

THE FEASIBILITY OF LANDFILL PROHIBITIONS AS A REGULATORY TOOL

Discussion Document No. 2004-03

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This summary has been prepared as a “Discussion Document” to facilitate informed discussion regarding the potential use of landfill prohibitions and other waste reduction options as tools to promote waste diversion in Alberta. Written responses from representatives of the Waste Management Stakeholder Group, using the attached response sheet, are invited for submission to Joanne Smart, Stantec Consulting Ltd. **on or before July 30 2004**. Please forward written submissions by email to:

jsmart@stantec.com

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SUMMARY

Alberta Environment (AENV) has a target to reduce the annual disposal (burial) of municipal solid waste in Alberta's landfills from the current rate of 750 kg per capita to 500 kg per capita by 2010. AENV is pursuing a number of strategies to meet this target. The implementation of landfill prohibitions – to encourage the diversion of specific useable materials – is one potential strategy.

During stakeholder consultation on the development of the Municipal Solid Waste Action Plan, stakeholders expressed a clear desire to further consult on the usefulness of landfill prohibitions. AENV developed the following discussion document as a direct result of those comments.

The purpose of this document is to provide the WMSG with a common level of information from which they can provide informed advice on whether landfill prohibitions are an acceptable management tool to encourage waste diversion. A second purpose is to identify Albertan's general beliefs towards waste management.

The background information includes a discussion of:

- why Alberta needs to consider more aggressive measures to meet the 2010, 500 kg per capita target;
- how landfill prohibitions are being used to reduce the disposal of waste in landfills in other jurisdictions;
- what would have to be considered before implementing this type of approach in Alberta, and
- other options that might be considered to divert municipal solid waste from landfills.

AENV undertook preliminary research to identify the broad issues and challenges around the implementation of landfill prohibitions. Landfill operators and industry practitioners in Alberta, as well as waste management agencies in other jurisdictions were interviewed. The cooperation and assistance of interview participants is sincerely appreciated.

<p>This Discussion Document is intended to promote informed discussion towards the resolution of the issues identified herein. If consultation on this document proves to be favourable towards the implementation of landfill prohibitions and/or other waste reduction options, further consultation will be required, through expert technical committees, to test the feasibility of applying these types of tools to specific waste resources.</p>

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1.0	General Attitudes and Beliefs Regarding Waste Management	
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1.0 INTRODUCTION

1.1 Alberta's Waste Strategy, the Waste Management Stakeholder Group, Alberta's Municipal Solid Waste Action Plan, and Landfill Prohibition Policies

Alberta Environment (AENV) is developing a long-term Waste Strategy (Strategy). The Strategy is intended to encompass and consolidate issues and initiatives related to municipal solid waste (MSW), industrial waste, and hazardous waste.

Alberta's Municipal Solid Waste Action Plan (to be released in 2004), developed through stakeholder consultation, details specific actions that AENV will undertake to reduce the quantity of waste deposited in Alberta landfills. These actions include assessing the potential for new or alternative waste diversion policies (e.g. restricting non-hazardous waste importation, landfill prohibitions).

During consultation on the development of the Municipal Solid Waste Action Plan, stakeholders expressed a clear desire to further consult on the feasibility of landfill prohibition/reduction policies in general. The present consultation is in direct response to that request.

1.2 Purpose

The purpose of this Discussion Document is to provide the Waste Management Stakeholder Group (WMSG) with a common level of information from which they can provide informed advice on the issue of whether landfill prohibitions are an acceptable tool to encourage waste diversion. The information presented here discusses:

- why Alberta needs to consider more aggressive waste diversion measures,
- how landfill prohibitions are being used to divert waste from landfills in other jurisdictions, and
- what would have to be considered before implementing this type of approach in Alberta.

2.0 BACKGROUND

2.1 Alberta's Waste Diversion Goal

AENV has established a performance measure of continuous reduction of MSW deposited in landfills from 750 kg per capita in 2002 to 500 kg per capita by 2010 (see definition of MSW in Appendix I). Diversion is described as the direction of end-of-life material to a beneficial end use, e.g., waste recycled or composted; waste to energy conservation.

2.2 Why Restrict Waste Disposal At Landfills?

Waste Generation is Increasing

Albertans currently landfill over two million tonnes of MSW every year. This is exclusive of industrial wastes destined for on-site or private disposal facilities, agricultural wastes and a significant portion of industrial, commercial and institutional (ICI) waste. While per capita waste generation is relatively stable (see Appendix II), Alberta's growing population and expanding economy points to further increases in Alberta's total annual generation of waste.

Landfills are Prolific, Yet Their Life Span is Limited

Alberta has 51 landfills managed by regional waste authorities. In total, there are approximately 700 landfills operating in Alberta, including landfills for dry (inert) waste, industrial waste and municipal waste. Upwards of 800 historic landfills have been closed. However, there are no siting records for many of the historic landfills in Alberta, so the actual number of historic landfills is likely much larger. The median reported life expectancy of MSW landfills in 2002, which voluntarily reported waste data to Alberta Environment, was 36 years (range 2 – 100 years, representing landfills which service 83% of Alberta's population). If current waste disposal rates continue, the majority of Alberta's landfills, which accept municipal solid waste, will close within one human lifespan.

Siting New Landfills Will Be Difficult

As Alberta's population grows and urban sprawl redefines the boundaries of municipalities, it will become increasingly more difficult to find land in Alberta available for municipal solid waste landfilling. The NIMBY (not-in-my-backyard) phenomenon has proven to be a significant factor facing communities looking to site new landfills. The public simply does not want a landfill neighbouring their community. As well, there are limited places in Alberta that are geologically fit to accommodate a new landfill.

Landfilling Limits Future Development Opportunities

Despite Alberta's large land area and relatively small population, development has been regularly encroaching on old landfill sites. Section 13(5) of the *Subdivision and Development Regulation* (AR 43/2002) under the *Municipal Government Act*, R.S.A. 2000, c. M-26 specifies setbacks from landfills for subdivision development (including inactive and reclaimed landfills) and waste storage sites. Setback distances can only be changed through a variance issued by the Deputy Minister of Environment. The Deputy Minister receives 10 to 15 requests per year from developers seeking reductions to a setback. It is anticipated that more requests will be received as Alberta's population continues to increase and development encroaches on landfills.

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Waste Management is a Long-term Public Expense

Waste generation has required AENV to make significant investments in landfill development and long-term maintenance. Over the last 30 years, AENV alone has invested approximately \$70 million in the development and expansion of environmentally sound landfills. This investment was necessary to close upwards of 350 open dumps and old landfills that did not meet standards for best management practices in environmental protection. Despite past investments, future expenditures are expected to increase due to long-term liability for landfill maintenance (including long-term leachate management and methane gas capture) after landfill management contracts expire.

Pollution Prevention

The decomposition of waste in landfills is a potential source of pollution. In landfills, organic waste is anaerobically digested over long periods, which results in the production of methane gas, a potent greenhouse gas. Currently, few landfills in Alberta have the capacity to collect methane and prevent its release into the atmosphere. Landfill leachate is another potential source of pollution. As water drains through landfills, contaminants are picked up from the surrounding waste materials. Not all landfills have leachate collection systems to manage this pollutant. Regardless, all landfills are potentially fallible. If released, landfill leachate can contaminate soil and water.

Current Landfill Practices Under-Price the Full Cost of Landfilling

In Alberta, low tipping fees, which under-price the true cost of landfilling, have created a situation where it appears that landfilling is the most economical waste disposal method. Current tipping fees often do not account for the:

- lost opportunity costs due to future land development restrictions,
- costs of siting and developing new landfills, or
- the legacy this waste is leaving to future generations.

However, it is difficult for landfill operators to voluntarily increase their tipping fees to account for these costs, because they must compete with other landfills to attain waste as a source of revenue. This competition has resulted in a (landfill) market situation where landfill operators must offer low tipping fees to attract waste to their landfill. If landfill operators raise their tipping fees, waste haulers will simply take their waste to a cheaper landfill (within a reasonable hauling distance). In some cases, landfill operators have had a difficult time meeting their operating costs through their waste disposal revenue. Fear of losing what little revenue they have prevents them from raising their tipping fees to meet these costs.

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Waste Diversion Effects Long-term Savings

The economics of landfilling currently do not account for the savings that could be accrued through waste diversion including the:

- reduced need for investment in landfill expansions
- reduced landfill management and treatment costs over the course of the life of a landfill
- reduced production of greenhouse gases
- reduced odour
- reduced loss of valuable real estate available for development
- reduced risk of water and soil contamination
- reduced need to disturb natural ecosystems for new materials extraction
- capture of energy from discarded products
- preservation of non-renewable resources (elements, nutrients, etc.) in the material cycle.
- preservation of biological resources in the nutrient cycle

Current Waste Diversion Initiatives Are Not Adequate to Meet Disposal Reduction Targets

Alberta has made major strides reducing the waste disposed at Alberta's landfills. Since 1976, the province has invested over \$9.5 million through the Resource Recovery Grant Program to fund waste minimization projects, such as recycling facilities, in over 200 communities. Today, the majority of Alberta's communities have made local investments and have implemented community-based recycling programs. As well, the province has introduced waste recovery stewardship programs for beverage containers, used oil products (oil, filters, and containers), and scrap tires. Several voluntary industry stewardship programs (dairy beverage containers, telephone books, ozone depleting refrigerants, pesticide containers, and rechargeable batteries) have also been developed in Alberta with varying levels of success. Together these efforts have reduced Alberta's per capita waste landfilled by 28 % since 1988 (see Appendix II). Of this, stewardship programs in Alberta account for an estimated diversion of 12 kg of waste per capita per year.

Despite all this effort, waste reduction has hit a plateau. There has been no significant waste reduction since 1995 (see Appendix 1). To achieve the 500 kg per capita goal, AENV, in consultation with stakeholders, needs to examine all the tools available to reduce waste generation, increase waste diversion, and encourage resource recovery, including the possibility of implementing landfill prohibitions on certain materials.

3.0 LANDFILL PROHIBITIONS AS A WASTE DIVERSION TOOL

3.1 What is a Landfill Prohibition?

- Landfill Prohibitions (LPs) are a waste management tool that directly restricts the disposal of a specific material at a landfill.
- Mandatory Recycling Ordinances (MROs) are a closely related tool that indirectly restricts the disposal of material at a landfill, by requiring that a specific material be recycled, composted, or diverted for energy capture.
- In practice, LPs and MROs do not achieve 100% diversion. Contaminated materials, composite products (which are difficult to disassemble), and small quantities (which are indistinguishable from MSW) may all be excluded from LPs and MROs. For example, oil soaked old corrugated cardboard (OCC) might be excluded from an OCC prohibition, mattresses might be excluded from a metals prohibition, and single pieces of paper (as opposed to clumps of paper) might be excluded from a paper prohibition.
- Excluded material lists are developed through stakeholder consultation, and are adjusted if the regulatory authority becomes aware of new products that are difficult to recycle.

3.2 Implementation & Practice of Landfill Prohibitions

In Canada, two provinces (Nova Scotia and Prince Edward Island), and numerous municipalities and regional districts (e.g. Greater Vancouver Regional District, Victoria Capital Region District, Town of Edson, City of Lloydminster) have implemented either landfill prohibitions or mandatory recycling ordinances. In the United States, at least 22 states have implemented the same types of policies.

In general, landfill prohibitions have most often been applied where:

- a recovery infrastructure is already in place and readily accessible,
- the public and/or commercial entities have not used the infrastructure to divert a specific material,
- a prohibition is needed to provide incentive to use the infrastructure.

However, this is not always the case. Landfill prohibitions have been regulated where no infrastructure existed but where there was a reasonable expectation that infrastructure could be developed prior to, or as a result of, implementing the prohibition. This is common for organics diversion or leaf & yard waste diversion. For example, in Nova Scotia (organics), Massachusetts (leaf and yard waste), and Michigan (leaf and yard waste), prohibitions were passed prior to the development of a widespread composting infrastructure.

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- In Nova Scotia, the imminence of provincial landfill prohibitions and the assurance of feedstocks allowed municipalities to engage in public-private partnerships to develop a composting infrastructure, and allowed select private compost facilities to flourish.
- In Massachusetts the imminence of the prohibitions encouraged municipalities or regional districts to develop the necessary composting infrastructure: e.g. composting pads.
- In Michigan, some rural localities chose not to develop the infrastructure and instead provided residents with education on alternative solutions to managing leaf & yard waste including:
 - o free mulching mower blades with the swap of a non-mulching blade to encourage grasscycling, and
 - o a 'Let'em lie!' campaign that encouraged rural residents to build small leaf & yard waste composting piles on their own property.

3.3 Critical Considerations

Design of an Implementation Plan

There are a number of steps that have been identified by different jurisdictions as important to determine the feasibility of implementing a landfill prohibition:

- 1) Identification of a suitable target material
- 2) Verification of diversion alternatives (the material has a market or an end-use)
- 3) Comprehensive stakeholder consultation process to identify the practical requirements for implementing a prohibition on the target material
- 4) Design of a regulation and policies that are feasible to implement
- 5) Stakeholder information and awareness campaign
- 6) Carefully monitored implementation phase
- 7) Enforcement phase
- 8) Comprehensive review of the program at a set time (sunset clause).

A detailed review of the implementation process has been provided in Appendix IV.

Enforcement

Regulatory authorities in other jurisdictions stated that the effectiveness of any prohibition depends entirely on good enforcement. However, enforcement methods varied from jurisdiction to jurisdiction.

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Municipalities as the Responsible Authority

Where provinces or states have implemented prohibitions, enforcement is often delegated to the municipalities. Municipalities make effective enforcement agencies because (1) they have direct contact with waste generators, and (2) they often dictate the required local waste management collection and handling practices. In this situation, the province or state audits the municipalities' efforts to enforce the prohibition and holds those governments responsible for lack of enforcement effort.

Municipal enforcement efforts may include:

- random garbage bag/bin checks at curbside or storefront,
- educational promotions, and
- auditing per cent diversion for the municipality or region.

Municipalities have been free to develop their own enforcement penalties, such as implementing by-laws and ticketing offenders.

Landfill Operators as the Responsible Authority

Other jurisdictions have designated responsibility to landfill operators –the landfill operators are required by law to stop and turn away loads that do not comply with the prohibition at that landfill. These operators are also often required to inform the hauler of their recycling options. Landfill operators are usually audited to ensure their efforts to abide by the prohibition through random surprise audits of their enforcement practices (not on garbage audits of buried materials). Landfill operators have never been restricted from offering recycling services onsite or charging a tipping fee for that service.

Enforcement: Penalties or Rewards?

Enforcement can result in either penalties or the withholding of rewards. The withholding of rewards is the most common method that provinces and states have used to hold municipalities accountable. For example, Nova Scotia and some states collect waste taxes, which are redistributed through an annual grant, to support local community recycling programs for those communities that achieve provincial/state diversion targets.

In contrast, municipalities or regional districts often use financial penalties to hold their public accountable. Penalties may include:

- municipal tickets which are given out to home owners or businesses that fail to comply with the prohibition,
- creating significant surcharges on the tipping fees that haulers must pay at the landfill to dispose of a load which is in non-compliance, or
- surcharges to the hauler for the cost of sorting the hauler's load.

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Illegal Dumping?

Twenty jurisdictions with experience in implementing landfill prohibitions were contacted and questioned about whether they had experienced increases in illegal dumping activities after implementing their prohibitions. All jurisdictions reported that there were short-term increases in dumping activities (few months to a year). However, all stated that dumping did not become a widespread problem, and that dumping rates levelled off to pre-prohibition rates after one to two years. Most jurisdictions accredited educational campaigns with curbing the dumping rate. Education focussed on (1) the benefits of keeping waste out of landfills, and (2) where the public can access recycling alternatives. Those interviewed expressed a general consensus that most people in society will abide by the prohibition as long as they have, and are aware of, alternatives because “they want to do the right thing.”

4.0 SUGGESTED TARGET WASTE STREAMS FOR LANDFILL PROHIBITIONS

This section highlights AENV’s rationale for exploring the feasibility of applying aggressive waste diversion measures to remove specified target materials from Alberta’s landfills. Materials of interest were chosen for discussion based on previous stakeholder consultations: leaf and yard waste; old corrugated cardboard; fluorescent tubes; and gypsum wallboard. If consultation through the WMSG indicates interest in pursuing landfill prohibitions as a policy tool, the feasibility of implementing prohibitions on specific materials will have to be explored through technical committees and further stakeholder consultations.

Leaf and Yard (L&Y) Waste

L&Y waste is considered to be a potential target for aggressive waste diversion measures because it:

- contributes approximately 10 per cent of Alberta’s solid waste stream;
- is likely to produce a high quality compost (i.e., will meet Canadian Council of Ministers of the Environment (CCME), Class A requirements) -- high quality compost is a source of valuable nutrients and organic matter that can be marketed as a soil amendment;
- is a relatively clean source of organic material –i.e. it contains few pathogens as compared to other organic waste streams;
- can easily be separated from the municipal solid waste stream;
- can be readily composted across Alberta using simple cost-effective techniques;
- can also be diverted from landfills through treatment which allows for energy recovery; and

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- presents an environmental hazard in landfills through landfill leachate production and the production of landfill gases (see Appendix III).

Current status of L&Y waste in Alberta: Composting infrastructure is limited, although the science of composting is well established. If L&Y waste were to be prohibited from landfills, Alberta would need to ensure its diversion results in a viable, marketable product. The development of L&Y waste composting facilities can be readily developed province-wide, although investment would be required. Some jurisdictions have the facilities in place and could implement a prohibition now. Other jurisdictions would require investment in infrastructure before implementation.

Old Corrugated Cardboard (OCC)

OCC waste is considered to be a potential target for aggressive waste diversion measures because:

- OCC makes up approximately 15 per cent of Alberta's waste stream;
- OCC presents an environmental hazard in landfills through landfill leachate production and the production of landfill gases (see Appendix III);
- clean OCC can be separated from the municipal solid waste stream through careful management, is easily recycled, and has an established market; and
- contaminated OCC can be composted or processed for energy recovery.

Current status of OCC waste management in Alberta: OCC recycling infrastructure is well-defined in urban areas, yet almost non-existent in rural areas. Some municipalities would be able to implement a landfill prohibition immediately. However rural areas would need to invest in recycling infrastructure and rural market development prior to the implementation of a prohibition. Rural zones, which produce small volumes and are a great distance from market, may benefit from regional planning and investment in alternative OCC management options such as composting facilities or alternative energy recovery options.

Fluorescent Light Tubes (FLT)

FLT waste is considered to be a potential target for aggressive waste diversion measures because:

- four foot FLTs contain (on average) 23 mg of mercury, and eight foot FLTs contain 46 mg of mercury;
- mercury is a toxic, persistent metal, which has a tendency to bioaccumulate when released into the environment;
- one gram of mercury can contaminate a lake with a surface area of eight hectares;

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- humans can inhale, ingest, or absorb mercury through the skin;
- human health impacts of mercury contamination include neurological damage, kidney disease, and fetal brain and neurological damage; and
- the average office tower can go through hundreds of FLT's each month.

Current status of FLT's waste management in Alberta: The FLT recycling infrastructure is well-defined in urban areas, yet almost non-existent in rural areas. FLT recycling is a business cost. There is little inherent value in the component materials of FLT's, and as a result, FLT recycling will never be self-supported through market demand for the product. That said, FLT's can be repackaged in their original packaging and shipped to recycling facilities.

It should be noted that Alberta currently exempts FLT's as a hazardous waste in the *Alberta User Guide for Waste Managers (ed. 1996)*. However, FLT's disposed in large quantities could be classified as a hazardous waste. This is because crushed FLT's (in quantities greater than 16 four foot tubes, or 8 eight foot tubes) fail the Toxicity Characteristic Leaching Procedure, which is the standard test used to identify hazardous wastes. Other jurisdictions (e.g. Ontario, various states) do classify FLT's in large quantities as a hazardous waste, and large quantity generators are required to send this material to an approved facility: either a recycling facility or a hazardous waste landfill. Alberta Environment has proposed that the *User Guide* be amended to classify FLT waste generated in excess of 30 tubes per month, or 30 tubes per event, as a hazardous waste. This and other hazardous waste issues will be reviewed by a technical sub-committee being established in the fall of 2004 to review hazardous waste management.

Gypsum Wallboard

Gypsum wallboard waste is considered to be a potential target for aggressive waste diversion measures because:

- it makes up approximately 6 per cent of Alberta's waste stream;
- when wet, it produces hydrogen sulphide (H₂S) gas in landfills; and
- regardless of condition (wet, dry, painted, clean), gypsum wallboard is readily recycled in other jurisdictions.

Current status of gypsum wallboard waste management in Alberta: At present, there is no gypsum wallboard waste recycling infrastructure in the province of Alberta. Gypsum wallboard producers in Alberta do recycle wallboard off-cuts produced within their own plants. However, these wallboard manufacturers do not accept external wallboard as a feedstock for recycling. It currently costs more to recycle used gypsum wallboard than to acquire freshly mined gypsum for wallboard production. Gypsum recyclers in other jurisdictions have expressed interest in developing a recycling plant in Alberta if they could be assured of a guaranteed feedstock and a source of revenue.

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5.0 LANDFILL PROHIBITIONS - PRELIMINARY STAKEHOLDER OPINIONS

Alberta Environment undertook preliminary research to identify the broad issues and challenges Alberta could face if landfill prohibitions were implemented for any waste material. The following section outlines the overall issues that were identified, as well as issues specific to materials targeted for this initial study. This work was meant to spur informed debate amongst the WMSG, as to what the real issues around landfill prohibition policy are, and whether Alberta could address these issues. This work will not replace a complete stakeholder review on the issues around the implementation of a landfill prohibition on a specific material.

This preliminary work was carried out between December 2003 and February 2004. During this research process AENV staff spoke with 66 landfill authority operators and municipal landfills operators. Staff also spoke with:

- Representatives from select environmental non-governmental organizations (ENGOS)
 - o the Recycling Council of Alberta,
 - o Northern Coordinated Action for Recycling Enterprises (Northern CARE), and
 - o Capital Region Waste Minimization Committee
- Compost industry
- Cardboard industry
- Fluorescent light tube industry
- Government representatives from other jurisdictions that have already implemented landfill prohibitions (on at least one of the products targeted for this preliminary work)

5.1 Key Findings

A summary of the findings indicate that the majority of the waste management industry favour the implementation of prohibitions on leaf & yard waste, old corrugated cardboard and florescent light tubes. Other key findings include:

- Waste managers are not in favour of municipalities funding the costs of implementing prohibitions
- Municipalities and regions require a stable funding source to run recycling programs
- It may be necessary to exempt rural municipalities, which are small volume producers and are a far distance from a market, from enforcement of the prohibitions

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5.2 Challenges for Alberta with Implementing Landfill Prohibitions

The following is a summary of the key stakeholder concerns about the implementation of landfill prohibitions. Industry group stakeholder opinions are provided in Appendix V. A complete list of the concerns identified are provided in Appendix VI. Major challenges identified were costs, availability of markets, public acceptance, and enforcement. Case Studies on overcoming challenges are provided in Appendix VII.

Landfill Authorities / Municipal Landfill Operators **Top Four Issues of Concern:**

- 61% cited cost/economics issues:
 - costs for implementing, operating or enforcing a landfill prohibition (infrastructure development, operations, transportation, enforcement)
 - costs for small volume producers or those regions that are a large distance from market(s)
 - small volume landfills cited that they often must “compete” for waste (profits from accepting tonnage) to finance basic landfill operations (staff, equipment repairs, electricity, heat, etc.)
- 38% cited concerns over access to market:
 - need access to market or end-uses (especially rural areas)
 - need knowledge of market or end-uses (especially rural areas)
- 30% cited concern over policing/enforcement:
 - Who will enforce it?
 - How will it be enforced?
 - What will the penalties be?
 - How will abuse be handled?
- 30% cited concern over public response:
 - potential for public outcry
 - potential for public abuse of unmanned depots
 - potential for increased illegal dumping

6.0 ALTERNATIVES TO LANDFILL PROHIBITIONS

There are a number of alternative policy options that AENV could explore to reduce the quantity of waste deposited in Alberta’s landfills. These options include:

- **Regulating mandatory management ordinances:**
 - o Require the recycling/composting of materials
 - encourages diversion of material to higher end uses

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- requires sorting
- market variability is a concern
- o Require the incineration of waste for energy recovery
 - emissions must be controlled
 - public acceptance has been an issue
- o Require the use of a bioreactor landfill to reduce the waste once it is disposed
 - does not encourage diversion of material to higher end uses
 - does not require sorting of the waste stream
 - reduces organics under a controlled system (aerobic or anaerobic reduction)
 - allows for landfill gas capture and energy recovery
- o Require the use of aerobic or anaerobic biodigestors to reduce organic waste (prevents disposal)
 - requires organics separation from waste stream (would be best supported by a landfill prohibition to capture organics)
 - reduces organics under a controlled system
 - allows for energy recovery
 - allows for further processing of material to create compost or nutrients for land-spreading

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- **Regulating charges to increase the cost of waste disposal to encourage diversion:**
 - o Regulate minimum municipal landfill tipping fees to encourage diversion (fees remain property of the landfill)
 - o Regulate municipal landfill tipping fee surcharges to encourage diversion (fees are the property of government or an arm's length government body)
 - o Regulate the collection of upfront waste recycling fees or disposal fees on products at the point of purchase
- **Restricting the volume of landfill space that can be developed at any given time:**
 - o Control through a provincial process, or
 - o Empower regional authorities to limit the space available for landfilling in their jurisdictions.

Other policy options exist to divert waste that are less aggressive, and as a result, are not expected to attain the same level of waste diversion as the aggressive options. For example:

- Expanding education on waste issues
- Designing new product stewardship (take-back) programs for problem products
- Expanding the capacity of existing community-based recycling programs.

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APPENDIX I: DEFINITIONS

Municipal Solid Waste

1) Municipal Solid Waste is defined in the Generally Accepted Principles (GAP) 2 MSW Manual (*Corporations Supporting Recycling, 2002*), which describes a process for measuring waste consistently across Canada. It states: “Municipal solid waste (MSW) is any material for which the generator has no further use, and which is managed at waste disposal (Class II Landfill sites in Alberta), recycling or composting sites. This definition specifically excludes:

- wastes that are associated with primary resource extraction or harvesting;
- agricultural wastes;
- mining wastes;
- conventionnel air pollutants;
- liquid effluents discharged from processing or manufacturing sites;
- nuclear wastes;
- liquid and hazardous wastes (except for household hazardous waste);
- auto hulks;
- pathological wastes;
- gaseous wastes, and
- gravel and rocks.

The above definition includes waste from residential sources, as well as ICI (Industrial, Commercial, Institutional) and CRD (Construction, Renovation, Demolition) waste deposited in Class II landfills. Class III landfills will not be included in the definition of MSW until there is a tracking system in place to monitor these landfills.

2) The draft *Standards and Guidelines for Landfills in Alberta* (Alberta Environment, 2001) defines Municipal Solid Waste as “solid waste resulting from or incidental to municipal, community, commercial, institutional and recreational activities, and includes garbage, rubbish, ashes, street cleanings, abandoned automobiles, and all other solid wastes except hazardous waste, industrial solid waste, oilfield waste and biomedical wastes”.

Inert Waste

The draft *Standards and Guidelines for Landfills in Alberta* (Alberta Environment, 2001) defines Inert Waste as “a solid waste that when disposed of in a landfill or re-used, is not

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reasonably expected to undergo physical, chemical or biological changes to such an extent as to produce substances that may cause an adverse affect and includes without limitation, demolition debris, concrete, asphalt, glass, ceramic materials, scrap metal and dry timber or wood that has not been chemically treated”.

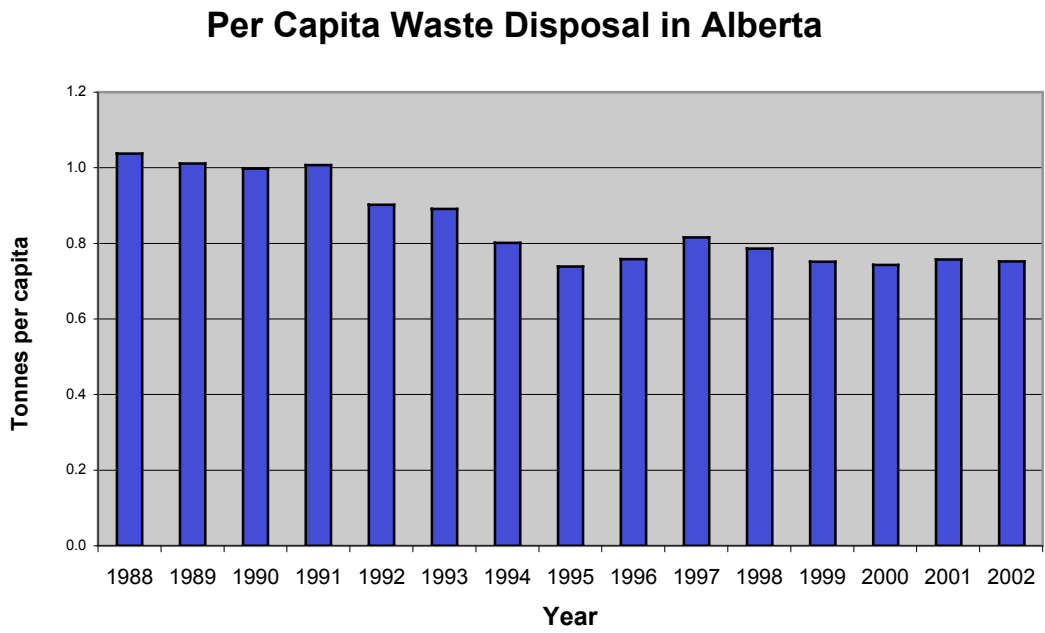
Industrial Solid Waste

The draft *Standards and Guidelines for Landfills in Alberta* (Alberta Environment, 2001) defines Industrial Solid Waste as “solid waste resulting from or incidental to any process of industry”.

Prohibited Waste

The draft *Standards and Guidelines for Landfills in Alberta* (Alberta Environment, 2001) defines Prohibited Waste as “a waste that may not be accepted for disposal at a landfill because of the classification of the landfill as defined in the Waste Control Regulation, as amended, or that is otherwise prohibited by the Province of Alberta”.

APPENDIX II: WASTE PER CAPITA IN ALBERTA



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APPENDIX III: ORGANICS LEACHATE AND METHANE PRODUCTION IN LANDFILLS (BRIEF)

Landfill “leachate” is produced as organics decompose or become compacted. While leachate is managed through proper landfill design and current management practices, all leachate management options are potentially fallible.

Organics also produce methane gas as a by-product of their decomposition. Some of the methane produced at larger landfills may be available for energy recovery. For most landfills in Alberta, the methane generated will be lost and poses an environmental hazard. Methane has a greenhouse effect 20X stronger than carbon dioxide. Landfills will become increasingly accountable for capturing or reducing methane emissions.

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APPENDIX IV: HOW HAVE LANDFILL PROHIBITIONS BEEN IMPLEMENTED?

There are a number of steps that have been identified by different jurisdictions as important to undertake prior to and during the implementation of a landfill prohibition. The following prohibition implementation procedure has been adapted from that developed by the Victoria Capital Region District in British Columbia, and is expanded to be representative of the procedures used in other jurisdictions contacted by Alberta Environment.

Landfill Prohibition Implementation Plan

Part One:

- 4) Identify a suitable target waste material.
 - a. Clearly define why a prohibition is being considered: toxicity, quantity, nuisance, etc.
 - b. Identify if recycling options readily exist for the targeted material. (Can the material be recycled with available technology?)
 - c. Establish a baseline data. (How much material is currently landfilled? How is material diverted?)
- 2) Verify alternatives.
 - a. Explore alternatives:
 - Do recycling options readily exist for the material?
 - If not, is it likely that it can be readily acquired prior to the implementation of the prohibition?
 - What effort has been made to encourage diversion of this material prior to considering a prohibition?
 - Can diversion be achieved without a prohibition?
 - b. Work with recyclers to clearly define what products can and cannot be recycled that contain the targeted material (e.g. are composite materials recyclable?).
 - c. Define the material to be prohibited from landfill, and any products that will be exempted by the prohibition (e.g. any composite products containing the material to be prohibited?).
 - d. Prepare and list alternatives to landfilling: list all collection and drop-off locations.
- 3) Comprehensive Consultation Process.
 - a. Stakeholder identification: residential and commercial sector, haulers, municipalities / districts, landfill operators (public / private), recyclers, waste industry associations, end users, environmental non-government organisations.
 - b. Stakeholder consultation: Pre-implementation consultation:
 - * review prohibition definition;
 - * define responsibilities;
 - * identify challenges, define methods to overcome challenges;
 - * ensure regular meetings with haulers, municipalities, enforcement officers to discuss issues and challenges;
 - * adjust prohibition exemptions if necessary.

Landfill Prohibition Implementation Plan

Part Two:

4) Political Approval

- a. Design regulation and submit to attain political approval.
 - Define responsible entities.
 - Define if there will be regional prohibition exemptions based on distance from market, population size, or the establishment of alternative waste minimization technologies (e.g. energy recovery facility).
 - Establish any requirements for landfill procedures, landfill signage, record systems.
 - Establish tolerance level.
 - * Define exemptions for contaminated material or mixed material products (where necessary).
 - * Set any discretionary limits (e.g. # of allowable pieces, % of load).
 - * Define enforcement method including any penalties for lack of compliance – e.g. surcharges on tipping fees by weight (e.g. 2x, 4x, 8x the base tipping fee), fixed rate tipping fee surcharges, mandatory sorting of loads, fines, jail time, etc. Define any incentives for compliance.
 - Set implementation schedule
- b. Pass regulation.

5) Information Process:

- a. Prepare education material. Develop advertising campaign.
- b. Education must focus on the fact that penalties for non-compliance are avoidable by recycling, composting, and otherwise diverting the material. Education must also identify access to recycling options.
- c. Directly notify major stakeholders of the prohibition.

6) Implementation Process:

- a. Distribute recycling opportunity notices to generators.
- b. Establish working relationship with haulers.
- c. Train staff: enforcement, information lines.
- d. Offer courses for stakeholders involved in enforcement: e.g. municipalities / districts, landfill operators, generators, haulers, other responsible entities.
- e. Deliver violation notices and follow-up with violators as to their options.
- f. Monitor process carefully and make adjustments where necessary.

7) Enforcement (after successful implementation only):

- a. Need dedicated enforcement staff and consistent staffing.
- b. Enforcement must be reasonable, train staff with examples / photographs of what is not reasonable.
- c. Conduct post implementation survey: adjustments may be needed to the prohibition exemptions as a result of the learning process.
- d. Understand that this is a continuous learning experience.
- e. Enforcement staff has an opportunity to act as educators: recycling opportunity notices.

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APPENDIX V: INDUSTRY STAKEHOLDERS OPINIONS LISTS

The following data were collected, for this research project, between December 2003 and February 2004.

Industry Opinions:

Compost Industry

- majority believed that leaf and yard waste prohibitions would be beneficial
- volumes of compost produced from leaf and yard waste should not saturate the market, as it will often be used onsite for reclamation of public lands
- key points:
 - leaf and yard waste is a relatively “safe” material to compost (few pathogens)
 - leaf and yard waste can be composted province-wide
 - Alberta requires all compost facilities to have a certified compost operator to ensure operators are educated to use best management practices in composting
 - composting should be promoted as an industry, thus municipalities or regions should not be prevented from implementing regional composting solutions
- key concerns:
 - poor compost practices could significantly damage the public image of composting
 - compost operator certification needs to be strictly enforced
 - more education opportunities need to be developed for compost operators

Industry Opinions

Fluorescent Light Tube Recycling Industry:

- all would support landfill prohibitions on fluorescent light tubes (FLT)s
- key points:
 - FLT recycling will always be a business cost
 - FLTs are often not recycled unless required by government regulation
 - FLTs should be recycled simply because they contain toxic material
 - the cost of FLT recycling decreases as volumes increase
- key concerns:
 - any landfill prohibition should require proper management of spent FLTs, through recycling or safe disposal
 - disreputable FLT recyclers simply crush and bag FLT waste prior to landfill disposal and do not divert mercury from landfills
 - financing FLT recycling will likely require that an environmental fee be paid upfront
 - prohibitions should target all lamps which contain mercury (FLT and High Intensity Discharge (HID) lamps).

Industry Opinions
Gypsum Wallboard Industry

- gypsum wallboard producers in Alberta would not support landfill prohibitions on spent wallboard
- there is currently no gypsum recycling industry in Alberta
- key points:
 - all gypsum wallboard waste (wet, dry, painted, unpainted) can be recycled with current technologies readily available in other jurisdictions
 - wallboard producers in other jurisdictions regularly incorporate 20 –30% recycled gypsum into their wallboard production
 - gypsum wallboard recycling is a business cost, gypsum recyclers must charge a tipping fee to recycle the spent wallboard
 - a market for gypsum recycling occurs naturally when landfill tipping fees are set above the tipping fees charged by spent wallboard recyclers
 - landfill tipping fees play a more prominent role in promoting gypsum recycling than does a landfill prohibition
 - the economic feasibility of recycling spent wallboard decreases as distance to the recycler increases
 - province-wide landfill prohibitions are likely not feasible (distance), however, regional prohibitions around Edmonton or Calgary could be feasible
 - mandatory minimum recycled content requirements in gypsum wallboard production would push spent wallboard recycling
- key concern:
 - high landfill tipping fees are a necessary tool to push gypsum wallboard waste to a gypsum recycler
 - gypsum wallboard recyclers must charge a tipping fee of \$50 -\$75 to recycle gypsum waste in Canada

Industry Opinions:
Old Corrugated Cardboard (OCC) Recycling Industry

- majority would support OCC prohibitions in Alberta alone, however some vehemently disagreed
- majority believed prohibitions would likely not oversupply the market because Alberta is a small market that already recycles much of its OCC
- key points:
 - market analysis should be done to determine the actual recovery rate of OCC in Alberta, the exact rate is currently unknown
 - if recovery rate in Alberta is above 70 per cent, the availability of recoverable non-contaminated OCC is minimal
 - contamination decreases the profitability of OCC recycling
- key concerns:
 - any prohibitions cannot include contaminated materials, contaminated material cannot be recycled (e.g. oil soaked OCC)

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APPENDIX VI: LANDFILL PROHIBITIONS ISSUES LIST

The following data were collected, for this research project, between December 2003 and February 2004.

Issue	Per cent respondents (rounded to nearest 1%)
Cost/ Economics: There is a concern about whether a region will be able to afford the implementation of a prohibition (e.g. operational costs, infrastructure costs). This is especially true for regions that produce small volumes of waste and regions that are large distances from market.	61%
Market: There is a concern about whether there will be a market (or end-use) for prohibited material, and whether regions have reasonable access to those markets. There is also a concern about access to information: the regions need to be educated about those markets or enduses.	38%
Policing / Enforcement: There is a concern about delegated responsibility in upholding any prohibition. Who will enforce it? How will it be enforced? What will the penalties be? How will abuse be handled?	30%
Public Response: There is a concern about a negative public response to the implementation of a prohibition. E.g. public outcry, public abuse of unmanned depots, increased dumping.	30%
Education: There is a concern that Albertans need more education about the need for waste minimization before the implementation of a prohibition. There is also concern that there should be a strong educational component to assist the implementation of any prohibition. Education should especially focus on rural areas (as waste issues are not even on the radar screen), and generators.	17%
Implementation Strategy: There is a concern that before a prohibition is implemented, an implementation strategy should be developed and vetted through consultation.	14%
Liability: There is a concern over who would ultimately be liable for abuses of the prohibition. Who is responsible for the prohibition? What will be the consequences for abuse? Will the consequences be fair?	14%
Infrastructure Development: There is a concern that there would need to be development of infrastructure to handle the prohibited material before the implementation of a prohibition.	11%
Operational Issues: There is concern over how the prohibition will be put into operation: currently unknown. Will it be fair?	11%

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Issue	Per cent respondents (rounded to nearest 1%)
Government Leadership: There is a concern that solid government leadership is needed in the implementation phase of a prohibition. There would need to be consistent province-wide advertising on how to manage various materials. There would also need consistent government signalling: government procurement, consistent waste regulations that encourage diversion, etc.	9%
Lack of Access to Recycling Alternatives: There is a concern that a prohibition would fail in Alberta right now, because there is a lack of convenient public access to recycling options, especially in rural areas.	8%
Landfill Economics: There is a concern that smaller landfills cannot afford to decrease their tonnage through increased recycling because these landfills need tonnage to fund their daily operations.	8%
Who Should Pay?: There is a concern about what entity should be responsible for funding the costs of recycling (ratepayers (public), the provincial government (taxpayers, public), consumers, producers (brandowners / manufacturers)). There was a suggestion that the cost of recycling programs should be shouldered by producers (generators) not ratepayers / taxpayers. The costs should not result in municipal downloading (ratepayer responsibility).	8%
Alternatives to Recycling: There is a concern that recycling is not always affordable (e.g. remote areas). There would need to be alternative management options available where recycling is not affordable.	6%
Definition: There is concern over what the definition of a prohibition is, and what implication a prohibition would have on landfill operators. There was a suggestion that the word prohibition implies that landfill managers can't manage products (e.g. for recycling, composting, etc).	5%
Environmental Benefit: There is a concern that recycling does not always result in a net environmental gain. There was a suggestion that there should be proof that there is an environmental gain through increased recycling before a prohibition is implemented. This should be accomplished through an environmental assessment.	5%
Zero Tolerance Is Unreasonable: There is a concern about how contamination will be dealt with. There was a suggestion that any prohibition must allow for some contamination, and that a prohibition should not mean a 100% prohibition.	5%
Consistent Funding Programs: can't rely on government recycling grants.	3%
Pay-As-You-Throw is Necessary: There is a concern that a prohibition would be best accomplished if accompanied by pay-as-you-throw trash accounting (perhaps through MOU with municipalities).	3%
Infringement on Rights: There is a concern that a prohibition is an infringement on Albertan's democratic /capitalistic right to landfill.	2%

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Issue	Per cent respondents (rounded to nearest 1%)
Impede Leading Edge Technologies: There is a concern that prohibitions impede the ability of jurisdictions to adopt leading technologies like biodigestion.	2%
Time: There is a concern that people are recycling things that end up being landfilled anyway.	2%
Hazardous Wastes Not a Problem in Alberta: There is a concern that there is no need to sort hazardous material out of the waste stream because Alberta has Class II landfills from which nothing leaches.	2%
Composting is Difficult: There is a concern that it is difficult to get composting license in Alberta to manage leaf and yard waste.	2%
Landfill Gas Recovery Is Important: There is a concern that a prohibition would restrict landfill gas recovery.	2%
Prohibitions Are Too Heavy Handed: There is a concern that government shouldn't force things on people.	2%
Market Volatility: There is a concern that even when markets are present, market volatility threatens cost feasibility of recycling programs.	2%
Graduation of Prohibitions: There is a concern that if a prohibition were implemented that it should be gradually implemented. Graduation allows for markets to build for the prohibited material. A prohibition should be the last step in the process to encourage diversion.	2%
Purpose of a Landfill: There is a concern that the only service a landfill should offer is disposal not diversion.	2%
Prohibition Design: There is a concern that whoever designs the prohibition should work with SWANA –because they have expertise in landfill management.	2%
Past Diversion Failures: There is a concern that a previous stewardship programs have been ineffective and any new diversion measures would be equally ineffective (e.g. tires building up in fields in rural areas, the tire program doesn't take all tires (e.g. agricultural tires).	2%
Province-Wide: There is a concern that a prohibition would only be effective if it were implemented on a province-wide basis.	2%
End-Fate of Material: There is a concern that if a prohibition were implemented, the prohibition should make sure the material is truly diverted from landfills and not buried in landfills outside of Alberta.	2%

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APPENDIX VII: CASE STUDIES –OVERCOMING CHALLENGES IMPLEMENTING LANDFILL PROHIBITIONS

Other jurisdictions have overcome the challenges associated with the implementation of landfill prohibitions.

Case Study: Nova Scotia

Nova Scotia has implemented landfill prohibitions on:

- beverage containers
- old corrugated cardboard
- lead acid batteries
- leaf and yard waste
- compostable organic material
- post consumer paint products
- automotive antifreeze
- glass food containers
- low-density PET plastic bags & packaging
- high-density PET plastic bags & packaging
- newsprint
- used tires
- steel / tin food containers

These prohibitions were regulated in 1996, and implemented from 1996-1998. Implementation corresponded with the development of infrastructure to manage the prohibited material across the majority of the province. The prohibitions were prompted due to a shortage of environmentally suitable and publicly acceptable landfill space in the urban centres of the province, and the lack of political acceptance to financially support the development of an incinerator. The development of the prohibitions was pushed by community grass roots actions.

Key actions by Government:

1. Province set a goal of 50% waste diversion.
2. All Nova Scotians have access to curb-side recycling, organics separation carts, and appliance removal.
3. Province passed regulated prohibitions.
4. Province delegated responsibility for enforcement of the prohibitions to the municipalities.
5. Province created an environmental fund, managed through an arm's length government organization called the Resource Recovery Fund Board (RRFB). This fund is acquired through their deposit refund program for beverage containers. In Nova Scotia, the public receives half of their deposits back at the point of beverage container return to depots. The RRFB keeps the other half of the deposits. The RRFB is responsible for using this

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fund to provide public education on waste reduction, and to help support regional recycling infrastructure. By regulation, the RRFB must reallocate at least one-half of their fund to municipal recycling programs each year. As incentive to achieve diversion targets, the RRFB reallocates the fund only to those municipalities or regional areas that achieve specific diversion targets. This provides incentive for the regions to divert as much waste as possible.

Key results:

1. Nova Scotia was the first, and only, province to achieve 50% diversion of waste.
2. Widespread public and private composting infrastructure was developed.
3. Guaranteed feedstocks allowed public / private partnerships to develop, which financed composter and municipal recycling facility (MRF) development and operations.
4. Public education remains a key focus: encouragement, waste recycling alternatives.
5. Enforcement remains a key issue. Municipalities have difficulty financing dedicated staff to deal with enforcement issues, and use by-law officers that deal with enforcing a number of municipal issues. Prohibition enforcement often ranks lower in importance than other municipal issues. Stronger enforcement would result in more rigorous compliance.
6. Illegal dumping has not been a major issue.

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Case Study: Victoria Capital Region District

The Victoria Capital Region District (VCRD) has implemented landfill prohibitions on:

- drywall
- corrugated cardboard
- white goods
- tires
- directories
- scrap metals
- concrete, aggregate, rubble, asphalt, soil

These prohibitions were implemented from 1991 – 1995. The VCRD will only implement prohibitions where diversion alternatives already exist. The prohibitions are implemented to enforce use of the recycling alternatives, not to build recycling infrastructure.

Key actions by Government:

1. Public consultation and training were a major focus of the development of the prohibitions and their implementation.
2. Prohibition research was key to identify necessary exclusions to the prohibition (e.g. products whose composition contains the prohibited material, but cannot be recycled, or easily recycled).
3. In this case, those who fail to comply with the prohibition are penalized through significant surcharges at the landfill. Public messaging strongly focussed on the fact that these surcharges are avoidable through the use of recycling alternatives.
4. The VCRD has worked closely with haulers to help them identify solutions (e.g. locking bins, passing costs back on to offending customers).
5. All municipal residents have access to curb-side recycling, rural residents have access to drop-off depots.
6. Enforcement staff is trained and dedicated to prohibition enforcement. Enforcement is “reasonable” and based on quantities of materials that people easily understand (e.g. surcharges on “clumps of paper” as opposed to a single piece of paper).

Key Results:

1. The VCRD considers the effectiveness of their prohibitions to be “quite dramatic”.
2. There are still issues that need to be resolved on a case-by-case basis, through education and the identification of solutions (e.g. concern over the recycling of confidential paper. Illegal dumping was not a major issue, and levelled off after a few months.

ATTACHMENT: LANDFILL PROHIBITIONS CONSULTATION STATEMENTS

Alberta Environment (AENV) is requesting your input on the following statements. The statements focus on four areas: (1) general beliefs and attitudes about waste, (2) landfill prohibitions, (3) landfill space, and (4) alternative waste diversion measures.

1.0 General Beliefs and Attitudes Regarding Waste Management

Alberta has many options to manage waste. The different options accomplish different overall outcomes (e.g. safe storage, recycling, energy recovery, volume reduction). The management option most appropriate for Alberta depends on what Albertans prefer as a final outcome for their waste material.

- 1.1 Alberta should work to reduce the quantity of waste disposed in landfills to achieve the following objectives:

(Please rank all responses that apply. Rank from 1 (as most important) to 3 as least important. Each number should be used only once.)

_____ Conserve landfill space (extend the life of Alberta's landfills/prevent the need for new landfills).

_____ Protect human health and the environment (reduce the potential for landfill leachate to contaminate the environment; reduce the production and release of landfill generated greenhouse gases).

_____ Conserve resources/prevent the need to harvest new resources.

_____ Other (Please describe): _____

Comments:

- 1.2 Cost, resulting from management, collection, sorting, transportation, etc., limits the ability of communities to recycle or otherwise divert waste from disposal in landfills.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

ATTACHMENT: LANDFILL PROHIBITIONS CONSULTATION STATEMENTS

- 1.3 Lack of public education limits the ability of communities to recycle or otherwise divert waste from disposal in landfills.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

2.0 Landfill Prohibitions

Landfill prohibitions are one option to direct waste away from disposal in landfills. By definition, landfill prohibitions do not restrict the ability of any jurisdiction to implement alternative waste management options such as composting, recycling, energy recovery or incineration technologies, as they are not specific regarding the end use of material diverted from landfills.

- 2.1 Province-wide landfill prohibitions should be pursued to require the diversion of some waste streams from Alberta's landfills, as long as the prohibitions are developed in consultation with those stakeholders who would have to implement them.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

- 2.2 If province-wide landfill prohibitions are pursued, they should allow for place-based exemptions where landfill diversion would create an unmanageable economic hardship for communities (e.g. small communities that are a great distance from the market).

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

ATTACHMENT: LANDFILL PROHIBITIONS CONSULTATION STATEMENTS

- 2.3 Preliminary surveys identify the strongest support for a landfill prohibition targeting leaf and yard waste. AENV should form a technical committee to examine the feasibility of implementing a landfill prohibition on leaf and yard waste as the first test case (with a report of the technical committee's findings presented to the WMSG).

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

- 2.4 AENV should also review (through technical committees) the feasibility of landfill prohibitions for the following waste streams to provide a more comprehensive assessment of landfill prohibitions (with reports of the technical committees' findings presented to the WMSG).

Old Corrugated Cardboard

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Fluorescent Light Tubes

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Gypsum Wallboard

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

ATTACHMENT: LANDFILL PROHIBITIONS CONSULTATION STATEMENTS

Other (please identify):

Comments:

- 2.5 According to preliminary survey results, if Alberta were to implement landfill prohibitions, it is felt that municipalities would require dedicated funding to help develop the necessary infrastructure. Landfill prohibitions should only be considered if they are economically sustainable, and do not require government (municipal, provincial, federal) funding/subsidies for ongoing operational costs.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

3.0 Landfill Space

Preliminary surveys indicate that as long as Alberta has surplus landfill capacity, and disposal at landfills remains the least expensive disposal option, it will be difficult to achieve waste diversion targets. Smaller landfill operators are concerned that they may not be able to finance daily operations if waste volumes (and subsequently their revenue) were reduced. If landfill space were limited, the costs of landfill disposal per tonne would increase. As such, landfills would be able to meet operating costs with less waste.

- 3.1 The current abundance of landfill capacity in Alberta is an impediment to the successful implementation of waste diversion alternatives.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

ATTACHMENT: LANDFILL PROHIBITIONS CONSULTATION STATEMENTS

- 3.2 It should be a policy of the Alberta Government that landfill space be limited as a means to encourage the development of alternative waste management options and thereby achieve waste reduction targets.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

- 3.3 Rather than province-wide policies, regions should make the decision on whether landfill space should be restricted in their region, and identify other regional waste diversion options to meet provincial waste management objectives (to allow for a more place-based approach).

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

4.0 Alternative Waste Diversion Tools

Recycling is one waste diversion option that conserves valuable materials in the product stream. However, some products are difficult or impossible to recycle with current technologies. Aside from recycling, the disposal of waste in Alberta's landfills could be minimized by either discouraging the generation of waste or encouraging alternative end-of-life diversion treatments.

- 4.1 Preliminary surveys identified some interest in promoting energy recovery (e.g. incineration, bioreactor landfill, bio-digestion technology) as an alternative, or complement, to landfill prohibitions. Energy recovery should be encouraged only where there is front-end recycling/composting of high quality recoverable materials.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

ATTACHMENT: LANDFILL PROHIBITIONS CONSULTATION STATEMENTS

4.2 A minimum tipping fee (based on true cost accounting) should be regulated on waste disposed in landfills to deter landfilling as a disposal option and to ensure that landfill operating costs can be covered with less waste.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

4.3 Surcharges on tipping fees should be regulated and collected through an arms length government body, and these funds should be used to support waste reduction/diversion initiatives in Alberta.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

4.4 Please suggest any additional alternatives to landfill prohibitions that you believe might effectively divert waste from Alberta landfills.

WASTE IMPORTATION INTO ALBERTA

Discussion Document No. 2004-04

Dated: June 1, 2004

This summary has been prepared as a “Discussion Document” to facilitate informed discussion regarding waste importation into Alberta. Written responses from representatives of the Waste Management Stakeholder Group, using the attached response sheet, are invited for submission to Joanne Smart, Stantec Consulting Ltd., **on or before July 30, 2004**. Please forward written submissions by email to:

jsmart@stantec.com

DISCUSSION DOCUMENT NO. 2004-04: WASTE IMPORTATION

SUMMARY

The following Discussion Document, the fourth in a series to be presented to the Waste Management Stakeholder Group (WMSG), provides a summary of the international, federal and provincial regulations and controls on the importation of non-hazardous and hazardous waste into Alberta. The purpose of the document is to obtain input from the WMSG on current and future controls that should be in place to properly manage waste importation into Alberta.

The Discussion Document provides background information on existing controls for hazardous waste, hazardous recyclables, non-hazardous waste, and oilfield waste. The amounts and types of wastes imported into Canada and Alberta in 2002 are outlined and analyzed. The following important policy issues are discussed: restrictions on waste importation, distinguishing between waste treatment and recycling, ensuring recycling practices are legitimate, and the management of residues that result from hazardous waste treatment/recycling. Trade issues are also highlighted. A series of statements are posed in a separate document to obtain the views of the WMSG on these and other important issues.

DISCUSSION DOCUMENT NO. 2004-04: WASTE IMPORTATION

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1.0 INTERNATIONAL AGREEMENTS CONTROLLING WASTE IMPORTATION

Environment Canada is responsible for implementing the terms of international agreements aimed at the monitoring and control of transboundary movements of hazardous and non-hazardous wastes and recyclables. Control of hazardous waste and hazardous recyclables within Canada is a shared responsibility. The federal government regulates international and interprovincial/territorial movements of hazardous waste and hazardous recyclables. The provinces and territories are responsible for intra-provincial transportation of hazardous waste and hazardous recyclables and for establishing controls for licensing hazardous waste, generators, carriers, and recycling and treatment facilities within their jurisdiction.

Details of the following international agreements are outlined in Appendix I: (1) The Basel Convention, (2) the Organisation for Economic Co-operation and Development (OECD), (3) Canada – U.S.A. Agreement, and (4) the North American Free Trade Agreement (NAFTA).

Co-operation in setting a national definition and standards for hazardous wastes and hazardous recyclables as well as promoting a national approach to Environmentally Sound Management (ESM) in Canada is accomplished through the Canadian Council of Ministers of the Environment (CCME).

2.0 FEDERAL LEGISLATION AND CONTROLS ON IMPORTATION

There are a number of federal regulations that control interprovincial/territorial and international movements of hazardous waste and hazardous recyclables, including the *Interprovincial Movement of Hazardous Waste Regulations*, SOR/2002-301¹ and the *Export and Import of Hazardous Waste Regulations*, SOR/92-637 (*EIHWR*), both under the *Canadian Environmental Protection Act, 1999* (1999, c. 33) (*CEPA*). The *EIHWR* includes mechanisms for notification and consent for imports, and tracking through hazardous waste manifests. For additional information on these and other federal regulations refer to Appendix II.

¹ Until August 15, 2002, hazardous waste and hazardous recyclables movements between provinces were regulated as dangerous goods under the federal *Transportation of Dangerous Goods Regulations (TDGR)*. On August 15, 2002, the new clear language TDGR (SOR/2001-286) came into force, and regulatory responsibility for the transportation of hazardous waste and hazardous recyclables was removed from the TDGR and moved to CEPA. The federal government is in the process of developing new *Interprovincial Movement of Hazardous Waste and Hazardous Recyclable Materials Regulations* under CEPA. In the interim, the *Interprovincial Movement of Hazardous Waste Regulations* was passed to fill the regulatory gap and ensure that current manifest tracking and classification requirements for hazardous waste and hazardous recyclables movements between provinces are maintained.

3.0 PROVINCIAL LEGISLATION AND CONTROLS ON IMPORTATION

3.1 Hazardous Waste and Hazardous Recyclables

Alberta Environment (AENV) controls the importation of hazardous waste and hazardous recyclables into Alberta through a combination of regulation, policy, and allowed practices. The following is a summary of the effect of these controls in terms of hazardous waste and hazardous recyclables importation. Please see Appendix III for a summary of the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12 (*EPEA*) legislation.

- Hazardous waste cannot be imported for disposal (*Waste Control Regulation* (AR 192/96), section 15(2)). The prohibition was established to prevent more persistent, toxic wastes from being imported into Alberta for disposal, and to ensure that these wastes are only imported for recycling or treatment. Alberta is the only province/territory in Canada that has such a prohibition.
- Hazardous waste can be imported from other provinces for treatment only, not for disposal (Natural Resources Conservation Board – 1994).
- Hazardous waste can be imported from out-of-country for treatment only at the Swan Hills Treatment Centre (SHTC) (Ministerial Decision – 1999). Hazardous waste is not to be imported for storage and subsequent out-of-province transfer. If imported waste is commingled with Alberta generated waste, which is not subject to the treatment only requirement, it becomes virtually impossible to track and verify the final destination of the imported hazardous waste, thus, impossible to ensure compliance with the legislated prohibition on the importation of hazardous waste for disposal.
- The only facility in Alberta that is approved to treat third party hazardous waste is the SHTC. Companies importing hazardous waste for treatment must have a Waste Service Agreement in place with the SHTC prior to applying to import a hazardous waste, to ensure that the SHTC has the capability to properly treat the waste. All hazardous waste imported to the SHTC is destroyed by incineration.
- Hazardous waste can be imported for on-site treatment by a company from one of its other facilities outside the province provided that it has an *EPEA* approval for that treatment process (general practice applied through application of the legislation). (Note: this importation allowance does not apply to hazardous waste movements between commercial hazardous waste management facilities).
- Hazardous waste cannot be imported for storage for more than 30 days without a Ministerial authorization (*Waste Control Regulation* (AR 192/96), section 15(1)). Out-of-country hazardous waste storage is not allowed unless the waste is ultimately destined for treatment at the SHTC.
- Importation of hazardous recyclables from out-of-province requires Ministerial Authorization (*Waste Control Regulation* (AR 192/96), section 21). The Ministerial

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Authorization is only issued if the final destination facility has an *EPEA* approval (or an Energy and Utilities Board (EUB) licence if imported to an oilfield waste facility) that authorizes the recycling of the hazardous recyclable. Once the importation authorization has been issued to a facility for specific hazardous recyclables, there is no requirement for approval of on-going imports. However, all interprovincial movements of hazardous waste and hazardous recyclables are tracked through the hazardous waste manifest system.

- All AENV consents/authorizations for the importation of hazardous waste and hazardous recyclables require that the importing facility comply with all terms and conditions of their *EPEA* approval, including waste storage limits.

3.2 Oilfield Waste

In Alberta a distinction is made between oilfield waste and non-oilfield waste and these two classes of waste are regulated separately. Section 1(cc) of the provincial *Waste Control Regulation* (AR 192/1996) defines *oilfield waste* as:

...an unwanted substance or mixture of substances that results from the construction, operation, abandonment or reclamation of a facility, well site or pipeline within the meaning of the *Oil and Gas Conservation Act* and the regulations under that *Act* but does not include an unwanted substance or mixture of substances from such a source that is received for storage, treatment, disposal or recycling at a facility authorized for that activity pursuant to the *Environmental Protection and Enhancement Act*;

AENV regulates non-oilfield wastes, and the EUB regulates oilfield wastes. Since the EUB's jurisdiction does not extend beyond Alberta's border, *dangerous oilfield waste* (equivalent to hazardous waste) is subject to the same importation controls as hazardous waste and hazardous recyclables.

3.3 Non-Hazardous Waste

Although Alberta prohibits the importation of hazardous waste for disposal, there is no such restriction on non-hazardous waste. The importation of non-hazardous waste from out-of-country or from out-of-province is currently not controlled, as there is no mechanism in place for the tracking and reporting of this waste. As outlined in Appendix II, Environment Canada is proposing the development of regulations for the *Export and Import of Prescribed Non-Hazardous Wastes for Final Disposal*. However, these regulations will only apply to the importation of out-of-country non-hazardous waste, not imports and exports of non-hazardous waste between provinces/territories.

It would be possible to obtain information on non-hazardous waste imported to large municipal and private landfills in Alberta that have an *EPEA* approval (landfills that dispose greater than 10,000 tonnes of waste per year). All landfills with an *EPEA* approval currently must submit an annual waste report to AENV summarizing the amount and types of waste received and disposed. The annual report requirements could be amended to include the tracking and reporting of imported non-hazardous waste. The

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EPEA approval for landfills could also be amended to include a prohibition on the importation of waste for disposal, or a prohibition on the importation of specific waste types for disposal.

Landfills disposing of 10,000 tonnes per year or less are regulated by the *Code of Practice for Landfills*. Currently there are no requirements in the *Code of Practice* for the reporting of wastes disposed or imported. The *Code of Practice* could be amended to include a requirement for reporting of wastes disposed, waste imported and a prohibition on importing waste for disposal. It should be noted that many of these landfills (the ones with weigh scales) are voluntarily reporting to AENV the annual amount of waste disposed.

4.0 CURRENT WASTE IMPORT PRACTICES

4.1 International Hazardous Waste/Recyclables Importation

The Transboundary Movement Branch of Environment Canada controls all out-of-country exports and imports of hazardous waste and hazardous recyclables through an export/import notification system. Environment Canada sends an import notice to AENV for approval prior to all out-of-country imports of hazardous waste and hazardous recyclables into Alberta. AENV reviews the import notice and provides a recommendation back to Environment Canada on whether the importation should be allowed.

The amount of hazardous waste and hazardous recyclables imported into Canada in 2002 is outlined by province in Table 1. Over 97% of the hazardous waste and recyclables imported into Canada was from the U.S. The 499 tonnes of hazardous waste imported from the U.S. to Alberta for incineration at the SHTC and remaining 43 tonnes imported from the U.S. to Alberta for recycling represents 0.13% of the total hazardous waste and hazardous recyclables imported into Canada. Approximately 95% of the hazardous waste and recyclables imported into Canada was imported into Ontario and Quebec, of which approximately 55% was disposed.

Table 1: Hazardous Waste/Hazardous Recyclables Imported into Canada in 2002

Receiving Province	Quantity for Disposal (tonnes)	Quantity for Recycling (tonnes)	Total Quantity Imported (tonnes)	Percentage of Imports into Canada
1.0 Alberta	*499	43	542	0.13 %
B.C.	8,932	12,860	21,792	5.20 %
Ontario	129,680	73,432	203,112	48.00 %
Quebec	90,621	104,589	195,210	46.20 %
New Brunswick	-	2,104	2,104	0.50 %

* Hazardous waste incinerated at the SHTC

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The SHTC treats over 97% of the hazardous waste it receives through incineration. All imported hazardous waste received at the SHTC is currently destroyed by incineration. Incineration minimizes treatment residues, and the SHTC's *EPEA* approval requires that all treatment residues are rendered non-hazardous prior to disposal.

4.2 Interprovincial Hazardous Waste/Recyclables Importation

Table 2 outlines the total amount of hazardous waste and hazardous recyclables imported into Alberta in 2002 by waste class. Of the 70,235 tonnes of hazardous wastes and recyclables that were imported into Alberta in 2002 from other provinces/territories, 14,707 tonnes of hazardous waste were imported for incineration at the SHTC. The remaining 54,487 tonnes were hazardous recyclables imported from other provinces/territories in Canada for recycling. Class 9.1 is PCB waste and Class 9 includes environmentally hazardous material and leachable toxic waste. Manifest records for the two Class 1 landfills and the five Class 1a deepwells confirm that there were no hazardous wastes imported into Alberta for disposal in 2002.

Table 2: Hazardous Wastes/Recyclables Imported into Alberta in 2002 (tonnes)

Waste Class	2.1	2.2	2.3	2.4	3	4.1	4.2	4.3	5.1	5.2	6.1	8	9	9.1	9.3	Totals
Hazardous Waste Imported to the SHTC	0.1	9.9	0.0	8.5	318.5	160.9	0.01	5.2	29.1	2.2	289.3	10.2	9,114.3	5,232.5	26.0	14,707 (21.7%)
Hazardous Recyclable Imported	8.9	10.2	0.5	73.3	6,270.1	2,114.2	107.8	4.9	65.7	2.0	310.6	763.9	19,404.0	141.7	25,752.2	54,487 (78.3%)
Totals	9.0	20.1	0.5	81.8	6,588.6	2,275.1	107.8	10.1	94.8	4.2	599.9	774.1	28,518.3	5,374.2	25,778.2	70,235

4.3 Non-Hazardous Waste Importation

Since there is no tracking mechanism in place at this time, there is no information available on the amount of non-hazardous waste imported into Alberta.

5.0 POLICY ISSUES RELATED TO IMPORTATION OF HAZARDOUS WASTE, HAZARDOUS RECYCLABLES AND NON-HAZARDOUS WASTE

5.1 Recycling Versus Treatment Issues

Alberta's hazardous waste management regulatory system differentiates between hazardous waste and what are termed "hazardous recyclables". The purpose of this distinction is to encourage resource conservation and recycling while at the same time recognizing that these recyclables have hazardous characteristics and must also be appropriately managed.

There is no difference between hazardous waste and hazardous recyclables in terms of physical, chemical or biological properties or characteristics. A recyclable is hazardous if it meets one or more of the criterion identified in Schedule 1 of the *Waste Control Regulation* (AR 192/96). The legal distinction between hazardous waste and hazardous

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recyclables is based on the intended management of the material. When the hazardous material is intended to be treated and/or disposed of it is termed a hazardous waste. A hazardous recyclable is a material intended for recycling. Inherent to the distinction is the presence or absence of residual economic value associated with the material. Depending on specific circumstances, the same material may sometimes be a hazardous waste and other times a hazardous recyclable.

There are several policy issues that also influence the regulatory approach to managing hazardous recyclables and their importation. These are:

- i) *Recycling vs. treatment:* Recycling is the beneficial use of material(s) or substance(s) that otherwise would be disposed or dealt with as a waste, while waste treatment is the alteration or destruction of the characteristics of the waste to render it environmentally safe and easier to manage. The U.S. EPA has proposed the following criteria to determine if secondary materials are being legitimately recycled:
 - The material must provide a useful contribution to the recycling process and/or product, which should include consideration of the economics of the recycling transaction.
 - The recycling process must yield a valuable product or intermediate that is either (1) sold to a third party, or (2) recycled as an effective substitute for a commercial product or as an ingredient in an industrial process.
- ii) *Circumstances when the importation of hazardous recyclables may constitute importation for disposal:* The importation of hazardous recyclables, which is allowed, may result in large volumes of hazardous residues that are suitable for landfilling, yet the *Waste Control Regulation* (AR 192/96) prohibits the importation of hazardous waste for disposal.
- iii) *Managing hazardous residues resulting from recycling:* The recycling associated with hazardous recyclables may result in no or minimal reduction of the hazardous characteristics of resulting residues and this raises the issue of whether or not these residues should be required to be treated to non-hazardous waste prior to disposal.

The intent is to try and ensure that recycling is legitimate and is not being used to circumvent the general regulatory requirements and intent of Alberta's waste management legislation, policies and guidelines.

5.2 Importation of Hazardous Waste Issues

Policy issues regarding the importation of hazardous waste include:

- i) *Prohibition on the importation of hazardous waste for disposal:* The prohibition under s. 15(2) of the *Waste Control Regulation* was established to prevent hazardous waste from being imported into Alberta for disposal. Even though the disposal of Alberta generated hazardous waste is limited to low concentration hazardous waste and is restricted to disposal at two state-of-the-art engineered landfills (Class I landfills), there is always the concern about the integrity of clay and synthetic liners. Therefore, minimizing the disposal of hazardous waste reduces the potential for contamination of soil, surface water and groundwater resources.
- ii) *Prohibiting the importation of out-of-country hazardous waste for storage and subsequent out-of-province transfer:* This policy was established to ensure that there is compliance with the legislated prohibition on the importation of hazardous waste for disposal. If imported waste is commingled with Alberta generated waste, which is not subject to the treatment only requirement, it becomes virtually impossible to track and verify the final destination of imported waste. Without this prohibition, hazardous waste could potentially be imported into Alberta, mixed with Alberta generated waste, and disposed in Alberta's Class I landfills.
- iii) *Allowing importation of hazardous waste for incineration (destruction) only:* The only facility in Alberta that is approved to treat third party hazardous waste is the SHTC and as such is the only facility that can receive third party out-of-country and out-of-province hazardous waste for treatment. All hazardous waste imported to the SHTC is destroyed by incineration and the residuals rendered non-hazardous prior to disposal in an on-site Class I landfill. Incineration minimizes the treatment residues to be disposed and the SHTC's approval requires that all residues are rendered non-hazardous prior to disposal. Based on the high costs to establish and operate a hazardous waste incinerator, the excess incineration capacity at the SHTC, and the extreme difficulty of siting a hazardous waste incinerator, the SHTC will likely continue to be the only facility in the province approved to incinerate third-party hazardous waste.

5.3 Importation of Non-Hazardous Waste Issues

Policy issues regarding the importation of non-hazardous waste include:

- i) *Prohibiting importation of non-hazardous waste for disposal:* Even non-hazardous waste landfills generate leachate, which could potentially contaminate soil, surface water and groundwater resources. Minimizing the disposal of all wastes reduces the risk of environmental contamination. Alberta's increasing population is also making it more difficult to site new

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landfills due to siting constraints such as the NIMBY (not-in-my-backyard) syndrome. Imported wastes reduce the landfill space available for Alberta wastes. Some may argue that as regional/municipal landfills receive provincial funding, they should only be used for provincial waste.

- ii) *Wastes banned from disposal in other jurisdictions:* When provincial jurisdictions establish waste management controls such as banning disposal of certain used materials, this can impact adjacent provinces that have not implemented such controls. For example, British Columbia has banned the disposal of drywall and asphalt shingles, and apparently some of these materials are now being exported to Alberta for disposal.

6.0 TRADE ISSUES

Background concerning trade agreements affecting hazardous waste management in Alberta is provided in Appendix I.

6.1 NAFTA Issues

Based on a legal opinion from the Alberta Department of International and Intergovernmental Relations, waste (hazardous and non-hazardous waste) would not be considered a “good” under NAFTA. Therefore any obligations in the Agreement based on the treatment of “goods” would not be applicable in these cases. This would mean, for example, that there would be no ability for another Party to the Agreement to claim that Alberta is treating their “goods” less favourably than Alberta treats its own “goods”.

The basic and general obligations with respect to services under NAFTA require that Alberta treat service suppliers/providers of another Party no less favourably than it treats domestic service suppliers/providers. There is no indication that landfills in Alberta are treated any differently based on the location or their ownership and control. For example, landfills that are owned by Albertans would not be treated differently than landfills owned or controlled by non-Albertans.

6.2 Interprovincial Trade Issues

The Agreement on Internal Trade (AIT) is an undertaking among the thirteen federal, provincial and territorial governments in Canada (signed prior to the creation of Nunavut) to ensure a more open, accessible and stable domestic market. As is the case under NAFTA, AIT applies to goods, and hazardous and non-hazardous wastes would not be considered a good.

APPENDIX I

INTERNATIONAL/INTERPROVINCIAL TRADE AGREEMENTS

The Basel Convention

The United Nations Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal (1989) was ratified by Canada in 1992. As of June 2001, 145 countries plus the European Union had ratified the Convention. The main objectives of the Basel Convention are to:

- Ensure that the generation of hazardous waste is reduced to a minimum;
- As much as possible, dispose of hazardous wastes within the country of their generation;
- Establish enhanced controls on exports and imports of hazardous waste;
- Prohibit shipments of hazardous wastes to countries lacking the legal, administrative and technical capacity to manage and dispose of them in an environmentally sound manner; and
- Co-operation on the exchange of information, technology transfer, and the harmonization of standards, codes and guidelines.

Nations that have ratified the Convention are only allowed to ship hazardous waste to, from or through other parties to the Convention. The Convention permits an exception to this requirement if a separate bilateral agreement covers relations with a given trading partner that is not a party to the Convention, as long as the agreement reflects the ESM of wastes. Such is the case with the Canada-U.S.A. Agreement on the Transboundary Movement of Hazardous Wastes, and the Organization for Economic Co-operation and Development (OECD) Council Decision on the control of Transboundary Movements of Wastes Destined for Recovery Operations.

Organisation for Economic Co-Operation and Development (OECD)

In the early 1980s, the OECD began work focused on exports and imports of waste. The OECD countries decided, in 1984, that exports and imports of hazardous waste should be controlled. Between 1984 and 1992, eight Council Acts were adopted covering waste identification, definition and control of transboundary movements of waste. These Acts formed the basis of the Basel Convention and several European Economic Community directives. The Acts are being consolidated and updated with the ultimate goal of building a global control system for hazardous waste movements. The control system has recently been revised to harmonize more effectively with the Basel Convention. Canada has been an active participant in the OECD decision-making process over the years and has incorporated many OECD principles into federal legislation:

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- The need to provide adequate and timely information respecting transfrontier movements of hazardous wastes to competent authorities of the countries concerned.
- The applications of controls on exports of hazardous wastes are no less stringent when dealing with non-OECD member countries.
- Adoption of the international waste identification code (IWIC) to define and classify wastes to be controlled when subject to transfrontier movements.
- Wastes not subject to recycling should be disposed of within the territory where they are generated, insofar as possible. Wastes are also to be managed in an environmentally sound manner.

Canada – U.S.A. Agreement

The Agreement between the Government of Canada and the Government of the United States of America (U.S.) concerning the transboundary movement of hazardous waste came into effect on November 8, 1986. The Agreement ensures both that the transboundary movement of hazardous waste is handled safely and that such waste is shipped to facilities that are authorized by the importing jurisdiction.

Within the context of the Agreement, wastes are considered hazardous if defined as such by the legislation of the exporting country. In Canada, hazardous wastes are covered by the *Export and Import of Hazardous Waste Regulations*. Both Canada and the U.S. support the 1992 OECD Decision of Council on the Control of Transfrontier Movements of Waste Destined for Recovery Operations. This decision requires the country in which the waste originates to provide the country to which they are being shipped with adequate and timely information on the shipment. The appropriate authorities in the country of destination then have the option of consenting or objecting to the proposed shipment. The Canada-U.S.A. Agreement, together with its supporting regulatory framework, is entirely compatible with the control procedures under the Basel Convention.

While a shipment of waste is in the importing country, its movements and handling must comply with that country's domestic regulations. The *Export and Import of Hazardous Wastes Regulations* and the *Interprovincial Movement of Hazardous Waste Regulations* under *CEPA* govern the transportation of hazardous waste in Canada. Under these regulations, a detailed manifest must accompany all waste shipments: those that originate in Canada, as well as those that enter Canada from another country. This manifest allows easy tracking of shipments until they arrive at their destination or exit the country.

North American Free Trade Agreement (NAFTA)

Implementation of NAFTA began on January 1, 1994. NAFTA is a comprehensive trade agreement established to improve virtually all aspects of doing business within North America. NAFTA will eliminate tariffs completely, and removes many of the non-tariff barriers, such as import licenses, that have helped exclude goods from markets in Canada, U.S. and Mexico. NAFTA ensures that investment will not be coerced by restrictive

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government policies, and that investors from Canada, U.S. and Mexico receive equal treatment. NAFTA ensures that investors in Canada, U.S., and Mexico are treated the same as domestic firms. It provides the right to international arbitration in disputes between investors and governments that involve monetary damages.

Environmental measures under NAFTA permits the imposition of stringent environmental standards on investments and discourages the lowering of environmental standards to induce investment. It also permits governments to require environmental impact statements on new investments. Each Party must notify the other Parties of a decision to ban or severely restrict a pesticide or chemical and will consider banning the export to another Party of toxic substances, the use of which is banned within its own territory.

Interprovincial Trade Agreements

The Agreement on Internal Trade (AIT) is an undertaking among the thirteen federal, provincial and territorial governments in Canada (signed prior to the creation of Nunavut) to ensure a more open, accessible and stable domestic market. The agreement is a tool that commits the Federal, provincial and territorial government to reduce trade barriers within Canada. The goal is to have people, goods, services and investments moving freely across the country. The agreement has six general rules and eleven sectoral chapters that lay out principle, rules and a code of conduct. Governments have to operate under these principles and trade by these rules. The Agreement resolves many specific issues and provides a mechanism for continuing review and negotiation in the future.

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APPENDIX II

FEDERAL REGULATIONS AND CONTROLS

The Federal Government has legislation that impacts the hazardous waste management systems of provinces/territories. This legislation includes:

Export and Import of Hazardous Wastes Regulations (SOR/92-637)(EIHWR) - These regulations govern the transboundary movement of hazardous waste and implement Canada's obligations under the Basel Convention, the OECD Council Decision concerning the control of transfrontier movements of waste destined for recycling, and the Canada-U.S. Agreement concerning the Transboundary Movements of Hazardous Waste. On March 20, 2004 Environment Canada published proposed amendments to the *EIHWR (1992)* that include harmonized controls on imports, environmentally sound management requirements, and a new classification system for hazardous waste. Liability insurance requirements for exporters and importers of hazardous waste/recyclables, is a minimum of \$5 million for hazardous waste and \$1 million for hazardous recyclables.

PCB Waste Export Regulations, 1996 (SOR/97-109) - Bans the export of PCBs except to the United States. PCBs can be exported to the U.S. for treatment and destruction (not landfilling) provided certain notifications are provided and authorizations received. The Canada-U.S. border is currently closed for the export/import of hazardous PCB waste (waste that has a PCB concentration greater than 50 parts per million).

Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301) – On August 15, 2002, the new federal clear language *Transportation of Dangerous Goods Regulations* came into force, which removed all references to hazardous waste and hazardous recyclables. The responsibility for regulating the movements of hazardous waste and hazardous recyclables between provinces was transferred to Environment Canada under CEPA. The federal government is in the process of developing new regulations called the *Interprovincial Movement of Hazardous Waste and Hazardous Recyclable Materials Regulations* (see more detail below). The *Interprovincial Movement of Hazardous Waste Regulations* were passed under CEPA as an interim measure to ensure that current manifest tracking and classification requirements for hazardous waste and hazardous recyclables movements between provinces are maintained. Under these regulations, hazardous waste is defined as a product, substance or organism that is:

- Included in Classes 2 to 6 and 8 of the TDGR or in Class 9 as if a reference to “disposal” means “disposal or recycling”,
- Intended for disposal or recycling, including storage prior to disposal or recycling, and
- Is not household in origin nor returned directly to the manufacturer or supplier.

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The Regulations refer to the manifest set out in Form 3 of Schedule II to the EIHWR under CEPA.

Development of *Regulations for the Interprovincial Movement of Hazardous Waste and Hazardous Recyclable Materials* - Environment Canada is developing new regulations that will integrate some of the waste controls formerly set out in the *Transport of Dangerous Goods Regulations*. The regulations are being developed to protect the environment from risks posed by uncontrolled interprovincial movements of hazardous wastes and hazardous recyclable materials. These regulations will ensure that wastes are transported to and received only at authorized facilities for final disposal and recycling operations. As part of regulatory development, a number of initiatives were undertaken in 2000-2003, including:

- A cost-benefit analysis, with input from industry, provincial jurisdictions and Environment Canada enforcement officials (completed); and
- Ongoing meetings with the Canadian Council of Ministers of the Environment (CCME) Hazardous Waste Task Group to provide advice on the development of the regulations.

Environment Canada is proposing to include the definition/classification of hazardous waste that is used in the *Export and Import of Hazardous Wastes Regulations*.

Development of *Regulations for the Export and Import of Prescribed Non-Hazardous Wastes for Final Disposal* - Regulations are being developed to protect the environment from risks posed by uncontrolled export and import of non-hazardous wastes destined for final disposal. Consistent with Canada's international obligations, Environment Canada is developing a regulatory framework to control these wastes. The regulations will affect waste management within Canada, and the management of Canadian wastes for export.

Preliminary stakeholder consultations were held across the country in spring 2000 to develop definitions from which to draw up regulations. Subsequently, an options paper, "Development of Regulatory Options for the Export and Import of Prescribed Non-Hazardous Wastes Destined for Final Disposal", was commissioned and distributed. A second round of consultations was held early in 2001 across the country to solicit discussion on regulatory options from which the proposed regulations may be drafted. Environment Canada has not conducted any further consultation on the proposed regulations.

APPENDIX III

PROVINCIAL REGULATIONS AND CONTROLS

Hazardous waste and hazardous recyclables management in Alberta is regulated under the *Environmental Protection and Enhancement Act* (EPEA). This *Act* establishes the major regulatory instruments for controlling hazardous waste and hazardous recyclables. These are:

- The requirement for all hazardous waste generators, carriers and receivers to have a ***personal identification number***
- ***Security/insurance requirements*** for persons holding a personal identification number or an approval
- ***Manifesting requirements*** for the movement of hazardous waste and **docket requirements** (within Alberta) for the movement of hazardous recyclables
- ***Approval or registration requirements*** for the storage, treatment and/or disposal of hazardous waste or processing hazardous recyclables (note: approvals are the principal regulatory instrument governing the construction, operation and reclamation of hazardous waste and hazardous recyclables facilities)
- ***Environmental assessment requirements*** for certain hazardous waste facilities

The following EPEA Regulations apply to the management of hazardous wastes/recyclables in Alberta:

- *Waste Control Regulation* (AR 192/96)- outlines the requirements for hazardous waste classification, manifesting, storage, landfill disposal and financial security.
- *Activities Designation Regulations* (AR 211/96)- outlines what types/sizes of hazardous waste management facilities require an approval or registration.
- *Approvals & Registrations Procedure Regulation* (AR 113/93) - outlines the process and requirements for obtaining an approval or registration.
- *Environmental Assessment (Mandatory & Exempted Activities) Regulation* (AR 111/93) - specifies that proposed hazardous waste incinerators and hazardous waste landfills that accept off-site hazardous waste require an environmental impact assessment.
- *Environmental Assessment Regulation* (AR 112/93) - outlines the process and requirements for environmental assessments.

**DISCUSSION DOCUMENT 2004-04: WASTE IMPORTATION INTO ALBERTA
ATTACHMENT – CONSULTATION STATEMENTS**

1.0 Importation of Hazardous Waste

1.1 The prohibition on the importation of hazardous waste for disposal in s. 15(2) of the *Waste Control Regulation* should be maintained.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

1.2 The prohibition on importation of out-of-country hazardous waste for storage and subsequent out-of-province transfer should continue.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

1.3 The importation of hazardous waste should be restricted to importation only for incineration (destruction).

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

1.4 If waste management facilities other than the SHTC were allowed to treat third-party hazardous waste, they should be restricted to only treating Alberta generated hazardous waste and not allowed to import hazardous waste for treatment and subsequent disposal.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

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ATTACHMENT – CONSULTATION STATEMENTS**

2.0 Importation of Hazardous Recyclables

2.1 The importation of hazardous recyclables should continue to be allowed.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

2.2 The importer should be required to provide specific information that the recyclable(s) have value and a legitimate use, and that recycling is not being done just to avoid hazardous waste importation restrictions.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

2.3 Importation for recycling should not be allowed unless a significant percentage of the waste will be recovered as usable product.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

If you agree, which of the following minimum recovery requirements would you support?

25%: , **50%:** , **75%:** , **Other:**

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- 2.4 Hazardous residues resulting from the recycling of imported hazardous recyclables should be required to be treated to non-hazardous levels prior to disposal in Alberta. This would avoid the disposal of hazardous recycling residues in Alberta landfills.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

3.0 Importation of Non-Hazardous Waste

- 3.1 Landfills accepting over 10,000 tonnes of waste per year should be required to track and report annually the amount and types of out-of-country and out-of-province non-hazardous waste that was imported for disposal.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

- 3.2 Landfills accepting 10,000 tonnes of waste or less per year should be required to track and report annually the amount and types of out-of-country and out-of-province non-hazardous waste that was imported for disposal.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

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- 3.3 Restrictions on the importation of non-hazardous waste from provinces/territories should be flexible to accommodate the special needs of provinces/territories without suitable waste management facilities.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

- 3.4 All landfills in Alberta should be prohibited from receiving imported non-hazardous waste for disposal that has been banned from disposal in the jurisdiction of origin.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

- 3.5 Landfills should be primarily for Alberta generated waste, and as a result all landfills in Alberta should be prohibited from receiving imported non-hazardous waste for disposal.

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: