

## Solid Waste and Hazardous Substances

### 1.0 Introduction

1.0.1 Humans are the only species that generate waste. In a natural cycle, one creature's cast-offs are another's food resource. Our traditional and linear production methods force most waste to be considered rubbish, which means that a significant amount of money and material is lost by this unnatural approach. Waste represents an inefficient use of our resources. Improperly disposed of, waste can also pose a risk to human health and the environment. The amount of waste generated in New Zealand has increased over time as our population and levels of production and consumption have grown. However, in recent decades, the amount of waste recovered from the waste stream to be reused, recycled, or reprocessed has increased.

### 1.1 National Context

#### 1.1.1 *Solid Waste*

1.1.1.1 It is estimated that around 8.7 million tons of solid waste (from domestic, commercial, industrial, and institutional waste sources) was generated in New Zealand in 2006, of which 2.4 million tons was subsequently diverted from disposal to landfills by recycling and reprocessing. The remaining 6.3 million tons of waste are sent to landfill and cleanfill sites each year. Of this, 3.156 million tons was sent to landfills, slightly reduced from an estimated 3.180 million tons in 1995. When averaged across the total population, that represents 1,572 kilograms of solid waste per person per year.<sup>1</sup> The shift to increased recycling and reprocessing, and the introduction of user-charges to dispose of waste have helped reduce the amount of waste disposed of to landfills.

1.1.1.2 In 1995, 327 landfills were in use in New Zealand. Many of these had poor environmental controls. Today, there are about 60 landfills in use. Of these, 54 percent use engineered liners (these help minimise leachate entering and contaminating surface and groundwater systems), 77 percent collect leachate (liquid produced in landfills through the decomposition of waste), and 23 percent recover landfill gas. New Zealand also has about 300 cleanfills across the country; these sites accept material that is not harmful to the environment when buried.<sup>2</sup>

1.1.1.3 Recycling rates are increasing. In 2006, 73 percent of New Zealanders had access to kerbside recycling, up from 20 percent in 1996, and 97 percent had access to either kerbside recycling or drop-off centres. In 2005, 329,283 tons of paper, plastic, cardboard, glass, steel, and aluminium collected through municipal recycling was diverted from being sent to landfills. When commercial waste is included, the total amount of material diverted from landfills is estimated to be about 2.4 million tons a year. However, despite these advances,

---

<sup>1</sup> Waste statistics from Environment New Zealand 2007, Ministry for the Environment. Section 2, Chapter 6 *Waste*.

<sup>2</sup> *Ibid.*

many potentially useful materials continue to be disposed of to New Zealand landfills and cleanfills. Organic (mostly garden and food) waste, timber, and construction and demolition waste make up nearly 50 percent of waste disposed of to landfills.<sup>3</sup>

1.1.1.4 Since 1997, waste management in New Zealand has focused on managing the human health and environmental effects of waste, primarily by putting in place standards for waste disposal. Today, many businesses, householders, and communities are paying greater attention to minimising the amount of waste they generate and dispose of. This reflects an international shift towards using valuable natural resources more efficiently, and reducing the costs associated with production and disposal of waste. Producers are also taking greater responsibility for reducing the environmental effects of their products, from manufacture to disposal. Consumer purchasing choices will increasingly drive the 'green design' of products, including products which produce less waste throughout their life cycle. In the future, the minimisation of waste generation and disposal is likely to remain a focus for New Zealand. In particular, attention is likely to focus on reducing the levels of potentially valuable wastes such as organic waste, construction and demolition waste, and some hazardous wastes. A further challenge is to improve the monitoring of waste flows.

## 1.1.2 *Hazardous Waste*

1.1.2.1 When hazardous substances reach the end of their useful life, they require careful handling and disposal. Hazardous waste can take a variety of forms – liquid, sludge, solid, and gas, and can be managed in a variety of ways, for example, at wastewater treatment plants or through the used oil recovery programme. Private sector waste operators play a key role in the treatment and disposal of hazardous waste. A key issue in New Zealand is that most hazardous waste is mixed either at source or during its transport, treatment, or disposal. As a result, treatment and disposal is made more difficult and opportunities for hazardous waste to be recovered and recycled are reduced. Information on hazardous waste is limited in New Zealand, because of a lack of formal record keeping and reporting on waste flows in the past. As well as this, a significant proportion of hazardous waste is handled by private waste operators, whose data is considered commercially sensitive. The information available about hazardous waste primarily relates to specific waste streams, such as those for electronic equipment, agrichemicals, end-of-life vehicles (vehicles that have come to the end of their useful life), and waste oil.

1.1.2.1 In 2004, solid hazardous waste was estimated to account for 11 percent of the waste disposed of to landfills. About a quarter of this waste is stabilised before disposal at waste treatment facilities. Several major industries – for example, the mining industry – treat and dispose of hazardous waste independently. Used oil is generated at a rate of 33 to 40 million litres in New Zealand each year. In 1997, 77 percent of used oil was dumped to landfills, burned, poured onto roads to control dust, used to lubricate chainsaws and stain fences, or lost or discarded in various unknown ways. Today, the Used Oil Recovery Programme collects and reuses 21 million litres of used oil a year.<sup>4</sup>

---

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

1.1.2.2 Waste electrical and electronic equipment (including products such as batteries, computers, cell phones, and televisions), and lighting appliances (such as fluorescent tubes), are disposed of to landfills in New Zealand every year at a rate of up to 80,000 tons. Several schemes to reuse, recycle, or recover waste electrical and electronic goods have been introduced in New Zealand.

### 1.1.3 ***Contaminated Land***

1.1.3.1 Inappropriate storage and use of hazardous substances and disposal of hazardous wastes can contaminate the environment. Industrial, domestic, and rural activities have all contributed to contaminated land in New Zealand. Many contaminated sites are due to historical agricultural, horticultural, and silvicultural (forestry) practices. In particular, contaminated sites have often resulted from past manufacture and use of pesticides and fertilisers; production of coal and gas; mining; timber treatment; and sheep dipping. People, animals and the environment can be exposed to hazardous substances on contaminated land in a number of ways, including: direct contact with contaminated soil, swallowing food or water from contaminated environments and breathing vapours or contaminated dust. Exposure to hazardous substances can have significant adverse effects on human health and on soil, surface water, groundwater and ecosystems. As well as endangering health, these substances can limit the use of land, cause corrosion that may threaten building structures, and reduce land value. Contamination is not always limited to a specific site. Hazardous substances may seep through the soil into groundwater, or be carried to nearby land and waterways in rainwater or on dust particles. Vapour and gases from contaminated land may present additional risks of explosion and odour.

1.1.3.2 Local government (regional councils, city and district councils) are responsible for the day-to-day management of contaminated land and have specific functions under the RMA. Local government is in charge of controlling the effects of contaminated land, and also for controlling activities that cause land to become contaminated.

1.1.3.3 The RMA defines contaminated land as: land of one of the following kinds:

- a) if there is an applicable national environmental standard on contaminants in soil, the land is more contaminated than the standard allows; or
- b) if there is no applicable national environmental standard on contaminants in soil, the land has a hazardous substance in or on it that—
  - (i) has significant adverse effects on the environment; or
  - (ii) is reasonably likely to have significant adverse effects on the environment.

1.1.3.4 Currently there is no applicable national environmental standard, although one is in the drafting draft process.

1.1.3.5 To date, most of the effort to identify, manage, and clean up contaminated sites has focused on urban and rural sites contaminated by activities and industries on the Hazardous Activities and Industries List (HAIL). The HAIL sets out

activities and industries that are considered likely to cause contamination from hazardous substance use, storage, or disposal.

1.1.3.6 Significant resources are needed to confirm if sites are contaminated, as currently many of these sites are listed as potentially contaminated. In the 1990s, the number of contaminated sites in New Zealand was estimated at between 7,000 and 8,000. About 1,500 of these were deemed to be high risk to human health or the environment. However, there are now thought to be over 50,000 contaminated sheep-dip sites alone.<sup>5</sup> There are presently no standards that set maximum levels for contaminants in soil to determine whether or not a site is contaminated. Local authorities may therefore interpret the definition of contaminated land differently and apply different maximum thresholds for levels of contamination.

## 1.2 Southland Context

### 1.2.1 *Solid Waste*

1.2.1.1 Southland's waste is disposed of at the Southland Regional Landfill at Kings Bend, east of Winton. In a landfill, rubbish is dumped, bulldozed, squashed and covered with layers of soil and more waste. In 2006, Southland disposed of 55,000 tons of waste to the regional landfill.<sup>6</sup> From 2007 to date, Southland disposed of 62,153 tons of waste to the regional landfill.<sup>7</sup> This is an increase of nearly 7000 tons from 2006. In November 2007, a waste consulting firm, Wastenot, completed a study at the regional landfill to determine what is in Southland's waste. The results indicate that almost half (42%) of the waste to landfill in the region is organic material such as food scraps, garden waste and kitchen waste which can all be easily composted instead of landfilled.<sup>8</sup> When landfilled, organic material can have adverse effects on the environment because it creates leachate and emits the greenhouse gas methane. Timber is the second largest material in the landfill at 11.1%. Combined paper and plastic, which are easily recyclable, make up 21% of the materials found in the landfill.<sup>9</sup>

---

<sup>5</sup> Contaminated land statistics from Environment New Zealand 2007, Ministry for the Environment, Section 3, Chapter 9, *Land*.

<sup>6</sup> [www.wastenot.org.nz](http://www.wastenot.org.nz)

<sup>7</sup> Email correspondence, Donna Peterson Waste Minimization Officer Invercargill City Council 3 July 2008, 4:03 p.m.

<sup>8</sup> WasteNot Consulting, February 2008, *Solid Waste in Southland 2007*—Draft copy.

<sup>9</sup> *Ibid.*

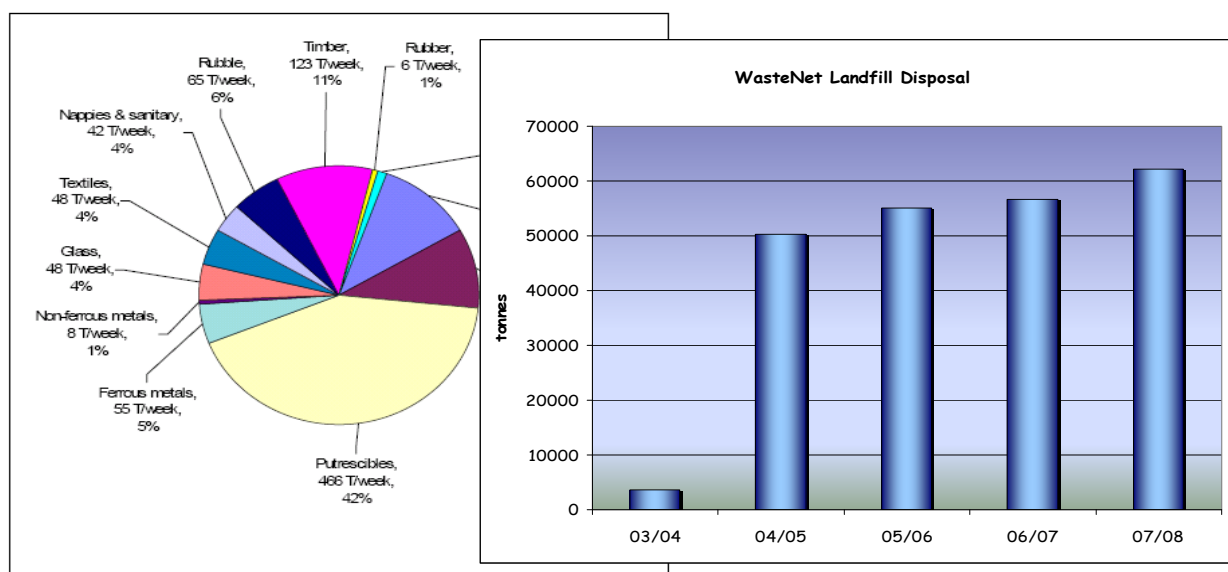


Figure 13.2 – Primary composition of overall waste at SRL – 2-8 November

## 1.2.2 Hazardous Waste

1.2.2.1 There is an unknown number of industries producing, storing, using or transporting hazardous substances and an unknown amount of users of hazardous substances disposing of hazardous waste in the Southland region. The three territorial authorities in Southland offer hazardous waste storage sheds at their transfer stations for people to drop-off domestic quantities of household hazardous waste. About ten tons of domestic hazardous waste has been collected from these sheds between 2006 and early 2008.<sup>10</sup> Industries or individuals may have their own private contracts with companies to collect and dispose of their hazardous waste.

1.2.2.2 Over recent years a greater understanding and knowledge of the amount of agrichemicals stored on farms in the region that require disposal has arisen. Since 1995 Environment Southland, with funding from Ministry of the Environment has undertaken two large scale agrichemical collections which removed a total of 71.8 tons of agrichemicals from the region. 34 tons of agrichemicals were collected during 1995-1997, and a further 37.8 tons from the 2005-2007 targeted collections. Persistent organic pollutants (POPs) are chemical substances that persist in the environment, bioaccumulate through the food chain, and pose a risk of causing adverse effects to human health and the environment. The organochlorine (chlorine-containing) chemicals listed as POPs under the Stockholm Convention are:

- nine pesticides (aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex, hexachlorobenzene, and toxaphene)
- PCBs (polychlorinated biphenyls)
- dioxins and furans (polychlorinated dibenzo-p-dioxins or PCDDs, and polychlorinated dibenzofurans or PCDFs).

<sup>10</sup> Email correspondence. Ed Hills, Chemical collector, Chemstocks Ltd.

1.2.2.3 The amount of agrichemicals including POPs remaining on farms in the Southland region is unknown. It is estimated that if a targeted collection was carried out in the Invercargill area, approximately 5 tons would be gathered. Approximately 45% farms did not respond to the 2005-2007 targeted collections of which an unknown proportion will have agrichemicals requiring disposal. Additionally, an unknown proportion of farms that have already been a part of a collection will also discover agrichemicals on their property in future years requiring disposal. This can occur because sheds and storage areas had not been completely checked before the collections or farms have changed hands and new owners unearth old stockpiles of unwanted agrichemicals from previous owners.

### 1.2.3 **Contaminated Land**

1.2.3.1 The public and some private industries report contaminated or potentially contaminated land to Environment Southland. Reports most commonly come in from petrol companies when they have pulled an underground storage tank from their site. Common activities that cause land to become contaminated include the manufacture and use of pesticides and fertilisers; production of coal and gas; mining; timber treatment; and sheep dipping all of which have occurred in the Southland region. However, there have been no definitive investigations within the Southland region to find sites that may be contaminated so there is an unknown quantity of contaminated sites in Southland. Closed landfills such as old community refuse sites are on the HAIL (Hazardous Activities and Industries List) because they are known to cause contamination of land. There are at least 99 closed landfill sites recorded in Southland with possibly many more out there that have yet to be documented. At least 5 dieldrin dump sites have also been identified.

## 2.0 **Emerging Issues requiring consideration.**

### 2.1 **What has changed and what are the solid waste and hazardous substance issues now and for the future?**

2.1.1 When thinking about emerging waste issues in Southland, we are required to consider the existing issues contained in the current Regional Policy Statement for Southland and the Southland District Plan to ascertain their relevance in today's environment. Appendix 1 and 2 contain a detailed discussion assessing the relevance of these existing issues relating to solid waste and hazardous substances.

### 2.2 **Solid Waste**

#### 2.2.1 ***Shift to Resource Stewardship***

2.2.1.1 Since Southland's Regional Policy statement was released in 1997 there has been a significant shift in focus regarding solid waste management. During the 1990s, the significant waste management issues focused on sub-standard landfills that adversely affected the environment because of poor construction, poor positioning, and little to no monitoring. Since then, most of those poor

landfills have been closed and in 2004 the AB Lime Regional Landfill at Kings Bend opened. This is now the only operating landfill in Southland and it is built to meet strict sanitary and environmental standards. There are controls in place to minimise effects from leachate, odor, landfill gases and other environmental effects.

2.2.1.2 Today the significant waste management issues focus on the relationship between sustainability and the need to minimise the generation of solid waste. The modern concept of sustainability comes from *Our Common Future*, the report that arose from the 1987 World Commission on Environment and Development in which sustainable development was defined as "meeting the needs of the present generation without compromising the ability of future generations to meet their own needs."<sup>11</sup> This definition has been widely adopted, especially since the 1992 United Nations Conference on Environment and Development. In New Zealand, sustainability is also used in the 1991 Resource Management Act where sustainable management is defined as: "managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while:

- a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations;
- b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
- c) avoiding, remedying, or mitigating any adverse effects of activities on the environment."<sup>12</sup>

2.2.1.3 Sustainability reflects a growing realisation that our whole future, as individuals, families, whanau, communities, nations and as a planet, is dependent upon the way we interact with each other and with our physical environment. Essentially, sustainability is about the relationship between people and planet; remembering that we are inextricably part of this planet, and that our societies (including economies) depend upon healthy biological and physical systems.

2.2.1.3 Waste is the by-product of economic activity. Waste can be generated at different times during the material life cycle: when raw natural resources are extracted or harvested; when goods are manufactured or services produced; and when goods are packaged, transported, and consumed. Waste generation can indicate the inefficient use of resources. Some business commentators consider waste to be a design flaw.<sup>13</sup> Studies have shown that up to 93 percent of raw materials are discarded during processing and do not end up in saleable products, and that 80 percent of saleable products are discarded after a single use.<sup>14</sup> Historically, the relationship between the amount of waste generated and economic growth has meant that the greater the wealth, the greater the consumption of goods and services (and the resources used to produce these),

---

<sup>11</sup> World Commission on the Environment and Development 1987. *Brundtland Report*, Oxford University Press, Oxford.

<sup>12</sup> Resource Management Act 1991 Part 2, s 5 (20/08/2005).

<sup>13</sup> Economist: Science Technology Quarterly, 2007.

<sup>14</sup> Von Weizsacker et al, 1997, in Ministry for the Environment, 2002.

and the more waste produced. A 40 percent increase in Organisation for Economic Co-operation and Development (OECD) gross domestic product since 1980 has been accompanied by a 40 percent increase in municipal waste over the same period.<sup>15</sup> Internationally, a key goal is to ‘decouple’ waste generation from economic growth. Waste generation can be decoupled by: increasing the resource efficiency of goods and services by using fewer resources in production and decreasing the resource intensity in the production of goods and services through improved processes, designs, and materials. The efficient use of our valuable natural resources saves us money, reduces our impact on the environment, and ensures that our goods and services are competitive.

2.2.1.4 So what is the relationship between sustainability and minimising waste? Living sustainably means maintaining that relationship with the planet by living within the planet’s confines of finite resources and ability to process wastes. In a natural cycle, one creature’s cast-offs are another’s food resource, but our traditional and linear production methods force most waste to be considered rubbish instead of a resource to be used again. The current global economy relies on extraction, manufacturing, and consumption of non-renewable resources which end up as products used for a short time and then discarded as rubbish. The earth’s natural processes are then unable to assimilate this “rubbish” into the environment. Minimising the waste discarded actually means reducing waste at its source—the extraction of raw materials. There is now recognition that manufacturers have a responsibility to produce products that can be used again for the same purpose, or that can be used as a resource for the manufacture of another product instead of extracting more finite raw materials. Consumers also have a responsibility to think critically about the need for a product and whether or not they can live without it or whether there is an alternative to buying the product new and can find one second-hand in order to conserve the resources that went into the manufacturing and prevent the product ending up as waste. In the past the waste management hierarchy has mainly revolved around the ‘3 Rs’—reduce, reuse, recycle—and then manage the residual waste. Today the concepts of ‘Rethink’ and ‘Redesign’ have been added to the top of the hierarchy. We are called to rethink the need for a product, the materials that went into its processing and the impacts it will have on the environment at the end of its life. We are called to rethink the way we produce products in the form of material things, rather than provide a service. We are also called to redesign products and processes that take into account the product’s whole lifecycle—from cradle to grave.

## 2.3 National Issues

### 2.3.1 *New Zealand Waste Strategy*

2.3.1.1 Over the past decade, central government has initiated several policy and legislative changes regarding solid waste management issues. In order to address these issues and forge a path for New Zealand to become a sustainable nation, Central Government initiated the New Zealand Waste Strategy (NZWS) in 2002. This strategy covers solid, liquid and gaseous waste, and

---

<sup>15</sup> OECD, in Ministry for the Environment, 2002.

recognises that moving *towards zero waste and a sustainable New Zealand* is a long-term challenge.<sup>16</sup> The NZWS was developed in partnership with local government. The strategy has three core goals:

- to lower the costs and risks of waste to society
- to reduce environmental damage from the generation and disposal of waste
- to increase economic benefit by using material resources efficiently.

2.3.1.2 The strategy recognises that waste management and minimization in New Zealand are everyone's responsibility, including central and local government, the private sector, the waste sector (including commercial waste operators and non-government organisations), and households. Waste minimisation means reduction, reuse, recycling, or recovery of waste.

2.3.1.3 The strategy identified nine priority waste areas and 30 targets. Progress against these targets has been reviewed regularly. The most recent review showed that, while much of the groundwork had been laid for achieving the strategy's wider goals and objectives, progress against the strategy targets has been variable. Good progress has been made in providing community recycling facilities and 'green waste' schemes. Central government has made progress in engaging with businesses and in developing guidelines to improve the management of landfills and hazardous wastes. However, less progress has been made in reducing commercial organic, and construction and demolition wastes; improving the management of cleanfills; and identifying and managing contaminated sites. Progress against other targets was either unable to be achieved or unable to be measured.<sup>17</sup> Currently targets are under review and new ones could be released with the Waste Minimization Act. Local government is encouraged to set local targets in line with national targets.

## 2.3.2 ***Waste Minimisation Act 2008***

2.3.2.1 The Waste Minimisation Bill has been given the Royal assent from the Governor-General. This means that the Waste Minimisation Act is now in place. The Waste Minimisation Act encourages a reduction in the amount of waste we generate and dispose of in New Zealand and lessen the environmental harm of waste. This Act puts in place provisions to enable households and businesses to decrease their waste disposal. In a nutshell, the Act:

- puts a levy on all waste disposed of in a landfill, initially at \$10 per ton
- helps and, when necessary makes, producers, brand owners, importers, retailers, consumers and other parties take responsibility for the environmental effects of their products through product stewardship schemes – from 'cradle-to-grave'

---

<sup>16</sup> The New Zealand Waste Strategy can be found at <http://www.mfe.govt.nz/publications/waste/waste-strategy-mar02/index.html> as at 01 October 2008.

<sup>17</sup> The New Zealand Waste Strategy was reviewed in 2003 (review can be found at <http://www.mfe.govt.nz/publications/waste/review-targets-waste-strategy-feb04/index.html>) and reviewed again in 2006 (can be found at <http://www.mfe.govt.nz/publications/waste/waste-strategy-review-progress-mar07/index.html>) both as at 01 October 2008.

- allows for regulations to be made making it mandatory for territorial authorities and others (for example, landfill operators) to report on waste to improve information on waste minimisation
- clarifies the roles and responsibilities of territorial authorities with respect to waste minimisation
- introduces a new Board to give independent advice to the Minister for the Environment on waste minimisation issues.
- Establishes a contestable fund for waste minimization projects

2.3.2.2 The Act also aims to regulate material and disposal controls (i.e. banning of certain materials from landfill) sets targets for reducing waste in landfills and cleanfills, and provides for public procurement programmes to spur the development of markets for products and services that result in waste reduction. It also contains requirements for territorial authority waste minimization and management plans.<sup>18</sup>

2.3.2.3 Product stewardship schemes are a ‘cradle to grave’ tool that helps reduce the environmental impact of manufactured products. In product stewardship schemes, producers, brand owners, importers, retailers, consumers and other parties accept responsibility for the environmental effects of their products – from the time they are produced until they are disposed of. Product stewardship is based on the idea that the polluter pays, rather than the ratepayer, the taxpayer or the environment. New Zealand already has a number of existing product stewardships schemes, all voluntary and industry-led, and would like to encourage more. Product stewardship scheme participants take responsibility for the environmental effects of their products and take these costs into account when making decisions about the production, purchase and disposal of their products. The product stewardship section of the Act currently says 1-3 schemes per year will be brought on as Priority Products. Priority products will be defined by actual or potential harm, public concern, effective management and the effectiveness of existing schemes. Voluntary schemes will also be considered, as well as guidance and requirements for schemes.

2.3.2.4 The purpose of the waste levy is to raise revenue for waste minimization and to internalize the cost of waste disposal. It will begin at \$10 (+GST) per ton, with territorial authorities receiving 50% of the GST exclusive cost with distribution based on population. This means that a territorial authority with high population but no landfills will still get funding; however, they will have to have a waste management plan in order to get any funding at all. Territorial authorities will get the non-contestable portion because they have responsibility for dealing with waste; the rationale is that Regional and TA Councils and private organisations can apply through the contestable fund for specific waste minimisation activities. Administration costs for the levy will be approximately 5%. The contestable portion of the fund will be allocated according to criteria established by Minister and Waste Advisory Board. The levy effectiveness and level will be reviewed within two years and then every three years.

---

<sup>18</sup> The Waste Minimization Act can be downloaded from [http://www.legislation.govt.nz/act/public/2008/0089/latest/viewpdf.aspx?search=ts\\_act\\_waste](http://www.legislation.govt.nz/act/public/2008/0089/latest/viewpdf.aspx?search=ts_act_waste) as at 3 October 2008.

### 2.3.3 *Organic and Construction & Demolition Waste*

2.3.3.1 To date, New Zealand has only touched the tip of the waste iceberg by managing the easier waste streams (such as recycling paper and cans) and the high risk waste streams (such as hazardous wastes). Now New Zealand will be focusing on the two largest waste streams: organic waste and construction and demolition waste. It is important to reduce the amount of organic waste going to landfills as it produces methane – a greenhouse gas and a major contributor to climate change – and also generates leachate. The Ministry for Environment will be encouraging households and industry to divert more green waste, food waste and commercial organic waste from landfills. This includes developing comprehensive nationwide infrastructure. The Ministry is also working with the organics recycling industry to further boost its research and development capabilities. This will allow producers to market natural products along with traditional inorganic fertilisers and pesticides. Entering these markets will create a huge increase in demand for a high quality, consistent product which should increase diversion, collection, and reprocessing of organic wastes.

2.3.3.2 Construction and demolition (C&D) waste work will focus on improving the monitoring and reporting of the C&D waste going to landfills and cleanfills, specifically timber, concrete, gib board and plastic wrap. The government is also focused on identifying and increasing opportunities for reprocessing and reusing this waste.

## 2.4 **Regional Issues**

### 2.4.1 *Increasing Waste Generation*

2.4.1.1 Of noticeable concern to Southlanders, is the increasing amount of waste disposed to landfill. This is despite having a stabilised population over the past few censuses. Therefore, the increase in waste generated is not due to an increase in population. This trend needs to reverse not only by diverting more waste from landfill through such initiatives as recycling, but more importantly by reducing waste at its source of generation. Recycling is a good way to divert waste streams from landfill, especially the easy ones like paper and plastic which currently comprise 21% of Southland's waste stream landfilled.<sup>19</sup> However, recycling does not reduce waste at its source, because raw materials and energy still went into the process of making the product which then becomes recycled. Recycling can only be truly beneficial if new products that are purchased are made out of the highest quantity of recycled content possible. Southland could greatly benefit by increasing recycling rates and diverting tons of “rubbish” from landfill, but it could benefit even more by not generating that rubbish in the first place.

### 2.4.2 *Organic Waste*

2.4.2.1 Another important issue for Southlanders is that organics comprise nearly half (42%) of the waste stream going to landfill.<sup>20</sup> It is important to reduce this

---

<sup>19</sup> See pie chart of Southland's waste stream in Section 1.

<sup>20</sup> See pie chart

amount landfilled because it is harmful to the environment, and also because if composted it can become beneficial to the environment. In order to align with Ministry for Environment's work we ought to encourage households and industry to divert more green waste, food waste and commercial organic waste from the landfill. The rising price of inorganic fertilizers provides even more of an incentive to investigate innovative techniques to enable the use of the organic material as a resource rather than discarding it as garbage. Along the same lines, combined, rubble and timber comprise 17% of Southland's waste stream. It will be important to provide ways and encouragement to reuse and recycle these waste streams.

### 2.4.3 *Farm Landfills*

2.4.3.1 Lastly, disposing of household waste and some types of farm waste on rural properties is likely to be a common practice in Southland's rural community. This is a waste management issue for Southland as there is very little information known about this form of waste disposal. Information such as the types of waste deposited, amounts of waste and the numbers and locations of these landfills are not known. As a result very little is known about the environmental impacts of this form of waste disposal. The environmental effects of this form of waste disposal need to be addressed and recognised should they arise especially since the size of many farms is increasing in Southland and some rural land uses are intensifying.

2.4.3.2 On-farm landfills are not monitored for their content or locations. They could contain hazardous materials which contaminate the soils and/or groundwater or could be located near waterbodies or in sensitive catchments. There is also an issue of equity because the urban areas are required to pay, through their rates, for strict waste management disposal options because their waste is managed and disposed of in accordance with strict environmental standards at the regional landfill. In some parts of the region, the farming community can freely dispose of waste that might be hazardous, reusable or recyclable onto their land. In Southland District, though, all ratepayers contribute to some of the costs of waste disposal. There are uniform District wide waste charges. Ratepayers that have weekly waste collection services contribute more but obviously benefit from the kerbside collection service. The rural community might welcome weekly waste and recycling collections if the option was financially and logistically feasible.

## 2.5 **The following are solid waste issues from Southland District Council's perspective**

### 2.5.1 *Establishment of Southland Regional Landfill (SRL)*

2.5.1.1 In terms of waste management one major change that has occurred within the Southland region since the existing District Plan became operative is the establishment of the SRL. The establishment of this facility has allowed the District Council to close a number of landfill sites throughout the District and replace these landfills with transfer stations at most locations. Waste is then collected at the transfer stations before being transported to the regional landfill at Kings Bend.

2.5.1.2 Figure 13.2 of this document shows a trend of increasing deposits at the SRL site. The increases in solid waste material that have been deposited in the Regional Landfill since it started operating may to a certain extent be a reflection of a period of sustained economic growth experienced by the Southland Region. A number of large construction projects have occurred during this time and there has been a significant amount of industrial, commercial, rural and residential development. If economic growth in the Region slows down or levels off this could result in a decrease in the amount of construction waste being deposited at the SRL and therefore the total amount of material the facility is receiving. It is also important to recognise that the waste going into the Regional Landfill is only a portion of the total waste generated in Southland, which if better understood would assist in better understanding waste issues.

2.5.1.3 As the SRL facility has only recently started operating it may take a number of years worth of information before trends of increasing amounts of waste deposited at the facility can be confirmed. In addition the District Council's waste management Department have indicated that detailed information on the amount of material that was deposited at landfill sites throughout the District prior to the SRL commencing operation is not available. This may also make it difficult to gauge accurate trends in terms of the amounts of waste being deposited over longer timeframes.

## 2.5.2 **Waste Minimisation**

2.5.2.1 An audit of waste going to the SRL from the Southland District was carried out in November 2007. This audit revealed that approximately half of the waste going to the landfill was organic (kitchen and greenwaste) and approximately one third was made up of paper, glass and plastics. A conservative estimate noted in the District Council's Annual Plan 2008 / 2009 is that 60% of the total waste stream could be diverted from the landfill and be recycled or composted.

2.5.2.2 The Council's Long Term Council Community Plan 2006 – 2016 states that Southland District Council actively promotes and advocates waste minimisation initiatives. The District Council is currently examining options relating to green waste collection throughout the District. The Council's Annual Plan notes that the Council has consulted on kerbside recycling and/or organic collection and the possibility of a regional kerbside recycling and/or organic service is also discussed. It further notes that a scheme such as this would consolidate the Regional approach that was taken with the establishment of the Regional landfill as well as having economies of scale and cost advantages.

2.5.2.3 In the Southland District's Councils yearly Residents Satisfaction and Opinion Surveys from 2005 to 2008 residents have consistently identified recycling as a top priority. The Southland District's Long Term Council Community Plan 2006 – 2016 notes that the District Council currently operates 7 recycling centres, 3 recycling drop off centres and 2 green waste sites throughout the District and these facilities provide an important service particularly for rural areas where kerbside collection is not possible. A number of additional

recycling drop off centres have been established since this document was written. The Council's Waste Management staff has indicated that these facilities are popular and are receiving large amounts of recyclable materials.

2.5.2.4 Aside from household waste significant contributions to the amount of waste deposited at the SRL comes from commercial and industrial activities. Waste minimization initiatives targeted at the activities could be examined further. This could lead to reductions in the amounts of timber, rubble, glass, metals, paper and plastics being deposited at the SRL.

### 2.5.3 ***Waste Disposal – Permitted Activities (Farm landfills)***

2.5.3.1 Rule WAS.1 of the existing Southland District Plan allows as a permitted activity land uses involving the disposal of solid waste derived from production land farming into or onto land. This permitted activity is subject to compliance with specific criteria the complete rule is written as follows;

#### Rule WAS.1 - Waste Disposal

##### (i) Permitted Activities

*Land uses involving the disposal of solid waste derived from production land farming into or onto land is a permitted activity provided that the following criteria are met:*

- (a) *The solid waste is generated from the production land farm on which the disposal site is located;*
- (b) *No offal is disposed of;*
- (c) *No hazardous wastes or chemical containers with chemical residues are disposed of; and*
- (d) *No solid waste is placed into any waterbody.*
- (e) *No surface water enters the production land landfill;*
- (f) *No solid waste is deposited within 50 metres of:*
  - *any waterbody*
  - *any bore used for potable supply*
  - *any site protected under the Historic Places Act 1993*
  - *any property boundary.*

2.5.3.2 *Provided that* production land offal holes are a permitted activity in terms of this rule.

2.5.3.3 However, offal disposal over and above what is understood as a normal production land offal hole is not permitted by this rule.

2.5.3.4 The discharge of solid waste derived from production farming is also a permitted activity under Environment Southland's current Solid Waste

Management Plan. Environment Southland in this issues and options paper has raised some concerns about the permitted activity status of these farm landfills. In particular there is a concern that waste materials that do not meet the permitted activity criteria in particular hazardous wastes may be being deposited on some properties.

- 2.5.3.5 As farm landfills are permitted activities under the current District plan there is no formal recording or monitoring of them. If the Council receives complaints about farm landfills they are investigated and compliance with the criteria of rule WAS.1 – Waste Disposal is checked. Following site investigations resource consent may be required and/or enforcement measures may be undertaken.
- 2.5.3.6 It is important to note that the District Council has not experienced a significant number of complaints regarding the disposal of production waste on farms and has not experienced any significant problems with the operation of Rule WAS.1. While there may be an absence of information detailing exactly what types of waste are being deposited in farm landfills this does not necessarily mean that hazardous waste materials are being deposited in them.
- 2.5.3.7 It is also important to note that the depositing of hazardous wastes on farms would appear to be a counter productive management decision to make given the harmful impacts that can arise to production land. Historically there has probably been a lower awareness of the negative impact some hazardous substances can have on the environment but awareness of the potential impacts of hazardous wastes has increased significantly. Environment Southland have noted on page 6 of this document the two large agrichemical collections that have been organised within the region in 1995 – 1997 and 2005 – 2007. The experiences of Environment Southland in organising these waste collections indicate that in many instances hazardous wastes have been stored on site until an appropriate method of disposal has arisen.
- 2.5.3.8 Environment Southland has also noted that Council's should be encouraging farmers to reduce, reuse and recycle waste that may be currently deposited on farmland. The Southland District Council through the establishment of recycling facilities at transfer stations and drop off recycling centres within rural parts of the District are endeavouring to do this. As noted earlier in this paper these facilities are being used and more of them have recently been established.
- 2.5.3.9 The reasoning behind Rule WAS.1 is stated in the existing District Plan and reads as follows;

*A production farm tip contains household solid waste, burnable solid waste, vegetative matter, and non-putrescible matter (such as fencing wire). It is neither feasible nor practical for some production farming operations to use public landfill sites, either because of the distance from the site, or the size of the farming operation itself. In some instances it may be that the holding of these materials until a sufficient amount is accumulated to justify a trip to a public refuse disposal facility site could cause a greater environmental, or public health, impact than the proper disposal of them on site.*

*Therefore farm tips are considered a permitted activity, provided certain criteria are met. Any farm tip which does not meet criteria (i) or (ii) specified in the rule is*

*considered a non-complying activity. Industrial or trade premises are not included in this rule.*

- 2.5.3.10 As noted by Environment Southland earlier in this paper, there are now more transfer stations located throughout the Region which farmers are able to take their rubbish to. There are also private contractors who are able to collect waste from rural areas and the use of these waste transfer stations and private contractors should be encouraged. Environment Southland has noted that the opening times of the transfer stations may not suit farmers and issues such as this could be looked at more closely. The District Council does also provide for some rural waste collection through designated drop off routes and a number of rural property owners have taken advantage of this service.
- 2.5.3.11 The reasoning behind this existing farm tip rule is still relevant given the large size of the Southland District and the large size of some farms. The larger and more isolated farms in particular are more likely to experience logistical and cost difficulties accessing waste transfer stations. The environmental health issues associated with the storage of waste on farms prior to disposal are also still relevant. Another factor to consider is the potential costs of collecting farm waste if farm landfills could no longer be utilised. Waste would then have to be transported to transfer stations before being transported to the SRL. The collection of waste from existing transfer stations is subsidised. Subsidies are required as the distances that waste has to be transported in the Southland District and the way it is transported is expensive. Some transfer stations are able to compact waste before transport and this reduces the number of truck movements required to transport waste to the SRL. Where compacting is not viable a higher number of vehicle trips to the SRL are required. Transfer stations that service smaller townships do not have compactor services and tend to be highly subsidised. If large amounts of waste from farms throughout the District were deposited at these transfer stations the economic costs are likely to be significant.

#### 2.5.4 ***Reverse Sensitivity Issues***

- 2.5.4.1 Solid waste collected within the Southland District is deposited at the privately owned and operated SRL site. Since the SRL commenced operating the Southland District Council has closed all its landfill sites and now operates 7 transfer stations with recycling facilities. The possibility of reverse sensitivity issues arising in relation to the operation of these facilities and the SRL needs to be identified. Residential development and other noise, odour and dust sensitive developments should ideally be positioned well away from these existing facilities.

#### 2.5.5 ***Problem Wastes***

- 2.5.5.1 The District Council along with others councils has experienced problems with disposal of certain waste products. The disposal of car bodies is one good example of this and large numbers of 'wrecked' or unwanted vehicles can build up over time on certain properties and in certain areas of the District. Many of these vehicles are also dumped, often in remote or isolated parts of the District. Appropriate disposal methods such as car crushing are available at key transfer

stations across Southland however costs associated with transporting these car bodies to where crushing services are available can be prohibitive. The value of these crushed vehicles may also be dependant on market rates that mean at times it may not be economically viable to have them crushed and disposed of appropriately. It is important to recognise problem wastes such as this and there may be a need to examine solutions and appropriate disposal options on a region wide basis. Any increased user charges for the use of transfer stations are likely to increase problem wastes such as car bodies as well as problems associated with illegal 'fly-tipping'.

## 2.6 **The following are Hazardous Substance issues from a regional perspective**

### 2.6.1 ***HSNO ACT 1996***

2.6.1.1 During the drafting of Southland's Regional Policy Statement over a decade ago, the HSNO Act was in its early development stages. Since the RPS became operative, the HSNO Act has come into force creating a much more comprehensive framework for the management of hazardous substances throughout their lifecycle. Once brought under the HSNO control scheme, the HSNO Act places minimum controls on hazardous substances that are specific to their hazards and that cover their entire lifecycle. These controls are the same irrespective of location, and constitute minimum performance requirements that have to be met under the Resource Management Act (RMA). Therefore, a new issue for Southland is that Councils are able to place additional and/or more stringent requirements on the storage, use, disposal or transportation of hazardous substances for the purposes of the RMA (to meet site-specific requirements or location characteristics). Additionally, the HSNO Act amended the RMA, through the insertion of a definition of hazardous substances, and also changed RMA s62 so that now regional policy statements are required to state the objectives, policies and methods for the control of the use of the land in regard to avoiding or mitigating the effects of the storage, use, disposal or transportation of hazardous substances.

### 2.6.2 ***Hazardous Wastes***

2.6.2.1 The RPS considers hazardous wastes to be a subset of hazardous substances and therefore does not provide much direction in dealing with hazardous waste. It is important to note that the HSNO Act does not control all hazardous wastes, but only those defined as hazardous substances under the Act. Therefore, hazardous wastes still need addressing and are an emerging issue for Southland. Central government has developed many tools since the RPS became operative to manage hazardous wastes. Ministry for Environment set up a policy framework to reduce and safely manage hazardous wastes in New Zealand. The hazardous wastes policy framework covers seven main elements:<sup>21</sup>

1. the safe treatment and disposal of 'historic' hazardous wastes such as those associated with contaminated sites and unwanted agricultural chemicals;

---

<sup>21</sup> Policy Framework for Reducing and Safely Managing Hazardous Wastes in New Zealand can be found at <http://www.mfe.govt.nz/issues/waste/hazardous/policy-framework/index.html> as at 1 October 2008.

2. incentives to reduce the generation of hazardous wastes and to recover and reuse materials that otherwise would be wasted;
3. information about the generation of hazardous wastes and their lifecycle, tracking them through to safe disposal, recovery or recycling;
4. the safe storage and transport of hazardous wastes;
5. the safe treatment and/or disposal of hazardous wastes;
6. international obligations for the safe management of hazardous wastes;
7. clarification of the responsibilities of different parties for the reduction and safe management of hazardous wastes and for monitoring policy implementation.

2.6.2.2 Central government also has in place specific elements or tools contributing to the management of hazardous wastes which include:<sup>22</sup>

- a national working definition of hazardous waste
- the NZ Waste List
- Landfill Waste Acceptance Criteria
- Guidelines for the Management of Hazardous Waste
- a tracking system for liquid and hazardous waste (WasteTRACK)
- the Liquid and Hazardous Waste Code of Practice
- priority hazardous wastes
- a mix of regulatory and non-regulatory tools to address the different aspects of hazardous waste management

2.6.2.3 The NZWS also includes targets, which are appended, for the management of hazardous waste. The challenge is now for Southland to use these tools and any others to implement effective management of hazardous waste in the region.

### 2.6.3 ***No Recognised facilities for treatment and disposal in Southland***

2.6.3.1 Hazardous substance disposal is a daily necessity, ranging from removal of paint and detergent from residential sites to agricultural containers from farms. When substances are disposed of in a controlled manner, environmental risks can be avoided or mitigated. One important issue for Southland is there are no recognised facilities for the treatment or disposal of hazardous substances that cannot be disposed of to landfill. Without a regional storage or disposal system or collection and disposal strategy, the ad hoc collection and storage of hazardous substances has the potential to have greater adverse effects than no collection. Currently anyone can drop off any kind of hazardous substances at certain transfer stations but there is no reconciliation of these substances until they are collected. The substances could end up mixing or sitting beside other hazardous substances posing a risk to health and the environment.

---

<sup>22</sup> These tools can be found at <http://www.mfe.govt.nz/issues/waste/hazardous/index.html> as at 1 October 2008.

#### 2.6.4 *Contaminated Land*

2.6.4.1 The Regional Policy Statement briefly touches on the issue of contaminated land in its section on hazardous substances. While it is mentioned in the RPS, it can still be considered an emerging issue because there has not been much management of contaminated land in Southland and it is now a very important issue. Since the release of the RPS, central government has significantly increased its work in the area of contaminated land and accordingly has prepared tools for its management. In the past 10 years, the Ministry for the Environment has undertaken a work program to address the risks from land contamination. The result has been:<sup>23</sup>

- a series of Contaminated Land Management Guidelines. These were developed in partnership with regional councils and unitary authorities;
- guidelines that address contaminants from specific industries or activities contain soil guideline values for specific contaminants of concern for gas works, petroleum hydrocarbon, timber treatment and former sheep dip sites.

2.6.4.2 Government has made funding available from the Contaminated Sites Remediation Fund to assist regional councils to encourage investigation and remediation of contaminated sites. To qualify, the sites must pose a known or potential risk to human health and the environment within their regions. Contaminated sites that are posing or likely to pose a high risk to human health, and which are prime candidates for the Contaminated Sites Remediation Fund are those that are:

- located in environmentally or culturally sensitive areas; or
- where the landowners do not have the financial resources to undertake the work themselves but want to do something about the problem.

2.6.4.3 The 2005 amendment to the RMA gave regional councils a clearer role for contaminated land management: “the investigation of land for the purpose of identifying and monitoring contaminated land.”

#### 2.6.5 *Central Government Direction on Contaminated Land Management for Councils*

2.6.5.1 Ministry for Environment currently has commenced work on a program that will address key issues and gaps that exist in how New Zealand manages contaminated land and will provide more central government leadership and direction to councils managing contaminated land. The program aims to provide consistency in managing contaminated land across councils. So far MfE has identified 10 main issues grouped into 3 categories:

##### 1. **Functional and legislative issues**

These issues relate to who does what, who is liable for contaminated land, and how contaminated land is defined. Clarity on these issues is

---

<sup>23</sup> Guidelines can be found at <http://www.mfe.govt.nz/issues/hazardous/contaminated/> as at 1 October 2008.

important to enable councils to consistently and effectively manage the effects of contaminated land. The main functional and legislative issues are as follows:

- *Roles and responsibilities* - the main agencies are uncertain how they should work together, and what their roles should be.
- *Resource Management Act (RMA) definitions and controls* - practitioners have differing understandings of what contaminated land is. Council planning and regulatory controls are also inconsistent.
- *Liability* - there is uncertainty over who is responsible for cleaning up historical contamination because there is no clear liability regime for historical contamination (i.e., contamination that was caused prior to the enactment of the RMA in 1991).

## 2. **Technical issues**

These are diverse, but are generally associated with the non-regulatory tools (e.g., methods, systems, guidelines and information) practitioners use to help them in their roles and functions. These tools serve an important role in ensuring that best practice is shared and national consistency is promoted. The main technical issues are as follows:

- *Identifying land and gathering information* - councils face difficulties identifying contaminated land and obtaining information on land.
- *Managing information* - databases or registers are often inconsistent between regional councils and district/city councils, and in some cases are absent.
- *Use of guidelines* - there is inconsistent and variable use by practitioners of contaminated land guidelines.
- *Remediation and disposal* - limited information on techniques to remediate sites, the high cost of remediation, and a preference by industry and developers for remediation by offsite disposal were seen by submitters as the main barriers to the remediation of land.
- *Diffuse sources* - there is often a lack of understanding about soil contaminants from common urban and rural practices (i.e., soil contamination from common contaminants used in cities and towns, and in farming and horticultural practices).
- *Ecosystem guidance* - guidance is needed on the effects of soil contaminants on terrestrial ecosystems.

## 3. **Capability and capacity issues**

These issues relate to the scarcity of resources and expertise that are used in managing contaminated land by local government, industry and consultancies. They directly affect the quality of outcomes and the degree to which the risks of contaminated land are addressed.

**Table 1: MfE work program, issues addressed and their relative priority**  
 High priority means work will take place between 2007 and 2009

No.	Project	Main issues addressed	Priority
1.	Nationally consistent methods for deriving soil contaminant levels and numbers for triggering defined management actions (NES and guidance)	Use of guidelines (T) RMA definitions and controls (F)	High
2.	Nationally consistent land-use and subdivision rules (NES or guidance)	Roles and responsibilities (F) Capability and capacity (C) Identifying sites and gathering information (T) Managing information (T)	High
3.	Contaminated Sites Remediation Fund	Capability and capacity (C) Identifying sites and gathering information (T)	High
4.	Roles and responsibilities protocol	Roles and responsibilities (F) RMA definitions and controls (F)	Medium
5.	Assistance in setting up good information management systems	Managing information (T) Identifying sites and gathering information (T)	Medium
6.	Require tracking of contaminated soil and waste using WasteTRACK	Remediation and disposal (T)	Medium
7.	Investigate options for addressing liability barriers	Liability (F)	Medium
8.	National information	Managing information (T)	Medium
9.	Guidance (new and revised)	Use of guidelines (T) Remediation and disposal (T)	Low
10.	Accredited practitioners	Capability and capacity (C)	Low

Notes: Letters in parentheses denote the issue group as follows: (T) = technical; (C) = capability and capacity; (F) = functional and legislative. NES = national environmental standard.

2.6.5.2 MfE's work program has commenced with the first phase. This phase involves developing Soil Guideline Values (SGVs) and information on how to apply them in the form of guidelines and a National Environmental Standard (NES). These guidelines will help to determine soil contaminant levels and numbers for triggering defined management actions. Two groups have been formed to put together the SGVs—Toxicology group and the Technical group. The Technical group determines the method for deriving and applying SGVs. An Australian toxicologist will review the values that are produced from the toxicology group. So far the process is 90% complete on priority contaminants\*, and 60% complete on SGVs policy and how to apply the guidelines. MfE plan to release a draft of the SGVs and information on how to apply them in December 2008.

*\*1<sup>st</sup> round priority contaminants have been defined as: As, benzene, BaP, Cr Cu, dieldrin and DDT. Second round (June/July 08/09) B, dioxins, TPH, Pb, HG, PCP(?) (not confirmed).*

2.6.5.3 After the SGV drafts are released, there will be an 8 month review period and then the NES will be initiated. Currently, there are still issues around the soil guideline values in the sense that there are no guidelines for environmental health; they only relate to human health.

## 2.6.6 *New Zealand Waste Strategy*

2.6.6.1 The New Zealand Waste Strategy (NZWS) published in 2002 set targets for the management of waste and contaminated land. Presently, those targets are under review, but MfE has announced some revised targets for the management of contaminated land. The new goal in the NZWS for regional councils is to align with s.30 RMA: the investigation of land for the purposes of identifying and monitoring contaminated land. In order to meet this goal a number of objectives have been set:

- Objective 1: To establish a HAIL database  
By 20XX, all regional councils will have a database in which to record their HAIL regional assessments
- Objective 2: To identify HAIL sites  
By 20XX, all regional councils will have assessed their region for HAIL sites
- Objective 3: To prioritise HAIL sites for action  
By 20XX, all regional councils will have applied the Rapid Risk Screening system (in accordance with MfE Guideline No. 3) to all sites identified, and will have developed an action plan to investigate those identified as high risk.
- Objective 4: To investigate, manage and/or remediate high risk sites  
By 20XX, all regional councils will have investigated all high risk sites and, if determined necessary, developed an action plan with timeframes for these sites to be managed and/or remediated
- Objective 5: To record and make available information on contaminated and potentially contaminated land  
By 20XX, all regional councils will be updating their HAIL database with information obtained from contaminated site identification, screening and investigative work, and be sharing this information with territorial authorities in their region.

2.6.6.2 The goal for territorial authorities (TAs) is to align plans with s.31 RMA: the prevention or mitigation of any adverse effects of the development, subdivision, or use of contaminated land. To meet this goal TAs should:

- Objective 6: Ensure safe land use  
By 20XX, all territorial authorities will have policies and rules for the prevention or mitigation of any adverse effects of the development, subdivision, or use of contaminated land. (s.31 RMA)

2.6.6.3 The arrival of the NES may change sections 30/31 of the RMA from a *function* to a *duty*.

- 2.6.6.4 As with hazardous substances and waste, a new challenge is for Southland to align with the direction set by central government and pick up the pace when managing contaminated land in the region.

### **3.0 Options for addressing issues**

#### **3.1 Solid Waste Issues**

- 3.1.1 There are a wide range of possible solutions that could ‘give effect’ to the issues already identified in the Regional Policy Statement and to the emerging significant issues. The following identified solutions are by no means exhaustive or set in stone. Rather they are possibilities that could be implemented in Southland in order to address the ‘waste problem.’ Some may be harder to implement than others, but that should not be a means for disregarding the option. Addressing the waste problem requires bold and innovative approaches that may not have been trialed before in Southland or in New Zealand. As discussed before, there is a strong link between resource consumption, economic growth, and an increase in solid waste; it will be a huge challenge to decouple those. It is important that a regional document provides ways to address this challenge. The ideas presented are open for consideration and comment and additional ideas and possible solutions are always welcomed.

#### **3.2 Southland Regional Waste Strategy**

- 3.2.1 The New Zealand Waste Strategy (NZWS) includes national targets for reducing solid waste streams, but their achievement is significantly dependent on the actions of local authorities and other parties. The Ministry for Environment assumed that action would be taken by local authorities to set their own targets in ways that contribute to the national targets. The National Council of Local Government New Zealand advised local authorities to adopt the strategy as the basis for their programmes, policies and plans.

- 3.2.2 One welcome initiative, encouraged through the NZWS, has been the role played by the 3 TA’s of Southland and regional councils in other areas in developing regional approaches to waste management planning. Waikato, Taranaki and Bay of Plenty regional councils and the 3 TA’s of Southland have facilitated regional approaches to waste management planning directly involving the territorial authorities within their regions. These initiatives will, for instance, enable co-ordinated projects on waste data collection and public information. The ability to measure progress towards targets at a regional level will make it easier to measure progress nationally.

- 3.2.3 Implementing a Southland Regional Waste Strategy, similar to those of many other regions, which adopts and regionalizes the targets in the NZWS is one way to help Southland reduce its generation of solid waste. The NZWS targets for reducing solid waste are appended. They are currently under review so many are out of date, but the Southland Regional Waste Strategy “regionalized” the targets and set target dates and goals that are practical for Southland. The strategy also includes targets that Southland thinks are important but are not contained in the NZWS. The strategy will ensure consistent waste management goals for the region by coordinating waste projects and plans

among the territorial authorities and regional council. The RPS could include as a method the strategy's implementation. This would give the strategy more "teeth" and ensure the agencies are working towards reaching the goals set.

### 3.3 **Monitoring Waste Data**

3.3.1 While there have been a few studies into the volume and composition of Southland's solid waste, these have been "one-off." It is important to monitor the volume/type of solid waste/source of waste in Southland, on a consistent and frequent basis, in order to measure progress towards meeting targets. The Waste Minimization Act will require reporting information that will be published on a national basis, as data from individual landfills will be commercially sensitive and will not be released, but not in the case of Southland given it is controlled by the 3 TA's. Territorial Authorities will not get the information, but they can create bylaws to obtain it. MfE has not yet determined the type of information to be collected. There is a "quick and dirty" information collection method under review, lumping waste generation into loose categories from households, C&D etc. MfE will ask for input into this process. A way to effectively measure progress towards meeting targets is to gather the information (once MfE determines what it will be) from the territorial authorities by advocating for them to create a bylaw to obtain that information. Part of the Wastenet councils' function is to gather data and report to the councils in the region. Environment Southland and the Wastenet councils could work together to maintain an effective monitoring system which tracks material within the waste stream; assesses the impacts associated with the production, use, reuse, recycling and disposal of waste materials; and provides for any information collected to be assessed and incorporated into a public regional information database.

### 3.4 **Access Funding**

3.4.1 Central government's new waste levy will provide funding for waste minimisation methods. The levy will generate funding that will go into a contestable fund accessible to TA's and Regional Councils and private organizations and 50% of the funding will be distributed to territorial authorities based on population. The RPS in conjunction with the RWMP could be a good way to ensure territorial authorities and Environment Southland take full advantage of using these funds to initiate new waste minimisation projects, continue and expand existing ones, and ensure projects meet the criteria to access the funding.

### 3.5 **Economic Incentives**

3.5.1 There have been calls from various commentators, in New Zealand, Australia and overseas, for the integration of the cost of natural resources into the economy. Transferable permits, environmental user charges and other types of economic incentives are increasingly being used overseas for management of natural and physical resources.<sup>24</sup> In terms of reducing solid waste, economic incentives discourage excessive resource use and waste generation; stimulate

---

<sup>24</sup> Jim Sinner and Guy Salmon, "Creating Economic Incentives for Sustainable Development" A Report to the New Zealand Business Council for Sustainable Development. November 2003.

cost-saving innovation; and in many cases, create sustainable business opportunities. Properly designed, economic incentives reward sustainable practices, and prevent unsustainable practices from undercutting those who take a more responsible approach.

3.5.2 Subsidising landfills from council rates is still a common practice. In this case the incentives to reduce waste or recover resources from the waste stream are limited or absent. Fortunately in Southland the territorial authorities do not direct any rates towards subsidising the regional landfill. However, some councils still meet some or all of the costs of waste collection and disposal through a uniform annual charge levied on ratepayers. This gives waste generators little incentive to reduce the waste they dispose of, and is unfair to those who generate little, or recycle and compost their wastes. In a similar manner, the Southland territorial authorities do not operate on a full user charge cost recovery model for transfer station operations because of the very high costs (absence of economies of scale) when dealing with small quantities and in remote areas such as Stewart Island. Therefore the councils have a policy of charging uniform, consistent transfer station fees throughout the districts and funding the shortfall (i.e. expenses less revenue) through waste rates on the basis of general good. In addition, citizens are charged a uniform fee for the cost of a large wheelie bin. This encourages Southlanders to “fill it up” in order to get their money’s worth.

3.5.3 An option to remedy the inability to operate on a full user charge cost recovery model is to consider the Danish approach to waste management. Denmark shares numerous commonalities with New Zealand. It has a similar population (5.5 million), and major industries like high-tech agriculture, meat, dairy, fish and chemicals. Danes also share with New Zealanders an appetite for consumption and the ensuing waste. Both Denmark and New Zealand produce around 2 tons of waste per person per year. During the 1990s, 18 Danish municipalities reduced the fixed charge per household and introduced a per-kg fee on ‘mixed’ household waste. Separated organic waste may carry a lower fee per kg, while recyclables are free. The bins are weighed by suitably equipped collection trucks, which also identify the waste-bins electronically for bill generation. This system more efficiently passes on the cost of disposal (amplified by the landfill tax) to the generation source – the household. Because people pay more for throwing away low value mixed-waste, this provides an incentive to separate materials, thus providing better quality waste streams for recycling. In response, households under the pay-per-kg system have not only increased their recycling rate, but also reduced their total waste output. Most citizens believe that a weight related fee is an advantage to them, and that it is the fairest way of calculating the refuse collection fee. Pricing waste collection correctly reduces waste, encourages recycling and saves people money – a true win-win.<sup>25</sup>

3.5.4 For waste collection services this would require either weight, volume or lift charges for each receptacle as it is emptied. As yet this has not been successfully implemented in Australasia and the additional costs to the overall service could be significant – possibly outweighing the variable costs savings. A weight

---

<sup>25</sup> Danish Case Study found in report to New Zealand Business Council for Sustainable Development, *ibid.*

based system would need to have a significant portion of the charge fixed to provide revenue stability to support the fixed costs of providing the services and a smaller portion of the costs say 25% variable depending on weight or empty. To date this has not been considered viable by the 3 TA's of southland because of the poor reliability of weighting technology and the relatively high costs of the weighing/detection and billing systems combined with the lower production rates where weighing occurs – slowing the collection and emptying process) However as these technologies improve the appropriateness of them to satisfy these objectives will be re-evaluated.

3.5.5 Councils in Southland are trying to encourage waste minimisation, by encouraging the compost of green waste, food scraps and paper on the property site and to use the nearest recycling facilities. To support this, charging by weight will be considered when the technology is sufficiently cost effective and more reliable. A possible way forward is for Environment Southland and the territorial authorities to support research into finding suitable technology to support user-pays principles for the refuse collection system that provide some incentives for less use of the service is fair to those reducing waste. The territorial authorities will implement the suitable refuse collection system. An additional option is to use subsidies as a positive incentive to divert organic material from landfill. Environment Southland could work closely with the Wastenet councils and industry to find ways to subsidize compost bins/systems and composting workshops. Any barriers to encouraging households and industry to divert more green waste, food waste and commercial organic waste from the landfill, such as prohibitive costs to drop off greenwaste at transfer stations, could try to be removed.

### 3.6 **Alternatives to Organic Waste Disposal**

3.6.1 Providing “carrots” in the form of rates rebates or similar to those actively involved in composting, worm farming or recycling projects, and demonstrating their commitment to reducing waste/increasing efficiencies is another option to reduce organic waste deposited in landfills and the generation of waste. There are several options for the re-use of organic waste and to encourage new business opportunities for reducing waste which could be trialed at the same time, for example:

- 1) *electricity generation*: this can be done from landfill or from biomass, using methane. AB Lime landfill anticipates using the methane from the landfill, and is looking to do so in the next 12 months. They have investigated the use of landfill gas for energy generation quite extensively, but also want to investigate the other uses for the gas that are on-site (to meet the in-house energy needs). They need to get the landfill to a point where they can “cap” some of it off and install an active gas extraction system. Electricity generation can also happen, though, through small-scale generating plants, which could be used to power milking sheds, local community facilities or similar. This could be undertaken in conjunction with electricity generation and/or supply companies;
- 2) *agricultural composting*: industrial-scale composting suitable for pasture.

- 3) *commercial composting*: production of compost for sale for suburban gardens etc. This could be branded as Southland Goodness or similar, and encourage Southlanders to buy local.
- 4) *education*: get the message out there that it can be done, and for all the right reasons
- 5) *research and development*: think locally, research locally will be important—for example, a joint effort between local authorities, SIT and the private sector. Tradable credits may apply here by promoting the development of local technologies, or the application of overseas technologies for local conditions (i.e. charging by weight refuse collection system), whereby those who take up the technology would earn the credits.
- 6) *branding*: those who take part in the scheme should be able to promote themselves as ‘green’ friendly or similar, as verified by ES/Venture Southland/SIT etc.

### 3.7 Encourage Business Sustainability

3.7.1 Opportunities exist to support and work with local businesses in the region on improving their waste management and reducing their waste generation through such services as the Southland Waste Exchange, a unique service that helps businesses connect their unwanted materials with new owners through a web-based and phone forum. Currently, Environment Southland, in conjunction with WasteNet Southland, runs the Quick Steps to Sustainability Programme for Southland Businesses. The free programme provides the participating business with an environmental audit and recommendations for improving the businesses resource efficiency. The business is assessed in 6-9 months time to see how they are progressing with the recommendations. Participants receive a certificate for participation, which is upgraded to a certificate for action for any actions they take. Businesses can also attend a three-hour sustainable business training workshop at Venture Southland. This is followed up by a two-hour on-site visit with a sustainability consultant, to assess areas of their business where there are opportunities for sustainability. The Sustainable Tourism South charter programme is a sustainability programme for tourism operators. Operators assess themselves against the charter, have a site visit and assessment undertaken by a consultant and then operators develop their own unique action plan. Members look at their effect on the environment and the community whilst taking into account their staff, their clients, themselves and their financial bottom line. Ongoing support is provided by Venture Southland to implement action plans and there are networking opportunities with other members.

3.7.2 Environment Southland and the region’s Territorial Authorities could continue supporting these programs and work to strengthen and expand these types of initiatives. For example, there may be opportunity to expand local business initiatives such as Southland Enterprises and Bond Contracts which operate recycling for the region. It would be appropriate to advocate and/or provide any assistance, if feasible, to expand the curbside recycling to include plastics 1-7. Another option is for all the councils in the region to work with local

businesses towards phasing out the use of plastic shopping bags and offer reusable cloth bags. These types of programs can tie in with the use of economic incentives as well. The Irish plastic bag levy is a good example. In Ireland, a levy was set at €0.15 or NZ \$0.30 per plastic bag at point of retail sale, on the basis that this would be sufficiently high to give most consumers pause for thought and motivate them to bring their own 'permanent' reusable shopping bags with them. Retailers were initially concerned that they would be seen as profiteering. The solution, resulting from an extensive consultation process with the Irish Business and Employers Confederation, was a strong publicity campaign from the government conveying the reasons for introducing the levy. As a result of the levy, plastic bag usage in Ireland has dropped some 90%. Overall, consumers are very much in favour of the levy. Surveys have shown that a majority feel that the levy has enhanced the convenience at checkouts, while improving the quality of the environment by noticeably reducing plastic bags. The levy has also raised the public's awareness of the environment – many people report feeling 'guilty' when purchasing plastic bags. For retail firms, the revenue collection and reporting was easily integrated with their collection systems for Value Added Tax (akin to New Zealand's GST) so net additional costs were modest, and more than offset by the reduced cost of plastic bags. Overall, retailers found the effects of the levy to be neutral to positive. Revenue from the levy goes into an Environmental Trust Fund to support other waste reduction and resource efficiency programs.<sup>26</sup> The territorial authorities could implement a similar levy through the creation of a bylaw.

- 3.7.3 It will be important to ensure that any such potential programme was carefully framed to highlight the reasons why it is being considered and the environmental benefits.

### 3.8 **Illegal Tipping**

- 3.8.1 As acknowledged earlier, illegal tipping is problematic for the Southland region. There is also concern that with the introduction of a national waste levy, illegal tipping will happen more frequently. Reducing the amount of waste generated will have a trickle down effect to the extent of illegal tipping, but it is likely to still occur. Environment Southland and the territorial authorities could take a proactive approach investigating and monitoring illegal tipping incidents to find out the causes behind them. The community could also become involved and help to notify councils of incidents that would otherwise go unnoticed.

### 3.9 **Farm Landfill Surveys**

- 3.9.1 An option to determine if farm landfills cause adverse effects to the environment or could potentially cause them is to find out more information in the form of a farm landfill survey. Environment Southland could conduct site visits to farms and ask them a few questions: why they prefer on-farm dumps, what they are putting in them, what Environment Southland could do to assist, etc. Environment Southland could coordinate with the territorial authorities to disseminate information or hold workshops in the communities to educate

---

<sup>26</sup> Irish Plastic Bag case study found in report to New Zealand Business Council for Sustainable Development, *ibid*.

people about the environmental effect of the dumps, what is possibly acceptable to put in the dump, *if* they can burn it, places they can take rubbish, and other options for reusing, recycling, or composting, etc.

### 3.10 **Iwi Resource Management Plan**

3.10.1 The Iwi Resource Management Plan for the region, Te Tangi a Taurira, is another way forward available to minimize the adverse affects from solid waste. Integrating the policies within the Plan, especially those on Solid Waste Management, into planning and implementation frameworks will enhance relationships, including understanding tangata whenua values and policy and assist communities in achieving good environmental outcomes and healthy environments. Environment Southland and the territorial authorities can work together to put into practice the provisions contained in Te Tangi a Taurira.

### 3.11 **Discharge Plan**

3.11.1 The Regional Discharge Plan process is a procedure currently taking place to review the Regional Effluent Land Application Plan and the Regional Solid Waste Management Plan and combine them with the Proposed Regional Water Plan to create one single plan—the Discharge Plan— which will deal with all discharges to land and water. It is important for the review of the Regional Solid Waste Plan to ‘give effect to’ the emerging resource management issues identified in the RPS. The Discharge Plan could be an important tool to manage hazardous substances, contaminated land and farm landfills. The Discharge Plan will be implemented by Environment Southland. A detailed discussion of possible plan provisions and rules to be included in the Discharge Plan can be found in Appendix 3.

### 3.12 **Options and Solutions from Southland District Council’s perspective for Solid Waste**

#### 3.12.1 ***Southland Regional Landfill***

3.12.1 The establishment of the SRL ensures that waste in Southland is being deposited in a modern facility with very high environmental standards. Another major advantage of the establishment of a regional landfill site is that it has simplified the analysis of waste within the Southland region. Detailed information on exactly what is being ‘thrown away’ within the region and deposited at the SRL can be obtained and this can guide waste management decisions. For example monitoring of waste at the facility has shown that approximately 42% of waste received is organic material and 21% is paper and plastics. This organic waste could potentially be reused as compost while large amounts of the paper and plastics could be recycled. Waste minimisation targets can determine if waste reduction, reuse and recycling policies and measures are being successful.

#### 3.12.2 ***Waste Minimisation***

3.12.2.1 A region wide kerbside recycling and organic green waste collection service is one waste minimisation measure that could potentially result in significant

reductions in the amount of material being taken to the Regional Landfill. The collection of compostable materials such as food scraps, organic material, garden waste and kitchen waste (which is estimated to make up 42% of the total waste stream) from the landfill has a number of advantages. It would significantly decrease the amount of material deposited at the SRL and therefore could extend the life of this landfill facility. Another advantage is that by composting this organic waste material a valuable end product is produced. Encouraging people to compost their own compostable waste at home would also have cost and environmental advantages. If people compost on their own properties this removes the need for green/organic waste to be transported to a regional facility and produces a beneficial product that can be used on the same property. The use of worm farms has similar advantages.

3.12.2.2 Strategies to encourage reductions in the amount of waste being deposited at the landfill from the construction industry could be one way of reducing the amount of waste being deposited at the SRL. Timber, rubble, glass, metals, paper and plastics are all recyclable materials and industry targeted information or programmes could be one way of reducing the amounts of these types of waste.

3.12.2.3 Within Southland District there are currently a small number of consented private cleanfill disposal sites, which are consented to receive non-hazardous cleanfill materials. A more comprehensive network of such sites could also lead to reductions in waste volumes at the SRL without significant adverse effects provided they are suitably managed and monitored. More detailed monitoring of these cleanfill sites would be necessary to assess the extent of any non-clean fill entering them and the quantities of waste going to them.

### 3.12.3 *Farm Landfills*

3.12.3.1 As already suggested by Environment Southland in this report a good starting point in dealing with waste issues and farm landfill sites would be a detailed information gathering process similar to those conducted by other regional councils. Once this information has been obtained the appropriateness of the permitted activity status for farm landfills could be assessed. The Southland District Council would be in favour of retaining the permitted activity status of these farm landfill sites in the immediate future. The criteria of this rule could be strengthened / modified if there are specific problems.

3.12.3.2 In order to encourage landowner compliance, it would be sensible to rationalise Regional/District rules relating to on-farm landfills to minimise unnecessary duplication of consent processes. For example retaining permitted activity status with a much more detailed list of permitted activity criteria may be an option worth closely considering, along with an associated landowner / stakeholder education programme.

### 3.12.4 *Problem Wastes*

3.12.4.1 The problem associated with the disposal of silage wrap is one example of a problem waste where a programme has been developed to address the issue.

The Southland Enterprises silage wrap scheme as discussed earlier in this paper provides a useful example of a waste minimisation approach.

### 3.12.5 **Education / Information / Monitoring**

3.12.5.1 The Southland District Council as suggested by Environment Southland in this document would be supportive of the development of Best Management Practice (BMP) guidelines relating to farm landfills. Raising public awareness of the wastes that should not be deposited on production land and working with rural communities in researching the issues relating to this form of waste management would be required as part of this process.

3.12.5.2 The establishment of the group known as joint waste management council Wastenet consisting of ICC, GDC and SDC has increased public awareness of waste issues in the Southland region as well as the availability and amount of information available. Continued funding and support of this region wide initiative should continue. The establishment of websites such as the [wastenet.org.nz](http://wastenet.org.nz) Southland site is a proactive way in which to get information out to the public about waste issues in the region. Education programmes through the print and television media, in schools and for businesses will also continue to raise awareness of waste management issues and help to inform the public about what is happening with waste issues in the Southland District and Southland Region. Publicity regarding the amounts and types of waste being deposited at the SRL as well as the amounts and types of waste being reused and recycled could help shape peoples behaviour and attitudes towards waste.

### 3.13 **Options for addressing Hazardous Substances Issues**

#### 3.13.1 ***Clarify Roles and Responsibilities***

3.13.1.1 The management of hazardous substances and waste is very complex involving many agencies that have different roles and responsibilities. The Regional Policy Statement could be used to provide clarification of roles and responsibilities of the different agencies involved. For example, the RPS could provide that in accordance with s 62(1)(i) of the RMA, local authority responsibilities for the management of hazardous substances in the area are as follows:

- (a) the *regional council* shall be responsible for developing objectives, policies and methods to control the use of land for the purpose of preventing or mitigating the adverse effects of the *disposal* of hazardous substances;
- (b) *territorial authorities* shall be responsible for developing objectives, policies and methods to control the use of land for the purpose of preventing or mitigating the adverse effects of the *storage, use or transportation* of hazardous substances.

#### 3.13.2 ***Align with HSNO Act***

3.13.2.1 Because of the passage of the HSNO Act and amendments to the RMA, the RPS, regional plans and district plans will need to ensure that they are consistent with the legislation and make it clear that:

- the HSNO Act's definition of hazardous substances should be included in definitions of 'hazardous substance' where these are contained in plans (the RMA definition of hazardous substances 'includes but is not limited to' the HSNO definition - it can be broadened to cover other materials not covered in the HSNO Act);
- territorial authorities retain primary responsibility for hazardous substances;
- the HSNO requirements for hazardous substances, are minimum standards (i.e., the bottom line);
- plans become an additional mechanism that control hazardous substances on a site-specific basis, over and above the minimum controls set by the HSNO Act.
- plans can set requirements for matters not addressed by the HSNO Act, such as most (but not all) hazardous waste, infectious waste, by-products, radiation and contaminated sites; and
- plans set requirements for ensuring the integrated management of natural and physical resources that arises on top of the HSNO controls for hazardous substances, including emergencies.

### 3.13.3 *Hazardous Substances Protocol*

3.13.3.1 Given that activities of hazardous substances throughout their lifecycle fall within the management responsibilities of different agencies it is important to work with territorial authorities for efficiencies and consistency on information management. Storage and disposal of hazardous waste is difficult because often there are very limited safe options available, but we have a duty to protect air, land, coast and water from contact with hazardous substances and waste. The Hazardous Substances Protocol developed earlier with Environment Southland, the three territorial authorities and Public Health South could provide a good starting point to coordinate hazardous substance and waste management and establish proper storage, treatment and disposal facilities. The Protocol has three objectives:

- to establish a procedure for identifying appropriate reuse or disposal options for “hazardous waste” collected at source, at landfills or stored in hazardous waste storage facilities.
- to co-ordinate and advise the public on the safe, cost effective and environmentally responsible reuse or disposal of collected or accumulated hazardous waste.
- to investigate and implement (initially on a trial basis) appropriate infrastructure and systems in Southland to mitigate the risk of adverse health, economic and environmental impacts of hazardous waste.

3.13.3.2 This protocol could extend to include the Hazardous Substance Technical Liaison Committee, which is a committee overseen by the NZ Fire Service that meets quarterly to discuss the management of hazardous substances, mainly in an emergency environment.

### 3.13.4 *WasteTRACK*

3.13.4.1 Gathering information and tracking hazardous substances and waste in the region will be important for effective management. Advocating for territorial

authorities to require the use of WasteTRACK through their trade waste bylaws could be an efficient and useful tool to fill in the knowledge gap of amounts and movement of hazardous wastes in the region. WasteTRACK is an internet based database which consolidates manifest, facility and carrier data to track liquid and hazardous wastes from generation, through transport to treatment or disposal. WasteTRACK is administered under contract to the Ministry for the Environment and is available to those businesses that are operating in accordance with the Liquid and Hazardous Waste Code of Practice or are required to use it to meet council requirements. WasteTRACK offers a number of benefits to councils. The reports within WasteTRACK contain a lot of valuable information on waste movements. The system has been modified to report on activities within city, district and regional council boundaries. The independent verification process within WasteTRACK requires that treatment plants to approve and sign off the wastes they receive. The data within WasteTRACK also allows operators to monitor the waste that is coming in and who is delivering that waste.

### 3.13.5 *Southland Regional Waste Strategy*

3.13.5.1 The Southland Regional Waste Strategy, as discussed above, could provide an important tool to set the direction for hazardous waste management because it includes hazardous waste targets from the NZWS applicable to Southland. Implementing measures to reach these targets would ensure the region is on course for improving coordination and management of hazardous substances and waste.

### 3.13.6 *Incentive based approaches*

3.13.6.1 Encouraging incentives for the reduction, recovery and reuse of hazardous wastes will be an important component of their management. The incentives for the reduction, recovery and reuse of hazardous wastes are similar to those that apply to wastes generally. These include ensuring that the price of disposal reflects the full costs and high environmental standards are established through the lifecycle of the wastes. Product Stewardship schemes can be effective in encouraging more efficient use of materials and in providing mechanisms for the recovery and recycling of products at the end of their life. It will be important to encourage industry to partake in the schemes already in place and to encourage new ones to start up.

### 3.13.7 *Discharge Plan*

3.13.7.1 Reviewing the Regional Solid Waste Management Plan for Southland and updating it to include provisions for the disposal of hazardous substances and waste will be very important because the current plan leaves out the issue of hazardous substances and waste. For a detailed discussion of the issues and options associated with reviewing the Regional Solid Waste Management Plan as part of the Discharge Plan process, see Appendix 3.

### 3.13.8 *Contaminated Land Management*

3.13.8.1 It will be important to significantly upscale the management of contaminated land in Southland. Ministry for Environment, other Regional Councils and the NZWS have provided a relatively clear framework for managing contaminated land and as previously mentioned, the challenge is now for Southland is to use the tools available to address this issue. Taking these things into consideration,

3.13.8.2 The city, district and regional councils could adopt and develop a robust contaminated land policy framework. The RPS could start by adopting the revised contaminated land targets of the NZWS that have been regionalised for Southland. These provide goals to direct progress towards managing contaminated land. The strategy also contains a framework for developing partnerships for managing contaminated land information with Territorial Authorities and landowners.

3.13.8.3 In order to reach the contaminated land targets it will be important for Environment Southland to work with the territorial authorities and Public Health South to establish a HAIL database, identify HAIL sites, and prioritise these HAIL sites for action. Environment Southland could use this information to set up a program to investigate, manage and/or remediate high risk sites. This may include accessing funding from central government's contaminated sites remediation fund. Environment Southland can also continue to record and make available information on contaminated and potentially contaminated land. It will also be important for territorial authorities' District Plans to ensure safe land use by having policies and rules for the prevention or mitigation of any adverse effects of the development, subdivision, or use of contaminated land. The Guidelines for the Management of Contaminated Land, developed by MfE, could help put these processes in place. The series of 5 guidelines cover the following areas: reporting, application of environmental guideline values, risk screening, classification & information management and investigation & analysis. Their main purpose is to introduce consistency in contaminated land assessment and management throughout the country.

### 3.13.9 *Southland District Plan*

3.13.9.1 Currently the Southland District Plan lists former landfill sites and other areas of filled land that are known on the district planning hazard maps. In terms of the second generation Southland District Plan any new areas of filled land or older areas not previously listed can be included on the new District Planning maps. The District Council also ensures that Land Information Memorandums (LIMs) detail the location these areas of filled land which is a useful way of ensuring perspective property owners or those wishing to develop any of these sites are made aware of potential problems with these properties.

### 3.13.10 *Iwi Resource Management Plan*

3.13.10.1 The Iwi Resource Management Plan for the region, Te Tangi a Tauira, is another way forward available to minimize the adverse affects from hazardous substances, waste and contaminated land. Integrating the policies within Te Tangi a Tauira, especially those on Hazardous Substances, into planning and implementation frameworks will enhance relationships, including understanding tangata whenua values and policy and assist communities in achieving good environmental outcomes and healthy environments. Environment Southland and the territorial authorities can work together to put into practice the provisions contained in Te Tangi a Tauira.

### 3.13.11 *Discharge Plan*

3.13.11.1 Reviewing the Regional Solid Waste Management Plan as part of the Discharge Plan process will be an important means to reflect the contaminated land work Environment Southland undertakes and provides a means to implement some of the contaminated land tools discussed above. Currently the plan makes no mention of the issue of contaminated land and accordingly provides no policies or methods to address the issue. Updating this plan provides a good opportunity to establish some rules that could provide clarity to all parties and ensure Environment Southland has the necessary tools and resources to adequately manage contaminated sites that come up, e.g. closed landfills. The issues and options associated with reviewing this plan are discussed in more detail in Appendix 3.

## 4.0 **Questions for Discussion**

4.0.1 This is a time for the reader to think about the issues, both existing and emerging, raised in this discussion document and the options to address them.

### 4.1 **Solid Waste**

1. Do you think we have identified the right solid waste issues?
2. Are there other solid waste issues, not already identified, that are significant to Southland and need addressing?
3. Do you believe the use of economic incentives is an appropriate and/or effective tool to help address the waste problem in Southland?
4. What is the best way, in your opinion, to divert organic and greenwaste from landfill?
5. What do you perceive the barriers and benefits are to widespread adoption of composting or worm farming?

## 4.2 Hazardous Substances

1. Do you think we have identified the right hazardous substances issues?
2. Are there other hazardous substances issues, not already identified, that need addressing?
3. Do you think the RPS should include as a method the implementation of the Regional Waste Strategy for Southland which adopts and 'regionalises' the waste minimisation, organic waste, hazardous waste and contaminated land targets set in the NZWS?
4. How should we prioritise HAIL sites for action?
5. What kind of information goes into a HAIL database?
6. What is the best way to identify contaminated sites?

## 4.3 Questions from Southland District Council

1. Should waste minimisation be listed as a specific resource management issue in the second generation District Plan?
2. Should a regional approach to waste minimisation through organic/greenwaste composting and the establishment of a regional composting facility be recognised as a waste minimisation priority?
3. Should a regional approach to waste minimisation through the establishment of a regional kerbside recycling scheme in the Southland District's towns be identified as a priority?
4. Are the Districts Councils existing recycling facilities at existing transfer stations along with the drop off recycling centres located throughout the District providing the required level of service? Is the entire District adequately serviced in terms of recycling facilities?
5. Is the existing District Plan rule WAS.1 still an appropriate approach to farm waste disposal?
6. Is there a need for detailed analysis of the use of farm landfills in terms of what materials are being deposited in them? How would this be best done? Would voluntary surveys be a useful approach?
7. Would the development of Best Management Practice (BMP) guidelines for farm landfills on a regional basis be a useful non-regulatory tool?
8. Should more private or public cleanfill disposal sites be established?

## Appendix 1 – An assessment of issues presently included in the Regional Policy Statement for Southland 1997

- 1.1 The following, contained in the Regional Policy Statement for Southland 1997, are considered to be the resource management issues within Southland relating to Solid Waste.
- 1.2 **Issue 1.**  
*The quantities of waste generated and/or brought into the Region are widely perceived to be excessive and are encouraging a “throw-away” mentality. Refer to Objectives 16.1-16.3; Policies 16.1-16.7; Methods 16.1-16.16*
- 1.2.1 This resource management issue is very relevant, possibly more today than ever before, because the quantities of waste generated within the region are increasing at an alarming rate. (Southland District Council, however, notes the relationship between the quantities measured at the regional landfill and the actual total quantities over time in Southland need to be established to support this statement e.g. the national total average of 1,572kg/pa/head cf ~ 650kg/pa/head into Southland Regional Landfill in 07/08). This increasing amount of solid waste is very much perceived as excessive by some and encourages a “throw-away” mentality because the producers of solid waste do not take responsibility for the lifecycle of their product and are not responsible for the product’s end-of-life which in most cases ends up in a landfill. Many people also do not feel they are provided with easy access to recycling so some products that are recyclable end up “thrown-away” in the rubbish. Scientific understanding in the community about the relative extent and effects of the total waste introduced to the global environment through the life cycle creation, use and consumption of different products (which give rise to consumer choice) is poor (e.g. cloth vs. disposable nappies and glass vs. plastic milk bottles) Improving this would more effectively influence perception. Moreover, there are not enough incentives encouraging household and commercial composting. Councils need to encourage a move away from the “throwing-away” of organic material which instead can be affordably composted and turned into a more valuable resource.
- 1.2.2 The increase in the generation of solid waste is also linked with an increase in consumerism and consumption of resources. Because new products sold within the region can be cheaper to purchase than repairing or reusing older goods, people tend to discard the used goods in favor of purchasing the new product. Furthermore, today’s “throw-away” mentality and focus on short-term gains encourages people to buy lower-quality products that have a shorter life-span rather than saving for a more expensive item that is higher quality and will last a lifetime. Today’s consumerism and focus on trends also pressures people to discard perfectly usable goods in order to keep ‘up-to-date’ with the latest products available. Effective national product stewardship and leadership (Such as container deposit legislation) by central government is required to help address these issues.

- 1.2.1 *Objective 16.1: To minimize adverse social, cultural, economic and environmental effects of solid waste disposal.*
- 1.2.1.1 This objective does not reflect the resource management issue 1 appropriately because the issue deals with the quantities of waste generated, but the objective deals with the waste disposal methods, i.e. a landfill, and the associated adverse effects from positioning the landfill and leaching of contaminants to water.
- 1.2.2 *Objective 16.2: To have regard to the traditional approaches of Maori in disposing of waste.*
- 1.2.2.1 Again this objective does not appropriately reflect issue 1 because the issue is about the quantities of waste generated but this objective is about taking into account Maori values when considering a site to be used for waste disposal.
- 1.2.3 *Objective 16.3: To reduce progressively the amount of solid waste generated per unit of production from farming, industry and households in Southland.*
- 1.2.3.1 This objective is very relevant to issue 1 because it deals with reducing the amount (or quantity) of solid waste generated in the region. The quantities and composition of waste (in addition to that received by the regional landfill) generated in Southland must be quantified to prioritize efforts and access progress against this objective. The explanation calls for adopting a range of methods including recycling and reuse which would help to discourage today's "throw-away" mentality. The explanation also calls for a comparison of the levels of waste with outputs which can give a measure of waste efficiency and can be monitored with a view to increasing efficiency and reducing waste being generated in the Southland Region and its composition. This explanation may appropriately reflect the issue because, in some cases, products or services produced in the region require more than the necessary amounts of resources, and making the process more efficient would reduce the amount of waste during processing. However, increasing the efficiency of production does not address the linkage between the growth in solid waste generation and consumerism. The explanation lastly calls for targets to be set for the reduction of different types of waste. Targets for reducing the quantity of waste generated appropriately address issue 1 and are very relevant today because they align with the direction set by central government in its New Zealand Waste Strategy.
- 1.2.4 *Policy 16.1: Adopt and implement the internationally accepted hierarchy of waste management which specifies the following priorities- Priority 1 reduce the amount of waste; Priority 2 reuse as much of the waste as practicable; Priority 3 recycle waste whenever practicable, taking into account economic and environmental costs and benefits; Priority 4 recover resources whenever practicable from the waste stream, for example, energy; Priority 5 manage the residue in an environmentally and culturally acceptable manner.*
- 1.2.4.1 This policy is very relevant and appropriately reflects issue 1. By adopting and implementing the waste hierarchy, a reduction in the generation of solid waste can occur and this will help to protect the region from the adverse effects of the disposal of waste by preventing the need for new waste disposal sites. However, the explanation says the waste management hierarchy is included in the National Policy Statement on Waste Management, but this is no longer

relevant because central government never developed a national policy statement on this topic. Furthermore, the waste management hierarchy used in this policy does not fully reflect the change in today's environment; the hierarchy used today emphasizes the concepts of "Rethink and Redesign" ahead of the concept of "reduce."

1.2.5 *Policy 16.2: Establish by 1 October 1995, and maintain, an effective monitoring system which- tracks material within the waste stream; assesses the impacts associated with the production, use, reuse, recycling and disposal of waste materials; and provides for any information collected to be assessed and incorporated into a public regional information database.*

1.2.5.1 This policy appropriately reflects issue 1. Putting in place an effective monitoring system across all waste (not just the regional landfill) provides knowledge of the quantities and composition of waste generated. This knowledge allows for a targeted approach to reducing the quantities of waste generated and will assist in determining whether reduction targets are met. By making the information public, the region will have a greater understanding of the impacts of their waste and will work harder to reduce those impacts. The date, 1 October 1995, is no longer relevant. This does not assess the net global impacts of particular products that are consumed and enter the waste stream in Southland. The Ministry for the Environment adapted a Life Cycle Analysis Tool call "Wizard" to New Zealand for this purpose.

1.2.6 *Policy 16.3: Encourage the costs of waste management to be borne by waste producers.*

1.2.6.1 This policy appropriately reflects issue 1. If the true costs of waste disposal to landfill are recognized and are borne by the producer of waste then there is more incentive for the producers to take responsibility for the end-of-life of their product and find ways to produce the product so it can be reused or recycled. The actual cost of providing public waste collection and drop off services varies substantially depending on transport distances and the scale of use (economies of scale) (e.g. it costs much more to provide waste services on Stewart Island or at Tuatapere than it does in Invercargill) regardless of waste generation habits. For these reasons it is very important to recognize that it is appropriate for Territorial Authorities to set pricing and cost recovery policies that provide consistency across a region, and that do not disadvantage people based on where they live.

1.2.6.2 A waste levy has been placed on the regional landfill and the Waste Minimization Act will place a national waste levy on all waste disposed to landfill; these levies increase the cost of waste disposal. Those costs are filtered through to the producers who send their waste to the landfill. This policy does not explicitly call for a waste levy so it is still relevant since there are other options that could be utilized besides a waste levy that encourage the cost of waste management to be borne by waste producers.

1.2.7 *Policy 16.4: Promote the progressive upgrading of existing refuse disposal facilities which do not meet environmentally acceptable standards, as defined by the "National Guidelines for Landfill Management 1992".*

- 1.2.7.1 This policy does not appropriately reflect issue 1. Upgrading existing refuse disposal facilities will have no affect on the quantities of waste generated in the region.
- 1.2.7.2 Southland District Council notes this is counter to the view that high disposal costs (such as through levies) promote resource efficiency i.e. the higher cost of providing a high grade disposal facility (such as a class A sanitary landfill) provide financial incentives to lower cost alternatives such as permitted on property disposal, cleanfills (categorization and control of permitted clean fill) Again it is critical to consider all waste not just that going to the Regional Sanitary Landfill.
- 1.2.8 *Policy 16.5: Ensure the adoption of post-closure management practices, in accordance with the “National Guidelines for Landfill Management 1992” at existing and already closed refuse facilities, and the inclusion of these practices as resource consent conditions for proposed landfills.*
- 1.2.8.1 This policy does not appropriately reflect issue 1. Ensuring the adoption of post-closure management practices will have no affect on the quantity of waste generated or the “throw-away” mentality.
- 1.2.8.3 These guidelines are very focused on large scale landfills which are inappropriate for the small scale closed landfills across the Southland District.
- 1.2.9 *Policy 16.6: Reduce uncontrolled and illegal tipping*
- 1.2.9.1 This policy does not appropriately reflect issue 1. Reducing illegal tipping will have no affect on the quantities of waste generated, but obviously could improve the environmental impacts of the tipping if this waste is more appropriately disposed of . Rather, reducing the quantities of waste generated will affect and/or reduce illegal tipping. Cost and availability of services are significant drivers.
- 1.2.10 *Policy 16.7: Recognize Maori cultural sensitivity to waste management and disposal options.*
- 1.2.10.1 This policy appropriately reflects issue 1 because Maori have their own set of concerns for waste management which is evident in the region’s Natural Resource and Environmental Iwi Management Plan 2008, Te Tangi a Tauria. The Iwi Management Plan encourages a move towards zero waste which addresses issue 1. The policy could be made more relevant by referring to this new Iwi Management Plan.
- 1.2.11 *Method 16.1: Information, education and public awareness*  
*Provision of information and education about solid wastes, including*
- *encouraging the adoption of practices and methods that reduce the need to dispose of waste material;*
  - *the development of new technology;*
  - *the effects of uncontrolled and illegal disposal of waste.*
- 1.2.11.1 This method, particularly the first and second bullet points, appropriately reflects issue 1 and will need to continue.

1.2.12 *Method 16.2: Promotion*

*The use of this technique will include*

- *promotion of the need to minimize waste;*
- *appropriate waste management techniques;*
- *the need to operate refuse disposal sites at acceptable stands;*
- *the concept of “generator-responsibility”*

1.2.12.1 This method, particularly the first and last bullet points, appropriately reflects issue 1. The third bullet point is not relevant to issue 1 because the operation of refuse disposal sites will not address the quantities of waste generated.

1.2.13 *Method 16.3: Advocacy (to Central Government)*

1.2.13.1 This method appropriately reflects issue 1. The Regional Council has a role to play in advocating to central government the need to reduce the excessive amounts of waste generated. This method can be made more relevant by referring to the direction central government has already taken by introducing the NZWS and Waste Minimization Act.

1.2.14 *Method 16.4 Consultation (with producers of solid waste, TAs, and other parties)*

1.2.14.1 This method appropriately reflects issue 1 because the producers of solid waste need to be consulted if any action to get them to reduce the amount of solid waste generated is to happen. TAs will also need to be consulted and this method could be more relevant by referring to their statutory waste management plans and how they could address the issue of excessive amounts of solid waste in the region. TAs could also be consulted to discuss the feasibility of providing more access to recycling in the region.

1.2.15 *Method 16.5 Developing guidelines for resource users (for management of solid waste disposal and transfer sites)*

1.2.15.1 This method does not appropriately reflect issue 1 because guidelines for managing the disposal of solid waste will not affect or address the excessive quantities of waste generated in the region.

1.2.16 *Method 16.6 Accords (for waste management practices with the agricultural sector)*

1.2.16.1 This method is relevant to issue 1. The Clean Streams Accord has been developed between Fonterra and the farming community, but it does not cover any agreements about solid waste disposal. Farm landfills could be picked up in these accords. The use of accords could be a useful non-regulatory tool that could help decrease the amount of waste material being deposited in the farm landfills.

1.2.17 *Method 16.7 Monitoring (of waste efficiency)*

1.2.17.1 This method appropriately reflects issue 1 because monitoring of waste efficiency will enable an assessment of the reduction of solid waste generated per unit of production within the region. However, it does not appropriately

reflect the link between consumerism (i.e. the justification of production of new products) and the growth in solid waste.

1.2.18 *Method 16.8 Investigations and Research (effects of the use of balage wrap)*

1.2.18.1 This method appropriately reflects issue 1 because there will need to be investigations into specific solid waste streams to see how the quantities of that type of waste could be reduced. Balage wrap is still a relevant example, although there are now widely used recycling services for balage wrap. Reducing the quantities of organic material deposited as waste is now a very relevant issue and might be worth including as a waste stream that could be investigated further.

1.2.19 *Method 16.9 Prepare, implement and administer a Regional Solid Waste Management Plan*

1.2.19.1 This method is no longer relevant because this has been done and is currently under review as part of the Discharge Plan. The method could instead reflect its review process.

1.2.20 *Method 16.10 Prepare, implement and administer Regional Plans and District Plans*

1.2.20.1 This method appropriately reflects issue 1 because the statutory waste management plan prepared by the 3 TAs will be able to give consideration to the excessive amount of solid waste in the region.

1.2.21 *Method 16.11 Plans, other documents, and action under other Acts*

1.2.21.1 This method appropriately reflects issue 1

1.2.22 *Method 16.12 Resource Consents*

1.2.22.1 This method does not appropriately reflect issue 1. The NZWS issued targets, including some that imposed waste minimisation programs as resource consent conditions. For example, “By December 2005, all regional councils will ensure that new or renewed industrial resource consents include a recognised waste minimisation and management programme and will report on the percentage of all consents under their jurisdiction that have such a clause.” However, the 2003 Review of Strategy Targets identified that this target could not be achieved. Including this kind of requirement in resource consents was legally determined to be in direct conflict with (*ultra vires*) the Resource Management Act 1991. This situation has not changed since the 2003 review.<sup>27</sup>

---

<sup>27</sup> See Ministry for the Environment, “Review of Targets in the New Zealand Waste Strategy.” Available at < <http://www.mfe.govt.nz/publications/waste/review-targets-waste-strategy-feb04/html/page4.html> > as at 29 September 2008. The target was called into question because it was uncertain whether waste minimisation and management programmes can be required where such programme are not directly linked to the mitigation of the discharge being consented. The Resource Management Act 1991 is concerned with the effects of contaminants on the environment. This point was discussed in the July 2002 issue of the journal of the Resource Management Law Association (Brodnax and Milne, 2002). The article argues that, provided the industrial facility is economically efficient, and has adequately avoided, remedied or mitigated any environmental effects from its discharge, any opportunities to minimise or better manage wastes are not legally relevant. Councils need to ensure that any action they undertake to implement the NZWS targets is not *ultra vires*. Environment Waikato, in its regional waste strategy, has adopted a regional target

1.2.23 *Method 16.13 Public works*

1.2.23.1 This method appropriately reflects issue 1 because planning for public works could give consideration to the quantities of waste generated while the public works are carried out.

1.2.24 *Method 16.14 Economic Instruments*

1.2.24.1 This method strongly and appropriately reflects issue 1. Economic instruments such as user pays charges can influence the amount of waste generated. This method could be more relevant by including incentives and rewards as well. The Waste Minimisation Act will put a national waste levy on all waste disposed and provide a contestable fund that regional councils will be able to access. This funding could provide a source to fund economic incentives for reducing waste.

1.2.25 *Method 16.15 Works and services*

1.2.25.1 This method appropriately reflects and is relevant to issue 1. The three TAs are working together co-operatively need to be pressured to promote and facilitate the reduction in amount of waste received at the regional landfill. The extent to which this is resourced may need to be reviewed.

1.2.26 *Method 16.16 Enforcement*

1.2.26.1 This method appropriately reflects issue 1 because if illegal tipping is enforced and people are forced to pay the consequences, then they may begin to reduce the quantities of waste generated so that they will have less or ideally nothing to dispose of.

1.3 **Issue 2.**

*There is inadequate knowledge on the volume, content and status of refuse generation and disposal sites in the Region, highlighting the need for an up-to-date database which could be linked with a national system. Refer to Objectives 16.1, 16.3; Policy 16.2; Methods 16.1-16.3, 16.7-16.9*

1.3.1 This resource management issue is still relevant today because while there have been a few studies into Southland's waste streams, they have been "one-off" instead of consistently undertaken on an annual or biannual basis. More consistent and frequent studies into Southland's waste stream and its origins provide necessary information to target reduction programs and proper

---

that implements the intent of the targets above but without directly linking waste minimisation programmes to resource consents. Environment Waikato's target is "By December 2010, 25 percent of companies in the region will have waste minimisation and management programmes in place". This avoids the *ultra vires* problem, but relies on voluntary suasion and is therefore less likely to be achievable. Greater Wellington has also set a target based on a voluntary programme. Environment Bay of Plenty (EBoP) has expressed the view (backed up by legal opinion) that a resource consent can reference waste minimisation but only for the substance that is the subject of the consent or for the material used to dilute the substance, where such loading may have a significant effect on the environment. EBoP is proposing to include a method in its Proposed Water and Land Plan that would implement this position.

disposal methods. There is a greater understanding of the status of disposal sites today than when the RPS was written, mostly because there is only one operating regional landfill built to meet sanitary guidelines. There is also greater understanding of the status of transfer stations operated by the TAs. However, there is inadequate knowledge on the status of farm landfills, cleanfills and of closed landfills, but closed landfills, or historic refuse sites, are covered within the Contaminated Land section. The need for a database of operating landfills is no longer relevant but could be useful to keep track of farm landfills. Inadequate knowledge on the volume, content and number of farm landfill and cleanfill sites in the Southland Region should be recognized. There will be difficulties in obtaining accurate information relating to these sites but a start needs to be made in terms of gathering information on them.

1.3.1 *Objective 16.1 To minimize adverse social, cultural, economic and environmental effects of solid waste disposal.*

1.3.1.1 This objective appropriately reflects issue 2. Minimizing the adverse effects of solid waste disposal includes gaining an understanding and knowledge of solid waste within the region. In today's context, refuse disposal facilities such as farm landfills, rather than regional landfills, pose a potential risk to the environment because little information regarding their volume, content, and location exists. They could be located near water sources or in areas prone to flooding, and they could contain hazardous materials that contaminate the land or water.

1.3.2 *Objective 16.3 To reduce progressively the amount of solid waste generated per unit of production from farming, industry and households in Southland.*

1.3.2.1 It is a bit unclear whether this objective appropriately reflects issue 2. Rather, issue 2 reflects this objective. In order to reduce progressively the amount of solid waste generated across sectors, it is important to have adequate information and knowledge on the volume, content, and status of refuse generation and disposal sites. Currently most knowledge about waste streams in Southland relates to those of the urban populations because their waste goes to the regional landfill and can be studied. However, there is less knowledge about the waste streams of the other sectors. This makes it difficult to set targets, as described in the explanation, to progressively reduce the amount of solid waste generated per unit of production.

1.3.3 *Policy 16.2 Establish by 1 October 1995 and maintain an effective monitoring system which tracks material within the waste stream; assesses the impacts associated with the production, use, reuse, recycling and disposal of waste materials; and provides for any information collected to be assessed and incorporated into a public regional information database.*

1.3.3.1 This policy, apart from the date 1 October 1995, appropriately reflects issue 2. A monitoring system would adequately improve understanding of the volume, content, and status of refuse generation and disposal sites in the region. A monitoring system would go beyond the "one-off" study completed by Wastenot Consulting in November 2007 and would provide effective information to measure Southland's progress in reducing the adverse effects on the environment from solid waste. Currently, adequate information can be

obtained on the volume of waste disposed of at the regional landfill, but there are no monitoring systems in place for waste disposed of on-site or in a farm landfill or cleanfill. The Waste Minimization Act will require the reporting of information that will be published on a national basis. This is because data from individual landfills may be commercially sensitive and will not be released. TAs will not get the information automatically, but they can create TA bylaws to source this information. This information is most appropriately recovered through compliance measures in the Regional Plan. The type of information to be collected has not been determined yet, and is still under review. It is yet to be determined what information will be given to regional councils. There is a “quick and dirty” information collection method under review, lumping waste generation into loose categories from households, C&D etc. MfE will ask for input into this process.

1.3.4 *Method 16.1 Information, education and public awareness*

1.3.4.1 This method appropriately reflects issue 2. Providing information about solid wastes improves knowledge on refuse generation and disposal sites.

1.3.5 *Method 16.2 Promotion*

1.3.5.1 The method does not appropriately reflect issue 2 because it does not include the promotion of the need to gather information and monitor information.

1.3.6 *Method 16.3 Advocacy*

1.3.6.1 This method appropriately reflects issue 2 because advocacy to central government will always need to happen, however central government is taking more of a lead in finding out information about refuse generation by including reporting requirements in the Waste Minimization Act.

1.3.7 *Method 16.7 Monitoring*

1.3.7.1 This method appropriately reflects issue 2 because monitoring of waste efficiency will enable an assessment of the reduction of solid waste generated per unit of production and this assessment will provide information and improve knowledge of the volume, content, status and origin of refuse generation in Southland across sectors.

1.3.8 *Method 16.8 Investigations and Research*

1.3.8.1 This method appropriately reflects issue 2 because investigating and researching specific solid waste management concerns provides information regarding the volume, content, status of refuse generation and disposal sites in the region.

1.3.9 *Method 16.9 Prepare, implement and administer a Regional Solid Waste Management Plan*

1.3.9.1 This method has been done and the Plan currently under review.

1.4 **Issue 3.**

*Historic refuse sites could pose a threat to public health and the environment, due either to design (or lack of it), location, management (or lack of it), or the materials they contain. Refer to Objectives 16.1; Policy 16.5; Methods 16.2, 16.9*

1.4.1 This issue is very relevant today in Southland because all of the region's landfills are closed (except for one) and many of them were not designed to protect against adverse effects on the environment and many do not have post-closure management plans in place. There are unknown quantities and locations of some historic refuse sites which contain unknown materials that could contaminate soils or groundwater. Furthermore, historic refuse sites are on the HAIL (Hazardous Activities and Industries List) and need close monitoring or even remediation in some cases. This issue may be more appropriately addressed in the Contaminated Land section.

1.4.2 *Objective 16.1 To minimize adverse social, cultural, economic and environmental effects of solid waste disposal.*

1.4.2.1 This objective appropriately reflects issue 3 because historic refuse sites can cause adverse social, cultural, economic and environmental effects.

1.4.3 *Policy 16.5 Ensure the adoption of post-closure management practices, in accordance with the National Guidelines for Landfill Management 1992 at existing and already closed refuse facilities, and the inclusion of these practices as resource consent conditions for proposed landfill sites.*

1.4.3.1 This policy does not appropriately reflect issue 3 because the guidelines are out of date. Since then MfE have released "A Guide for the Management of Closing and Closed Landfills in New Zealand" in 2001. Currently any consented landfills will need to have a post-closure management plan. However some unconsented historic refuse sites may have no post-closure management plans and we still need to ensure those are adopted. Where TA's or private owners of closed landfills are able to demonstrate that appropriate post closure management practices are observed, proportional to the landfills individual scale, age, likely contents, location and risk indicators then recourse consents should not be required.

1.4.4 *Method 16.2 Promotion*

1.4.4.1 The promotion technique listed in this method relevant to issue 3 is the promotion of the need to operate refuse disposal sites at acceptable standards. This needs to happen so that refuse disposal sites, once they become closed, do not adversely effect the environment. This method no longer appropriately reflects the issue because the new Southland Regional Landfill operates at acceptable standards and any new landfills will have to meet strict environmental standards that will include post-closure management practices.

- 1.4.5 *Method 16.9 Prepare, implement and administer a Regional Solid Waste Management Plan*
- 1.4.5.1 A Regional Solid Waste Plan has been prepared and is currently under review. The plan does not contain any rules for the discharges from closed landfills and the review process is looking into including rules around closed landfill management.
- 1.5 **Issue 4.**  
*As the cost of collection and disposal of waste is often not borne by those producing and / or benefiting from generation of the waste there is no incentive to minimize waste. Refer to Objectives 16.1; Policy 16.5; Methods 16.2, 16.9*
- 1.5.1 Generating waste and disposing of it has social, environmental and economic costs, but these are not all covered by the *price* of waste treatment or disposal. Some councils still meet some or all of the costs of waste collection and disposal through a uniform annual charge levied on ratepayers. This gives waste generators little incentive to reduce the waste they dispose of, and is unfair to those who generate little, or recycle and compost their wastes.
- 1.5.2 *Objective 16.1 To minimize adverse social, cultural, economic and environmental effects of solid waste disposal.*
- 1.5.2.1 This objective appropriately reflects issue 4. In order to minimize the adverse effects of solid waste disposal, the true costs of those effects needs to be borne by the generator of waste as an incentive to minimize the waste they produce. If costs of disposing waste are to be raised for those generating waste, it may be necessary to carefully monitor illegal tipping. Increased costs of waste disposal could be an incentive to reduce waste generated, or it could turn out to be an incentive to illegally dispose of waste so as to avoid those costs. The actual cost of providing public waste collection and drop off services varies substantially depending on transport distances and the scale of use (economies of scale) (e.g. it costs much more to provide waste services on Stewart Island or at Tuatapere than it does in Invercargill) regardless of waste generation habits. For these reasons it is very important to recognize that it is appropriate for Territorial Authorities to set pricing and cost recovery policies that provide consistency across a region.
- 1.5.3 *Policy 16.3 Encourage the costs of waste management to be borne by waste producers*
- 1.5.3.1 This policy is not referred to in issue 4 but it appropriately reflects the issue and should be referred to. Since most ratepayers pay a standard fee for waste disposal through the collection service provided no matter how much or little they dispose of (within the capacity of the service provided), there is no incentive to minimize waste generation. It could be considered is unfair for those who reuse, recycle or compost because they use the service to a lesser extent than others essentially subsidize those who generate more waste and use a greater capacity of the service because they do not pay the true economic, social and environmental costs of generating waste. This policy could also advocate for waste producers to take back their products at the end of their life, incur the cost, and find ways to reuse, recycle or dispose of them properly.

This type of product stewardship scheme is under development and included in the Waste Minimization Act for national priority products so the policy could reflect this and advocate for products to be included, and/or the policy could encourage regional product stewardship schemes for local businesses.

- 1.5.3.2 Southland District Council notes that while this is true most government services are provided in this way (e.g. pest rates that don't depend on the number of pests you have or road rates are largely independent of the extent of ratepayer or taxpayer use – the reason being it is a complex and often costly exercise to base charges on actual consumption. For waste collection services this would require either weight, volume of lift charges for each receptacle as it is emptied. As yet this has not been successfully implemented in Australasia and the additional costs to the overall service could be significant. A weight based system would need to have a significant portion of the costs fixed to provide revenue stability to support the fixed costs of providing the services and a smaller portion of the costs say 25% variable depending on weight. To date this has not been considered viable by the 3 TA's of southland because of the poor reliability of weighting technology and the relatively high costs of the weighing and billing systems combined with the lower production rates – slowing the collection and emptying process.
- 1.5.4 *Policy 16.5 Ensure the adoption of post-closure management practices, in accordance with National Guidelines for Landfill Management 1992 at existing and already closed refuse facilities, and the inclusion of these practices as resource consent conditions for proposed landfill sites.*
  - 1.5.4.1 This policy does not appropriately reflect issue 4 because it has nothing to do with the cost of collection and disposal of waste.
- 1.5.5 *Method 16.2 Promotion*
  - 1.5.5.1 Promoting the concept of “generator-responsibility” is relevant and appropriately reflects issue 4. The generators of waste need to be responsible for the cost to the environment of disposing of the waste their products produce. Internalizing this cost acts as an incentive for them to find ways to avoid waste for example by making the product recyclable or reusable. However NZ is a net importer of goods and the influence NZ is able or willing to exert on international producers is questionable.
- 1.5.6 *Method 16.9 Prepare, implement and administer a Regional Solid Waste Management Plan*
  - 1.5.6.1 This method appropriately reflects issue 4, but this method could capture the review process the plan is currently under.
- 1.6 **Issue 5.**  
*Current Waste Management practices are at times insensitive to, and conflict with, cultural and traditional spiritual values of Maori. Refer to Objectives 1.1-1.3; 16.2; Policies 1.1, 1.2, 16.7; Methods 16.1, 16.4, 16.9, 16.12*
  - 1.6.1 This issue is still relevant today as highlighted in the region's Iwi Management Plan. Solid waste disposal is a significant environmental management issue for

Ngai Tahu ki Murihiku. Inappropriate solid waste disposal can have adverse effects on the mauri of water, sites of significance and taonga, such as food and weaving resources. Current waste management practices, such as generating excessive amounts of solid waste, furthers the need for more landfills and depletion of natural resources which can impact upon cultural and spiritual values of Maori. Waste also weakens our sense of connection to the environment. If we think of the environment as a dumping ground, it is harder to value its other qualities. For some, this directly affects cultural and spiritual values, and our role as kaitiaki, or stewards, of natural resources.

- 1.6.2 *Objective 1.1 To protect wahi tapu from the adverse effects of resource use activities*
- 1.6.2.1 This objective appropriately reflects issue 5 because the disposal of solid waste, especially illegal tipping and positioning of new landfills, can adversely affect wahi tapu (sacred places). Any proposed new landfills will need to avoid adverse effects on wahi tapu, while reductions in the amount of waste generated will mitigate the need for the establishment of new landfills and therefore may protect wahi tapu from those effects.
- 1.6.3 *Objective 1.2 To recognize the importance of wahi tapu, (sacred places) wahi taoka (treasured resources), mahika kai (places where food was gathered) and the customary use of water to Kai Tabu.*
- 1.6.3.1 This objective appropriately reflects issue 5 because solid waste, if disposed of inappropriately, can adversely affect wahi tapu, wahi taoka, mahika kai and water resources of Ngai Tahu so when managing solid waste those values need to be recognized.
- 1.6.4 *Objective 1.3 To incorporate Maori cultural and traditional spiritual values where appropriate into resource management decision making processes.*
- 1.6.4.1 This objective appropriately reflects issue 5. Disposing of waste to landfill can be insensitive to Maori values and it is important to include Maori in any decision making for any future new landfill. Moreover, the cultural and traditional spiritual values that have been developed over time are a combination of environmental conservation ethics and history. Southland has much to learn from such a rich background of experience and waste minimization practices. It is considered appropriate to include Maori in decision making processes around solid waste management.
- 1.6.5 *Objective 16.2 To have regard to the traditional approaches of Maori in disposing of waste.*
- 1.6.5.1 This objective appropriately reflects issue 5 because a range of methods are available for the disposal of waste, a variety of techniques can be adopted in applying disposal methods, and a diversity of sites can be used. In making decisions on each of these matters, it is appropriate to have regard to Maori values and customs. The Iwi Management Plan recognizes that Ngai Tahu ki Murihiku is committed to the development of tools and techniques to reduce waste generation and maximize reuse, recycling and recovery, and to raise awareness throughout Murihiku of this important issue.

- 1.6.6 *Policy 1.1 Prepare and implement an Accord between the local authorities and the takata whenua o Murihiku which sets out a process for consultation.*
- 1.6.6.1 This issue no longer appropriately reflects issue 5 because a Charter of Understanding between Te Ao Marama Incorporated and the relevant Local Authorities has been developed. The charter provides a foundation for consultation on a wide range of local government issues and for the recognition and willingness of Te Ao Marama Incorporated to assist all councils in consultation with nga matawaka living in Murihiku.
- 1.6.7 *Policy 1.2 Recognize “Te Whakatau Kaupapa O Murihiku” as a Kai Tabi resource management reference planning document for the Region.*
- 1.6.7.1 This issue no longer appropriately reflects issue 5. A new Iwi Management Plan has been released—Te Tangi a Tauira. This planning document has a section on Solid Waste Management that sets out the issues important to Ngai Tahu and appropriate polices to put in place.
- 1.6.8 *Policy 16.7 Recognize Maori cultural sensitivity to waste management and disposal options.*
- 1.6.8.1 This policy appropriately reflects issue 5 because Maori hold definite concerns with regard to waste management and disposal options, which must be addressed in all aspects of solid waste management.
- 1.6.9 *Method 16.1 Information, education and public awareness*
- 1.6.9.1 This method appropriately reflects issue 5. To make the method more relevant, it could include the provisions contained in the Iwi Management Plan. For example, encourage zero waste, including reduce, reuse and recycle programs, in both commercial and residential contexts. Encourage the communication of good ideas between communities, to continually improve management of solid waste in Murihiku. Minimize the risk of adverse effects from waste disposal activities through promoting community awareness of good waste management practices and the environmental costs and benefits of waste disposal.
- 1.6.10 *Method 16.2 Promotion.*
- 1.6.10.1 This method is not referred to in issue 5 but it appropriately reflects issue 5 because promotion techniques are included in the Iwi Management Plan and could be applied to this issue. For example, promote community based recycling schemes.
- 1.6.11 *Method 16.4 Consultation*
- 1.6.11.1 This method appropriately reflects issue 5 because Ngai Tahu have a policy in place to use RMA planning processes, including input into statutory plans, best practice guidelines, hearing panels and resource consent conditions, to ensure that solid waste disposal does not adversely affect tangata whenua values.

1.6.12 *Method 16.9 Prepare, implement and administer a Regional Solid Waste Management Plan*

1.6.12.1 This method has occurred and needs to consider the review process the Plan is currently going through.

1.6.13 *Method 16.12 Resource Consents*

1.6.13.1 This method appropriately reflects issue 5 because Ngai Tahu believes the highest environmental standards should be applied to any consent application involving the management and disposal of solid waste. The duration of the solid waste consents must not exceed the lifetime of the disposal or treatment system. All consents must be considered in terms of cumulative and long-term impacts.

1.7 **Issue 6.**

*Some solid waste management issues, such as alternative disposal options, recycling and cleaner production, may be more effectively addressed on an inter-regional or national basis than on a regional basis. Refer to Objectives 16.1, 18.1; Policies 16.1, 18.2; Methods 16.3, 16.9*

1.7.1 This issue is partially still relevant in today's environment. It is true that some solid waste management issues may be more effectively addressed on an inter-regional or national basis rather than on a regional basis. For example central government, in its Waste Minimization Act, will address product stewardship for some priority products and will ban some materials from landfill. The 3 TAs have come together to form a joint waste management group know as—Wastenet. Wastenet came together to initiate the process of building and opening the regional landfill in 2004 and recently has approached Clutha District with a proposal for an inter-regional 3 bin collection service for rubbish, greenwaste and recyclables. However, there are some regional initiatives underway in Southland that may require support such as Southland Enterprises which operates recycling for the region. It would be appropriate to advocate and/or provide any assistance, if feasible, to Southland Enterprises to expand their recycling capacities to include more types of plastics. Opportunities still exist to work with local businesses in the region on improving their waste management and getting them involved with product stewardship schemes. For example, all businesses in the region could work towards phasing out the use of plastic shopping bags and offer reusable, cloth bags.

1.7.2 *Objective 16.1 To minimize adverse social, cultural, economic and environmental effects of solid waste disposal.*

1.7.2.1 This objective appropriately reflects issue 6, because we have already seen the benefits of using an inter-regional approach between the three territorial authorities to open a new regional landfill. Because of the previous example and economies of scale, it may be more practical to provide recycling plants and/or composting plants on an inter-regional basis as well.

- 1.7.3 *Objective 18.1 To establish and maintain effective processes to deal with cross-boundary issues.*
- 1.7.3.1 The reference to the Planning Tribunal in the explanation is no longer relevant to issue 6 because the Planning Tribunal has been changed to the Environment Court. The rest of this objective appropriately reflects issue 6 because in the future there may be need for a centralized composting facility or other alternative waste disposal facilities which could benefit and be used by several regions. It may also be important to establish effective processes to deal with the amounts of solid waste brought into Southland from another region for disposal.
- 1.7.4 *Policy 16.1 Adopt and implement the internationally accepted hierarchy of waste management...*
- 1.7.4.1 This policy partially reflects issue 6 appropriately because while it would be helpful and useful for the hierarchy of waste management to be adopted and implemented nationally or inter-regionally, it can still significantly and effectively address solid waste management issues on a regional basis here in Southland. Southlanders generate over 62,000 tons of waste per year, and by applying the updated waste hierarchy which includes Rethink and Redesign; Southlanders can reduce that figure, which would greatly benefit the environment and society.
- 1.7.5 *Policy 18.1 The Regional Council and the Region's territorial authorities, and neighboring regional and territorial councils, will consult with each other and the takata whenua to seek jointly agreed solutions to cross-boundary issues.*
- 1.7.5.1 This policy is very relevant to issue 6, although it is not referred to in issue 6, because future waste management projects such as more recycling processing plants and/or composting facilities benefit from a joint approach between the three TAs and possibly neighboring regions or districts. This policy could be more relevant by referring to Wastenet, a joint agreement between the 3 TAs for waste management in Southland. Wastenet was formed in order to establish the regional landfill in a cost-effective way. Wastenet has been discussing with Clutha District a possible 3 bin waste collection service.
- 1.7.6 *Policy 18.2 Where matters of regional significance arise that involve cross-boundary issues, the Regional Council will, in consultation with other interested parties, determine the appropriate action.*
- 1.7.6.1 This policy appropriately reflects issue 6 because there are existing and potential future waste management cross-boundary issues which will need consultation and input from interested parties. Such examples might include composting operations, or the need for another landfill.
- 1.7.7 *Method 16.3 Advocacy*
- 1.7.7.1 This method appropriately reflects issue 6 because a waste management issue may be more effectively addressed by central government, in which case the

Regional Council will need to strongly advocate to central government that it takes a lead role in this area.

- 1.7.8 *Method 16.9 Prepare, implement and administer a Regional Solid Waste Management Plan*
- 1.7.8.1 The process for reviewing the Solid Waste Plan could make sure the revised plan only includes those waste management issues that can be effectively addressed within the region.
- 1.8 **Issue 7.**  
*Landfills produce greenhouse gases, such as methane, through the decomposition of material. Refer to Objectives 12.2, 16.1; Policies 12.1, 16.2, 16.4-16.6; Methods 16.1, 16.2, 16.5-16.9*
- 1.8.1 This issue is very relevant today because the decomposition of organic material contributes the most to the release of methane from landfills and organic material is the largest waste stream sent to landfill in Southland. There is a direct relationship between the amounts of organic waste materials such as green waste, food wastes, house wastes and paper that are deposited and the amount of methane gas produced. Methane is produced when these materials are decomposed by bacteria under anaerobic conditions. Currently at AB Lime Landfill, landfill gas is generally around 40-60% methane with the remainder being mostly carbon dioxide, and water.<sup>28</sup>
- 1.8.2 *Objective 12.2 To protect the life-supporting capacity of the global atmosphere.*
- 1.8.2.1 This objective appropriately reflects issue 7 because the release of methane emissions from landfills contributes to the global build-up of greenhouse gases.
- 1.8.3 *Objective 16.1 To minimize the adverse social, cultural, economic and environmental effects of solid waste disposal.*
- 1.8.3.1 This objective appropriately reflects issue 7 because refuse disposal facilities such as a landfill have adverse effects on the environment because they emit methane, a greenhouse gas. This effect needs to be minimized, possibly through a way to capture the methane and turn it into energy.
- 1.8.4 *Policy 12.1 Prepare, implement, and administer a Regional Air Quality Plan containing objectives, policies and methods concerning the discharge of contaminants into the air...*
- 1.8.4.1 This plan has been developed and will be reviewed in the near future.
- 1.8.5 *Policy 16.4 Promote the progressive upgrading of existing refuse disposal facilities which do not meet environmentally acceptable standards...*
- 1.8.5.1 This issue is no longer relevant because the existing refuse disposal facilities have been closed and the new regional landfill meets environmentally acceptable standards.

---

<sup>28</sup> Email correspondence Steve Smith General Manager AB Lime Landfill

- 1.8.6 *Policy 16.5 Ensure the adoption of post-closure management practices in accordance with the National Guidelines for Landfill Management (1992) at existing and already closed refuse facilities, and the inclusion of these practices as resource consent conditions for proposed landfill sites.*
- 1.8.6.1 This is no longer relevant because the National Guidelines have been re-written. Moreover, closed refuse facilities that do not have consents will need post-closure management plans, because facilities with consents already require them.
- 1.8.7 *Policy 16.6 Reduce uncontrolled and illegal tipping*
- 1.8.7.1 This policy only appropriately reflects issue 7 if large quantities of organic material are illegally tipped together. This has not knowingly happened to date.
- 1.8.8 *Method 16.1 Information, education and public awareness*
- 1.8.8.1 This method appropriately reflects issue 7 because encouraging methods that reduce the need to dispose of waste material also reduces the amount of material in the landfill emitting methane and also reduces the need for more landfills. Education about the development of new technology is important because there are new ways of capturing methane and turning it into energy.
- 1.8.9 *Method 16.2 Promotion*
- 1.8.9.1 This method appropriately reflects issue 7 because all of these techniques will reduce the methane emissions from landfills.
- 1.8.10 *Method 16.5 Developing guidelines for resource users*
- 1.8.10.1 This method appropriately reflects issue 7 because guidelines can be prepared for the management of methane emissions from the regional landfill (i.e. capture and energy production) in consultation with the landfill operators.
- 1.8.11 *Method 16.6 Accords*
- 1.8.11.1 This method appropriately reflects issue 7 because accords can be prepared with large agricultural operations to ensure they compost organic material where feasible instead of disposing to landfill. Accords can and are being developed with commercial and industrial users also to minimize their waste production.
- 1.8.12 *Method 16.7 Monitoring*
- 1.8.12.1 This method appropriately reflects issue 7 because monitoring of waste efficiency of organic material across sectors will enable an assessment of the reduction of organic material generated per unit of production within the Region, which will reduce the amount of organic material going to landfill.

1.8.13 *Method 16.8 Investigations and Research*

1.8.13.1 This method appropriately reflects issue 7 apart from the reference to the effects of the use of balage wrap in the Region. Investigation and research will need to take place into organic material to see if the amount can be reduced or into alternative disposal methods, such as composting.

1.8.14 *Method 16.9 Prepare, implement and administer a Regional Solid Waste Management Plan*

1.8.14.1 This Plan is currently under review.

1.9 **Issue 8.**

*Illegal tipping and littering, such as plastic in the coastal marine area and on roadsides, is unsightly and can be a hazard to the environment. Refer to Objectives 13.1, 16.1, 16.3; Policy 13.2, 16.6; Methods 16.1, 16.2, 16.9, 16.16*

1.9.1 This issue is very relevant today because there is a high incident rate of illegal tipping occurring in Southland. So far in 2008 there have been 45 reports of illegal tipping. This figure represents only those incidents reported, and there could be other incidents that have not been detected. Illegal tipping could potentially increase as a result of the regional waste levy and the onset of the national waste levy. Any increases in waste disposal costs to the regional landfill could give rise to increases in illegal dumping. The issue could be more relevant by referring to illegal tipping in more than just the coastal marine environment or on roadsides.

1.9.2 *Objective 13.1 To preserve the natural character of the coastal environment.*

1.9.2.1 This objective appropriately reflects issue 8 because illegal dumping into the marine environment or littering in the coastal environment adversely affects the natural character of this environment. In particular species that occupy or travel through Southland's marine environment may mistakenly think rubbish is food or get entangled in it. Certain types of rubbish can pollute the water and illegally dumped rubbish can also affect the amenity values of the coastal environment.

1.9.3 *Objective 16.1 To minimize adverse social, cultural, economic, and environmental effects of solid waste disposal.*

1.9.3.1 This objective addresses the adverse effects from refuse disposal facilities, but it can also appropriately reflect issue 8 as waste may be disposed of informally and illegally in certain areas of the region particularly remote areas. These illegal tipping sites can have adverse social, cultural, and environmental effects because of their uncontrolled nature.

1.9.4 *Objective 16.3 To reduce progressively the amount of solid waste generated per unit of production from farming, industry and households in Southland.*

- 1.9.4.1 This objective appropriately reflects issue 8 because if the amount of solid waste generated is reduced, then there will be less rubbish requiring disposal which can have a flow-on effect to the rate of illegal tipping.
- 1.9.5 *Policy 13.2 Provide for the continuance, maintenance and enhancement of existing facilities and infrastructure in the coastal marine area that-*
- a. *enable the public use and enjoyment of the coastal environment*
  - b. *facilitate or contribute to the social and economic values of the Region*
  - c. *facilitate or contribute to safe use of the coastal area while avoiding, wherever practicable, remedying or mitigating any adverse effects on the environment.*
- 1.9.5.1 This policy is relevant and appropriately reflects issue 8 because existing facilities in the coastal marine area such as rubbish or recycling bins could reduce the amount of illegal tipping or littering. If no rubbish bins can be provided because the area is too remote to enable collection of the rubbish from the bins, signage can be used to encourage people to take their rubbish with them.
- 1.9.6 *Policy 16.6 Reduce uncontrolled and illegal tipping*
- 1.9.6.1 This policy appropriately reflects issue 8. Uncontrolled and illegal tipping is still a problem in Southland, both on roadsides and in the coastal marine area, as well as other areas. Greater adherence to this policy and promotion could greatly benefit the environment because there is a possibility illegal tipping may increase due to the introduction of the waste levy.
- 1.9.7 *Method 16.1 Information, education, and public awareness*
- 1.9.7.1 The third bullet point most appropriately reflects issue 8 because by educating and making the public more aware of the extent of illegal disposal of waste and its effects, they will be more inclined to reduce illegal tipping. In addition from a social perspective this type of activity may increasingly become viewed as unacceptable within the community.
- 1.9.8 *Method 16.2 Promotion*
- 1.9.8.1 The first and last bullet points appropriately reflect issue 8 because minimizing waste will have trickle-down effects on the extent of illegal tipping. Promoting the concept of generator-responsibility will also have trickle-down effects on the extent of illegal tipping due to generators of waste becoming more responsible for end products. They will need to either take them back to dispose of them properly, or will have to design products which don't end up as waste. Both of these responsibilities are likely to reduce pressure to illegally dispose of waste.
- 1.9.9 *Method 16.5 Developing guidelines for resource users*
- 1.9.9.1 This method does not appropriately reflect issue 8 because guidelines are not the right tool to use to address illegal tipping. Education, promotion and enforcement are better suited to this issue.

1.9.10 *Method 16.6 Accords*

1.9.10.1 Again this method is not the best tool to address issue 8. Other methods are better suited.

1.9.11 *Method 16.7 Monitoring*

1.9.11.1 Monitoring of waste efficiency does not appropriately address issue 8. Rather, there could be monitoring of the extent of illegal tipping incidents and if they occur as a result of increases in waste levies at a regional and national level.

1.9.12 *Method 16.8 Investigations and Research*

1.9.12.1 This method appropriately reflects issue 8 because there may need to be investigations into what waste streams are most commonly illegally tipped, where illegal tipping occurs, and why.

1.9.13 *Method 16.9 Prepare, implement and administer a Regional Solid Waste Management Plan*

1.9.13.1 This method should refer to the review process the Solid Waste Plan is going through which is raising the profile of illegal tipping.

1.9.14 *Method 16.16 Enforcement*

1.9.14.1 This method is very relevant and appropriately reflects issue 8. It is important to have enforcement options available when illegal tipping occurs. This ensures that there are consequences for these illegal actions and may discourage illegal tipping. However, enforcement is dependent on the resource available to Councils to police these incidents where the person(s) responsible can found.

1.9.15

Issue	Relevant	Relevant Objectives	Relevant Policies	Relevant Methods
1	Yes	16.3,	16.1, 16.2 (check date), 16.3, 16.7	16.1, 16.2, 16.3, 16.4, 16.6?, 16.7, 16.8, 16.10, 16.11, 16.13, 16.14, 16.15, 16.16
2	Yes	16.1	16.2 (check date)	16.1, 16.3, 16.7, 16.8
3	Yes (move to a different section?)	16.1		16.2
4	Yes	16.1	16.3	16.2
5	Yes	1.1, 1.2, 1.3, 16.2	16.7	16.1, 16.2, 16.4, 16.12
6	Yes (partially)	16.1, 18.1(except Planning Tribunal ref.)	18.1, 18.2	16.3
7	Yes	12.2, 16.1		16.1, 16.2, 16.5, 16.6, 16.7, 16.8
8	Yes	13.1, 16.1, 16.3	13.2, 16.6	16.1, 16.2, 16.7, 16.16

1.9.15.1 In addition to the above issues, associated resource management issues within Southland relating to solid waste also found in the following sections, require consideration:

1. **Takata whenua**

- Issue 1 Protection of wahi tapu
- Issue 2 Recognition of customary use of water and importance of wahi
- Issue 3 Consideration of cultural and traditional spiritual values
- Issue 4 Regard for kaitiakitanga
- Tangata whenua issues relate to solid waste because inappropriate solid waste disposal can have adverse effects on the mauri of water, sites of significance and taonga, such as food and weaving resources. Moreover, solid waste is essentially those materials that are no longer wanted or needed, so are thrown away or disposed in a landfill or similar land based site. This inefficient use of the earth's valuable natural resources conflicts with the cultural and spiritual values of tangata whenua and does not have regard for kaitiakitanga. These issues will be covered and addressed in greater depth in the Tangata Whenua Paper.

2. **Biodiversity**

- Issue 1 Reduction in area and ecological values of areas of significant indigenous vegetation and significant habitats of indigenous fauna.
- Issue 3 Effects on biodiversity
- Issue 4 Ecological effects beyond the immediate area
- Issue 7 Lack of awareness of potential environmental impacts of activities
- Biodiversity issues relate to solid waste because biodiversity is fundamental to the functioning of ecosystem services. These services can be adversely affected because in a natural cycle, ecosystem services function to turn one creature's cast-offs into another's food resource, but our traditional and linear production methods force most waste to be considered rubbish, and the ecosystem services cannot process the types or quantities of 'rubbish.' These issues will be covered and addressed in greater depth in the Biodiversity Paper.

3. **Water Quality**

- Issue 2 Effects on water quality
- Issue 3 Alternative means of treating and discharging waste
- Water quality issues relate to solid waste because leachate from inappropriate disposal of solid waste, such as illegal tipping or contaminated land can adversely affect water quality. These issues will be covered and addressed in greater detail in the Water Quality Paper.

4. **Soils**
  - Issue 2 Discharges to land
  - Issue 3 Alternative means of treating and discharging waste
  - Soils issues relate to solid waste because solid waste is usually discharged to land and leachate and other contaminants can contaminate the soil. These issues will be covered and addressed in greater depth in the Rural/Land Issues Paper.
  
5. **Landscape and Natural Features**
  - Issue 2 Insufficient regard for landscape values
  - Landscape issues relate to solid waste because positioning disposal sites can adversely affect landscape values. Deciding on disposal sites can result in the NIMBY (not in my backyard) syndrome. These issues will be covered and addressed in greater depth in the Landscape Paper.
  
6. **Built Environment**
  - Issue 6 Effect of natural hazards
  - Natural hazards such as a flood event can impact solid waste disposal sites. This issue will be covered and addressed in greater depth in the Natural and Other Hazards Paper.
  
7. **Transportation**
  - Issue 7 Effect of vertical and horizontal alignment of roads and railways.
  - Transportation issues relate to solid waste because solid waste is transported from sites all over the region to the regional landfill, and there is potential risk of solid waste entering the environment during transportation. This issue will be covered and addressed in greater detail in the Transportation Paper.
  
8. **Coast**
  - Issue 3 Point and non-point discharges
  - Issue 4 Waste disposal
  - Issue 16 Natural character of the coastal environment
  - Issue 22 Heritage values
  - Coastal issues relate to solid waste because illegal tipping can occur in the coastal environment which adversely affects amenity values, species and their habitats. These issues will be covered and addressed in greater depth in the Coastal Issues Paper.
  
9. **Cross Boundary**
  - Use, storage, transportation and disposal of waste
  - Consistency in monitoring
  - While there isn't a separate paper detailing cross boundary issues, these issues will be discussed during consultation with the stakeholders while drafting policy.

The following are the resource management issues relating to Hazardous Substances.

1.10 **Issue 1.**

*The management of hazardous substances should be more inclusive than at present, based on a lifecycle management system, which includes their manufacture (or import) and the final, environmentally acceptable, disposal of their residue. (Refer to Objective 17.1; Policies 16.2, 17.1-17.5; Methods 17.1-17.15)*

1.10.1 This issue is no longer relevant because since the RPS was written and adopted just over a decade ago, central government has passed the Hazardous Substances and New Organisms Act (HSNO) which addresses the management of hazardous substances based on a lifecycle management system.<sup>29</sup> The Act and regulations control the import, manufacture or use (including disposal) of manufactured chemicals that have hazardous properties. The Act and regulations also control the import, manufacture or use (including disposal) of hazardous substances. Places that manufacture or store hazardous substances are controlled under both the HSNO and Resource Management Acts. The hazardous facilities screening procedure is one means for local authorities to assess the impact of these activities. The 2005 amendments to the Act brought in a package of changes that allow substances to be considered by the Environmental Risk Management Authority (ERMA) in groups rather than individually. These Group Standards enhance the protection of the environment and the health and safety of people and communities because they enable HSNO controls to be applied not only to the many currently uncontrolled notified toxic substances, but also hazardous wastes. Because this issue identified in Southland's RPS is no longer relevant, it is not worth detailing the relevance of the related objectives, policies and methods.

1.11 **Issue 2.**

*There is insufficient information about the volume, location, movement and disposal of hazardous substances in the Region, particularly domestic and rural chemicals. (Refer to Objective 17.1; Policies 16.3, 17.3, 17.5; Methods 17.1, 17.4, 17.5, 17.7)*

1.11.1 This issue is still relevant. There is insufficient information about the volume, location, movement and disposal of hazardous substances in the Region; however, there is perhaps sufficient information on domestic and rural chemicals because of the agrichemical collections that have occurred. Environment Southland has undertaken two large scale agrichemical collections removing 71.8 tons of agrichemicals from the region. 34 tons of agrichemicals were collected during 1995-1997, and a further 37.8 tons from the 2005-2007 targeted collections.

1.11.2 **1995-1997 collection:**

(a) There was a wide scale collection, involving significant advertising campaign to get farmers to register for a door-to-door pick up of their old unwanted agrichemicals. 398 farms were collected from, a further 70 farms did not require pick up. 16 tons of material collected was treated as Persistent Organic Pollutants (POPs).

---

<sup>29</sup> For more information about the HSNO Act see <http://www.mfe.govt.nz/laws/hsno.html> as at 1 October 2008

1.11.3 **2005-2007 collection:**

- (a) There was an intensive targeted collection staggered over 3 years. It involved direct letters to rural properties in a target area and phone-backs to as many non-respondents as possible. At the end of the 3<sup>rd</sup> year the collection had approached all rural properties except those within the ICC area due to MfE partnership funding ceasing. In addition, farms outside a target collection area that contacted Environment Southland for collection were picked up from each year as well. If a targeted collection was carried out in the Invercargill area an estimate of approximately 5 tons would be gathered taking into account collection results of the 2005-2007 collections.
- (b) While there is a good amount of information because of these collections, there is still an uncertain amount of agrichemicals including POPs remaining on farms in the Southland region. We do know if a target collection was carried in the Invercargill area approximately 5 tons would be gathered. We also know approximately 45% farms did not respond to the 2005-2007 targeted collections of which an unknown proportion will have agrichemicals requiring disposal. An unknown proportion of farms that have already been a part of a collection will also discover agrichemicals on their property in future years requiring disposal. This can occur for a number of reasons; sheds and storage areas may not have been completely checked before the collection(s) or the farm may have been sold and the new owners have discovered old stockpiles of unwanted agrichemicals. The proportion of POPs stored on properties is likely to decrease over time as this has been found in other regions who have undertaken agrichemical collections.
- (c) There are still uncertainties about the volume, location, movement and disposal of other types of hazardous substances in the region. Environment Southland began a process to collect data on hazardous waste stored in territorial authority storage sheds at transfer stations throughout the region. This information was very difficult to obtain as often the data was not recorded. Chemstocks Ltd is contracted to remove the hazardous waste from the storage sheds and the company used to remove the waste every three months, but has cut back to only once a year because the volumes dropped right off. This raises the question of whether people have just reduced their use of hazardous substances or whether they have been disposing them in a different way other than using the storage sheds.

1.11.4 *Objective 17.1 To safeguard the environment from the adverse effects from the existing and past storage, use, disposal or transportation of hazardous substances.*

- 1.11.4.1 This objective is relevant and appropriately reflects issue 1. It is crucial to have up-to-date information of the volume, location, storage, use, disposal and transportation of hazardous substances and their waste in order to safeguard the environment from the adverse effects of these activities. It is difficult to safeguard the environment from activities associated with hazardous substances and waste if those activities are unknown or there is little information on them within the Southland region.

- 1.11.5 *Policy 16.3 Encourage the costs of waste management to be borne by waste producers.*
- 1.11.5.1 This policy does not appropriately reflect issue 2. Encouraging the costs of waste management to be borne by waste producers will have no effect on the information of the volume, location, movement and disposal of hazardous substances and waste in the region.
- 1.11.6 *Policy 17.3 Preparation and implementation of a hazardous substance manifest system for the Southland Region.*
- 1.11.6.1 This policy is relevant and appropriately reflects issue 2. This type of manifest system will increase information and understanding of the volume, location, movement, transportation, use and disposal of hazardous substances and waste which will allow for better management of these effects. In 2001 Environment Southland established a Hazardous Substances Protocol jointly with the three territorial authorities and Public Health South staff. As part of the protocol, Environment Southland was to complete an inquiry form and enter into Hazardous Substances Response Inquiry Database (HSRID), maintain a database manifest of materials stored at landfill sites, and assist in the co-ordination of the removal and disposal of materials stored. The protocol had the support of staff in all four local authorities in Southland and was seen as an efficient method for dealing with hazardous wastes. However, the protocol never really got off the ground except that all four authorities in the region are able to effectively answer hazardous waste queries by directing people to appropriate disposal sites.
- 1.11.7 *Policy 17.5 Minimise the adverse effects on the environment from the storage, use, discharge, transportation and disposal of hazardous substances.*
- 1.11.7.1 This policy is relevant and appropriately reflects issue 2. It is important to have sufficient information on all stages in the lifecycle of hazardous substances in order to minimise potential adverse effects and allow for their effect upon the environment to be considered and planned for by users and consent authorities.
- 1.11.8 *Method 17.1 Information, education and public awareness*
- 1.11.8.1 This method is relevant and appropriately reflects issue 2. Provision of information and education to safely use, store, transport and dispose of hazardous waste is important especially since central government has come out with guidelines and best management practices for those activities. For issue 2, however, it is just as important to gather information as it is to provide it.
- 1.11.9 *Method 17.4 Developing guidelines for resource users*
- 1.11.9.1 This method is no longer relevant. ERMA has developed user guides, quick guides and Codes of Practice for users of hazardous substances. Central government also has in place specific elements or tools contributing to the management of hazardous wastes which include:
- a national working definition of hazardous waste

- the NZ Waste List
- Landfill Waste Acceptance Criteria
- Guidelines for the Management of Hazardous Waste
- a tracking system for liquid and hazardous waste (WasteTRACK)
- the Liquid and Hazardous Waste Code of Practice
- priority hazardous wastes
- a mix of regulatory and non-regulatory tools to address the different aspects of hazardous waste management

1.11.10 *Method 17.5 Protocols and Accords*

1.11.10.1 This method is partially relevant. As discussed above, Environment Southland established a Hazardous Substances Protocol with the three territorial authorities and Public Health South, but it was never used. This method could instead call for this protocol to be updated and used.

1.11.11 *Method 17.7 Investigations and Research*

1.11.11.1 This method is relevant and appropriately reflects issue 2 because investigating and researching specific hazardous substance management will increase information regarding hazardous substance activities. The explanation calls for the identification of contaminated sites in the Region which is very relevant but fits better in a separate section on Contaminated Land.

1.12 **Issue 3.**

*Information regarding the appropriate methods of use, storage, transportation and disposal of hazardous substances, as well as some enforcement procedures to ensure that these proper methods are followed is needed. (Refer to Objective 17.1; Policies 13.4, 16.3, 17.3-17.5; Methods 17.1, 17.2, 17.4, 17.5, 17.7, 17.13-17.15)*

1.12.1 This issue is no longer relevant because the HSNO Act and ERMA control the activities of hazardous substances throughout their lifecycle. ERMA publishes information on appropriate ways to comply with this legislation. Central Government has also set up a policy framework to reduce and safely manage hazardous wastes in New Zealand. The hazardous wastes policy framework covers seven main elements:

1. the safe treatment and disposal of 'historic' hazardous wastes such as those associated with contaminated sites and unwanted agricultural chemicals.
2. incentives to reduce the generation of hazardous wastes and to recover and reuse materials that otherwise would be wasted;
3. information about the generation of hazardous wastes and their lifecycle, tracking them through to safe disposal, recovery or recycling'
4. the safe storage and transport of hazardous wastes;
5. the safe treatment and/or disposal of hazardous wastes;
6. international obligations for the safe management of hazardous wastes;
7. clarification of the responsibilities of different parties for the reduction and safe management of hazardous wastes and for monitoring policy implementation.

1.12.2 In addition, recent amendments to the HSNO Act enable regional councils to act as HSNO enforcement agencies. Because this issue is no longer relevant it is not worth detailing the related objectives, policies or methods.

1.13 **Issue 4.**

*There are unknown locations of and/or threats from contaminated sites the Region and a comprehensive identification and investigation of sites in the Region is needed, for example, as is currently occurring with dieldrin sites. (Refer to Objective 17.1; Policies 16.2, 17.1-17.3, 17.5; Methods 17.1, 17.6-17.8)*

1.13.1 This issue is very relevant for Southland today. In previous years Environment Southland has been involved with some contaminated land cases. Accordingly, a number of files have been made and stored. Some files relate to one specific site while other files contain information on multiple sites. The files have been entered into 2 excel documents ('tank sites' and 'other sites'). Currently they list 87 'tank sites' and 30 'other sites.' The type, amount and layout of information on each site is variable, therefore the true number of sites and their locations held on file is not easily accessible. Moreover, there have been no HAIL (hazardous activities and industries list) searches or risk ranking of the sites on file nor has there been any active investigation into locations of potentially contaminated sites. Common activities that cause land to become contaminated such as the manufacture and use of pesticides and fertilisers; production of coal and gas; mining; timber treatment; and sheep dipping have all occurred in the Southland region so there are likely to be contaminated sites in Southland. There may also be unknown locations and numbers of closed landfill sites that could potentially be contaminated. Known closed landfills in the Southland District Area have been clearly identified and have had their risks assessed and recorded on a unique Hazard layer of SDC's GIS system. This issue may fit better in a separate section on Contaminated Land.

1.13.2 *Objective 17.1 To safeguard the environment from the adverse effects from the existing and past storage, use, disposal or transportation of hazardous substances.*

1.13.2.1 This objective is relevant and appropriately reflects issue 4. The existing and past storage, use, discharge or disposal of hazardous substances has the potential to cause land to become contaminated. By not knowing the locations of these sites where these activities occur or have occurred, it is difficult to safeguard the environment from the effects of contaminated land such as continual leaching of hazardous substances into soil or groundwater.

1.13.3 *Policy 16.2: Establish by 1 October 1995, and maintain, an effective monitoring system which- tracks material within the waste stream; assesses the impacts associated with the production, use, reuse, recycling and disposal of waste materials; and provides for any information collected to be assessed and incorporated into a public regional information database.*

1.13.3.1 This policy is partially relevant, apart from the date 1 October 1995. While tracking materials in the waste stream, assessing the impacts associated with the production, use, reuse, recycling and disposal of waste materials and providing any information collected to be incorporated into a public regional database

will help to prevent new sites from becoming contaminated, it will not help locate or investigate already contaminated sites from past activities associated with hazardous substances.

- 1.13.3.2 The 3 TA's of Southland intend to make liquid waste tracking a requirement of receipt of liquid wastes at their wastewater treatment facilities, under their respective tradewaste bylaws. It is important that the liquid/soild waste phase change does not act to conceal waste flows in any tracking system.
- 1.13.4 *Policy 17.1 Promote the co-ordination of hazardous substances management between national, regional and territorial authorities.*
- 1.13.4.1 This policy is relevant and appropriately reflects issue 4. Coordinating hazardous substances management could include managing land contaminated by hazardous substances. Identifying and monitoring contaminated land is a function of regional councils under s 30 of the RMA, and could be more effective and efficient if it is coordinated with the territorial authorities by using any information available to them and also if coordinated with central government by using funding provided by them to investigate sites. MfE has promoted the development of the Waste Track tool, which is being incorporated in codes of practice.
- 1.13.5 *Policy 17.2 Ensure that present and future sites used for the disposal of, or contaminated by hazardous substances do not pose additional or ongoing risks to people or the environment.*
- 1.13.5.1 This policy is relevant and appropriately reflects issue 4. Ensuring present and future sites contaminated by hazardous substances do not pose risks to people or the environment means understanding their locations and potential threats. Without this information it is very difficult to protect the environment or people from these risks.
- 1.13.6 *Policy 17.3 Preparation and implementation of a hazardous substances manifest system for the Southland Region.*
- 1.13.6.1 This policy is partially relevant to issue 4. Tracking the activities throughout the lifecycle of hazardous substances can be a way to investigate sites that could potentially become contaminated in the future or prevent them from becoming contaminated. Tracking the current activities of hazardous substances may or may not be effective in locating old sites that are contaminated from the activities associated with hazardous substances. If the current activities associated with hazardous substances are similar to those in the past then it may be effective.
- 1.13.7 *Policy 17.5 Minimize the adverse effects on the environment from the storage, use, discharge, transportation and disposal of hazardous substances.*
- 1.13.7.1 This policy appropriately reflects issue 4. Locating and identifying contaminated sites and their threats will help to minimize the adverse effects from the discharge of hazardous substances at those sites.

1.13.8 *Method 17.1 Information, education and public awareness*

1.13.8.1 This method appropriately reflects issue 4. Providing information and education about the threats from contaminated sites is important for people who want to subdivide or develop contaminated land. If the public or any agency tests for land contamination it will be important for the council to be provided that information in order to increase knowledge. It is more appropriate, however, in terms of this method to gather information by identifying and investigating potential contaminated land prior to subdivision or development. This has not occurred previously in Southland and is particularly relevant for those activities listed on the HAIL.

1.13.9 *Method 17.6 Monitoring*

1.13.9.1 This method may or may not appropriately reflect issue 4. This method calls for the development of a hazardous substances manifest tracking system undertaken by transporters and disposers of hazardous substances in order to monitor the movement, use, storage, and disposal of hazardous substances into, within, and out of the region. It is unclear whether this type of manifest system will help to locate and identify contaminated sites. If the movement, use, storage and disposal is similar to what occurred in the past, then it may be useful to locate, identify and monitor contaminated land. It would be more appropriate for this method to call for the monitoring of land that is known to be contaminated to determine if it poses any risk to people or the environment and also to monitor the site during and after remediation.

1.13.10 *Method 17.7 Investigations and Research*

1.13.10.1 This method is relevant and appropriately reflects issue 4. There has been little to no identification or investigation of sites that could be on the HAIL. Likewise, without investigation of sites, there has been no research into the potential for remediation of sites either.

1.13.11 *Method 17.8 Prepare, Implement and administer Regional Plans and District Plans*

1.13.11.1 This method appropriately reflects issue 4. The Regional Solid Waste Management Plan for Southland is currently under review and is looking at including provisions for identifying, investigating, and discharging on contaminated land which were not included in the original version of the Plan.

1.14 **Issue 5.**

*Some routes used for the movement of hazardous substances may pose risks to people and communities. (Refer to objective 17.1; Policies 13.4, 16.2, 17.1, 17.3, 17.5; Methods 17.1-17.15)*

1.14.1 This issue is still relevant because the movement of hazardous substances is unknown in the region and if there were ever an accident involving the spillage of hazardous substances this could pose a risk to people and communities near the area of the spillage.

- 1.14.2 *Objective 17.1 To safeguard the environment from the adverse effects from the existing and past storage, use, disposal or transportation of hazardous substances.*
- 1.14.2.1 This objective appropriately reflects issue 5 because if some routes for the movement of hazardous substances pose a risk to people or environment, it will be important to take measures to safeguard the environment from those risks such as finding alternative routes if feasible.
- 1.14.3 *Policy 13.4 Avoid wherever practicable, or mitigate any adverse effects of the manufacture, storage, use, disposal, or transportation of hazardous substances.*
- 1.14.3.1 This policy refers to the activities associated with hazardous substances in the coastal marine environment. This policy is still relevant and appropriately reflects issue 5. Because the coastal marine area is at least part of the time covered by water, hazardous substances that enter this environment are easily spread. Furthermore, because it contains large amounts of marine life it is very vulnerable to the adverse effects of any hazardous substances within its confines. Therefore, it is necessary to ensure that the movement or transportation of hazardous substances within the coastal environment, adverse environmental effects are avoided wherever practicable, or mitigated. This will include the provision of secondary containment systems to reduce the risk of spillage or the development of contingency plans to respond to marine emergencies, and undertake remediation or mitigation following the spillage or discharge of persistent oils or other materials.
- 1.14.4 *Policy 16.2 Establish by 1 October 1995, and maintain, an effective monitoring system which- tracks material within the waste stream; assesses the impacts associated with the production, use, reuse, recycling and disposal of waste materials; and provides for any information collected to be assessed and incorporated into a public regional information database.*
- 1.14.4.1 This policy appropriately reflects issue 5 apart from the date. It is important to maintain an effective monitoring system which tracks the material within the waste stream and assesses the impacts associated with the movement and disposal of hazardous substances in order to determine if some routes pose a risk to the environment and people. A monitoring system could help to determine if alternative routes are better (pose less risk) or help determine the risk current routes may or may not pose.
- 1.14.5 *Policy 17.1 Promote the coordination of hazardous substances management between national, regional and territorial authorities.*
- 1.14.5.1 This policy is relevant and appropriately reflects issue 5. Central government has developed some tools to coordinate hazardous substances management, including their safe transport, so these need to be implemented at the regional and district level.

- 1.14.6 *Policy 17.3 Preparation and implementation of a hazardous substances manifest system for the Southland Region.*
- 1.14.6.1 This policy is relevant and appropriately reflects issue 5. In order to manage the effects of hazardous substances along some routes, it is necessary to keep track of the movement of hazardous waste into, within, and out of the region. This will also help determine whether the risks to people and the environment from adverse effects need to be avoided, remedied or mitigated or if alternative routes can be used.
- 1.14.7 *Policy 17.5 Minimize the adverse effects on the environment from the storage, use, discharge, transportation and disposal of hazardous substances.*
- 1.14.7.1 This policy appropriately reflects issue 5. Some of the adverse effects on the environment from the transportation of hazardous substances are the potential risk to the community and environment along the routes and these effects should be minimized.
- 1.14.8 *Method 17.1 Information, education and public awareness*
- 1.14.8.1 This method appropriately reflects issue 5. Providing information about travel routes used for hazardous substances and what to do if an accident should ever occur are important to reduce the potential risk from their movement.
- 1.14.9 *Method 17.2 Promotion*
- 1.14.9.1 This method appropriately reflects issue 5. Identifying areas where alternatives to hazardous substances can be use and promoting the use of those alternatives will help to decrease the movement of hazardous substances and decrease their risk to the community and environment. Promoting alternative routes to move hazardous substances is also important in order to decrease risk of adverse effects.
- 1.14.10 *Method 17.3 Advocating*
- 1.14.10.1 This method appropriately reflects issue 5. While central government has developed tools regarding the safe transportation of hazardous substances and waste, it is important to advocate for it to provide resources and training to local authorities on how to use and implement those tools.
- 1.14.11 *Method 17.4 Developing guidelines for resource users*
- 1.14.11.1 This method is no longer relevant. Central government has developed Guidelines for the Management of Hazardous Waste and the HSNO Act and regulations control the import, manufacture or use (including disposal) of hazardous substances.

1.14.12 *Method 17.5 Protocols and Accords*

1.14.12.1 This method appropriately reflects issue 5. While a protocol between Environment Southland, the three territorial authorities and Public Health South has already been established, it has never been used. It could be updated to include coordinating safe routes for movement of hazardous substances.

1.14.13 *Method 17.6 Monitoring*

1.14.13.1 This method appropriately reflects issue 5. The development of a hazardous substances manifest, which is primarily a tracking system undertaken by producers, transporters and disposers, will enable the movement of hazardous substances into, within, and out of the Region to be monitored. Monitoring this movement will help determine if there are risks to communities or the environment along the routes.

1.14.14 *Method 17.7 Investigations and Research*

1.14.14.1 This method appropriately reflects issue 5. Carrying out investigations into the routes used for the movement of hazardous substances will help determine any risks and how to avoid, remedy or mitigate them by investigating, for example, alternative routes.

1.14.15 *Method 17.8 Prepare, implement and administer Regional Plans and District Plans*

1.14.15.1 This method appropriately reflects issue 5. The review of the Regional Solid Waste Management Plan will most likely include revising the Plan to include provisions for the movement of hazardous waste.

1.14.16 *Method 17.9 Plans, other documents and action under other Acts*

1.14.16.1 This method appropriately reflects issue 5. Other Acts such as HSNO or documents put out by Ministry for Environment on the safe movement of hazardous substances will require action to minimize adverse effects and risks.

1.14.17 *Method 17.10 Resource Consents*

1.14.17.1 This method is not relevant and does not appropriately reflect issue 5. The use of resource consents is not the best tool to use to minimize the risk from the movement of hazardous substances.

1.14.18 *Method 17.11 Economic Instruments*

1.14.18.1 This method appropriately reflects issue 5. The use of economic instruments, for example, ensuring that the generators of hazardous substances pay for their reuse, appropriate transport and disposal, can be an effective method of either minimizing their use or finding non-hazardous alternatives which decreases the risk to the community and the environment along the routes of transporting hazardous substances.

1.14.19 *Method 17.12 Assistance*

1.14.19.1 This method does not appropriately reflect issue 5. Assisting industry with implementing 'cleaner production' programs will not have an effect on the routes used for their movement, but it could have an effect on minimizing their use.

1.14.20 *Method 17.13 Works and Services*

1.14.20.1 Local authorities can have a role in providing sites for the controlled storage, decontamination, treatment and disposal of hazardous substances. Depending upon the material, this may be on a local, regional or inter-regional basis. Local authorities can also have a role in the planned collection, storage and disposal of hazardous substances, for example, unwanted agricultural chemicals and they can control the routes used the movement of hazardous substances within the Region.

1.14.21 *Method 17.14 Contingency Plans*

1.14.21.1 This method is not relevant for issue 5. It fits better with issue 6—the accidental spillage of hazardous substances.

1.14.22 *Method 17.15 Consultation*

1.14.22.1 This method appropriately reflects issue 5. Consultation will be necessary between users of hazardous substances, the tangata whenua, local bodies and the community in order to ensure there are safe routes for the movement of hazardous substances.

1.15 **Issue 6.**

*Accidental spillages of environmentally damaging substances, and the emergency discharge of raw or partially treated industrial and domestic effluent, adversely effects the receiving environment. (Refer to Objective 15.2, 17.1; Policies 5.4, 5.9, 8.6, 13.4, 16.2, 17.3, 17.5; Methods 17.1-17.15)*

1.15.1 This issue is still relevant because there is always the chance that there will be accidental spillages of environmentally damaging substances and emergency discharge of raw or partially treated industrial and domestic effluent.

1.15.2 *Objective 15.2 To reduce the social and economic costs that result from the occurrence, avoidance, mitigation and remedying of natural hazards.*

1.15.2.1 This objective is relevant and appropriately reflects issue 6. The occurrence of natural hazards can result in considerable financial and social, direct and indirect costs, to the community, both at an individual and collective level. The occurrence of the specific event may be only the beginning. Direct costs arise from the inundation itself, and indirect costs arise from materials, sewage, hazardous substances and other material mixing with or being carried away by floodwaters, building of protection works, devaluation of property, prevention of outbreaks of disease, maintenance of protection works and concern over the adequacy of any works built.

- 1.15.3 *Objective 17.1 To safeguard the environment from the adverse effects from the existing and past storage, use, disposal or transportation of hazardous substances.*
- 1.15.3.1 This objective is relevant and appropriately reflects issue 6. Accidental spillages of hazardous substances or untreated effluent can occur because of a variety of reasons and the environment needs to be safeguarded from these effects through emergency response and clean-up actions.
- 1.15.4 *Policy 5.4 Utilize land treatment of liquid wastes where this can be undertaken in a sustainable manner and without significant adverse environmental effects.*
- 1.15.4.1 This policy is relevant and appropriately reflects issue 6. The Proposed Regional Water Plan prefers discharges to land over discharges to water where this is practicable and the effects are less adverse. The adverse effects of discharges on surface water quality can largely be avoided by removing the discharge from surface water altogether. In the emergency discharge of raw or partially treated industrial or human effluent, it is therefore preferred to discharge to land. However, some discharges to land can have adverse effects on surface water bodies, groundwater and soil quality (e.g. through runoff or leaching), will be objectionable based on cultural reasons and will not be practicable in every case.
- 1.15.5 *Policy 5.9 Discourage, and where practicable prohibit, the discharge of persistent and bio-accumulative contaminants into water.*
- 1.15.5.1 This policy appropriately reflects issue 6. If there is an accidental spillage of persistent and bio-accumulative contaminants it will be important during the clean-up process to prevent or discourage the discharge of those contaminants into water.
- 1.15.6 *Policy 8.6 Require, where practicable, the rehabilitation of contaminated soils where there is a significant adverse effect on the environment.*
- 1.15.6.1 This policy is relevant and appropriately reflects issue 6. If an accidental spillage of environmentally damaging substances or the emergency discharge of raw or partially treated industrial or human effluent occurs and there is a significant adverse effect on the soils then it is important the soils are rehabilitated. This policy would also fit well within a section on Contaminated Land.
- 1.15.7 *Policy 13.4 Avoid where practicable, or mitigate any adverse effects of the manufacture, storage, use, disposal, or transportation of hazardous substances.*
- 1.15.7.1 This policy is relevant and appropriately reflects issue 6. An adverse effect of the activities associated with hazardous substances involves the potential for accidental spillages to occur, and if this should occur the effects of the spillage should be mitigated.

- 1.15.8 *Policy 16.2 Establish by 1 October 1995, and maintain, an effective monitoring system which- tracks material within the waste stream; assesses the impacts associated with the production, use, reuse, recycling and disposal of waste materials; and provides for any information collected to be assessed and incorporated into a public regional information database.*
- 1.15.8.1 This policy is relevant, apart from the date, and appropriately reflects issue 6. An effective monitoring system will help keep track of what hazardous substances are in the region and where so that if an accidental spillage occurs, the substance will be easily identified and action to remediate the spill can quickly occur.
- 1.15.9 *Policy 17.3 Preparation and implementation of a hazardous substances manifest system for the Southland Region.*
- 1.15.9.1 This policy is relevant and appropriately reflects issue 6. A manifest system that tracks the movement, use, storage and disposal of hazardous substances into, within and out of the Region will make it easier to locate and respond to an incident of an accidental spillage of hazardous substances.
- 1.15.10 *Policy 17.5 Minimize the adverse effects on the environment from the storage, use, discharge, transportation and disposal of hazardous substances.*
- 1.15.10.1 This policy is relevant and appropriately reflects issue 6. At any one of these stages in the lifecycle of hazardous substances, an accidental spillage can occur and it is important that the adverse effects on the environment are minimized.
- 1.15.11 *Method 17.1 Information, education and public awareness*
- 1.15.11.1 This policy is relevant and appropriately reflects issue 6. Providing information, education and public awareness about what to do if an accidental spillage of hazardous substances or the emergency discharge of raw or partially treated effluent occurs will be important to avoid or mitigate the adverse effects.
- 1.15.12 *Method 17.2 Promotion*
- 1.15.12.1 This method appropriately reflects issue 6. Promoting alternatives to hazardous substances will help to avoid spillages if those substances are not used in the first place.
- 1.15.13 *Method 17.3 Advocating*
- 1.15.13.1 This method appropriately reflects issue 6. Advocacy to central government is an on-going activity. In the case of an accidental spillage of hazardous substances, it may be appropriate to advocate to central government for funding to help rehabilitate the site of the spill.
- 1.15.14 *Method 17.4 Developing guidelines for resource users*

1.15.14.1 This method is no longer relevant to issue 6. An accidental spillage of hazardous substances will require emergency management. ERMA put in place emergency management requirements which are found in the Hazardous Substances (Emergency Management) Regulations. These regulations list three levels of emergency management requirements which change depending on the quantities of hazardous substances held (i.e. the level of potential risk).

1.15.14.2 The levels include requirements for the provision of:

- information (e.g. first aid instructions or spill response procedures)
- equipment (e.g. fire-extinguishers)
- emergency response plans.

1.15.15 *Method 17.5 Protocols and Accords*

1.15.15.1 This method is relevant and appropriately reflects issue 6. The use of protocols will result in coordination of hazardous substances management between local authorities, Public Health South, NZ Fire Service, and other key parties that deal with hazardous substances in relation to spills and disposal. A group does meet quarterly to discuss plans and deal with issues that relate to emergency management of hazardous substance spills and this system has been working effectively without formally written protocols, but formalizing a protocol or MOU could be looked into.

1.15.16 *Method 17.6 Monitoring*

1.15.16.1 This method appropriately reflects issue 6. The development of a hazardous substances manifest, which is primarily a tracking system undertaken by producers, transporters and disposers, will enable the movement, use, storage and disposal of hazardous substances into, within and out of the Region to be monitored. Monitoring these activities will ensure efficient and effective responses to accidental spillages of hazardous substances.

1.15.17 *Method 17.7 Investigations and Research*

1.15.17.1 This method appropriately reflects issue 6. There may need to be investigations and research into best management practices of responding to and taking action in the event of an accidental spillage of hazardous substances or the emergency discharge of effluent.

1.15.18 *Method 17.8 Prepare, implement and administer Regional Plans and District Plans*

1.15.18.1 This method appropriately reflects issue 6. The Regional Solid Waste Management Plan is under review and will be looking at including provisions for cleaning up land that has become contaminated, for example, from an accidental spillage of hazardous substances.

1.15.19 *Method 17.9 Plans, other documents and action under other Acts*

1.15.19.1 This method appropriately reflects issue 6. In the case of an accidental spillage of hazardous substances, action will be required under the HSNO Act or any other acts.

1.15.20 *Method 17.10 Resource Consents*

1.15.20.1 This method does not appropriately reflect issue 6. Resource consents are not the best methods for addressing accidental spillages or emergency discharges.

1.15.21 *Method 17.11 Economic Instruments*

1.15.21.1 This method does not appropriately reflect issue 6. Economic incentives will not address minimising the effects from the accidental spillage or emergency discharge of hazardous substances.

1.15.22 *Method 17.12 Assistance*

1.15.22.1 This method appropriately reflects issue 6. In the case of an accidental spillage, local authorities such as Environment Southland will assist in investigating the effects and remedying them.

1.15.23 *Method 17.13 Works and Services*

1.15.23.1 This method is very relevant and appropriately reflects issue 6. Local authorities can have a role in providing sites for the controlled storage, decontamination, treatment and disposal of hazardous substances recovered from an accidental spillage. Depending upon the material, this may be on a local, regional or inter-regional basis.

1.15.24 *Method 17.14 Contingency Plans*

1.15.24.1 This method is relevant and appropriately reflects issue 6. In order to enable a rapid and coordinated response should accidents occur, it will be necessary to prepare contingency plans in consultation with New Zealand Fire Service, New Zealand Police, territorial authorities, Ministry of Health, Occupation Safety and Health, industry representatives and government bodies. Such plans will need to outline responses to spills, and how provision should be made for the temporary storage of hazardous substances. Currently there is a system in place to respond to and handle accidental spillages, but there is a gap in the system because the region lacks a safe place to store hazardous substances recovered from an accident.

1.15.25 *Method 17.15 Consultation*

1.15.25.1 This method is relevant and appropriately reflects issue 6. Consultation will be necessary between users of hazardous substances, the tangata whenua, local bodies and the community when discussing a suitable site for the storage of hazardous substances recovered from an accidental spillage.

1.16 **Issue 7.**

*There is insufficient knowledge about the long-term effects on ecosystems within New Zealand of using hazardous substances. (Refer to Objectives 2.1, 17.1; Policies 16.2, 16.3, 17.1, 17.3, 17.5; Methods 17.1, 17.6-17.8, 17.12, 17.15)*

- 1.16.1 This issue is still relevant today. There has been some studies done on the effects on ecosystems of *some* hazardous substances, but there still remain uncertain long-term effects from using other hazardous substances. Most research is focused on the effects from using hazardous substances on human health. For example, the Soil Guideline Values for determining the contamination of land from the activities associated with hazardous substances are based on effects to human health, but the guidelines do not know or take into account the effects on ecological health.
- 1.16.2 *Objective 2.1 To protect areas of significant indigenous vegetation and significant habitats of indigenous fauna within Southland where this will maintain or enhance biodiversity of indigenous ecosystems.*
- 1.16.2.1 This objective appropriately reflects issue 7. Areas of significant indigenous vegetation and significant habitats of indigenous fauna could be quite vulnerable to the effects of using hazardous substances and will require protection, even if the long-term effects are unknown.
- 1.16.3 *Objective 17.1 To safeguard the environment from the adverse effects from the existing and past storage, use, disposal or transportation of hazardous substances.*
- 1.16.3.1 This objective appropriately reflects issue 7. Since there is insufficient knowledge of the long-term effects on the ecosystem from using hazardous substances it may be appropriate to adopt a precautionary approach to safeguard the environment from even unknown effects from using hazardous substances.
- 1.16.4 *Policy 16.2: Establish by 1 October 1995, and maintain, an effective monitoring system which- tracks material within the waste stream; assesses the impacts associated with the production, use, reuse, recycling and disposal of waste materials; and provides for any information collected to be assessed and incorporated into a public regional information database.*
- 1.16.4.1 This policy appropriately reflects issue 7, apart from the date. An effective monitoring system which assesses the impacts associated with the production, use, reuse, recycling and disposal hazardous substances can provide information about the effects on ecosystems from these activities.
- 1.16.5 *Policy 16.3: Encourage the costs of waste management to be borne by waste producers.*
- 1.16.5.1 This policy does not appropriately reflect issue 7. This policy will not help to increase knowledge about the long-term effects on ecosystems from using hazardous substances.
- 1.16.6 *Policy 17.3 Preparation and implementation of a hazardous substances manifest system for the Southland Region.*
- 1.16.6.1 This policy appropriately reflects issue 7. Keeping track of the movement, use, storage and disposal of hazardous substances into, within and out of the Region can help determine if any effects to ecosystems arise because of these activities.

- 1.16.7 *Policy 17.5 Minimize the adverse effects on the environment from the storage, use, discharge, transportation and disposal of hazardous substances.*
- 1.16.7.1 This policy appropriately reflects issue 7. It will be important increase knowledge on the long-term effects to ecosystems from using hazardous substances in order to minimize adverse effects on the environment.
- 1.16.8 *Method 17.1 Information, education and public awareness*
- 1.16.8.1 This method appropriately reflects issue 7. It is important to gather as much information as possible on the adverse effects on ecosystems from using hazardous substances and educate and raise public awareness about these effects.
- 1.16.9 *Method 17.6 Monitoring*
- 1.16.9.1 This method appropriately reflects issue 7. Monitoring of the effects on ecosystems from using hazardous substances is important in determining if the effects are adverse or how to mitigate adverse effects.
- 1.16.10 *Method 17.7 Investigations and Research*
- 1.16.10.1 This method is very relevant. It is important for there to be investigations and research into the effects on ecosystems from using hazardous substances. It will be important for guidelines to take into consideration the effects hazardous substances have on human and ecological health.
- 1.16.11 *Method 17.8 Prepare, implement and administer Regional Plans and District Plans*
- 1.16.11.1 This method appropriately reflects issue 7. Regional and/or District Plans could include provisions to help increase knowledge on the long-term effects to ecosystems from using hazardous substances or could include provisions to safeguard ecosystems from known or unknown effects from using hazardous substances.
- 1.16.12 *Method 17.12 Assistance*
- 1.16.12.1 This method is relevant. Since long-term effects on ecosystems from using hazardous substances are widely unknown, assisting industries with reducing the amount of hazardous substances produced, imported, used, stored and transported in the Region will help avoid those effects should they exist.
- 1.16.13 *Method 17.15 Consultation*
- 1.16.13.1 This method is relevant. Consultation will be necessary between users of hazardous substances, the tangata whenua, local bodies and the community in gathering information, sharing knowledge, investigating and determining if there are any long-term effects on ecosystems from using hazardous substances.

1.16.14

Issue	Relevant	Relevant Objectives	Relevant Policies	Relevant Methods
1	No	n/a	n/a	n/a
2	Yes	17.1	17.3, 17.5	17.1, 17.5?, 17.7
3	No	n/a	n/a	n/a
4	Yes (fits better in Contaminated Land section)	17.1	16.2?, 17.1, 17.2, 17.3?, 17.5	17.1, 17.6?, 17.7, 17.8
5	Yes	17.1	13.4, 16.2(check date), 17.1, 17.3, 17.5	17.1, 17.2, 17.3, 17.5, 17.6, 17.7, 17.8, 17.9, 17.11, 17.13, 17.15
6	Yes	15.2, 17.1	5.4, 5.9, 8.6, 13.4, 16.2(check date), 17.3, 17.5	17.1, 17.2, 17.3, 17.5, 17.6, 17.7, 17.8, 17.9, 17.12, 17.13, 17.14, 17.15
7	Yes	2.1, 17.1	16.2(date), 17.3, 17.5	17.1, 17.6, 17.7, 17.8, 17.12, 17.15

1.16.15 In addition to the above issues, associated resource management issues within Southland relating to hazardous substances can also be found in the following sections:

(a) **Takata whenua**

- Issue 1 Protection of wahi tapu
- Issue 2 Recognition of customary use of water and importance of wahi tapu, wahi taoka and mahika kai
- Issue 3 Consideration of cultural and traditional spiritual values
- Issue 4 Regard for kaitiakitanga
- Tangata whenua issues relate to hazardous substances because the adverse effects from hazardous substances can have direct impact on environmental and human health and can impact the cultural integrity of mahinga kai, wahi tapu, wahi taonga and cultural landscapes. These issues will be covered and addressed in greater depth in the Tangata Whenua paper.

(b) **Biodiversity**

- Issue 3 Effects on biodiversity
- Issue 4 Ecological effects beyond the immediate area
- Issue 7 Lack of awareness of potential environmental impacts of activities
- Biodiversity issues relate to hazardous substances because if hazardous substances are used out in the environment or escape into the environment they could adversely affect flora and fauna. Hazardous substances may also have effects on ecosystems that are largely unknown. These issues will be covered and addressed in greater depth in the Biodiversity paper.

(c) **Water Quality**

- Issue 2 Effects on water quality
- Water Quality relates to hazardous substances because if hazardous substances are discharged to land that can seep into and contaminate groundwater or hazardous substances may be accidentally discharged to surface water and degrade water quality.

These issues will be covered and addressed in greater depth in the Water Quality paper.

(d) **Soils**

- Issue 4 Discharge of agricultural wastes to land
- Issue 4 does not relate to hazardous substances, but soils do relate because soil can become contaminated from past use or storage of hazardous substances that leach into the land at the site of their use or storage. This issue will be covered and addressed in greater depth in the Rural/Land Use paper.

(e) **Transportation**

- Issue 1 Transportation of hazardous substances
- Transportation relates to hazardous substances because hazardous substances are transported frequently through their lifecycle—transportation from their manufacture (or import) to the site for use to a disposal site. Transporting hazardous substances is very risky given they are often flammable or toxic. These issues will be covered and addressed in greater depth in the Transportation paper.

(f) **Air Quality**

- Issue 3 Discharges to the atmosphere
- Air Quality relates to hazardous substances because manufacturing or using hazardous substances can result in the release of toxins into the air. Some of these toxins can harm the atmosphere or ozone layer. These issues will be covered and addressed in greater detail in a number of the other papers, for example the Transport Paper and the Urban Paper.

(g) **Coast**

- Issues 6, 7 Transportation of hazardous substances
- Coastal issues relate to hazardous substances because transporting hazardous substances can happen in the coastal marine environment and there could be significant impacts to the coastal marine environment and species if a spillage or accident ever occurs involving hazardous substances. These issues will be covered and addressed in greater depth in the Coastal Issues paper.

(h) **Natural Hazards**

- Issue 12 Storage of hazardous substances
- Natural hazards issues relate to hazardous substances because a natural hazard event such as an earthquake or flood could effect hazardous substance storage facilities and let those substances escape into the environment. These issues will be covered and addressed in greater depth in the Natural Hazards paper.

(i) **Cross-boundary Issues**

- Use, storage, transportation and disposal of hazardous substances
- Consistency in monitoring

While there isn't a separate paper detailing cross boundary issues, these issues will be discussed during consultation with the stakeholders while drafting policy.

## Appendix 2 - Relevance of existing Southland District Plan issues

2.1 The existing Southland District Plan recognises that waste management is an integral part of the sustainable management of the Southland District and highlights the importance of waste management in terms of promoting the sustainable management of natural and physical resources. The existing Plan identifies four significant resource management waste issues with these being; *inefficient use of resources, scarcity of suitable land, site rehabilitation, future use and long term liabilities, and responsibility for historical disposal sites.*

2.2 Inefficient use of resources

### Explanation

*Due to the distance to markets a number of waste minimisation methods are not viable. The encouragement of combined approaches, bulking of resources and providing economies of scale could minimise the inefficient use and wastage of resources.*

2.2.1 The explanation and the issue of *inefficient use of resources* do not link in well with each other. The explanation states that due to distance to markets a number of waste minimisation methods are not viable. This statement appears to be referring to recycling and markets for recycled materials. The issue of inefficient use of resources would seem to encompass a wider resource management issue than this explanation focuses on. In terms of the viability of recycling certain materials the recycling industry and markets for recycled goods have developed considerably since the existing District Plan was formulated. Nationwide and regionally the amount of material being recycled has increased significantly and this has created economies of scale meaning it is now economically viable to recycle certain materials where previously it wasn't.

2.2.3 Increased costs for some raw materials particularly metals has also lead to increased value for some recycled materials and waste metal that has been processed can in many instances be reused. New uses for recycled materials and the development of new techniques and technology have also resulted in the ability to recycle materials that previously were unable to be. Given these changes the current explanation of the issue of *inefficient use of resources* may need to be reworded. The explanation of this issue is not as relevant as it would have been at the time the existing District Plan was written. A focus on *Waste Minimisation* through reductions in the amount of recyclable and green waste material that are being deposited into the Southland Regional Landfill (SRL) site may be more appropriate in terms of framing this issue for inclusion in the second generation District Plan. The issue of waste minimisation is discussed in more detail later in this document.

2.3 Scarcity of suitable land

### Explanation

*Land ideal for waste facilities for any facet of an integrated waste strategy will be scarce due to its unsuitability for the following reasons:*

- *Close proximity of development*
- *NIMBY attitudes (short for "Not-In-My-Back-Yard")*
- *Physical unsuitability*
- *Incompatibility of land uses*

*Further, some waste management facilities will have effects which cannot be completely mitigated. These effects may not be compatible with neighbouring land uses and must therefore not be sited in close proximity.*

2.3.1 The second significant waste issue identified in the existing plan is *scarcity of suitable land*. The explanation of this issue centres on the scarcity of land suitable for waste facilities in an integrated waste strategy. Issues that effect the availability of suitable land that are listed include physical unsuitability, incompatibility of land uses, NIMBY (Not In My Backyard) attitudes and close proximity of existing development. With the establishment of the Southland Regional Landfill the issue of scarcity of land for landfill sites in the Southland region has been resolved for the medium to long term future. The reuse and establishment of former landfill sites as transfer stations to a certain extent may have avoided many of the issues listed in the explanation from arising, issues such as incompatibility of land uses and NIMBY attitudes for example.

2.3.2 The establishment of the new regional waste facility means that resource management and political issues usually experienced in the development of new waste facilities are not likely to arise for the medium to long term future. One exception to this may be the need in the near future for the establishment of a regional organic/green waste composting facility. The establishment of a regional green waste collection and composting service would require the development of a suitable facility somewhere in the region to process this waste. As noted earlier in this report the establishment of a facility such as this would require a number of resource consents and a suitable locations for the facility would need to be found. There is likely to be a number of potential environmental effects that would need to be addressed in the development of such a facility including transportation, odour and noise issues among others. There is also likely to be some potential resistance from adjoining landowners/occupiers.

2.4 Site rehabilitation, future use and long term liabilities.

Explanation

*Waste disposal facilities may create long term liabilities well into the future. These liabilities will last long after the facility's useful life has expired. This liability must be covered fully by those who used and are responsible for the original land use.*

2.5 Responsibility for historical disposal sites

Explanation

*There are a number of historical disposal sites in the Southland District. Responsibility for these sites is not clear but there needs to be a system in place that these sites are not utilised in such a way to present a risk to society or the environment.*

2.5.1 The third and fourth issues identified in the existing District Plan are *site rehabilitation, future use and long term liabilities* and *responsibility for historical disposal sites*. Both these issues are closely related and could potentially be incorporated into one in terms of the second generation District Plan. These issues are still relevant and the District Council's LTCCP notes that there are 60 closed refuse sites situated throughout the District. In terms of liabilities the explanation detailed in the Plan notes that liability must be covered fully by those who used

and are responsible for the original land use. The explanation also notes that responsibility for these sites is not clear but there needs to be a system in place to ensure that these sites are not utilised in such a way so as to present a risk to society or the environment.

- 2.5.2 Currently the Southland District Plan lists former landfill sites and other areas of filled land that are known on the district planning hazard maps. In terms of the second generation Southland District Plan any new areas of filled land or older areas not previously listed can be included on the new District Planning maps. The District Council also ensures that Land Information Memorandums (LIMs) detail the location these areas of filled land which is a useful way of ensuring perspective property owners or those wishing to develop any of these sites are made aware of potential problems with these properties. LIM processes provide for the disclosure of this information while liability is likely to rest with current owners which in most cases for closed municipal landfills is the Southland District Council.

## **Appendix 3 - Discussion of Issues and Options for the Discharge Plan**

### **3.1 Introduction**

3.1.1 The Discharge Plan is a project to review two of Environment Southland's existing regional plans prepared under the RMA (the Regional Effluent Land Application Plan and the Regional Solid Waste Management Plan) and combine these plans with the Proposed Regional Water Plan to create a single document. The Regional Solid Waste Management Plan became operative in 1996 and is therefore required to be reviewed in accordance with section 79 of the RMA. With the Proposed Regional Water Plan now close to becoming operative, there is an opportunity to merge the three plans into one document dealing with all discharges to land and water. This discussion document deals with Phase 3 of the Discharge Plan project which will be a Plan Change dealing with discharges of waste (i.e. cleanfill, solid waste, landfills, hazardous substances, contaminated sites, etc).

### **3.2 Regional Solid Waste Management Plan for Southland (1996)**

3.2.1 The Regional Solid Waste Management Plan for Southland currently contains sections on Waste Minimization, Solid Waste (which deals with Landfills & Cleanfills) and Offal. The current sections of the plan reflect the situation at the time it was developed in the 1990s. Those were the significant issues back then. Since then the goal posts have really moved—new issues have arisen, we have better knowledge and understanding of the issues and there has been a lot of work done at a central government level. Phase 3 of the Discharge Plan will comprise 2 stages. The first stage will be looking at the significant resource management issues which are not currently covered in the Regional Solid Waste Management Plan. These issues include contaminated land, hazardous substances and their waste, and organic/greenwaste. Waste minimization and farm dumps are included in the current Plan; however these issues have become even more significant as time has passed so they are worth including in the first stage. The second stage of Phase 3 will be looking at the issues and plan provisions already contained in the Regional Solid Waste Management Plan. These include landfills, cleanfills and offal. This discussion document will only focus on the first stage of Phase 3 in order to keep things concise. It will be looking at the issues and some options to address those issues associated with contaminated land, hazardous substances, waste minimization, organic/greenwaste, and farm dumps.

3.2.2 Since the Solid Waste Plan became operative, the focus has shifted from addressing solid waste disposal methods and the associated adverse effects of the region's landfills to new significant issues in Southland such as contaminated land, hazardous waste, waste minimization and organic/greenwaste. Most of the consents on the region's landfills expired which led to the opening of AB Lime Landfill, the only operating landfill in Southland built to meet specific sanitary guidelines. Central government has also provided clear indication of what the focus should be with the release of

the New Zealand Waste Strategy, changes to the RMA, Contaminated Land policy framework and passage of the Waste Minimization Act.

### 3.3 **Contaminated Land**

3.3.1 As previously mentioned central government has significantly increased its work in the area of contaminated land management and provided some tools for regional councils to use. In addition, the 2005 amendment to the RMA gave regional councils a clearer role for contaminated land management: “the investigation of land for the purpose of identifying and monitoring contaminated land.” For a more detailed discussion of central government’s work in this area and to understand the direction set, see part one of this document. Other regional councils in New Zealand have developed policy and plans for the management of contaminated land using the tools from central government along with their own. When discussing our own plan change, we can look at the work of other regional councils for an idea of what we can work towards and to save time and money from “reinventing the wheel.”

### 3.4 **Contaminated land: What have other Regional Councils been doing?**

3.4.1 While the amount and type of information varied, all the councils gave mention to contaminated land. Of the 14 regional councils searched, 11 had RMA Plans, which included a range of specific issues, objectives, policies and methods including rules for contaminated sites. Within other councils’ RMA Plans, they identify a number of issues and background reasoning for carrying out various contaminated land management work. These have been collated and summarized into the following points:

- Discharges of contaminants, including hazardous substances, from contaminated land and the remediation of contaminated land, have the potential to cause significant adverse effects (long and short term, on site and off site) to public health and/or the environment such as;
  - Acute toxic effects on human health through ingestion of contaminated material or inhalation of volatile chemicals and particulate matter
  - Bioaccumulation of contaminants in flora, fauna and humans, causing chronic health effects
  - Degradation of water quality and aquatic ecosystems, including groundwater and surface water
  - Degradation of soil quality and air quality
  - Objectionable levels of odor
  - Adverse effects on the relationship that tangata whenua as Kaitiaki have with their taonga such as ancestral lands, water and wahi tapu
  - Adverse effects to other cultural values and amenity, social, economical and values.

- Discharges of contaminants, including hazardous substances, from contaminated land and the remediation of contaminated land have and may continue to occur given:
  - The Council has had experience with sites that have been and/or still are contaminated.
  - The true number of contaminated sites is unknown, therefore the level of risk is unknown. Where information exists, the characteristics of the site and the actual or potential adverse effects are not always known in detail. There is no requirement for the public to forward information that they are aware of.
  - Sites with historic land uses involving (storage, use, transport and disposal of) hazardous substances have a higher potential of being contaminated. There are many different land uses that involved hazardous substances, and therefore there are a significant number of sites that could potentially be contaminated e.g. closed landfills, municipal rubbish dumps, timber treatment sites, petrol stations, gasworks etc.
  - Existing activities in the region have the potential to become contaminated sites as many still involve hazardous substances.
  - The potential risks can also increase through regional growth (land use and ownership changes).
  - Discharges from contaminated sites can occur through many pathways from stormwater run-off, percolation, migration of contaminants through land and discharges resulting from site remediation.
  - Some contaminated sites may discharge leachate many years after the site has been closed due to the percolation of rainfall through decomposing waste or contaminated soil.
  - If a contaminated site is not properly controlled it can continue to discharge contaminants and pollute a wider area.
  - Landowners can be reluctant to take responsibility for contamination caused by previous owners that they knew nothing about.
  - Cost of remediation can be significant.
  - Difficulty with addressing contaminated sites which are orphaned sites<sup>30</sup>.

### 3.5 **Actions Regional Councils have taken to address Contaminated Land**

3.5.1 Territorial authorities are responsible for controlling land use on contaminated land. This means that regional councils must develop objectives, policies and methods for managing both passive and active discharges from contaminated land. Within RMA plans, regional councils outlined a various number of methods to address contaminated land management issues. These are briefly collated and summarized into the following groups:

---

<sup>30</sup> Orphaned site: A contaminated site where either no party can be fixed with legal liability or where the liable party is unable to fund the clean-up of the site.

- Strategies: A number of councils mention strategies and these take on various forms.
  - Hawkes Bay Regional Council's Contaminated site management strategy is a report detailing the extent of contaminated sites within the region, the degree of contamination and the appropriate strategy to deal with the site investigation, the effects of contamination, clean-up procedures, and guidelines to avoid future contamination.
  - Greater Wellington's contaminated site management strategy says its primary objective is to minimise the adverse effects of contaminated land on the environment within the Wellington region. The Strategy has three main components: Contaminated site identification, contaminated site management and prevention of future site contamination.
  - Environment Canterbury's Contaminated Site Information Management Strategy says its purpose is to ensure information Council holds is managed in a clear and consistent manner, and that the information can be made available to appropriate parties involved in decision-making and management of sites. In addition, assessment of information on contaminated sites helps to ensure that adverse environmental effects from contaminated sites are remedied or mitigated, to an acceptable level.
  - West Coast Regional Council's Contaminated sites Management Strategy was developed to guide Council in managing information about sites associated with hazardous substances and managing off-site effects from contaminated sites. The strategy summarizes existing Council policy regarding contaminated sites along with legal liability issues, roles and responsibilities.
  - Otago Regional Council's Contaminated Sites Management Strategy is intended to provide guidance to staff of the ORC for the identification, investigation, and management of contaminated sites in Otago.
  
- Providing Information - Councils acknowledge their duty to supply information, for example: Council will supply information known about the sites to interested members of the public as requested. Council has a legal obligation under the Building Act 1991 and Local Government Official Information and Meetings Act 1987 to provide information held to persons requesting such information. Release of information will be performed in a manner consistent with the provision of the Privacy Act 1993.
  
- Responding to Information - Councils acknowledged the need to respond to information given by the public.
  
- Database/Register - Councils noted that they would maintain a database regarding contaminated sites. A range of clarifications about how the database would work has been collated as follows: *The database would records information about land in the region that is or may be contaminated, and*

*manage the database information according to clear and publicly available protocols. The database would contain historic land use sites where past land uses have involved the use, storage or disposal of hazardous substances, or where contamination has been confirmed. The database would make clear distinctions between potentially contaminated and contaminated sites. Sites where spills or other incidents involving hazardous substances have occurred would also be included in the database.*

- **Investigations** - To various degrees, councils noted that they would undertake similar investigation methods regarding contaminated sites. This has been collated as follows: *There are a number of sites around the region that have been historically or currently used for manufacture, use, storage, or disposal of hazardous substances (often referred to as HAIL (Hazardous Activities and Industries List). Council will systematically identify these sites, in association with territorial authorities. Given that there are many historic land uses involving hazardous substances Council will focus on the HAIL land uses that are considered to be of a high priority. High priority is given on the basis of risk and/or requirement of national technical guidelines. Council will then undertaking appropriate desktop investigations (including analysis of old aerial photos, and records of chemical use, enforcement action and affidavits) to locate and gather information about these sites.*
  
- **Advocacy/Promotion** - councils noted that they would undertake similar types of advocacy and promotion methods regarding contaminated sites. This has been collated as follows:
  - **For landowners**
    - *Provide information and advice on the best means to avoid or remedy any potential effects of land contamination to ensure adverse effects are appropriately addressed. Advice may include techniques for undertaking contaminated site assessments, options for remediation and long term management of their sites and land use options given the level of contamination of the site.*
    - *Encourage the community, particularly landowners and occupiers, to come forward with information about land they believe to be contaminated.*
    - *When a site which may be contaminated is located Council request a preliminary investigation into the nature and extent of contamination, including its source. And/or: Encourage owners of sites on which medium and high priority land uses have occurred to complete contaminated site assessments, especially prior to the sale or redevelopment of their land.*
    - *The Council will encourage owners of potentially and confirmed contaminated sites to take primary responsibility for characterizing the degree of contamination of the site and to assume responsibility for appropriate remedial action (if necessary) and management of the site.*
    - *Where a site is contaminated the Council may promote the development of a management plan for the use of the site to ensure that adverse effects are addressed.*
    - *Encourage the landowner or occupier to carryout any works that may be required to remedy or mitigate any adverse environmental effects, and to monitor the site. In cases where no action is taken, and where actual or potential adverse effects may arise, consideration may be given to seeking an enforcement order pursuant to Section 314 of the RMA*

- *Encourage owners and occupiers of land which is registered on the Council's database and has not been investigated, to provide information to the Council about whether the land is actually contaminated and any risks associated with the contamination. Wherever possible, landowners and occupiers should not be penalized for supplying information on contaminated land in order to promote information sharing, investigation and remediation of sites.*
    - *The Council will prepare and distribute information pamphlets on the safe storage, use, transportation and disposal of hazardous substances.*
  - **For Territorial Authorities**
    - *Encourage territorial authorities to develop appropriate resource management techniques (e.g. district rules) in order to enable activities to be carried out without land use consents where practicable to remedy and mitigate the adverse environmental effects of contaminated sites, and avoid future contamination of sites.*
    - *Encourage territorial authorities to seek site assessments prior to allowing subdivision or redevelopment of land where any of the historical land uses identified in HAIL are likely to have occurred in the past.*
    - *Encourage territorial authorities to contribute to the ongoing development and maintenance of a joint database collating information on the status of land where uses involving the storage, use or disposal of hazardous substances has occurred and release of that information through the LIMs and PIMs processes.*
  - **For central government**
    - *The Council will advocate to central government that funds be established to finance the management of orphaned contaminated sites.*
  - **General**
    - *The Council will initiate or support the preparation and adoption of appropriate Codes of Practice, and education programs to prevent future site contamination.*
    - *The Council will promote the use of the Australia and New Zealand Environment and Conservation Council (ANZECC) and MfE guidelines for the management of contaminated sites.*
    - *The Council will submit on policy related to contaminated site management produced by government departments, industry and interest groups.*
    - *The extent and amount of advocacy Council undertakes will be determined by the Annual Plan.*
- **Partnerships**-Various councils agreed to work with other organisations on a range on contaminated land management matters; these have been collated as follows:
- **Co-ordination and Strategies** – *Establish an Inter-agency Working Group to assist in coordinating the management of contaminated sites in the region. Work with individual land owners, other liable parties, territorial authorities, public health boards and other relevant agencies to develop strategies.*

- **Protocols** – *Work with territorial authorities on protocols for contaminated sites issues including procedures for transferring information contained on the Regional Council's database to territorial authorities for LIMs and PIMs. Maintain a consultation protocol with local iwi on the approach and practices being adopted by the Council in dealing with contaminated sites. This will include providing information on potentially contaminated and contaminated sites.*
- **Database** – *Work with territorial authorities, public health boards and/or industries to establish and maintain a database.*
- **Cross boundary issues** - *Liaising and sharing information with the territorial authorities on cross boundary issues in respect to the management of contaminated sites;*
- **Landuse controls** - *Work with territorial authorities to develop appropriate mechanisms for controlling the use of land associated with contaminated sites, such as the incorporation of confirmed contaminated sites onto Project Information Memoranda and Land Information Memoranda. Encourage territorial authorities to develop appropriate resource management techniques (e.g. district rules) in order to enable activities to be carried out without land use consents where practicable to remedy and mitigate the adverse environmental effects of contaminated sites, and avoid future contamination of sites.*
- **Management options for sites under investigation** – *Consult with the landowner and occupier. Work with national agencies, other regional councils, territorial local authorities, and other organizations to develop appropriate management options for contaminated sites under investigation.*
- **Confirmed contaminated sites** - *Work with the polluter/owner/occupier to implement strategies for confirmed contaminated sites. Appropriate remediation for known contaminated sites should be determined by the territorial and regional councils on a case-by-case basis with the landowner. The Council will in conjunction with the local runanga identify the tangata whenua who have an ancestral relationship with contaminated sites and through this process have regard to kaitiakitanga. Once the Council has identified the relevant tangata whenua for a site, consultation will be undertaken to address their concerns.*
- **Testing techniques** - *Work with industry groups, national agencies and other regional councils to develop appropriate testing techniques to determine contamination levels and risk assessment methods.*
- **Risk assessment procedures for identified contaminated sites** - *will be carried out in conjunction with owners and occupiers and other interested parties.*
- **Orphan contaminated land** - *Work with district councils and Government to ensure that significant adverse effects are avoided, remedied or mitigated.*
- **Treaty of Waitangi** - *The Council will ensure that the principles of the Treaty of Waitangi are taken into account in any decisions.*
- **Bi-cultural awareness** - *The Council will increase the bi-cultural awareness of the Council and its staff through its committee meetings and by way of regular training sessions facilitated by the iwi liaison officer.*

- Regulation - Councils noted they would use regulatory methods. Council will apply for enforcement orders, issue abatement notices and use other enforcement mechanisms in Part XII of the RMA, to require remediation or management of contaminated land where the current management of the land is not adequately addressing adverse effects of discharges to air or water emanating from the site. The Council will require owners/occupiers to apply for resource consents for any discharges arising from a contaminated site (including stormwater) that are having, or are likely to have, adverse environmental effects off-site. Some council's RMA Plans provide specific rules for contaminated sites, particularly identifying them as a discretionary activity where they were causing adverse effects. Some council's RMA Plans also provide permitted activity rules for the remediation of small scale, low risk areas of contaminated land.

### 3.6 Other Regional Council Rules

#### 3.6.1 *Environment Waikato*

- 3.6.1.1 This permitted activity rule is highlighted by Ministry for Environment. Ministry for Environment points out that to encourage site remediation, the Waikato Regional Plan (operative Sept 2007) allows for the remediation of contaminated land as a permitted activity provided disposal is to a licensed landfill and certain other conditions are met. The rule is as follows:

##### *5.3.4.6 Permitted Activity Rule – Discharges from Remediation of Contaminated Land*

*Any discharge arising from remediation of contaminated land is a permitted activity, subject to the following conditions:*

- a) Any discharge to air arising from the activity shall comply with the conditions and standards and terms in Section 6.1.8 except where the matters addressed in Section 6.1.8 are already addressed by conditions on resource consents for the site.*
- b) No contaminants from the remediation of the contaminated land shall be discharged into water or onto land unless discharged to a landfill authorized in Section 5.2.7.*
- c) The Waikato Regional Council shall be provided with the following reports prepared in compliance with Contaminated Land Management Guideline No. 1: Reporting on Contaminated Sites in New Zealand (MfE, Wellington, NZ, updated October 2003) prior to commencement of land remediation:*
  - i) detailed site investigation report*
  - ii) site remedial action plan*
- d) After remediation is completed, copies of the following reports prepared in compliance with Contaminated Land Management Guideline No. 1: Reporting on Contaminated Sites in New Zealand (MfE, Wellington NZ, updated October 2003) must be provided to the Waikato Regional Council:*
  - i) site validation report*
  - ii) ongoing monitoring and management plan*
- e) Any updates to these reports shall be provided to the Waikato Regional Council if a change in investigation, remediation, and monitoring strategy occurs.*

### 3.6.2 **Environment Canterbury**

#### *Rule WQL53 Investigation of contaminated land - permitted activity*

*The use of land for the purposes of a site investigation to assess concentrations of hazardous substances that may be present in the soil at a site: is –*

- 1. a permitted activity if such use complies with all of the conditions of this Rule;*
- 2. a discretionary activity if such use does not comply with any one or more of the conditions of this Rule, in which case a resource consent under Rule WQL 54 is required.*

*Where rule applies*

*This rule applies everywhere in the Canterbury region, excluding the Coastal marine area*

#### *Conditions*

- 1. The person undertaking the site investigation shall inform Environment Canterbury within two working days of the commencement of the investigation that the investigation is being undertaken.*
- 2. The site investigation shall be undertaken and reported on in accordance with Section 4 of the Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand, (Ministry for the Environment, November, 2003).*
- 3. A copy of report of the site investigation shall be provided to Environment Canterbury within two months of the completion of the investigation.*

### 3.6.3 **Auckland Regional Council**

3.6.3.1 A new Contaminated Land Rule in the Proposed Auckland Regional Plan: Air, Land and Water is now operative. A consent order was granted by the environment court on 14 December 2007. The rule is as follows:

*5.5.40 The discharge of contaminants to land or water arising from the trenching or the similar small scale disturbance of land containing elevated levels of contaminants, and intrusive investigations of land that involve chemical testing or monitoring (excluding soil fertility testing), is a Permitted Activity subject to:*

- a) The ARC is advised in writing prior to the commencement of the activity;*
- b) The discharge shall not give rise to any of the effects referred to in section 70(1) of the RMA;*
- c) Any water encountered shall be discharged or disposed of without causing more than minor adverse effects on the environment;*
- d) The duration of the trenching or disturbance activity is less than one month;*
- e) The volume of earthworks at any one time is less than 200m<sup>3</sup>;*
- f) Erosion and sediment controls are implemented in general accordance with ARC Technical Publication No. 90 'Guidelines for land disturbing activities in the Auckland Region;*
- g) The land, material or discharge shall not contain separate phase liquid contaminants, including separate phase hydrocarbons;*
- h) Any contaminated soil or materials removed from the site shall be disposed of at a facility or site authorised to accept such materials; and*

- i) *The disturbed area is reinstated to an erosion-resistant state within one month of the completion of the works.*

*Explanatory Notes:*

*The purpose of this Permitted Activity is to allow short duration land disturbance activities (such as trenching for services), but not land remediation, that may encounter contaminants in land on sites and for which the activity is incidental to the land use or contamination on the site. If trenching or small scale land disturbance activities encounter land containing elevated levels of contaminants once those activities have already commenced, then the ARC should be advised in writing of that as soon as is reasonably practicable. Investigations of land are undertaken to determine whether or not a site is contaminated and what, if any, site remediation is required. The information obtained from the notification of site investigations will assist the ARC in the delivery of its RMA Section 30(1)(ca) function which is “the investigation of land for the purposes of identifying and monitoring contaminated land”. This information will be used to complement the register of land referred to in Method 5.6.23.*

- 3.6.3.2 This rule is interesting because even though trenching, small scale disturbance and intrusive investigations are allowed as a permitted activity, Auckland Regional Council (ARC) must be notified in writing. The rule is handy because it allows ARC to find out about any investigation on potentially contaminated land and this information will be used to populate ARC’s register with potentially contaminated sites. However, there are issues around reporting conditions on permitted activity rules so we need to be a bit careful when considering these. There is some speculation that when the Environment Court was considering this rule they were considering a different matter other than the reporting requirement, and so the reporting condition hasn’t actually been tested in the court system yet. ARC also has a new rule that requires earthworks or remediation on a contaminated site to obtain a resource consent. Any site that is undergoing earth breaking activities or remediation and has contamination above the permitted activity level criteria requires a controlled activity consent.

3.6.4 ***Environment Waikato - Closed Landfills***

- 3.6.4.1 Closed landfills are on the Hazardous Activities and Industries List and accordingly have the potential to be contaminated land. Ministry for Environment considers Environment Waikato’s closed landfill rule to be a good example of how to regulate closed landfills.

*5.2.7.3 Discretionary Activity Rule – Closed Landfills*

*Except as provided for by Rule 5.2.7.2, the discharge of contaminants from any closed landfill:*

1. *Into or onto land in circumstances which may result in contaminants entering water; or*
2. *Into water; or*
3. *Into air (excluding discharges to air permitted by Section 6.1.14.1) from a closed landfill that does not have a current resource consent with conditions relating to the management of those discharges that continue to occur after closure, is a discretionary activity (requiring resource consent).*

*Not appropriate for small scale closed landfills as exist throughout Southland provided appropriate post closer management practices, including risk assessment, are in place – such as those managed by SDC.*

*Advisory Notes:*

- *Information requirements to enable the assessment of any application under this Rule are as set out in Section 8.1.4.6. In addition assessment shall take into account the matters identified in Policy 2 of Chapter 5.2.*
- *Small scale discharges of biogas to air are permitted by Section 6.1.13.1.*
- *Land use consents may also be required by district plans addressing matters such as public health issues, traffic flows protection of identified areas of significant indigenous vegetation and outstanding landscapes and other land use related effects.*

*Explanation and Principal Reasons for Adopting Method 5.2.7.3*

*In some instances, landfills have closed without obtaining resource consents related to ongoing off-site discharges that continue after closure. Rule 5.2.7.3 acknowledges this and gives a clear indication that where discharges of contaminants to land, air or water are occurring or are likely to occur at these sites and the adverse environmental effects that are likely to be occurring at them, must be addressed through the resource consent process. If no discharges are occurring, the site will be managed as contaminated land under Chapter 5.3. Where appropriate, the consent conditions may allow reduced monitoring over time as the contaminant loadings in the discharge stabilise.*

**3.7 Contaminated Land: What has Environment Southland been doing?**

3.7.1 Environment Southland has recognized contaminated land management in the Regional Policy Statement for Southland, 1997. It states “there are unknown locations of and /or threats from contaminated sites in the Region and a comprehensive identification and investigation of sites in the Region is needed...” No further RMA plans, best advisory guidelines or strategies have been developed by Environment Southland.

3.7.2 In previous years Environment Southland has been involved with some contaminated land cases. Accordingly, a number of files have been made and stored. Some files relate to one specific site while other files contain information on multiple sites. The files have been entered into 2 excel documents (‘tank sites’ and ‘other sites’). Currently they list 87 ‘tank sites’ and 30 ‘other sites.’ The type, amount and layout of information on each site is variable, therefore the true number of sites and their locations held on file is not easily accessible. It is important to note there have been no HAIL searches or risk ranking of the sites on file. Environment Southland also fields enquiries regarding contaminated land (e.g. is this site contaminated?) and enters them into an excel spreadsheet.

3.7.3 Closed landfills are on the HAIL list and accordingly need to be recorded. Recording of this information is required by both territorial authorities and Environment Southland. Currently Environment Southland is in the early stages of building a regional database of HAIL sites and their history. All closed landfills in Southland need to be added to this database. If a record of HAIL sites are not gathered and kept sooner rather than later, that knowledge is lost and the risk to manage the sites is much harder to manage later. The

Solid Waste Plan requires landfills with consents to have a post closure management plan, but there are no policies or rules for historical landfills that did not have consents.

3.7.4 Compliance Division set up a project to investigate all known landfill sites so that the risks associated with them can be dealt with in a consistent manner. Each site's risk will be calculated and this will be used to establish each site's priority for investigation. Those with a high degree of risk need to be contained and controlled, to minimise the risk of any contaminants entering the natural environment. However, work on this project has stopped due to staff turnover. Compliance division is in the process of employing more staff, with the hope one new staff member will pick up the work of this project.

### 3.7.5

Table: Summary of ES contaminated land management

Contaminated site management	Detail description	Current person primarily involved	Current work	Future work/direction
Information management	Keeping a record of HAIL sites and any related contamination info, knowledge of site status. Responding to public queries re 'is land contaminated?'	Gretchen Ledington	A very basic electronic database has been made listing the contaminated sites we have on file. Still needs info on closed landfills and dieldrin sites	GIS search tool, share and update with TAs data, desktop surveys for all HAIL activities
Policy – rules	How we deal with/regulate contaminated land and activities on contaminated land/ potentially contaminated land	John Engel	John responds to queries re people asking what the rules are for developing on potentially contaminated land and contaminated land	Opportunity to formalize/clarify our approach through the Discharge Plan
Enforcement/ Action	Ensuring that where land is contaminated, it is remedied	Mark Hunter, Graeme McKenzie	Respond to new info re contamination of a site, ensuring appropriate action is taken to avoid, remedy, mitigate adverse effects	Actively investigate high risk HAIL sites to ensure land is not contaminated, and/or where it is, that it is remedied
Other	Liaise with other stakeholders— MfE, RWOFF, TAs	Gretchen Ledington	Attend RWOFF, Coordinate ES response to MfE policy, liaise w/ TAs	Continue to keep up to date and feed into what is happening re contaminated sites with TAs, other regions and nationally

## 3.8 Contaminated Land: What are the Options?

3.8.1 The Plan being developed will largely reflect the direction set in the Regional Policy Statement (RPS) which is under review (see discussion in part one). Many of the options suggested for the RPS could be implemented through this Plan. Since the current Plan makes no mention of contaminated land as a resource management issue, it is a good place to start by updating it to reflect the contaminated land work Environment Southland undertakes and needs to undertake in the future. This should happen in order to provide transparency to the community; to be consistent and keep up with other regions; come up-to-date with RMA changes and the NZWS; to adequately manage contaminated land issues and effectively respond to queries. Updating the Plan provides a good opportunity to establish some rules that could provide clarity to all parties and ensure Environment Southland has the necessary tools and

resources to adequately manage contaminated sites that come up, e.g. closed landfills.

3.8.2 Other regional councils' work, MfE direction, NZWS and Environment Southland's latest work have provided a relatively clear framework. Taking these things into consideration, the Solid Waste Plan could adopt and develop a robust contaminated land policy framework which would include RMA Plan provisions such as issues, objectives, policies, and methods to allow Environment Southland to align with s 30 of the RMA and to manage discharges on contaminated land or remediation works. Plan methods to manage contaminated land could include (but are not limited to) the following:

- develop a contaminated sites strategy;
- this type of strategy could be part of a Regional Waste Strategy discussed in the RPS review. The strategy could simply contain provisions for information management to ensure information on contaminated sites in the region is managed in a clear and consistent manner, and that the information can be made available to appropriate parties involved in decision-making and management of sites. On the other hand, the strategy could expand its scope to include guidance and procedures for staff on how to identify, investigate, manage, and/or remediate contaminated land using the available MfE guidelines or other appropriate guidance material. A strategy, if part of a Regional Waste Strategy, could contain the NZWS revised contaminated land targets and would provide a means to set the target dates for Southland. Targets set within such a strategy could sit outside the Plan to allow flexibility given it will be hard to quantify how long it may realistically take to meet them with x resources available.

3.8.3 The next points relate to methods for implementing the contaminated land targets if adopted or to manage contaminated land even if they are not adopted:

- establish and maintain a database according to contaminated land management guideline no. 2 in order to record HAIL regional assessments
- identify possible contaminated sites especially those on the HAIL (MfE may prepare guidance) and identify priority sites for action using the Rapid Risk Screening system in accordance with contaminated land management guideline no. 3.
- investigate the priority high risk sites and develop management plans
- manage and/or remediate contaminated sites in accordance to contaminated land management guidelines no. 2 and 5.

3.8.3 The Plan is expected to be updated to include some rules relating to discharges from certain contaminated sites (e.g. closed landfills) and discharges from remediation works. For example there may be rules addressing:

- closed landfill management: those sites identified as requiring further inspections require resource consents to discharge leachate from the landfill site;

- PDP Ltd Consultants will be advising Environment Southland of appropriate rules (investigation of contaminated land permitted activity; discharge from remediation permitted activity for small scale, discretionary as risk increases, etc...)

3.8.4 Permitted Activity for small scale closed landfills as exist throughout Southland provided appropriate post closer management practices, including risk assessment, are in place – such as those managed by SDC.

### 3.9 **Hazardous Substances and Waste**

3.9.1 Hazardous waste comes in many forms - ranging from sludges resulting from timber treatment processes to waste cell phone batteries. There is a significant risk to human health and the environment if hazardous substances and their wastes are improperly managed. The discharge of wastes to land and water are controlled under the RMA. Conditions can be imposed on resource consents to minimise the risk of spillages and leaks into the environment. Regional councils can control the use of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use, disposal, treatment or transportation of hazardous substances.

3.9.2 As previously discussed in part one, central government has increased its work on managing hazardous substances and waste. MfE set up a policy framework to reduce and safely manage hazardous wastes in New Zealand and there have been several amendments to broaden the scope of the HSNO Act. Other regional councils have developed policy and plans for managing hazardous waste. These developments can provide some insight into what may be possible for Southland to put in place to improve management of hazardous wastes in the region.

### 3.10 **Hazardous Substances and Waste: What have other Regional Council's been doing?**

3.10.1 Several regional councils such as Auckland, Bay of Plenty and Hawke's Bay provide on-going hazardous waste collections through the Hazmobile. The HazMobile is a free service for householders who want to dispose of their unwanted hazardous materials safely and responsibly. In some areas of New Zealand, the HazMobile visits a public car park on specific dates to receive household and garden chemicals, waste oil, batteries, lead based paints and other products that can potentially harm people or the environment. Other regional councils such as Northland, Taranaki, Canterbury, Hawke's Bay, Waikato and Greater Wellington have agrichemical collections. Most regional councils in conjunction with territorial authorities have provided drop-off sites or hazardous waste storage sheds.

#### 3.10.2 ***Regional Waste Strategies***

3.10.2.1 Regional councils that have developed regional waste strategies have also included a section on hazardous waste. Many strategies adopted the NZWS targets on hazardous waste, but "regionalized" them to them fit specifically for the region. Target #2 was most commonly adopted among councils with the

date changed from 2004 to an appropriate date depending on when the region's waste strategy became operative.

### Targets for hazardous wastes

- 1 By December 2005, an integrated and comprehensive national hazardous waste management policy will be in place that covers reduction, transport, treatment and disposal of hazardous wastes to effectively manage risks to people and the environment.
- 2 By December 2004, hazardous wastes will be appropriately treated before disposal at licensed facilities, and current recovery and recycling rates will be established for a list of priority hazardous wastes.
- 3 Recovery and recycling rates for priority hazardous waste will increase 20 percent by December 2012.

#### 3.10.3 *RMA Plan Provisions*

3.10.3.1 Several of the regional councils include issues, objectives, policies and rules on the management of hazardous substances as part of their RMA Plans. These are collated and summarized below:

- Issues: The concerns for regional councils in terms of hazardous substances being discharged to land are:
  - Lack of information: There is a lack of information on quantities and movements of hazardous substances and wastes generated and disposed of in the Region. This makes it difficult to identify areas where there may be problems.
  - Transportation, storage, use of hazardous substances: As with the quantities and movements of hazardous substances and wastes generated and disposed of within the region, there is a similar lack of information about the transportation of hazardous substances to and from the Region. As there are no suitable facilities for the disposal of hazardous wastes in the Region (such as sanitary landfills, purpose-built landfills for co-disposal, high temperature incinerators, base-catalysed dechlorination facilities), it may be necessary to transport hazardous wastes out of the Region. To this end, the agreement of other local authorities may be needed. The transportation of hazardous substances is primarily dealt with under other legislation, including the Transport Act 1962 and the Code of Practice for the Transport of Hazardous Substances on Land (NZS 5433:1988). In general, the transport of hazardous substances in the Region is only of concern where transportation practices fail to adhere to the Code or relevant legislation, and inappropriate discharges occur. The storage or use of hazardous substances becomes an issue of concern only when inappropriate use or storage practices may result in the unauthorised discharge of a hazardous substance to land.
  - Disposal and treatment of hazardous wastes: Currently in the Region there are no recognised facilities for the disposal of hazardous substances, and it is unclear how hazardous substances are being disposed of. The inappropriate disposal of hazardous

substances is of concern to the Region. Without a regional storage or disposal system or collection and disposal strategy, the ad hoc collection and storage of hazardous substances has the potential to have greater adverse effects than no collection.

- Methods to Address Hazardous Waste (non-regulatory):
  - Reduce the amount of hazardous wastes requiring treatment and disposal in the Region by promoting:
    - (1) the minimization of hazardous wastes at the point of generation;
    - (2) the development of industry-led schemes for reusing, recycling and recovering hazardous substances; and
    - (3) the concept of generator responsibility, as far as practicable, for the appropriate treatment and disposal of hazardous wastes.
  - Promote the provision of adequate treatment and disposal facilities for hazardous wastes generated in the region
  - Adopt a regional system for tracking the movement and disposal of hazardous wastes in the region
  - Develop agreements with other regional councils throughout the country on the inter-regional transportation of hazardous wastes, including the development of compatible inter-regional hazardous waste manifest systems.
  - Establish a working group of local authorities in the Region to:
    - (1) provide a forum for swapping information and identifying regional issues in hazardous substance and hazardous waste management, and develop regional solutions to those issues where appropriate; and
    - (2) co-ordinate the development of a regional approach to the assessment of facilities using or storing hazardous substances.
  - Prepare, in conjunction with territorial authorities, the Public Health Service and the New Zealand Fire Service, a register of industries using and storing significant quantities of hazardous substances.
  
- Rules to address Hazardous Waste:
  - Greater Wellington  
*Rule 15 Specified hazardous substances*  
*The discharge onto or into land of*
    - (a) *wastewater sludge originating from timber treatment processes using copper-chromium-arsenic wood preservatives;*
    - (b) *perchloroethylene contaminated waste from dry cleaning operations; or*
    - (c) *organochlorine substances**is a Non-Complying Activity.*
  
  - West Coast Regional Council  
*Rule 25 Discharge of Hazardous Wastes*  
*The discharge of any hazardous wastes into or onto land which is not provided for by any other Rule in this Plan, is a discretionary activity.*

### *Assessment Matters*

*The matters to be considered by the Regional Council when exercising its discretion to grant resource consent may include but not be limited to, the following:*

- a) identification of potential hazards and exposure pathways and the acceptability of any risks to the environment.*
- b) the provisions adopted to avoid, remedy or mitigate any adverse effects on surface water, groundwater, soil, human health and the health of plants, animals and ecosystems that may arise from the discharge of contaminants.*
- c) management and operational standards, including contingency provisions and maintenance programmes.*
- d) design and construction standards, including the provision of bunds and sealing as they relate to any actual or potential discharge of contaminants.*
- e) monitoring provisions.*
- f) review conditions of resource consents.*
- g) duration of resource consents.*
- h) establishment of a bond.*
- i) the characteristics, composition and volume of wastes being discharged and of any likely by-products occurring from the degradation of these wastes.*

- **Environment Canterbury**

*Rule WQL42 Use, including storage or removal of an underground container used for a specified hazardous substance – permitted activity, The use of land for the use or removal of a container, or part of any container, located in or under land that is, or has been, used to store any of the following substances:*

- (a) petroleum hydrocarbons, including those for cooling purposes, but excluding liquefied petroleum gas,*
- (b) chlorinated hydrocarbons,*
- (c) agrichemicals,*
- (d) timber preservatives, or*
- (e) any other substance containing, arsenic, cadmium chromium, cyanide, lead, mercury, nickel, or selenium; where that substance is a hazardous substance and is classified under the Hazardous Substances and New Organisms Act 1996 with an ecotoxicity classification of 9.1A, or 9.1B, or 9.1C*

*Rule WQL43 Use, including storage in an above ground container of a specified hazardous substance - permitted activity (conditions attached)*

*The use of land to use or store in an above ground container, any of the following substances:*

- (a) petroleum hydrocarbons including those for cooling purposes but excluding liquefied petroleum gas,*
- (b) chlorinated hydrocarbons,*
- (c) agrichemicals,*
- (d) timber preservatives, or*
- (e) any other substance containing, arsenic, cadmium chromium, cyanide, lead, mercury, nickel, or selenium; where that substance is a hazardous substance and is classified under the Hazardous Substances and New*

*Organisms Act 1996 with an ecotoxicity classification of 9.1A, or 9.1B, or 9.1C*

*Rule WQL44 Use, including storage, of a specified hazardous substance—controlled activity*

*Rule WQL51 Discharge of municipal solid waste refuse or treated hazardous waste to land - discretionary activity*

- Horizons Regional Council

*Policy 3-11: Regulation of hazardous substances*

*Resource consents will not be granted for discharges that contain or result in the production of environmentally persistent hazardous chemicals or hazardous chemicals that will bioaccumulate to a level that has acute or chronic toxic effects on humans or other non-target species.*

*Rule 13-22 Discharges of persistent and harmful contaminants*

*Any discharge onto or into land, or into water, of:*

- (a) wastewater sludge originating from timber treatment processes using copperchromium- arsenic wood preservatives*
- (b) perchlorethylene-contaminated waste from dry cleaning operations*
- (c) persistent organochlorine substances*
- (d) polyaromatic hydrocarbons*
- (e) Tributyl tin*

*Is a Non-complying activity*

- Auckland Regional Council

*5.5.14 The use of land for the purposes of an Industrial or Trade Process, other than those activities listed as moderate risk and high risk in Schedule 3: Industrial or Trade Processes is a Permitted Activity, subject to the following conditions:*

- (e) Where any environmentally hazardous substance is stored on site, at a greater quantity than used for domestic purposes an Emergency Spill Response Plan shall be developed*
- (f) Environmentally hazardous substances shall be stored in a manner that prevents the entry of rainwater into the container, and when the quantity exceeds that used for domestic purposes, in a secondary containment device (such as a bund)*
- (g) A procedure shall be developed and implemented to ensure reconciliation measurements are recorded by the site operator for any environmentally hazardous substance stored in an underground storage tank;*

### 3.11 **Hazardous Substances and Waste: What has Environment Southland been doing?**

3.11.1 Environment Southland fields calls and records inquiries into a database from the public asking how to dispose of their hazardous waste. The public is generally directed to dispose of their domestic hazardous waste at territorial authority transfer station hazardous waste storage sheds, or if commercial/large-scale directed to a list of professional chemical collectors. Response has been improving all the time and the Resource Directory is a

further means to help people find out the correct thing to do with their waste. Environment Southland began a process to collect data from the territorial authorities of hazardous substances and waste stored at the transfer station storage sheds but this proved very difficult to obtain and not all the volumes were being recorded. Chemstocks Ltd, based in the North Island, comes down about once a year to collect the waste stored at the hazardous waste storage shed. Environment Southland has also undertaken two large scale agrichemical collections removing 71.8 tons of agrichemicals from the region. 34 tons of agrichemicals were collected during 1995-1997, and a further 37.8 tons from the 2005-2007 targeted collections. As previously mentioned in part one, there are still agrichemicals out in the region especially since the Invercargill area was not part of the last collection.

### 3.12 **Hazardous Substances and Waste: What are the Options?**

3.12.1 Disposal of hazardous waste is difficult because often there are very limited safe options available, but we have a duty to protect air, land, water and the coast from contact with hazardous waste. Under s30 of the RMA, regional councils have the function to control the use of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use disposal, or transportation of hazardous substances. The current operative RPS states that the Regional Council shall be responsible for:

- coordination of disposal on a Regional basis;
- storage and/or disposal of those materials that cannot be safely disposed of to local landfills; and
- treatment and/or remediation of contaminated sites

3.12.2 The plan provisions in the Discharge Plan will largely reflect the direction set by the review of the RPS. Since the RPS is going through its review process at the same time as the Discharge Plan, there is a possibility that the responsibilities it sets will change. For example the RPS may change the responsibilities so that territorial authorities are responsible for the use, storage and transportation of hazardous substances and the regional council is responsible for the discharge or disposal of hazardous substances. The plan provisions identified as options for addressing hazardous substances and waste discussed below will be based on two scenarios—1. the responsibilities laid out in the RPS remain unchanged after the review or 2. the responsibilities change to those previously explained.

3.12.3 Whether or not the responsibilities stated in the RPS change, the Plan could be updated by incorporating hazardous waste management that Environment Southland already undertakes. This would include general policies such as Environment Southland advocating to reduce the amount of hazardous substances requiring treatment and disposal in the region by promoting industry-led schemes such as product stewardship of such hazardous materials. Policies could also include how Environment Southland will work with the territorial authorities for efficiencies and consistency on information management, and mandate territorial authorities to require the use of WasteTrack through their trade-waste bylaws.

- 3.12.3 Proper storage and disposal of hazardous substances and their waste depends on good data about the quantities of these substances and where they are located. This Plan could require the preparation, in conjunction with territorial authorities, the Public Health Service and the New Zealand Fire Service, of a register of industries using and storing significant quantities of hazardous substances. It will also be important for this Plan to promote provision of adequate treatment and disposal facilities for hazardous wastes generated in the region. If a regional waste strategy is adopted through the RPS, it could include hazardous waste targets from the NZWS. For example, if a target was set so that by 20XX hazardous wastes will be appropriately treated before disposal at licensed facilities, and current recovery and recycling rates will be established for a list of priority hazardous wastes, the Plan could be a key means of implementing this target and resolving the issue around lack of proper storage and disposal facilities in the region.
- 3.12.4 Since the Solid Waste Plan became operative in 1996, the HSNO Act was passed and the review of our Plan needs to take into consideration this piece of legislation. This means that the hazardous substances section of the Plan needs to be developed to ensure it is consistent with the HSNO Act controls and it is adequate for the needs of the community. This Plan could become an additional mechanism that controls hazardous substances on a site-specific basis, over and above the minimum controls set by the HSNO Act. The policies, rules or resource consent conditions can set more stringent requirements in environmentally sensitive areas (such as in wetlands, water catchments or near schools), but they cannot be less stringent than controls set under the HSNO Act. For example, the Plan could specify certain sites that would be off-limits to a treatment and disposal facility such as a Natural Hazards area (e.g. prone to flooding) or near a wetland. This Plan could also set requirements for matters not addressed by the HSNO Act, such as most (but not all) hazardous waste, infectious waste, by-products, and radiation.
- 3.12.5 Discussions have occurred in the past in New Zealand about future construction of a nuclear power station. The next generation of the Solid Waste Plan should look to make discharges of radioactive waste material prohibited in Southland. Chances are a nuclear power plant will not be constructed in Southland because it would make little sense to build one in Southland, away from the major demand for electricity, and emissions from such a plant are banned under the Air Plan. In any case, operation of a nuclear power plant is probably of less concern than disposal of the very long-term waste. If nuclear energy would ever arrive in New Zealand, it will be important to prevent Southland from becoming a dumping ground for radioactive waste generated elsewhere. There are separate regulations on radioactive waste disposal, but there is unlikely to be much direction as to where a disposal area can be located. The Regional Policy Statement states that nuclear power plants in Southland are to be treated as a prohibited activity. However, the discharges of such wastes are relevant, but would need a limit of some sort (e.g. smoke alarms have minimal radioactive material in them and are dumped to landfill when they become unusable).
- 3.12.6 The Plan could include rules relating specifically to the discharge of hazardous waste similar to the other regional councils' rules that make the discharge either

a discretionary or non-complying activity. Depending if the RPS changes the responsibilities for hazardous substance management, the Plan may need to include rules relating to the storage of hazardous substances such as those for storing petroleum hydrocarbons.

### 3.13 **Solid Waste & Waste Minimization**

3.13.1 The purpose of the RMA is to avoid, remedy, or mitigate the adverse effects of activities on the environment. The primary responsibility for regional councils is to avoid adverse effects, and if that is not possible then try to remedy them, and if those actions have been exhausted mitigation may be used as a final resolution. Environment Southland has a duty to avoid adverse effects on the environment from the disposal of solid waste, and the best way to do this is to avoid the generation of solid waste in the first place so that there is less (ideally none) to dispose of. Therefore, Environment Southland has a key role in waste minimization within the region. As previously discussed in part one, central government has provided more direction and opportunities for waste minimization through the New Zealand Waste Strategy and the Waste Minimization Act. Other regional councils across New Zealand have responded to these initiatives and have created their own opportunities for waste minimization. These ideas are useful for Southland to reflect on as we consider the next generation of our Plan.

### 3.14 **Waste Minimization: What are other Regional Councils doing?**

3.14.1 Many regional councils have developed waste strategies for their regions. These strategies have adopted the NZWS targets for waste minimization and/or have developed their own targets for waste minimization. The following are example targets:

- by 20xx all territorial authorities in the Region using a mixture of incentives and economic instruments to encourage and reward waste minimisation;
- by 20xx, at least x number of major businesses will be participating alongside central and local government in developing and promoting waste minimisation programs within their sector;
- the Environmental Initiatives Fund being used to support projects that will reduce the quantity of waste generated in the Region;
- 20xx businesses in at least x number of different sectors will have introduced extended producer responsibility pilot programs for the collection and reuse, recycling or appropriate treatment and disposal of at least eight categories of special wastes;
- by 20xx, 25 percent of companies in the Region will have waste minimization and management programs in place;
- local authorities in the region will report quantitative assessments on waste minimization and management in their annual reports from 20xx/20xx onwards;
- by 20xx, where there is a viable market for a recyclable product, ninety-five percent of the region's population will have access to community recycling facilities for these materials.

3.14.2 Regional councils have also included issues, objectives, policies, and methods on waste minimization in their RMA Plans dealing with discharges of solid waste to land. Other regional councils have policies in place for:

- producing and circulating available information to educate industries and communities in the region about the advantages and methods of waste minimisation;
- providing advice on Sustainable Production Projects through workshops and audits;
- providing advice to organisations and individuals involved in generating or managing waste on ways to implement waste minimisation in relation to their own operations. The Council's education programmes for Waste Minimisation will be publicised through the Annual Plan Process;
- encouraging the use of waste audit procedures to identify and implement waste minimisation opportunities;
- mandating the use of the waste management hierarchy (reduce, reuse, recycle, recover, dispose);
- requiring an assessment, as part of the consent information requirements for all discharges to air, land, water and the coastal marine area, of reduction, reuse, recycle and recovery options for the discharge;
- encouraging waste reduction activities, in particular by generally allowing cleanfills and composting operations.

3.14.3 Their RMA Plans generally include non-regulatory methods to implement the policies for waste minimization. Methods in place include:

- establish a Regional Territorial Authority Waste Forum and work with the Territorial Authorities to achieve a regionally consistent approach to waste and to progress region-wide waste issues and implement agreed initiatives, including:
  - recycling facilities
  - resource recovery network/ waste exchange
  - public information
  - waste education in schools
  - consistent waste data collection and reporting
  - development of region-wide waste reduction targets in line with the NZWS
  - cleanfill management and monitoring
  - waste minimization and cleaner production in business/trade sectors
  - economic instruments including incentives for waste reduction.
- develop and provide easily accessible information to increase public awareness on waste issues generic to the Region, including:
  - cleanfill management and guidelines
  - waste minimization
  - availability of waste disposal and recovery facilities
  - fly tipping
  - offal pits and farm dumps
  - composting.

- 3.14.4 Several regional councils implement their policies and methods by establishing programs to help businesses in the region become more sustainable. Environment Waikato's Sustainable Business Advisory Service is a partnership between Environment Waikato and six of the District Councils and Hamilton City. The service will initially focus on waste management issues, but the long term objective is that this service will have a broader focus placing waste management in the broader context of energy and resource use issues. Contact has been made with businesses in the South Waikato, Taupo and Matamata Piako districts, with face-to-face advice having been delivered to a range of small and medium sized enterprise (SMEs) in these areas. In Hamilton City, the service is currently focused on working with cafes in the Hamilton East area to engage in a reusable cup scheme to reduce disposable cups going to landfill. It is hoped the cafes involved in this scheme will also engage in energy reduction and other green procurement initiatives.
- 3.14.5 West Coast Regional Council has used the Sustainable Management Fund for waste minimization work. Tasks have included promoting waste minimization into school curriculums and delivering class sessions, promoting Bokashi composting systems, giving talks to community service groups, and assisting with other community waste minimization days such as the Westport school beach cleanup day.
- 3.14.6 Greater Wellington's Sustainability program for Wellington region businesses will be funded by the partner Councils, Hutt City Council, Wellington City Council, Porirua City Council, Greater Wellington Regional Council, EECA, Landcare, and the participating businesses. To help the businesses achieve their target Greater Wellington will work with them over a two year period. The businesses will have two key goals in this time, a 15-20% reduction in carbon emissions, and the achievement of Enviro-Mark NZ® gold environmental certification. Carbon reduction will be achieved by reducing waste, improved energy efficiency, and better transport and fuel use.
- 3.14.7 Taranaki Regional Council's business sustainability program has so far visited cafes, restaurants, a shopping centre and a marae (52 in total) and written reports prepared on waste minimization and energy use. Of the 42 followed up to date, nearly half have reduced their waste as a result of either the visit or the follow-up phone calls, mainly by starting recycling or increasing the range of materials recycled. Persistence pays off, as many people just seemed to need reminders before they took action. Taranaki found that the day to day demands of running a business tend to take priority even if initiating recycling is something the owner would like to do.
- 3.15 **Waste Minimisation: What has Environment Southland been doing?**
- 3.15.1 The Solid Waste Plan currently contains a section on waste minimisation. The plan calls for an increase in public awareness of the effects of disposing solid waste compared with reducing, reusing or recycling. It promotes the waste hierarchy of reduce, reuse, recycle, recover then manage the disposal. The plan also sets out methods to achieve waste minimization such as setting up in-house waste reduction programs, advocating to territorial authorities the use of educational material on waste minimization, monitoring solid waste disposed,

promote the use of recycled materials, advocate to central government and promote establishment of accords with industry to implement waste minimization.

- 3.15.2 Environment Southland runs the Quick Steps for Sustainability Program which is a support program for busy businesses to improve environmental performance and profit from it. The Quick Steps program helps 10 local businesses per term by sending an advisor to 'walk through' a business and provide it with a list of simple actions to take to increase efficiency, reduce waste, reduce environmental impacts and reduce related costs. Environment Southland has also recently launched the Southland Sustainable Business Network which connects businesses to a range of relevant information, resources and opportunities. Through its website, newsletters, events and contacts, the network aims to link businesses with programs, upcoming events, funding opportunities, services, experts and other businesses in Southland. The network is an Environment Southland project and is supported by the WasteNet councils (ICC, SDC, GDC) and Venture Southland.
- 3.15.3 Environment Southland is a supporter of Wastenet, a joint agreement between the 3 territorial authorities (GDC, ICC, SDC) for waste management in Southland. Environment Southland works closely with them on waste minimization initiatives and provides input into their planning processes.

### 3.16 **Waste Minimisation: What are the Options?**

- 3.16.1 Sustainability is a growing concern at a global, national and local level and the Plan could be updated to incorporate this. The Plan could acknowledge waste minimization within the context of sustainability. For example, reducing solid waste generation assists in trying to reduce resource consumption which is fundamental in striving for sustainability. The Plan could acknowledge the strong link/relationship between economic growth, resource consumption and solid waste growth and the need to decouple those. For example, the Plan could continue to promote the waste management hierarchy but could be updated with the new R's such as Rethink and Redesign (those concepts are discussed in the RPS section above).
- 3.16.2 Environment Southland and the Southland region already have many mechanisms in place such as the Quick Steps program and a regional waste forum, Waste net. The Plan could be updated to include these initiatives and ensure they are continued and supported. The Plan could acknowledge central government's "waste levy" which will provide funding for waste minimization methods, and that methods will be chosen on their ability to reduce waste to landfill. The Plan could include ways for councils to use this funding for projects through the Quick Steps program and/or develop other similar programs. The Plan could also include ways Quick Steps and SSBN will be publicised and promoted and include ways to coordinate better with Wastenet to develop regional approaches for waste minimisation.
- 3.16.3 These regional approaches will depend largely on the direction set by the RPS. For example, the discussion of the RPS in part one suggests developing a Regional Waste Strategy. This strategy could be developed with the territorial

authorities under the umbrella of Wastenet and include targets to achieve reduction in waste generated, and ensure effective planning and implementation. These targets could be adopted either from the NZWS or our own. The strategy could set responsibilities for territorial authorities and the regional council. Implementing the strategy could be a Plan method to ensure the regional council executes its responsibilities.

- 3.16.4 Waste minimization depends on having good data on waste in order to target specific waste streams and measure progress. The Waste Minimisation Act, as outlined in the discussion on the RPS above, will contain reporting requirements to obtain information from operators of refuse facilities on the amount and composition of waste received at the facility. The discussion of the RPS in part one suggests that the territorial authorities create a bylaw to obtain that information. If this occurs, this plan could provide methods for working with the territorial authorities on accessing and using that information effectively for the purpose of waste minimization. However, the Waste Minimisation Act only introduces mandatory reporting requirements and says it *may* become mandatory for territorial authorities and others (for example, operators of landfills) to report to the Ministry for the Environment on waste to improve information on waste minimisation, so there are some unknown matters regarding the reporting requirements. It will be important to think about systems for collecting and accessing that data for the region in the absence of the reporting requirements in the Waste Minimisation Act. Environment Southland could work with Wastenet to set up a reporting and monitoring system to monitor the volume/type of solid waste/source of waste in order to collect data to ensure we are heading towards and meeting the reduction targets.
- 3.16.5 The Plan offers an opportunity to put in place methods for waste minimization by encouraging greater investigation of both public and private partnerships for recycling, waste exchange, re-use, or product stewardship schemes with regional industries. For example, greater utilisation of the ICC/Southland Enterprises operation and other positive examples include the silage wrap initiative undertaken by Southland Enterprises with the school community.
- 3.16.6 The discussion of the RPS in part one makes a case for using certain kinds of economic incentives to reduce waste generation. If the community agrees with these incentives, the Plan could provide methods to implement these economic tools and incentives. For example the councils could provide rates rebates to those people and businesses participating in waste minimization projects such as reusing, recycling or composting.

### 3.17 **Organic/Greenwaste**

- 3.17.1 Landfilled, organic wastes adversely affect the environment by generating and releasing methane (one of the primary landfill gases and a significant greenhouse gas) and generating leachate. Recent concerns about climate change add impetus to New Zealand finding more ways of diverting organic wastes from landfill. Unlike many other waste streams, there are a number of options for converting organic waste to other, environmentally beneficial products or converted to another state so that, when disposed of, they have a

lower environmental impact. Other regional councils around New Zealand have in place policies and options for diverting organic and greenwaste from landfill which are useful examples for consideration.

3.18 **Organic/Greenwaste: What have other Regional Councils been doing?**

3.18.1 Other regional council RMA Plans dealing with the discharge of contaminants to land recommend diverting organic material from landfill as a method to address the adverse effects on land and water. Other methods include the Council supporting the promotion of composting of organic material, while recognising the need to avoid, remedy or mitigate any adverse effects from composting. For that reason, rules have been developed for composting operations.

3.18.2 Many councils have rules for the discharge of contaminants from composting operations. Most discharges from farm or domestic composting are permitted activities; while discharges from large-scale composting operations are discretionary activities. For example:

- Greater Wellington allows the discharge from farm composting and domestic composting as a permitted activity
- West Coast Regional Council allows the discharge in connection with composting operations on production land or domestic composting operations as a permitted activity. The discharge from composting operations or biodegradable waste is a discretionary activity
- Northland Regional Council allows the discharge in association with the dumping of produce as a permitted activity. The discharge from transfer stations and green dumps is a permitted activity.
- Hawkes Bay Regional Council allows the discharge arising from the storage, transfer, treatment, mixing or use of compost, biosolids, and other organic material for soil condition purposes as a permitted activity.
- Horizons Regional Council allows any discharge of contaminants associated with farm or domestic composting operations as a permitted activity.
- Environment Waikato allows the discharge occurring as a result of production of compost as a permitted or controlled activity depending on compliance with conditions. The discharge of contaminants onto or into land occurring as a result of production of compost from green waste at a landfill or transfer station is a permitted or controlled activity depending on compliance with the conditions.
- Otago Regional Council allows composting of organic material as a permitted or discretionary activity depending on compliance with conditions.

3.18.3 Most Regional Councils publish information on their websites about the benefits of composting and how to compost at home. They also offer brochures about how to compost.

3.19 **Organic/ Greenwaste: What has Environment Southland been doing?**

3.19.1 To date, there are no RMA plan provisions for the discharge of contaminants to land from composting operations or greenwaste storage. Territorial authority transfer stations do accept greenwaste for a charge per ton disposed of.

3.19.2 The Wastenet councils are in the early discussion phase of moving to 3 bin collection system for organic waste, greenwaste, recycling, and rubbish. This might require a centralized processing plant for organic/greenwaste and recycling. Since organic wastes, if landfilled, can have adverse effects on the environment, it will be important for Environment Southland to make sure there are no barriers to composting operations and encourage household and commercial composting, while avoiding, remedying or mitigating adverse effects on the environment from composting operations.

3.20 **Organic/Greenwaste: What are the Options?**

3.20.1 While landfilling organic waste has adverse effects on the environment, composting can also cause some adverse effects which would need to be avoided, remedied or mitigated. Depending on the scale of a proposed composting facility, resource consents may be required with conditions for:

- controlling feedstock quality;
- dust associated with storage and processing areas;
- odour associated with feedstock storage and the composting process;
- run-off/leachate from storage and processing areas; and
- final product quality including maturity and contamination.

3.20.2 In most cases an organic waste processing facility will require one or more resource consents to operate. The environmental consulting firm, Sinclair Knight Mertz, has drafted a Compost Consents guide for regional councils to use when an application for resource consent has been lodged which could be useful to consult when deciding the activity status for composting operations. Some example consent conditions for addressing leachate which could be included in the Plan are the following:

- take samples once per month and test for specific analytes. If analytes exceed safe level then investigate, take remedial action and rectify within 3 months;
- no discharge of biofilter infiltrate into stormwater system unless infiltrate meets quality criteria.;
- bulk grass clippings shall be separated and if not processed within 48hrs shall be stored inside thereby avoiding toxic insecticide runoff.

3.20.3 In some cases the issues are dealt with in a site/operations management plan rather than by specifying consent conditions. An example for a management plan is the following:

- ***Surface Water Controls***

*“The processing area will be constructed with a bund around it so that storm water does not enter the processing area. This will avoid the possibility of the any unnecessary generation of leachate.”*

3.20.4 Including rules in the Plan will be important to safeguard the environment from the effects of composting, but it will also be important to include policies and methods for more education and encouragement of households and farms to compost. Environment Southland could work closely with the Wastenet councils to ensure an appropriate way forward to divert greenwaste from landfill is put in place. This could include providing incentives for households to compost such as subsidized compost bins, or composting workshops. In addition to composting, the discussion of the RPS in part one suggests options for the re-use of organic waste for electricity generation and ways to encourage the up-take of local composting operations. This Plan could ensure allowance of small-scale generating plants which could be used to power milking sheds, local community facilities or similar. Encouraging local compost operations could help the economy of Southland because the use of composts, soil conditioners and mulches helps improve soil properties. Compost is a preferred option over artificial fertilisers which release large amounts of CO<sub>2</sub> through combustion of natural gas in the heating phase of their production. This Plan could advocate for increased use of the compost the region produces in place of artificial fertilisers.

### 3.21 **Farm Landfills**

3.21.1 The current Solid Waste Plan allows the discharge of solid waste derived from production land farming onto land as a permitted activity. This rule's permitted activity status may need to be revisited depending on compliance with the conditions. Farms could be disposing or burying rubbish such as hazardous waste into their farm landfills; we do not really know what is going in them or potentially leaching out and affecting water quality. There are more transfer stations throughout the Southland region for farmers to take their rubbish to, or private contractors are available to collect waste from rural areas. In this new age of sustainability and waste minimisation we should be encouraging farmers to reduce, reuse, recycle instead of burying their waste in a farm landfill. People living in rural communities may well make use of recycling facilities at transfer stations and drop off recycling centres within the District and may also undertake composting of organics on their properties. It will be important encourage the majority of the rural community to participate in these activities.

3.21.2 The farming community voluntarily disposes of their waste according to the conditions of the permitted activity rule. There is no incentive for farmers to comply with the conditions since the rule is not monitored or enforced so they could be dumping all sorts of waste that might be hazardous, reusable or

recyclable. While the farming community could be dumping all sorts of waste in on-farm landfills there is no definitive information on exactly what is being deposited in these landfills. Further analysis on this issue may be appropriate before altering rules relating to farm landfills. While the waste disposal methods under this permitted rule are not subject to the same environmental standards as the urban communities as noted above other disposal options may not be practical or available.

### 3.22 **Farm Landfills: What have other Regional Councils been doing?**

3.22.1 Through an MAF Sustainable Farming Fund grant, the Taranaki Regional Council (TRC) carried out an investigation into Taranaki's rural waste stream. The Taranaki Rural Sustainability Group carried out a survey in 2004 to assess waste management practices in the rural community of Taranaki. 90 farmers participated in the survey and provided information regarding waste management on their farms. Waste items addressed in the survey included household waste, plastic containers and wrap, agrichemicals, dead livestock, vehicle batteries, used oil, construction and demolition, animal medicines, and metal. Some contextual information was also gathered to assist data interpretation.

3.22.2 The survey revealed that there is a significant amount of waste generated in the rural community and varying proportions of this is recyclable, depending on waste type. It is estimated that there is approximately 525 tons of plastic wrap, 8,750 tons of household waste, and 32,440 plastic containers generated in the rural area in the region each year. It is estimated that there is approximately 84 m<sup>3</sup> to 162 m<sup>3</sup> of waste engine and hydraulic oil generated in the rural area region each year.

3.22.3 Overall, some materials are disposed of in an environmentally sound manner and some materials are reused a lot. However, most materials are disposed of by burning (e.g. plastics) or by on-farm burial (e.g. metal) which are less than ideal disposal methods, both from the perspective of potential environmental damage and by the loss of a resource. The aim of the project is to evaluate on-farm waste generation, management and disposal gaps and shortcomings, and to interpret the survey data to identify disposal opportunities for the rural communities and service providers to reduce, reuse and recycle, and provide sustainable disposal options. The report identifies a number of opportunities to improve current waste disposal practices. The information in the report can be used by councils, waste contractors, and the regional rural community to explore robust, environmentally sound, and economically sustainable long term waste management options.

3.22.4 The Auckland Regional Council (ARC) is currently trying to develop a program to assist farmers on how to deal with their rubbish. The first step is finding out more information. ARC's Rural Team will conduct site visits to farms and will ask them a few questions: why they prefer on-farm dumps, what they are putting in them, what ARC could do to assist, etc.

3.22.5 After ARC receives the information, they will try to work with the HazMobile coordinator to see if they can get more frequent pick-ups in rural communities

for chemicals. They are then hoping to work with the territorial authorities to see if they would like to get involved. After ARC coordinates with the territorial authorities, they will try to get a factsheet out and possibly hold workshops in the communities on options that are available. The factsheets and workshops will discuss the current environmental effect of the dumps, what is possibly acceptable to put in the dump, *if* they can burn it, places they can take rubbish, and other options for reusing, recycling, or composting, etc. ARC is taking small steps because they do not want to go around hitting farmers with a stick, but instead are trying to work with them.

3.22.6 Environment Canterbury is preparing a rule on the discharge of solid domestic waste and farm refuse on rural land in the draft Natural Resources Regional Plan. This draft rule sets out conditions for the use, siting and construction of refuse pits including the following:

- any new rubbish pit shall only be located where there is no territorial authority rubbish collection service, or refuse transfer station or landfill to which residents have access to within 10 kilometres of the property;
- rubbish discharged into any pit shall only be from households or farming activities carried out on the same property;
- the location of any pit to within an accuracy of 50 meters and marked on a map of the property of a scale of 1:50,000 or larger, shall be provided to Environment Canterbury within seven days of a request to do so.

### 3.23 **What are the Options for Environment Southland?**

3.23.1 Environment Southland could begin finding out information similar to TRC and ARC by conducting site visits and farm landfill surveys. This information would give Environment Southland an indication of how the rural community is complying with the permitted activity rule and how well the rule is working. This baseline information could then be used to develop ways to work with the rural community in assisting them with the disposal of their waste and provide direction on the regulatory approach that should be taken, i.e. keep the permitted activity status, require more monitoring and enforcement action, etc. Anecdotal evidence already suggests that the opening hours of transfer stations do not suit farmers which could be a big reason why they prefer on-farm landfills. Developing Best Management Practice (BMP) guidelines for what can be placed in farm landfills and where to locate them is another tool to use in conjunction with the rule that is already in place. Environment Southland would also like to encourage farmers to have one dump site shared by a common group of landowners as long as it complied with the BMP guidelines.

### 3.24 **Conclusion**

3.24.1 The Regional Solid Waste Management Plan for Southland has worked well over the past decade and the current provisions will need minor updates and revisions. This work will take place during stage two further down the track of the Discharge Plan process. There are new issues such as contaminated land, hazardous substances & their waste, sustainability/waste minimization and organic waste that have emerged which do not have any baseline policy framework in place. This discussion paper has given an overview of these issues in stage one of Phase 3 and how local government and Environment

Southland have responded to them. It also provides some options for future policy development based on the framework provided by the discussion of Southland's RPS, central government and other regional councils. The options are not exhaustive, but are presented as a way to get Environment Southland thinking about different ways to address the issues. The issues and ideas presented are to be thought about so that stakeholders can provide their feedback and indicate how Environment Southland should further proceed with stage one of Phase 3 of the Discharge Plan process.

## **Appendix 4 - New Zealand Waste Strategy Targets**

### **4.1 Targets for waste minimisation**

1. Local Authorities will report their progress on waste minimisation and management for their annual report in 2001-2 and quantitatively on an annual basis from then onwards.
2. By December 2005, at least 10 major businesses will be participating alongside central and local government in developing and promoting waste minimisation programmes within their sector.
3. Ninety-five percent of the population will have access to community recycling facilities by December 2005.
4. By December 2005, all councils will ensure that procedures for waste minimisation have been addressed for all facilities and assets they manage and will have set target reductions based on public health, environmental and economic factors.
5. All regional councils will ensure that at least 25 per cent of all existing industrial resource consent holders have in place a recognised waste minimisation and management programme. This target was deemed unachievable because it is in direct conflict with the RMA. However, there are other ways councils can engage with business and industry in order to help them achieve waste minimisation outcomes. Instead of requiring waste minimisation activities through resource consent conditions, territorial authorities and regional councils provide a wide range of programmes and initiatives to promote best practice, provide information and guidance, and offer seed funding. These programmes are often run in partnership with business, nongovernmental organisations and central government.

### **4.2 Targets for organic wastes**

1. By December 2003, all territorial local authorities will have instituted a measurement programme to identify existing organic waste quantities, and set local targets for diversion from disposal.
2. By December 2005, 60 percent of garden wastes will be diverted from landfill and beneficially used, and by December 2010, the diversion of garden wastes from landfill to beneficial use will have exceeded 95 percent.
3. By December 2007, a clear quantitative understanding of other organic waste streams (such as kitchen wastes) will have been achieved through the measurement programme established by December 2003.
4. By December 2007, more than 95 percent of sewage sludge currently disposed of to landfill will be composted, beneficially used or

appropriately treated to minimise the production of methane and leachate.

5. By December 2010, the diversion of commercial organic wastes from landfill to beneficial use will have exceeded 95 percent.

#### 4.3 **Targets for construction and demolition wastes**

1. By December 2005, all territorial local authorities will have instituted a measurement programme to identify existing construction and demolition waste quantities and set local targets for diversion from landfills.
2. By December 2008, there will have been a reduction of construction and demolition waste to landfills of 50 percent of December 2005 levels measured by weight.

#### 4.4 **Target for special wastes (tires, electrical and electronic equipment, used oil, batteries)**

1. By December 2005, businesses in at least eight different sectors will have introduced extended producer responsibility pilot programmes for the collection and reuse, recycling, or appropriate treatment and disposal of at least eight categories of special wastes.

#### 4.5 **Targets for waste disposal**

1. By December 2003, local authorities will have addressed their funding policy to ensure that full cost recovery can be achieved for all waste treatment and disposal processes.
2. By December 2005, operators of all landfills, cleanfills and wastewater treatment plants will have calculated user charges based on the full costs of providing and operating the facilities and established a programme to phase these charges in over a timeframe acceptable to the local community.
3. By December 2005, all cleanfills will comply with cleanfill disposal guidelines.

#### 4.6 **Targets for hazardous wastes**

1. By December 2005, an integrated and comprehensive national hazardous waste management policy will be in place that covers reduction, transport, treatment and disposal of hazardous wastes to effectively manage risks to people and the environment.
2. By December 2004, hazardous wastes will be appropriately treated before disposal at licensed facilities, and current recovery and recycling rates will be established for a list of priority hazardous wastes.

3. Recovery and recycling rates for priority hazardous waste will increase 20 percent by December 2012.

#### 4.7 **Revised targets for contaminated land**

1. By 20XX, all regional councils will have a database in which to record their HAIL regional assessments
2. By 20XX, all regional councils will have assessed their region for HAIL sites (MfE may prepare guidance)
3. By 20XX, all regional councils will have applied the Rapid Risk Screening system (in accordance with MfE Guideline No. 3) to all sites identified, and will have developed an action plan to investigate those identified as high risk.
4. By 20XX, all regional councils will have investigated all high risk sites and, if determined necessary, developed an action plan with timeframes for these sites to be managed and/or remediated
5. By 20XX, all regional councils will be updating their HAIL database with information obtained from contaminated site identification, screening and investigative work, and be sharing this information with territorial authorities in their region.
6. By 20XX, all territorial authorities will have policies and rules for the prevention or mitigation of any adverse effects of the development, subdivision, or use of contaminated land. (s.31 RMA)

#### 5.0 **References**

- Economist: Science Technology Quarterly, 2007.
- Email correspondence, Donna Peterson Waste Minimization Officer Invercargill City Council, 3 July 2008 4:03 p.m.
- Email correspondence. Ed Hills, Chemical collector, Chemstocks Ltd 16 June 2008.
- Environment New Zealand 2007, Ministry for the Environment. Section 2, Chapter 6 *Waste*.
- Environment New Zealand 2007, Ministry for the Environment, Section 3, Chapter 9, *Land*.
- Jim Sinner and Guy Salmon, “Creating Economic Incentives for Sustainable Development” A Report to the New Zealand Business Council for Sustainable Development. November 2003.

- OECD, in Ministry for the Environment, 2002.
- Policy Framework for Reducing and Safely Managing Hazardous Wastes in New Zealand  
<http://www.mfe.govt.nz/issues/waste/hazardous/policy-framework/index.html>  
as at 1 October 2008.
- Resource Management Act 1991 Part 2, s 5 (20/08/2005).
- Review of the New Zealand Waste Strategy 2003,  
<http://www.mfe.govt.nz/publications/waste/review-targets-waste-strategy-feb04/index.html>) as at 01 October 2008.
- Review of the New Zealand Waste Strategy 2006,  
<http://www.mfe.govt.nz/publications/waste/waste-strategy-review-progress-mar07/index.html> ) as at 01 October 2008.
- The New Zealand Waste Strategy  
<http://www.mfe.govt.nz/publications/waste/waste-strategy-mar02/index.html> as  
at 01 October 2008.
- The Waste Minimization Act,  
[http://www.legislation.govt.nz/act/public/2008/0089/latest/viewpdf.aspx?search=ts\\_act\\_waste](http://www.legislation.govt.nz/act/public/2008/0089/latest/viewpdf.aspx?search=ts_act_waste) as at 3 October 2008.
- Von Weizsacker et al, 1997, in Ministry for the Environment, 2002.
- WasteNet Southland, [www.wastenet.org.nz](http://www.wastenet.org.nz)
- WasteNot Consulting, February 2008, *Solid Waste in Southland 2007*—Draft copy.
- World Commission on the Environment and Development 1987. *Brundtland Report*, Oxford University Press, Oxford.