

## 16.1 Introduction

In the past hazardous substances were only used in specialised areas in society (such as explosives in mining, or solvents in industrial use). Their implications for people and the environment were not well understood. Today the use of such substances has become a common part of day to day life, with the potential for their effects to impact the health and safety of people and the environment.

Hazardous substances are defined in the RM Act as any substance which may impair human, plant or animal health or may adversely affect the health or safety of any person or the environment.

The definition presents some difficulties in practical usage – for example, it does not define the circumstances, quantities, or concentrations under which a substance may be hazardous for land use planning purposes.

The Auckland Region contains the largest quantities of hazardous substances of any region in New Zealand. In particular, large quantities are currently contained in the Penrose, Rosebank, Wiri and East Tamaki industrial areas and at the Freemans Bay tank farm.

This is of particular concern because the Region's industrial areas are the work places for a large number of people. In many instances they are located close to residential areas and valued environmental areas. The Region's groundwater aquifer system, and the Waitemata and Manukau Harbours including their associated waterways are examples of valued environmental areas.

At present there are a number of other agencies which also have statutory functions in respect of hazardous substances under other legislation. These are outlined later in this chapter.

The measures set out in this RPS are additional to the provisions applying under other legislation. The legislation applying to hazardous substances is presently being revised. The provisions of this RPS applying to hazardous substances may need to be updated when new legislation is enacted.

The RM Act gives the ARC and TAs similar responsibilities in relation to the management of adverse effects of the storage, use, disposal, or transportation of hazardous substances. The RM Amendment Act 1993 enables this RPS to define the respective responsibilities of regional and territorial councils.

## 16.2 Issues

### 16.2.1 Potential adverse effects arise from the use of land for the storage, use, disposal and transportation of hazardous substances

In sufficient quantities, and dependent on their particular physical properties, hazardous substances can become dangerous to the extent of being explosive, toxic or flammable when inappropriately handled, stored, transported or released into the environment. In these circumstances, hazardous substances can cause one or more of the following: adverse effects to the health and safety of people, to sensitive species, habitats or ecosystems, contamination of land and water, including water supplies, and destruction of property.

Hazardous substances can enter the environment through sewerage and stormwater systems, by domestic and commercial wastes and air emissions. Some enter the environment more directly, through spills, leakages or accidents.

### 16.2.2 Adverse environmental effects arise from the disposal of hazardous wastes

The disposal of hazardous wastes both from contaminated land and the waste stream is dealt with in Chapter 15 – Waste.

### 16.2.3 Inappropriate use and/or disposal of hazardous substances has resulted in contaminated sites

The clean-up of contaminated land is dealt with in Chapter 17 – Contaminated Sites. Measures to avoid the contamination of land or water are also covered in Chapter 8 – Water Quality.

## 16.3 Objective

*To prevent or mitigate risks to the health and safety of people and communities, and to prevent or mitigate adverse effects on the natural and physical environment from activities using, storing, disposing or transporting hazardous substances.*

## 16.4 Policies, Methods and Reasons

*The following policies and methods all give effect to Objective 16.3.*

#### 16.4.1 Policies

1. *The responsibility for developing objectives, policies, and rules relating to the control of the use of land for the prevention and mitigation of any adverse effects of the storage, use, disposal, or transportation of hazardous substances shall be:*
  - (i) *The ARC's for:*
    - (a) *the co-ordination of the management of hazardous substances for the purpose of integrated management in the Auckland Region;*
    - (b) *activities which use, store, dispose, or transport hazardous substances in the CMA.*
  - (ii) *The TAs' for:*
    - (a) *all other activities which use, store, dispose, or transport hazardous substances not in the CMA, including the assessment of land use consents.*
2. *The assessment of any land use consent application required for the storage, use, disposal, or transportation of hazardous substances shall include consideration of the manner in which any potential adverse effects of the hazardous substances on the environment will be prevented or mitigated.*
3. *The use of land in proximity to existing hazardous facilities shall be controlled:*
  - (i) *to prevent proposed new activities presenting significant risks to public health and safety;*
  - (ii) *to prevent new activities imposing significant limitations on existing facilities.*
4. *Proposed facilities for the use, storage, disposal or transportation of hazardous substances shall be designed, developed, and managed so as to prevent, as far as practicable, and where not practicable mitigate the contamination of land, water or air.*
5. *Routes that are preferred for the transportation of hazardous substances shall be identified and promoted within the Auckland Region.*

#### 16.4.2 Methods

1. *In considering any land use consent for the use, storage, disposal or transportation of hazardous substances, the consent authority shall have regard*

*to the following matters in addition to any other matters which it is required by the RM Act to have regard to:*

- (i) *The reasons for choosing the location, with particular regard to the compatibility of the activity for which consent is sought, with existing and likely future activities in the vicinity, in terms of safety, prevention or mitigation of adverse effects, and, where it is likely that the activity will result in any significant adverse effect on the environment, any feasible alternatives for the location of the activity.*
- (ii) *Details of, and justification for, transport routes proposed to feed to and from those routes identified in the district plan, with particular regard to population density, peak traffic flows and the ease of access for emergency vehicles, areas of significant environmental value (including water supply catchments and aquifers), and taking into account the transport safety equipment or systems proposed to be used.*
- (iii) *Any current circulars or guidelines published by the ARC, MfE, Department of Labour, or other governmental agencies, relating to the development of activities using hazardous substances.*
- (iv) *Current codes of practice adopted by industry which are relevant to the activity being assessed.*
- (v) *The following matters as part of the assessment of environmental effects:*
  - (a) *identification of all hazards associated with the operation of the proposed potentially hazardous development;*
  - (b) *analysis of such hazards in terms of their consequences to people, property and the natural environment including water supplies from surface waters and aquifers, and their likelihood of occurrence;*
  - (c) *assessment of risks from the operation of the potentially hazardous development in terms of location and implications for land uses in the vicinity;*

- (d) *the nature and quantities of hazardous substances used and stored on the site and transported to and from the site;*
- (e) *the type of plant and equipment in use;*
- (f) *the adequacy of proposed technical and site management safety systems;*
- (g) *the surrounding land uses or likely future land uses;*
- (h) *the interactions of the above matters.*

2. The ARC will:

- (i) *Investigate the need for, and if necessary include provisions within, a regional plan in consultation with relevant organisations, which will set minimum standard requirements for facilities using or storing hazardous substances that will prevent hazardous substances entering land, water or air.*
- (ii) *Prepare non-statutory guidelines, in conjunction with TAs and other agencies, to provide the range of issues and studies expected to be covered in the consideration of environmental risk impacts, and to assist in the decision-making process for consents relating to activities using hazardous substances.*

*The following guidelines will be produced:*

- (a) *industry emergency planning guidelines;*
- (b) *spill contingency guidelines;*
- (c) *fire safety study guidelines;*
- (d) *environmental risk assessment guidelines;*
- (e) *guidelines for hazardous facilities and activities;*
- (f) *guidelines for hazard analysis;*
- (g) *guidelines for hazard audits.*
- (iii) *Endorse a hazardous facility screening procedure and promote its adoption in district plans.*
- (iv) *Advocate for the use of cleaner production methods, including the promotion of the reduction of the use, production, and storage of hazardous substances with particular*

*regard to toxic, persistent, and bioaccumulative substances.*

- (v) *Advocate for the use of smaller or more appropriate inventories of hazardous substances.*
- (vi) *Participate in the preparation and review of district plans.*
- (vii) *Identify routes that are preferred for the transportation of hazardous substances in liaison with TAs, as outlined in Method 16.4.2-3(ii).*
- (viii) *Participate in education programmes for the successful implementation of the policies.*
- (ix) *Make submissions to central government on hazardous substance issues appropriate to the Auckland Region, and advocate for nationally consistent hazardous substance policies.*
- (x) *Liaise with appropriate organisations regarding cross-boundary issues.*
- (xi) *Undertake research into the adverse effects hazardous substances have on the environment, as is necessary for the ARC to effectively carry out its functions under the RM Act.*
- (xii) *Advocate methods to reduce adverse effects on the environment.*

3. TAs will:

- (i) *Include within district plans, objectives, policies and methods of implementation, including consent procedures, relating to the control of the use of land for the prevention or mitigation of any adverse effects of the storage, use, disposal or transportation of hazardous substances. Conditions and criteria for site protection and emergency planning will be included.*
- (ii) *Identify and promote routes within their districts that are preferred for the transportation of hazardous substances in liaison with the ARC, adjoining TAs and other parties as appropriate. The identification of such routes will take into account the following factors:*

- (a) *the avoidance (so far as practicable) of areas of high population density and/or which would be unable to be evacuated quickly in the event of an accident;*
  - (b) *the avoidance (so far as practicable) of areas of significant environmental value;*
  - (c) *peak traffic flows and the ease of access for emergency service vehicles.*
- (iii) *Advocate methods to reduce adverse effects on the environment.*

### 16.4.3 Reasons

#### Roles of regulatory agencies

Sections 30(1)(c) and 30(1)(d)(v), and 31(b) of the RM Act enable regional councils and TAs to exercise similar responsibilities in respect of hazardous activities. Section 62(1)(ha) enables Regional Policy Statements to determine which local authority shall have responsibility for the prevention or mitigation of adverse effects of the storage, use, disposal or transportation of hazardous activities in all parts of the Region. In addition to the provisions of the RM Act, other legislation establishes certain responsibilities with regard to hazardous substances, as indicated in Table 16.1 (page 16–6).

Anything decided or pursued through the RM Act cannot be in conflict with requirements arising from other legislation, for example:

- The Department of Labour administers the Dangerous Goods Act 1974, through its own or TA dangerous goods inspectors by inspecting premises in terms of packing, marking, handling, carriage, storage and use of dangerous goods.
- Crown Health Enterprises employ Health Protection Officers and Medical Officers of Health who enforce the Toxic Substances Act 1979 on behalf of the Ministry of Health.

TAs have hazardous substance control responsibilities via several pieces of legislation. Responsibilities include controlling the siting of activities involving hazardous substances, and controlling storage. They may also control the routing of vehicles carrying hazardous substances. It is therefore appropriate in terms of efficiency that TAs be the consent authority for land uses involving hazardous substances.

#### Managing Risk

Management to prevent or mitigate risk requires a broader response than simply the adoption of engineering safety codes. It is also necessary to determine whether the location chosen for an activity which uses, stores, transports or disposes of hazardous substances is compatible with the existing and likely future surrounding land uses, in terms of health and safety considerations, and whether appropriate emergency planning and appropriate site management systems are brought into effect.

Regional guidelines are proposed as the most efficient method of facilitating the assessment and management of risks to the environment from hazardous substances. Any guidelines produced will be reviewed from time to time, and will be made consistent with or be replaced by any central government guidelines that may be produced.

The specification of trigger quantities is a fundamental step in the management of risks from facilities using hazardous substances. A potential adverse effect on the environment can only occur where there is an inventory of hazardous substances of significant size. The trigger quantity for hazardous substances approach is adopted so that activities that have the potential for adverse environmental effects can be readily identified. The ARC is committed to reviewing available methods for determining trigger quantities of hazardous substances at regular intervals.

Many codes of practice prepared by industry groups or other organisations are designed to prevent or mitigate adverse effects on the environment from the storage, use, disposal or transportation of hazardous substances and will be considered during the assessment of any applications for consents for discretionary activities involving hazardous substances.

When processing any application involving the use, storage, transportation or disposal of hazardous substances, consent authorities will need to consider all of the factors affecting risk, including appropriateness of the location for the proposed activity as required by the Fourth Schedule of the RM Act. Method 16.4.2 (1) (v) provides guidance on specific matters which should be addressed in such an assessment of risk. Risks may be controlled by separation distance or by safety systems. Safety systems can incorporate hardware or software, or

a combination of both. Hardware includes appropriate structural engineering design and control systems designed to achieve safety. Software includes management systems and procedures. Where a land use resource consent is not required on the basis of the quantity or type of hazardous substances involved in the proposed activity, no risk assessment is required.

TAs are given the responsibility of controlling activities involving the storage, use, disposal, or transportation of hazardous substances. The TA may take into account the potential adverse environmental effects either by resource consent or by permitting activities in which the likely adverse environmental effects are prevented or mitigated as described above.

TA district plans shall also control the use of land in proximity to existing hazardous facilities to prevent the imposition of significant risks to public health and safety and the imposition of limitations upon existing facilities, in accordance with Policy 16.4.1 (3).

If Regional consistency in minimum standard requirements for hazardous facilities can be satisfactorily achieved through district plans, it may not be necessary to include provisions relating to hazardous facilities within the proposed regional plan. However, if such Regional consistency is unable to be achieved, provisions within the proposed regional plan will be added to fulfil the integrated management of hazardous substances function imposed upon regional councils by the RM Act.

**Table 16.1: Hazardous substances – Roles of Agencies**

<b>Class</b>	<b>1</b>	<b>2, 3, 4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>Substances Group</b>	Explosives	Flammable Substances	Oxidising Substances	Toxic Substances	Radioactive Substances	Corrosive substances	Environmentally Hazardous Substances
<b>Legislation (Principal Act)</b>	Explosives Act 1957	Dangerous Goods Act 1974	Dangerous Goods Act 1974	Toxic Substances Pesticides Act 1979	Radiation Protection Act 1965	Toxic Substances Act 1979	Various
<b>Registration or Licensing Authority</b>	Labour Dept	Labour Labour TAs	Labour Dept TAs	Ministry of Health – Pesticides Board	Ministry of Health – (National Radiation Laboratory)	Ministry of Health	Various
<b>Monitoring Authority</b>	Labour Dept	Labour Dept TAs	Labour Dept TAs	Ministry of Health – Designated Officers	Ministry of Health (National Radiation Laboratory)	Ministry of Health – Designated Officers	Various

#### **Preventing or Mitigating the Contamination of Land**

The potential for contamination of land and water bodies from activities involving hazardous substances can be avoided or mitigated. Good site management reduces the potential for spills onto the natural environment. Methods such as containment, spill contingency planning, equipment maintenance, housekeeping

procedures, etc. can avoid or reduce the potential adverse environmental effects from the risk of spills and leakages of hazardous substances.

Section 1.9 in Chapter 1 – Introduction refers to the general duty of the ARC to respond to pollution events such as from the storage, use, disposal or transportation of hazardous substances.

### **16.5 Environmental Results Anticipated**

- (a) Prevention or mitigation of the potential adverse effects to people and property from the storage, use, transportation and disposal of hazardous substances.
- (b) Reduced number of incidents of adverse environmental effects from hazardous substances.
- (c) Prevention or mitigation of contamination of the natural environment from new facilities using, storing or transporting hazardous substances.
- (d) Appropriate siting or control of potentially hazardous facilities.
- (e) Improved community and industry awareness of potential risks posed by activities using, storing or transporting hazardous substances.

### **16.6 Monitoring**

Consent authorities shall require an activity or facility owner to investigate, and report to the TA and ARC in writing, any incident involving hazardous substances that results in adverse effects to the natural environment, property damage, or actual or potential adverse effects to the health or safety of any persons.

The ARC will establish and maintain a database which will include information on the properties of hazardous substances and this will be available for Regional use.