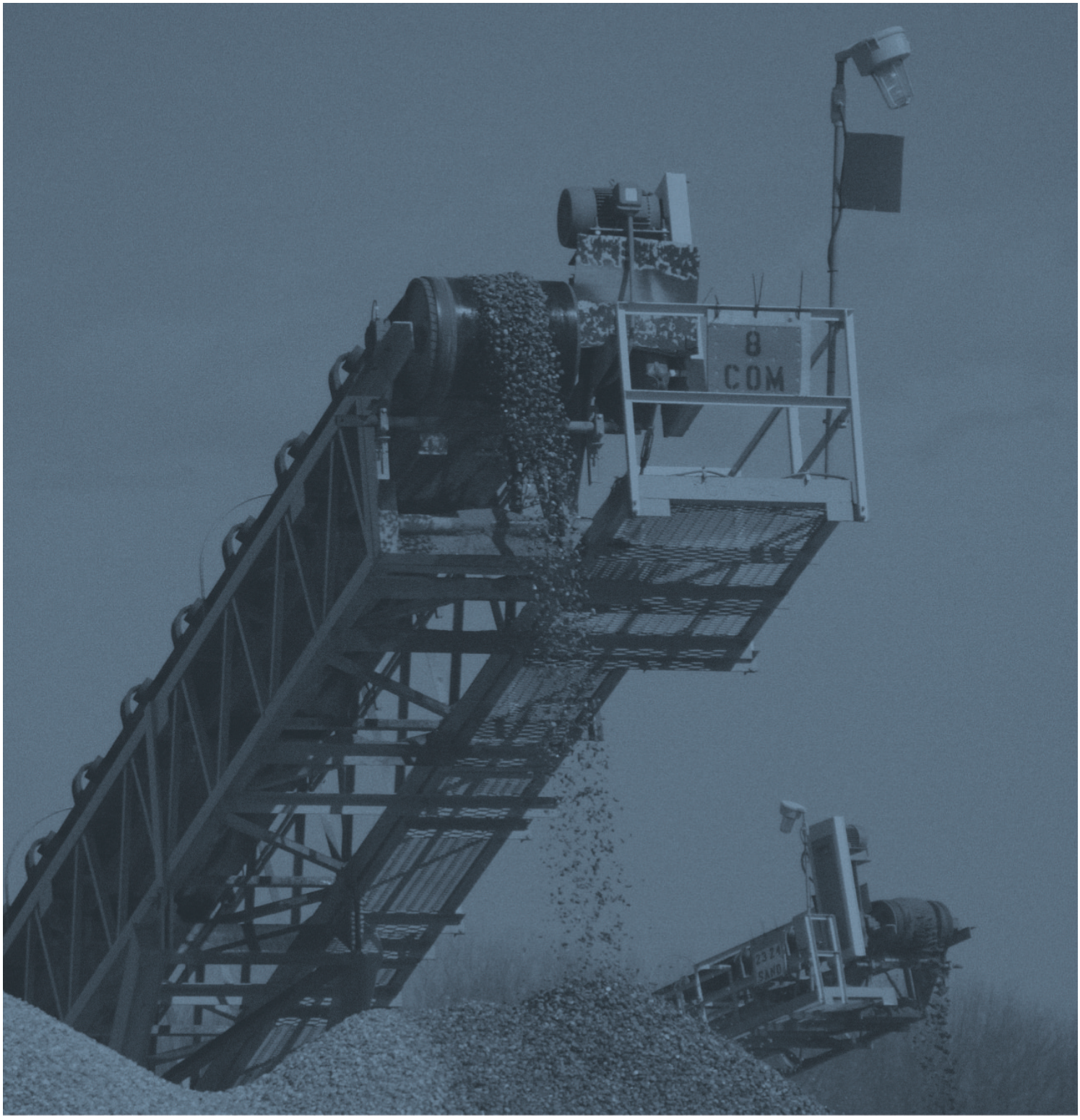
- A map showing the land for which the certificate is being requested, the status of adjacent land, and legal descriptions;
- Documents outlining the characteristics and properties of the reclaimed land including topography, drainage, soils, vegetation and land capability;
- Documented conservation and reclamation procedures on the site;
- The history of surface disturbance on the site;
- Description of any surface improvements to be left on the reclaimed land and evidence of acceptance of the improvements by the landowner or occupant;
- Evidence of compliance with the terms or conditions of any registration in effect for the site (for a Class I pit);
- The name, address and telephone number of any landowners or occupants;
- Any surface lease or right of entry order for the site; and
- A declaration regarding any substances that may cause, are causing, or have caused a significant adverse effect that are present on the site.

Final reclamation reports provided to Alberta Environment by the sand and gravel operator must have written acknowledgement from the private landowner that he/she has received a

copy of the report. There is no legislative requirement that a reclamation report for Class I pits be shared with the municipality, although it is considered good practice to do so.

INSPECTIONS AND ENFORCEMENT (for Class I pits)

Alberta Environment inspectors may conduct random, unannounced inspections, as well as planned inspections to determine if registration holders are following the *Code of Practice for Pits*. Due to a lack of inspection resources, however, most inspections are complaint-based and conducted either when there is a history of non-compliance, or where there are environmental issues or public concerns. Failure to follow the *Code of Practice for Pits* may result in enforcement actions ranging from a warning letter to an Enforcement Order under *EPEA*. The consequences of enforcement actions may range from work stoppages to a reduction in the financial security returned to the operator, to the cancellation of a registration.



MUNICIPAL ROLES, RESPONSIBILITIES AND **POWERS**

The local municipality is responsible for protecting and managing gravel resources and locating sand and gravel operations for the good of the entire community. With a limited supply of natural aggregates in Alberta, there is a growing emphasis on minimizing sterilization of aggregate through land use policies.

A checklist to assist municipalities with their evaluation of proposed sand and gravel developments as they relate to local needs and priorities can be found in the Project Assessment and Management Toolkit for Municipalities in Chapter 5 of this *Guide*.

Municipalities have a proactive role to play in assessing and permitting the development of sand and gravel operations (both Class I and Class II pits) in their communities. The municipality can choose to approve or deny a development permit for a sand and gravel operation in their jurisdiction. Provincial land use policy encourages municipalities to establish land use patterns that accommodate natural resource extraction (including sand and gravel) while minimizing potential conflicts with nearby land uses and any negative environmental impact. Under the *Municipal Government Act (MGA)*, municipalities have several planning and development tools at their disposal, including: *Municipal Development Plans*, *Area Structure Plans*, *Land Use Bylaws*, other local bylaws, haul and development agreements with industry, and the new provisions under the *MGA* for the implementation of a community aggregate payment (CAP) levy. Ideally, municipal land use policies and development approval processes need to both protect the interests of ratepayers and recognize the essential contribution sand and gravel resources make to the local community.

PIT STOP

Ideally, municipal land use policies and development approval processes need to protect the interests of ratepayers while, at the same time, recognize the essential contribution sand and gravel resources make to the local community.

The **Municipal Development Plan (MDP)** is intended to provide a comprehensive long-term land use policy framework within which present and projected growth of a municipality may take place. In accordance with provincial land use policies, municipalities could ideally develop policies for the protection of sand and gravel resources under their MDP.

An **Area Structure Plan (ASP)** is a more specific planning tool that is adopted by municipal bylaw and must conform to the general objectives and policies contained in the MDP. Section 633(1) of the *MGA* defines the purpose of an ASP as providing a framework for subsequent subdivision and development of a specific area of land within the municipality.

Through MDPs and ASPs, municipalities can also choose, for example, to regulate and control development in areas of the municipality where there are known sand and gravel deposits. This may include a conscious effort to avoid sterilization of sand and gravel resources through the regulation of the lands containing the deposit and on adjoining lands to protect the resource for removal. For example, an ASP can be prepared and serve as a framework for the re-designation and development of lands for the use of sand and gravel operations.

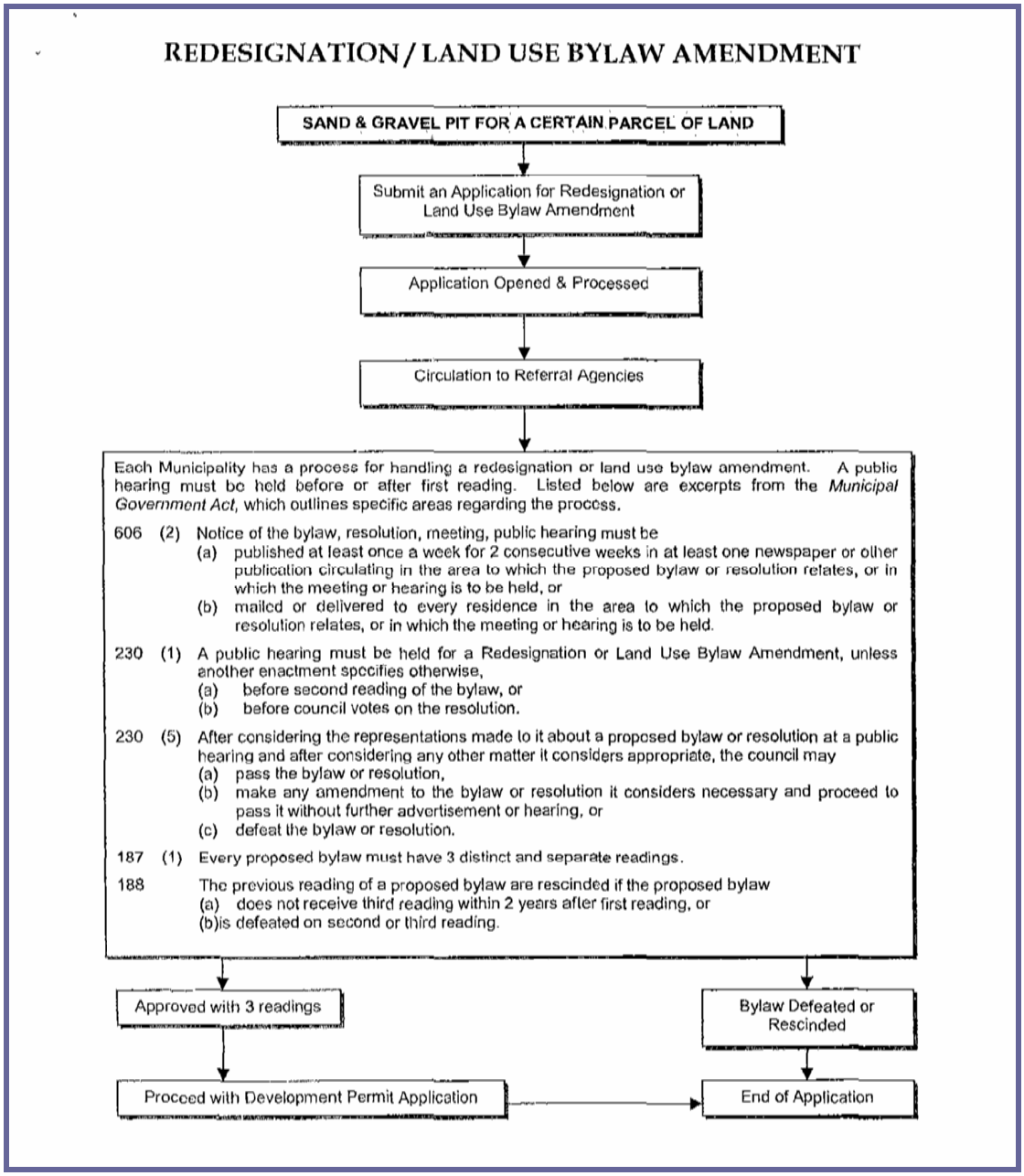
PIT STOP

A municipal Area Structure Plan can be prepared and serve as a framework for the re-designation and development of lands for the use of sand and gravel operations.

A municipal **Land Use Bylaw** regulates the use, conservation, and development of land, habitat, and buildings in a municipality. Municipalities may need to re-designate land use for a particular area of the municipality through an amendment to their Land Use Bylaw to allow for a sand and gravel operation. The need for a re-designation would occur if the zoning on the parcel of land

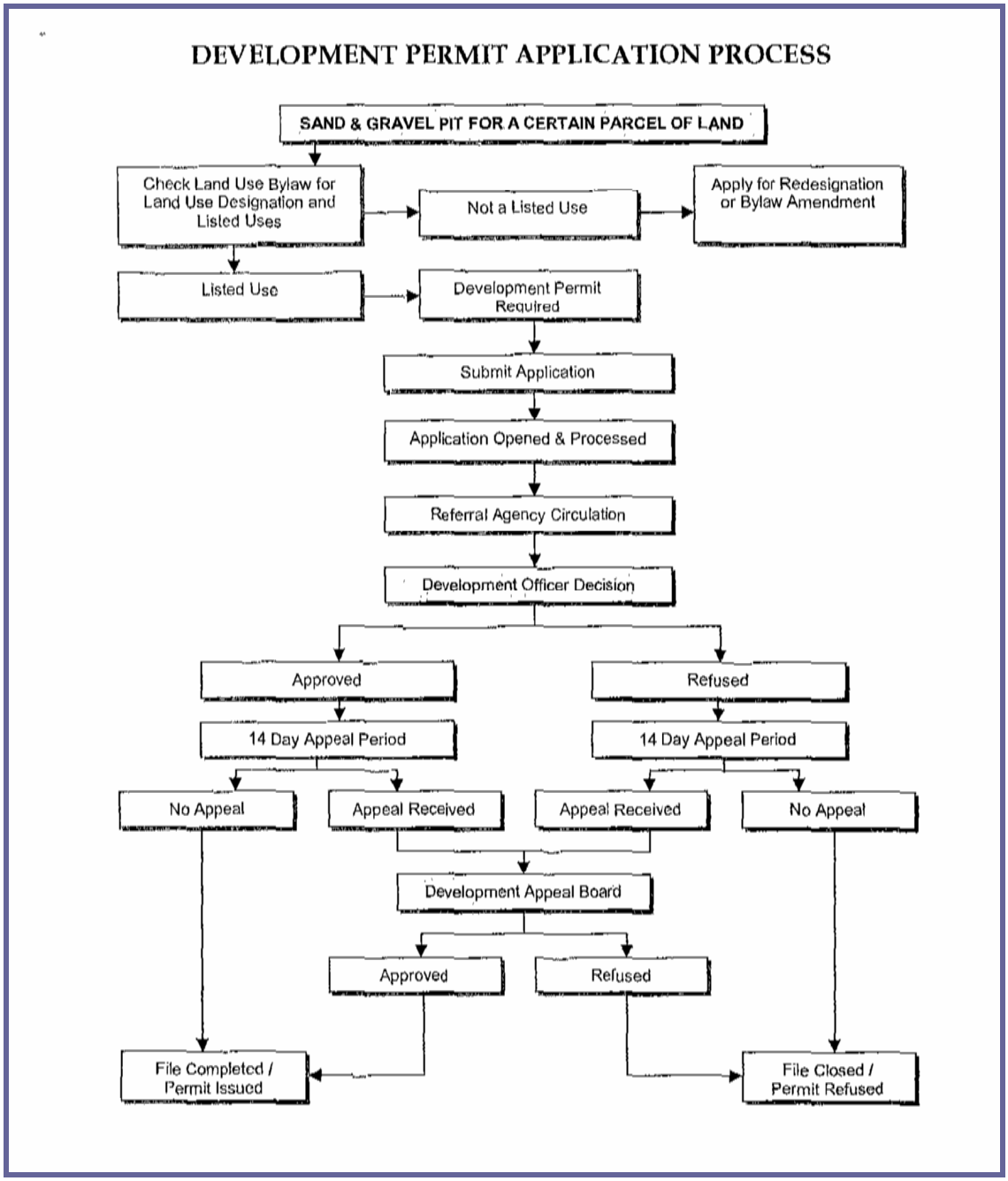
where the sand and gravel operation is to be located does not list sand and gravel resources as a permitted or discretionary use. Chart 1 provides an example of a redesignation/ land use bylaw amendment.

CHART 1



Through the **Development Permit Process**, the local municipality decides where pits may be located. The development permit may also deal with issues such as hours of operation, buffers, noise, dust, haul routes, and traffic control. **Chart 2:** outlining a typical **Municipal Development Permit Application Process** is located on the following page. Lists of typical application requirements for municipal development permit approval and sample conditions municipalities might want to place on a development approval can be found in the Project Assessment and Management Toolkit for Municipalities contained in Chapter 5 of this *Guide*.

CHART 2



Municipalities may also choose to enter into a **Development Agreement** with a sand and gravel operator. The Development Agreement may be a granting condition of a development permit in some municipalities. The agreement may set out details related to site management, safety, noise, nuisance and dust control measures, the requirements for a haul agreement and other terms. A sample municipal development agreement is located in the Project Assessment and Management Toolkit for Municipalities contained in Chapter 5 of this *Guide*.

Haul Agreements are entered into by sand and gravel companies and individual municipalities regarding specific issues related to gravel pit operations. These agreements are negotiated and vary based on the sand and gravel operation, the municipality, and site-specific circumstances.

A Checklist of Typical Considerations and Provisions in a Municipal-Industry Haul Agreement can be found in the Project Assessment and Management Toolkit for Municipalities contained in Chapter 5 of this *Guide*.

The **Community Aggregate Payment (CAP) Levy Regulation** came into effect in Alberta on January 1, 2006. The regulation, which came about as a result of an amendment to the *Municipal Government Act*, gives municipalities the option of passing a bylaw to set and collect a levy from sand and gravel operators. A copy of the regulation can be obtained from the Queen's Printer website at www.qp.gov.ab.ca. If a municipality enacts a community aggregate payment levy bylaw, it allows a municipal council to raise revenue by imposing a maximum levy of $0.25 per tonne on sand and gravel businesses operating in the municipality. This levy is intended to raise revenue to be used toward the payment of infrastructure and other costs of hosting a sand and gravel operation in the municipality. The levy does not, however, replace road use agreements between individual municipalities and sand and gravel companies or the municipal right to enter into same. A sample municipal Community Aggregate Payment Bylaw can be found in the Project Assessment and Management Toolkit for Municipalities contained in Chapter 5 of this *Guide*.

The Municipal Need for Aggregate Resources

Aggregate is typically obtained through the development of new aggregate resources (pits) or it can also be obtained by recycling or re-using aggregate. As stewards of Alberta's local road network, municipalities have a need for large quantities of sand and gravel to maintain and construct local infrastructure. Municipalities may choose to be sand and gravel pit operators to meet local needs. They may also purchase sand and gravel from local operators to meet their needs. Mining gravel from beneath roads (reusing aggregate) is another way municipalities may address their aggregate needs. Under provincial law, title of all roads or road allowances is vested in the provincial crown and specifically with the Minister of Infrastructure and Transportation (AIT). Ownership of aggregate in the road lies with the title holder. If the aggregate from the roadbed or road allowance is not required by AIT, a municipality, for example, can obtain ownership of roadbed-extracted aggregate through a negotiated agreement with the province. In this case, the municipality must also arrange for a temporary or permanent road closure through AIT before commencing aggregate mining.

PROJECT ASSESSMENT AND **MANAGEMENT TOOLKIT** FOR **MUNICIPALITIES**

This Project Assessment and Management Toolkit for Municipalities includes the following components:

Tool 1:	**A Sand and Gravel Project Assessment Framework for Municipalities**
Tool 2:	**A Checklist of Typical Municipal Development Permit Application Requirements for Sand and Gravel Operations**
Tool 3:	**A Sample Development Permit Application from a Sand and Gravel Operator**
Tool 4:	**A List of Sample Conditions for Municipal Development Permit Approvals for Sand and Gravel Operations**
Tool 5:	**A Sample Municipal Development Agreement for a Sand and Gravel Operation**
Tool 6:	**A Checklist of Typical Considerations and Provisions in a Municipal-Industry Haul Agreement**
Tool 7:	**Sample Community Aggregate Levy Bylaw**

TOOL 1: SAND AND GRAVEL PROJECT ASSESSMENT FRAMEWORK FOR MUNICIPALITIES

This sand and gravel project assessment framework consists of a list of questions the municipality can use to evaluate potential sand and gravel development proposals in its jurisdiction.

Planning

- ☐ Are aggregate resources in the municipality protected through long-term planning?
- ☐ Will the sand and gravel development conflict with other land uses, long-term priorities for the community?
- ☐ What is the present land use on the proposed sand and gravel site?
- ☐ What is the adjacent land use?
- ☐ What is the total area that will be disturbed by the pit operation over its lifespan?
- ☐ What is the projected lifespan of the sand and gravel deposit/operation?
- ☐ What is maximum area that will be disturbed at any one time?
- ☐ Will the operation be a net benefit to the community?
- ☐ What is the nearest village, town or city and its distance from the proposed pit?
- ☐ Will the pit be located adjacent to a primary or secondary highway?
- ☐ If the pit has direct access to a provincial highway, has Alberta Infrastructure and Transportation been contacted for a development permit?
- ☐ Are the lands within a ½ mile (800 meters) of a surveyed road allowance?
- ☐ Will access roads be constructed for the pit?
- ☐ Will any road construction or road upgrading be necessary to access the pit's working area?
- ☐ Will the proposed pit affect any other property rights of way?

  (Note: A 3 metre undisturbed buffer zone must be maintained adjacent to all property boundaries unless consent has been obtained from the adjoining landowners to mine through the property boundary)

Regulatory Considerations

- ☐ Have the requirements of other regulatory agencies been met? *(Several municipalities require in their Land Use Bylaw that sand and gravel operators get all required provincial permits, registrations and approvals as a condition of a development permit approval)*
- ☐ Does the proposed operation comply with:
  - the Municipal Land Use Bylaw?
  - The Municipal Development Plan?
  - Area Structure Plans?
  - Other municipal bylaws and policies?
- ☐ Have the Development Authority's (the municipality's) requirements for the issuance of a development permit been met?
- ☐ Is there a provision for the renewal of the development permit, provided certain conditions have been met, after a set period of time?
- ☐ Is a re-designation required under the Municipal Land Use Bylaw (LUB) to locate the sand and gravel operation in the preferred area?
- ☐ Does the municipality have a community aggregate levy bylaw in place?
- ☐ Does the pit development affect a temporary or permanently occurring waterbody? (*Alberta Water Act* and the *Public Lands Act*)
- ☐ Does the pit operation require water removal from a stream or the diversion of a watercourse? (license under the *Water Act*)
- ☐ Will the operation affect migratory bird flight paths or habitat? (federal *Migratory Birds Act*)
- ☐ Will the operation impact the habitat of an endangered or threatened species (federal *Species at Risk Act*)
- ☐ Is there a wellsite or pipeline within 300 feet of the proposed pit site?

(Note: An Alberta Energy and Utilities Board authorization may be required)

Mitigation of Impacts

- ☐ Have mitigation measures been outlined regarding various identified impacts?
- ☐ Have certain aesthetic requirements, including buffering and screening been incorporated in the development permit application and/or the Activities Plan under the *Code of Practice for Pits*?
- ☐ Has the applicant agreed to install adequate warning and identification signage around the pit and on haul roads to the satisfaction of the municipality and as a condition of the granting of the development permit?
- ☐ Has the applicant agreed to enter into an industrial haul agreement with the municipality including any or all of the following provisions:
    - Operational hours for hauling;
    - Dust control measures on access roadways; and
    - Participation in the Alberta Sand and Gravel Association central truck registry.

Communication

- ☐ Have all residents directly affected by the proposed gravel pit development and operations (those adjacent and within 2 kilometers of the pit property) been personally interviewed and notified in writing of the intent to develop the site?
- ☐ Are there plans laid out for directed affected residents to be notified prior to activation of pit operations?
- ☐ Has one or more open houses been held in the community?
- ☐ Has input from citizens been integrated into the proposal for a development permit?
- ☐ Are there provisions for affected residents to be consulted (on an annual basis) throughout the lifespan of the sand and gravel operation?

Pit Operations

- ☐ Has an area been designed on the site for all servicing, fueling and rinsing of trucks?
- ☐ Will this area be suitably lined to prevent permeation of contaminants into the soil?
- ☐ Will this area be graded to prevent surface water from entering the site?
- ☐ Are plans in place to install containers to collect used oil and filters?
- ☐ Are provisions in place for trash collection and removal that are acceptable to the County/MD?
- ☐ Are there on-site provisions for on-site sewage disposal?
    - Portable toilets?
    - Other?
    - Sewage hauling and removal protocols?
- ☐ Is there a workplan, which when used will reduce risk and minimize or mitigate impacts from the sand and gravel operation?
- ☐ Does the workplan clearly designate:
    - The proposed development area?
    - Extraction locations?
    - Stockpile locations?
    - Production, washing, crushing locations?
    - Topsoil and subsoil salvage and replacement?
    - Surface and groundwater management measures?
    - A reclamation plan including final grades, slopes and elevations as well as final land use?
        - Does the reclamation plan show cross-sections of existing lands and proposed post-reclamation land?

- ☐ Is the reclamation plan and post-development land use consistent with the municipality's Area Structure Plan and Municipal Development Plan?
- ☐ Have royalty agreements/arrangements been made with landowners?
- ☐ Have hours of operation been established in accordance with County/MD policy or accepted practice for:
    - Stripping Operations?
    - Mining/Crushing/Washing Operations?
    - Asphalt Production?
    - Concrete Production?
    - Hauling Operations?
- ☐ Has a list of equipment based on the specific operation it is utilized for and the expected times such equipment would be utilized been provided?
- ☐ Will sand and gravel washing, pit dewatering or wet pit excavations take place?
- ☐ Will any chemicals be used for pit operations?
- ☐ Will an asphalt or concrete plant be part of the pit operation?

Environmental Considerations

- ☐ Has an assessment of the potential environmental impacts of the proposed operation been conducted? Does it consider:
    - Climatic conditions?
    - Topography?
    - Soil types and their erosion potential?
- ☐ Has an Environment Construction Operations (ECO) Plan been established detailing how used oil, filters and accidental spills will be dealt with?

Trucking and Haul Routes

- ☐ Have haul routes been established and agreed to?
- ☐ Has the number of gravel trucks that will be operating been agreed to?
- ☐ Has a traffic assessment been undertaken to address potential traffic issues?
- ☐ Are gravel truck operators required to be part of the ASGA Registry?
- ☐ Has a moratorium been placed on hauling during spring road bans of 75% or less?

TOOL 2: CHECKLIST OF TYPICAL MUNICIPAL DEVELOPMENT PERMIT APPLICATION REQUIREMENTS FOR SAND AND GRAVEL OPERATIONS

- ☐ Site Plan drawn to scale showing:
  - Legal description of site;
  - Dimensions of site;
  - Other land that may be used in conjunction with the proposed development;
  - The location of existing and proposed buildings (whether on permanent or temporary foundations), wells, septic tanks, disposal fields, dugouts, lagoons, culverts, and crossings that may be used in conjunction with the development; and
  - Height, dimensions, and relationship to property lines of all existing and proposed buildings and structures.

- ☐ Other land ownership involved in the development supported with signed consent.

- ☐ Utilities, site drainage, existing and proposed grades, grades of roads and sewer servicing .

- ☐ Number of years the sand or gravel pit is proposed to be in operation.

- ☐ Total amount of sand and gravel to be mined out.

- ☐ Projected operating procedures for the pit.

- ☐ Number of people to be employed by the sand and gravel operation.

- ☐ Anticipated generation of motor vehicle traffic on a daily, weekly, or monthly basis.

- ☐ Number of vehicles that will be used in the hauling of materials and the proposed hauling route to and from the site.

- ☐ Types and numbers of equipment to be used for each activity.

- ☐ Access locations to and from the site, including roads and highways, traffic generation on each of those roads and highways.

- ☐ Dust control measures to be implemented, including the suppressant materials or methods to be used either on the pit floor and on stockpiles and the estimated frequency for the application.

- ☐ The projected impacts of plant (asphalt, gravel crushing, concrete or other) dust or emissions and the methods to be used for controlling such dust or emissions.

- ☐ Frequency for cleaning settled dust from in or around gravel crushing plants.

- ☐ Provisions for loading and parking.

- ☐ Descriptions of any noxious, toxic, radioactive, flammable or explosive materials proposed.

- ☐ Garbage and storage areas and fencing and screening proposed for same, and methods of disposing of garbage.

- ☐ Provision of a written security plan that identifies dangerous situations or areas, typical procedures to be used for monitoring the site during periods of activity and also when activities are suspended.
- ☐ Methods to be used to restrict public access and to protect wildlife, neighbouring livestock and domestic animals.
- ☐ Quantity and quality of well water and soil tests for the systems that may be used in conjunction with the proposed development.
- ☐ Amount of water required for the proposed development on a daily, weekly or monthly basis and proposed water source.
- ☐ Engineering feasibility studies on the method of water supply.
- ☐ Engineering feasibility studies on the method of effluent disposal.
- ☐ Profiles and cross-sections showing the original ground level, the proposed depth of any excavation, the finished grade elevation, the depth of over-burden and water table elevations.
- ☐ The method intended to be used for the excavation of the materials contained in the land, back-filling, terracing, compacting, leveling, reclaiming the site and equipment to be used in connection therewith.
- ☐ Reclamation plans and the projected final use of the site.
- ☐ The method to be used for supporting any pit walls.
- ☐ Methods of controlling noise, dust, or drainage from the site, both during and after completion of the operation.
- ☐ Size, number, and location of stockpiles of topsoil, overburden, and gravel.
- ☐ The days and hours of operation for each activity and any known or regular periods of inactivity.

TOOL 3: SAMPLE DEVELOPMENT PERMIT APPLICATION

(Developed by the Aggregate Resource Task Group)

ABC Gravel Mining Company Ltd.

ABC Pit #9

NW xx-xx-xx-w9

Submitted to:

Municipal District of XYZ

This example contains aggressive and demanding conditions for permitting requirements. It has been developed for reference and use by pit operators and permitting agencies. It is expected that most permits would not necessarily require the level of detail or onerous commitments outlined. **This example is provided for information purposes only.**

Introduction

This document forms part of the ***ABC Gravel Mining Company Ltd. (ABC)*** submission to the ***Municipal District of XYZ (M.D.)*** in support of a requested development permit for a gravel mining operation, asphalt concrete production facility and Portland cement concrete production facility. This document has been prepared in accordance with the Alberta Sand and Gravel Association's ***Guide for Gravel Pit Operators.***

The land is located at NW xx-xx-xx-w9 and referred to as ABC Pit #9.

This document has been developed in conjunction with the Conservation and Reclamation Plan (CRP) for ABC Pit #9 and other environmental approvals, and in anticipation of the general conditions normally associated with the municipal Development Permit and site-specific conditions. This document also describes the day-to-day and long-term operating procedures and requirements. It is understood that this document may form part of the conditions of the development permit to be issued by the M.D.

Upon issuance of the requested permit and start of operations, this document will form the basis of ABC's operation of ABC Pit #9.

General

Requirements of other Regulatory Agencies

Environmental regulations of both provincial and federal jurisdictions will affect the operation of the ABC Pit #9. Specifically, the following conditions will be in place (or are expected):

- There will be no operations within 30m of the unnamed watercourse (LSD xxxxx), and
- Water settling and retention ponds will be tested prior to any discharge into the above watercourse.

ABC's Pit Manager will ensure that all equipment operators are aware of all operational requirements and shall inspect the activity to ensure conformance with all permits, approvals and this document.

ACTIVITY	INSPECTION FREQUENCY-ACTION
Timber salvage	Daily-
Stripping	Daily- correct method/depth
Integrity of Stripped Buffer	Daily- Warn thru Loader operator, order more stripping
2:1 Slope of the inactive Face, Other Slopes as per the CRP	Monthly and the end of the project
Trucking (Code-speed/ spacing/ passing) and use of Box rinsing area	Daily
Weed Control	Monthly-spray or mow as required
Erosion Control	Weekly and each rain event
Dust Control	Daily at start up, and weekly or more frequently as required thereafter, depending on the dust suppressant used

Communication Plan

Notification of Those Directly Affected

All residents directly affected by the gravel pit development and pit operations who reside within two kilometres of the pit property have been personally interviewed and notified in writing of our intent to develop this site. We have also notified in writing and personally visited residents along the truck haul route. We have encouraged their input regarding their concerns and suggestions. Additional meetings have been held with those expressing initial concerns to address issues they raised.

During these personal interviews with directly affected people, we have developed and will continue to update a contact list of affected residents complete with address, phone numbers, fax numbers and e-mail addresses, as applicable.

An open house was held in the local community center two weeks after a notice was placed in the local newspaper and notices were placed in various local area public buildings. Citizens' concerns have been dealt with and integrated into this proposal. Appendix A lists these concerns and references the manner in which they were addressed.

Affected Adjacent Landowners and Residents:

One week prior to beginning pit development work, residents living within two kilometres of the site will be notified. They will also be notified one week prior to activation of pit operations as well as prior to reactivation of pit operations following seasonal shutdowns.

Haul Route Residents Between the Pit and the Highway:

Each year, haul route residents will be contacted by telephone and mail one week prior to the commencement of truck haul operations. They will be given a contact phone number and the name of the person to talk to should they have any concerns once truck haul operations are in progress. Since our truck haul will also go through Shady Nook, notification of the truck haul will be posted in the local newspaper. Occasionally, we expect to have contracts to supply highway construction projects which will create more intensive truck hauls. Haul route residents will be provided with specific notification in such cases.

Annual Interviews:

After the end of each season, we will conduct personal interviews of all affected residents including those on the haul route. They will be asked questions specifically related to our operations and asked to voice any concerns which they may have. Those residents which for any reason we cannot personally contact will be sent a questionnaire with a stamped, self-addressed return envelope. These annual interviews will provide the information needed to keep the affected residents contact list updated as well as address noted concerns about our operations.

Truckers - Operators

All gravel truck operators will be provided with a copy of our Code of Conduct for Truck Operators, (see Appendix B) which includes special details about the truck haul route. Copies of this Code are available to interested members of the public from our dispatch/scale office at the pit site.

On-Site Meetings

There are several phases to our operations including pit development, crushing and stockpiling of aggregates, loading of aggregates and truck haul as well as the manufacture of hot mix asphalt and Portland Cement Concrete from the on-site plants. Prior to the start of each of these operational phases, the pit site supervisor will hold a meeting with all involved personnel outlining their duties and

responsibilities. Where appropriate, combined meetings will be held with personnel involved in more than one phase. At these meetings, local area residents' concerns, company expectations and reporting requirements will all be discussed.

We expect that any concerns raised by those affected by pit operations or the truck haul will be directed to our dispatch/scale office contact person. A log will be kept of all concerns including the names of those who raised them. These concerns will be reviewed by the Pit Supervisor within 24 hours of notification and attempts will be made to mitigate or correct any problems identified. Subsequently, the person raising the concern will be advised of the action taken.

Truck Haul Operations

Before starting any truck haul, those trucks hired for this purpose will each be given an identification number. This clearly visible number together with the name of our company will be placed on the left side of the front bumper and the left side of the tailgate of each truck.

Once all truck haul participants are employed, a general meeting will be held to discuss:

- The Code of Conduct for Truck Operators.
- The haul route and all identified special situations which exist along it, including but not limited to:
    - School bus routes;
    - School zones;
    - The specific truck route through Shady Nook;
    - Areas specifically noted on the haul route map where special conditions exist and extra care must be taken;
    - Public expectations of general truck haul operations; and
    - Concerns expressed initially by citizens.

Every two weeks during truck haul operations, our site supervisor will conduct a meeting of all employed truck operators to discuss any concerns expressed by members of the public and any that have been identified by members of our organization. Any truck operator considered in violation of good operating practices will be interviewed and the nature of the infraction discussed. Corrective action will be taken as necessary. If the infraction is considered minor, the operator will be dismissed upon a second occurrence. Any truck operator who commits what is considered a major offence will be dismissed immediately upon recognition of the infraction.

General Pit Development

Timing

We plan to open ABC Pit #9 in the spring of 2003. Initial mining operations will include 37 acres (15 ha) in the NW corner of Section XX. As this area is depleted, mining operations will be extended southward. The size of the deposit and current market conditions indicate that the working life of this source will be between 12 and 17 years. This estimate is based on an average usage of 200,000 tonne/year. Although the site will be reclaimed in a sequential manner, it is anticipated that reclamation work will lag behind the final pit depletion by one full calendar year before the land is available for its final use.

(The pit has an estimated life of 15 years based on an average usage of 80,000 tonnes/year with peak usage of 160,000t in four of the years. Development shall occur in accordance with the CRP and other permits. The intent is to restrict the size of the open pit and stockpile site to four ha and two ha respectively. Reclamation of two ha shall occur once the pit has reached the four ha limit.)

ABC has completed a Conservation and Reclamation Plan (C&R Plan). The C&R Plan is attached as Appendix A to this document. The following is detailed in the C&R Plan:

- Proposed development area (the total area is xx acres/yy ha);
- Mining plan – includes planned sequential mining and reclamation and locations of equipment and stockpiles;
- Topsoil and subsoil salvage and replacement;
- Surface and groundwater management; and
- Reclamation plan – includes final grades, slopes and elevations, and final land use.

The attached C&R Plan also contains plans and cross section drawings of the existing lands and proposed post-mined land. Placements of all overburden and topsoil piles are detailed on the plans, as are the locations of gravel stockpiles and the various production facilities.

As reclamation progresses, the land will be reclaimed to productive farmland excepting the NW corner of Section XX which we plan to subdivide into country residential lots. This planned sub-division is consistent with the M.D.'s Area Structure Plan.

Access Road

As ABC Pit #9 has direct access to Provincial Highway xx, a development permit has been requested of Alberta Infrastructure and Transportation. As part of that request a traffic assessment has been undertaken to address potential traffic issues. The traffic assessment indicated that the existing farm entrance to Pit #9 must be upgraded to a class 2 intersection. This will be undertaken to Alberta Infrastructure and Transportation's standards prior to the start of the truck haul. The existing field entrance will be widened and paved to meet this requirement. In addition, the entrance road shall weave between two berms that will act as a visual buffer.

General Pit Operating Procedures

Types of Activities

The proposed land uses include gravel mining, gravel crushing and gravel washing facilities. In addition, an asphalt concrete plant and a Portland cement concrete plant will operate on the property. Stockpiles of various gravel products will also be established.

On-site Equipment

The following list of equipment is based on the specific operation as described. The expected times that such equipment would be utilized is also shown:

Stripping (generally once per year for a two week period)	Motor Scraper, Crawler-Tractor c/w Dozer
Mining/Crushing (all operating periods)	Loader, Hydraulic Excavator, Crusher set up
Stockpiling (all operating periods)	2 Tandem Dump Trucks
Asphalt Concrete Production (May to August annually)	Plant set up, Camp site
Portland Cement Concrete Production (all operating periods)	Permanent plant set-up
Trucking (general hauling as noted, this can increase for short periods for specific projects)	Tandem Axle Water Truck, 16 round trips per hour off site
Reclamation (generally done in conjunction with stripping operations)	Motor Scraper, Crawler-Tractor c/w Dozer, Tractor, Disc, Cultivator, Rock Picker, Seeder

Hours of Operation

OPERATION	WEEKDAY HOURS	WEEKEND HOURS
STRIPPING	Summer only 7:00 -19:00	No work on Sunday
MINING CRUSHING	Summer 9 days at 24h/day and 17 days at 12h/day	No work on Sunday
ASPHALT PRODUCTION	Summer only Dawn to Dusk	No work on Sunday
CONCRETE PRODUCTION	Daily 7:00 to 20:00	No work on Sunday
HAULING	Daylight only 7:00 to 17:00	No work on Sunday

Generally, no activity is anticipated on statutory holidays. Specific projects such as paving on provincial highway projects may require such work on a short term basis but in such event, all local area and truck haul road residents will be advised by phone in advance. No hauling will occur during spring road bans of 75% or less.

Managed Pit Operations:

The additional potential issues within the context of day-to-day pit operations have been identified and will be managed in accordance with the following guidelines.

Equipment Servicing

All servicing, fuelling and truck box rinsing shall take place at the upper level of the site to ensure that accidental spills can be easily contained. An area six metres square shall be lined, as the existing

soils are permeable. The area shall be graded to prevent surface water from entering the site. Barrels shall be provided to collect used oil and filters. Spill kits shall be available as per the Environment Construction Operations (ECO) Plan. All spills shall be cleaned up immediately.

Trash Collection

All trash will be placed in the bin located next to the scale house. The site and access will be routinely inspected by ABC's on-site manager to collect all errant material. No more than one truckload of recyclable metal (screens, culverts, guard rails) and one bin of garbage will be kept on site at any one time. No garbage will be imported to the site. At seasonal shutdown all garbage, recyclables and used oil will be removed to approved disposal facilities.

Sewage

Portable commercially serviced outhouses will be used at all times.

Dust and Emissions

Dust Control on the Haul Route (Municipal Roads)

During stockpiling and hauling, the roads will be watered once per hour and more frequently if visibility is an issue. Alternately, dust abatement materials such as calcium chloride will be used.

Dust Control in the Pit

The roads in the pit shall be watered as required to prevent any dust carrying from the pit into the neighbour's yard (which is 400m to the southeast of the pit) or impairing visibility on adjacent municipal roads. To minimize dust generation in the pit, the following practices will be implemented:

- Maximum drop height of aggregate of two metres
- All conveyor free-fall areas will be covered with tarpaulin covers

The asphalt concrete plant to be utilized in ABC Pit #9 is a 1999 Barber Greene plant with a cyclone scrubber. A water flow rate will be maintained within the scrubber to capture discharged particulate matter. This plant exceeds Alberta Environment requirements for particulate emissions and will be maintained to assure that it is always in compliance. Effluent from the cyclone scrubber will be discharged into a self-contained separation tank.

Noise Control

The ABC Pit #9 is located within 500 m of some local residences, therefore noise has been recognized as a potential issue. EFG Consultants were retained to carry out a noise modeling investigation and make preliminary sound predictions based on the proposed equipment. This study identified that during initial operations, noise levels might be expected to reach as high as 70dBa at neighbouring property lines. Remedial measures have been designed to reduce this noise to an estimated 55 dBa. The remedial measures include strategically placing the overburden and topsoil piles as shown on the plans in the C&R document (Appendix A) and locating all crusher and plants at the bottom of the excavated area.

Following depletion of the initial work area, equipment will be located further south, while the initial overburden/topsoil piles will be left in place. Once the equipment is moved, the estimated sound levels at neighbouring properties will be reduced even further.

Noise monitoring is not considered necessary. If the M.D. mandates that noise monitoring be implemented due to residents' complaints, ABC will contract this service and provide the results to the M.D.

Site Security and Protection

Use of Fences/Gates/Signs to Enhance Public Safety

The pit boundary shall be posted with No Trespassing, Danger-Open Excavation signs at the pit entrance/exit and the mid-point of each side and where trails intersect. The property line is already fenced and shall be maintained in its current state by the grazing lessee. A Texas gate shall be installed before opening the pit. The main entrance gate shall be closed nightly. The fence and gate and signs shall be inspected bi-weekly during operations to ensure they are functioning as designed. After seasonal shutdown, the lessee shall complete monthly inspections.
Truck haul signs shall be placed at the pit entrance, the highway and the two uncontrolled intersections along the designated haul route during periods of intensive haul operations.

Hauling Operations

Hauling operations have been generally described in the Section "General Pit Operating Procedures" with respect to numbers of trucks and dust control methods related to haul activities.

Irrespective of any separate haul road agreement between ABC and the M.D., during periods of intensive haul, potholes shall be repaired on an as required basis. At the conclusion of an intensive truck haul, re-gravelling of those portions devoid of gravel will be completed.

Code of Conduct For Truck Operators

A *Code of Practice for Truck Operators* is appended to this submission. All employed and contracted truck operators will be required to agree to operate within this *Code* as a condition of employment.

Contact Persons

The following ABC employees should be contacted to address any concerns that the M.D. may have:

John Doe – Pit Manager (780) 415-4875 cell (780) 888-9192
Fred Doe – VP Northern Operations (780) 415-0001 cell (780) 999-9192

In the event that satisfactory resolution of the M.D.'s concerns are not able to be addressed, contact:

Joe Doe – Owner (780) 415-0002
ABC Gravel Mining Company Ltd.
11243 - 299 Ave.
Edmonton, AB T6J 3S3

APPENDIX B CODE OF CONDUCT FOR TRUCK OPERATORS

1. Trucks shall meet all requirements under the *Highway Traffic Act, Occupational Health & Safety (OH&S) Act*, *National Safety Code*, and the *Commercial Vehicle Inspection Program (CVIP)*. *CVIP* stickers must be prominently posted on the vehicle. Trucks are to be kept in good mechanical condition and available for mechanical inspection if one is requested.

2. Truck operators are responsible for making themselves aware of overhead power lines and shall allow the safe clearance distances as outlined in the O.H.&S. guidelines.

3. No truck will be permitted to load in excess of its maximum **allowable** weight.

4. Loads must be leveled to prevent spills. All hitches, sideboards, etc. must be cleaned prior to leaving the work site or pit site. All loads must be tarped when in transit.

5. All posted speed limits, permanent or temporary, must be adhered to. Signal and flag personnel shall be obeyed at all times. Failure to adhere to speed restrictions will result in dismissal.

6. Truck operators shall turn only when safe to do so. Trucks shall use approaches to turn around whenever possible and failing this, use only staff turning areas. Care and consideration will be given at all times to the travelling public.

7. All trucks must have automatic backup alarms in operation at all times on the project. Night operations at the pit may use backup lights instead of alarms due to noise issues, if permitted by Alberta Labour, Workplace Health and Safety Division.

8. As part of truck operators' commitment to safety, all operators must attend project safety meetings when notified. Truck operators' safe work practices and any and all job procedures must be adhered to.

9. Consuming, being in possession or under the influence of alcohol or drugs will result in immediate dismissal.

10. All truck operators are to follow "Personal Protective Equipment" requirements on all projects. Wearing a safety vest while outside your vehicle is required.

11. All truck owners must have an account in good standing with the Workers' Compensation Board (WCB), providing coverage for anyone operating their vehicles.

12. All personal injuries or property damage must be reported immediately to the pit site supervisor or senior personnel on site.

13. Operators are to remain in a safe position while the truck is being loaded.

14. No work shall be performed beneath an elevated dump box or cab until the box or cab has been securely blocked in the elevated position.

15. The loader has the right-of-way within the pit area.

16. Passing will not be permitted within the pit. Passing outside the pit area is permitted only when safe to do so. Convoying (following closer than 500 metres) is not permitted.

17. No garbage shall be disposed of other than in garbage containers typically found at the scale shack.

Failure to follow these instructions will constitute grounds for immediate dismissal.

OPERATING NAME: _____ **TRUCK NO.** _____
DRIVER SIGNATURE: _____ **DATE:** _____

TOOL 4: LIST OF SAMPLE CONDITIONS FOR MUNICIPAL DEVELOPMENT PERMIT APPROVALS FOR SAND AND GRAVEL OPERATIONS

1. Applicant is to comply with all requirements of Alberta Environment, including any registrations, permits and approvals. Proof of compliance with said requirements are to be submitted to the municipal Development Officer.

2. This permit is subject to the community aggregate payment, the amount of which is to be set by the M.D./County council.

3. The area being mined is to be staked at all times;

4. All equipment and activity relating to the mining and crushing shall take place in the areas approved for gravel extraction;

5. Reclamation and rehabilitation of the pit shall be to the satisfaction of Alberta Environment and in accordance with the EPEA and the Conservation and Reclamation Regulation. Proof of compliance with reclamation requirements shall be submitted to the Development Officer.

6. Any structures or equipment on the land are to be removed upon expiry or cancellation of this permit.

7. Where, in the process of development, areas require leveling, filling or grading, the topsoil and subsoil shall be removed before work commences, stockpiled and replaced following the completion of the work.

8. No topsoil or subsoil is permitted to be hauled off of the said property.

9. Hours of operation are restricted to ___ a.m. to ____ p.m. Monday through Sunday.

10. The applicant shall ensure that dust and noise control measures are undertaken to prevent such items from becoming an annoyance to neighbouring landowners.

11. The applicant shall conduct dust control procedures at the request of and to the satisfaction of the Development Officer.

12. Stockpiles shall be located in a position to act as a sound barrier where possible.

13. The applicant shall apply methods of minimizing the noise created from machinery and equipment.

14. The applicant shall keep the area subject to the development permit in a clean and tidy condition free from rubbish and non-aggregate debris.

15. The applicant shall locate appropriate traffic and safety signage on and about the subject site and road accesses.

16. Access routes into extraction areas shall be located away from residential areas.

17. A disturbed area shall be reclaimed to a land capability equivalent to the pre-disturbance land capability or to a post-disturbance condition and land use satisfactory to the Development Officer.

18. For pits which are less than 5 hectares in size, the applicant must enter into a surface restoration agreement with the municipality and post security based on the cost of reclamation to the satisfaction of the municipality.

19. Contravention of any conditions of development approval may result in the municipal Council authorizing the cancellation of this development permit or jeopardize the renewal of same.

20. A valid business license must be obtained from the municipality and renewed on an annual basis for the life of the sand and gravel operation.

21. The sand and gravel operation is required to comply with all municipal bylaws and setback requirements.

22. No development, disturbance or alteration of a surface water body is permitted without obtaining the necessary provincial approvals under the *Water Act*. Evidence of a *Water Act* approval or license must be provided to the Development Officer.

23. All reasonable measures must be taken to control erosion in the area of the sand and gravel operation.

TOOL 5: SAMPLE MUNICIPAL DEVELOPMENT AGREEMENT FOR A SAND AND GRAVEL PIT

(sample provided by Lacombe County)

An Agreement made on the _____ day of _____, 20__.

BETWEEN:

County of XYZ
of (insert address)
(hereinafter called the "County")

OF THE FIRST PART

- and –

ABC Gravel Mining Company Ltd.
of (insert address)
(hereinafter called the "Operator)

OF THE SECOND PART

WHEREAS the County received an application for permission to remove gravel from the lands legally described as follows:

(insert legal description)

Excepting thereout all mines and minerals
(Certificate of Title No. _____)
(hereinafter called the "said lands")

AND WHEREAS the application was approved by the County's Municipal Planning Commission/County's Subdivision and Development Appeal Board on (insert date), subject to conditions, and attached hereto as Schedule A is a copy of that decision;

AND WHEREAS a condition of the said approval requires an Operator to enter into a development agreement with the County before a development permit is issued;

NOW THEREFORE in consideration of the terms and conditions hereinafter set forth, the parties hereby agree as follows:

1. It shall be the responsibility of the Operator to obtain all permits, licenses or other approvals that may be required under provincial and federal legislation for the development approved by the County. The operator is also responsible for adhering to the *Code of Practice for Pits* regulated by Alberta Environment.

2. The Operator shall salvage and store separately all topsoil and other overburden material from all areas disturbed by the gravel operation. No material so stripped is to be removed

from the said lands but must be retained thereon for future reclamation of the area disturbed by the operation.

3. All stripping and stockpiling shall be by scraper unless otherwise approved by the County.

4. The County shall designate the roads to be used for the hauling of gravel and further, may require that the Operator installs weigh scales at the pit site to ensure that truck load limits are adhered to. The Operator shall not permit to be hauled any gravel upon any roads not so designated for that purpose by the County. All truck traffic shall be subject to road weight laws and road ban restrictions. (*The Operator is hereby directed that all materials from the said lands is hauled north along (Range Road/ Highway / Township Road). No other route shall be used for haul traffic, unless permission is received in writing from the County. It will be the responsibility of the Operator to ensure that empty trucks use the route designated by the County.)*

5. The Operator shall enter into a *Sand/Gravel Haul Agreement* with the County, a copy of which is attached hereto as Schedule B. This Agreement describes responsibilities for dust control, road maintenance and security requirements, signage, hours of operation, and other safety and vehicle operating procedures. It shall be the responsibility of the Operator to ensure that all conditions of the *Sand/Gravel Haul Agreement* are adhered to.

6. It shall be the responsibility of the Operator to ensure that gravel extraction is adequately fenced, complete with a gate, and clearly visible warning signs are installed prohibiting public access into the working area. Such fencing shall be maintained in satisfactory condition at all times. As a further safety measure, the Operator shall ensure that no working faces in the excavation area are left with more than a 3:1 slope.

7. In the interests of public safety, the Operator is responsible for ensuring that a guard rail is installed, satisfactory to the County, prior to excavating any area within 5 metres (16.4 feet) of a developed road allowance. Once excavation has been completed, the Operator shall reclaim the area adjacent to the developed road allowance creating a slope no steeper than a 4:1 ratio. The guard rail may only be removed with written approval from the County.

8. No new topsoil, overburden or granular material is to be piled over 4.6 metres (15 feet) in height within 38.1 metres (125 feet) from the centre line of a road right-of-way.

9. The Operator is responsible for advising all persons and parties permitted by the Operator to haul gravel from the said lands of the general pit operating and haul requirements broadly described under this Agreement and more particularly set out in the *Sand/Gravel Haul Agreement.*

10. Every effort shall be made by the Operator to control or avoid any nuisance arising from the gravel excavation due to noise, dust or drainage. Such methods shall be to the satisfaction of the County. The County may, at its sole discretion and acting responsibly, require the Operator to take additional measures to reduce any nuisance that may be caused by the operation.

11. The Operator shall also undertake to properly control weeds on all disturbed areas and stockpile sites.

12. Where feasible to do so, the Operator shall ensure that reclamation occurs progressively as the gravel excavation operation proceeds in order to minimize the amount of land disturbed

at any one time. All reclamation related to the operation approved by the County's Subdivision and Development Appeal Board and under any other previous development permit and agreement affecting the said lands shall be completed immediately upon the expiry of the new development permit with the requirement that the Operator restore the lands disburbed by the operation to an agricultural land capability equivalent or better than the land capability that existed prior to disturbance. The reclamation work shall not be considered complete until a Reclamation Certificate has been issued by Alberta Environment. A copy of such Certificate is to be provided to the County.

13. This Agreement shall enure to the benefit of and be binding upon the parties hereto, their successors and assigns.

IN WITNESS WHEREOF the parties have executed this Agreement as of the date set forth above.

COUNTY

Per: _____

OPERATOR

Per: _____

TOOL 6: CHECKLIST OF TYPICAL CONSIDERATIONS AND PROVISIONS IN A MUNICIPAL-INDUSTRY HAUL AGREEMENT

- ☐ The haulage period (effective dates).
- ☐ Hours of operation for the truck haul.
- ☐ A general requirement for the hauler to repair any damage caused to the municipality's roadways from their haul activities.
- ☐ Specific requirements for haul route maintenance (ie. road to be maintained by a grader during haulage, dust control provisions).
- ☐ Road restoration requirements upon the completion of the haul.
- ☐ Provisions to provide security to the municipality to offset any infrastructure damages that may occur.
- ☐ Designated haul routes in the municipality.
- ☐ Landowner and affected party notice requirements.
- ☐ A commitment from the hauler regarding adherence to speed limits and municipal bylaws associated with the haul routes (ie. axle-weight requirements, dust control, nuisance, noise control, etc.).
- ☐ A list of goods and materials that may be hauled (ie. no dangerous goods).
- ☐ Signage requirements for both the haul route and the gravel trucks.
- ☐ A process for transferring or assigning the haul agreement to another industry party.
- ☐ A conflict resolution process or mechanism.
- ☐ Non-compliance conditions and outcomes.
- ☐ Notice and notification provisions and information for both parties.

TOOL 7: A SAMPLE MUNICIPAL BYLAW TO AUTHORIZE THE IMPOSITION OF A COMMUNITY AGGREGATE PAYMENT LEVY

WHEREAS the *Municipal Government Act,* Part 10, Division 7.1, authorizes the Municipal Council to pass a community aggregate payment levy bylaw to impose a levy in respect of all sand and gravel businesses operating in the municipality to raise revenue to be used toward the payment of infrastructure and other costs in the municipality;

WHEREAS Alberta Regulation 263/2005 made pursuant to the *Municipal Government Act*, section 409.3, applies to all municipalities that have passed a community aggregate payment levy bylaw;

AND WHEREAS the Council of (Municipality) has determined that it is in the best interest of (Municipality) to pass a community aggregate payment levy bylaw;

NOW THEREFORE be it resolved that the Council of (Municipality) in the Province of Alberta, duly assembled, enacts as follows:

DEFINITIONS

1. In this Bylaw:
    a. "**Aggregate**" means any sand or gravel that is excavated from a pit, whether in a processed or unprocessed form.
    b. "**County**" means (Municipality) in the Province of Alberta.
    c. **"Crown**" means the Crown in right of Alberta or Canada;
    d. "**Levy**" means community aggregate payment levy;
    e. "**Pit**" means any duly constituted opening, excavation or working of the surface or subsurface made for the purpose of removing sand or gravel, and includes any associated infrastructure, but does not include a mine or quarry;
    f. "**Sand and gravel operator**" means a person duly engaged in extracting sand and gravel for shipment;
    g. "**Shipment**" means a quantity of sand and gravel duly hauled from the pit from which it was extracted.

REPORTING OF SHIPMENTS

2. All sand and gravel operators in the County shall report their shipments, in tonnes, from each individual pit within the boundaries of the County, on a quarterly basis, within fourteen (14) days after March 31, June 30, September 30 and December 31 of each year, on the form attached as ***Schedule "A"*** to this bylaw.

LEVY NOTICES AND PAYMENT

3.1 The County shall send out community aggregate payment levy notices within thirty (30) days of March 31, June 30, September 30 and December 31 in each calendar year setting out the amount of the Levy payable by the Operator.

3.2 The levy shown on a levy notice shall be paid to the County by the operator within thirty (30) days of the date of receipt of the levy notice.

SAND AND GRAVEL SHIPPED TONNAGE ROLL

4. The County shall record the tonnage of sand and gravel in an operator's shipment on a sand and gravel shipped tonnage roll based on the tonnage of sand and gravel in an operator's shipment, as reported by the operator.

UNIFORM LEVY RATE
5. The levy rate to be applied throughout the County in calculating the amount of the levy is **$0.25 per tonne** of sand and gravel.

UNIFORM CONVERSION RATE
6. Where a sand and gravel operator is unable to provide a measurement of weight for the amount of sand and gravel in a shipment, the operator must use the following conversion rates to report shipments in tonnes:
1 cubic metre = 1.365 tonnes, for sand and
1 cubic metre = 1.632 tonnes, for gravel where 1 cubic metre = 1.308 cubic yards

AMOUNT OF LEVY
7. The amount of levy to be imposed in respect of a sand and gravel operator is calculated by multiplying the number of tonnes of sand and gravel recorded on the sand and gravel shipped tonnage roll for that operator for the reporting period by the levy rate.

EXEMPTIONS FROM LEVY
8.1 No levy may be imposed on the following classes of shipments of sand and gravel:

(a) A shipment from a pit owned or leased by the Crown or a municipality for a use or project that is being undertaken by or on behalf of the Crown or a municipality;

(b) A shipment from a pit owned or leased by a municipality for a use, project or purpose that otherwise fulfills a policy of the County that is being undertaken by or on behalf of a municipality;

8.2 No levy may be imposed on shipments of sand and gravel that are subject to another tax, levy or payment that is established by and payable to a municipality.

8.3 No levy may be imposed on shipments of sand and gravel that are required pursuant to a road haul agreement or a development agreement for construction, repair or maintenance of roads identified in the agreement, that is necessary to provide access to the pit from which the sand and gravel is extracted.

PERSON LIABLE TO PAY LEVY
9. A person who purchases a sand and gravel business or in any other manner becomes liable to be shown on the sand and gravel shipped tonnage roll as liable to pay a levy must give the County written notice of a mailing address to which notices under the *Municipal Government Act*, Part 10, Division 7.1, may be sent.

EFFECTIVE DATE:
10.1 This Bylaw comes into effect upon the final third passing and proper signature thereof.

10.2 If any provision herein is adjudged to be repugnant to any federal regulations or legislation, this Bylaw shall continue in full force and effect but any such repugnant provision shall be of no force or effect until such time as the repugnancy is removed by repeal or amendment of the federal legislation or regulations.