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Waikato District Council– Legislative Analysis HSNO/HSW - RMA Relationship

PROPOSED HAZARDOUS SUBSTANCES PROVISIONS OF THE WAIKATO DISTRICT PLAN – ANALYSIS OF RELEVANT HSNO NOTICE AND HSW HAZARDOUS SUBSTANCES REGULATIONS

resources

Hazardous Substances Management

Proposed Hazardous Substances Provisions of the Waikato District Plan – Analysis of relevant EPA Notice and HSW (Hazardous Substances) Regulations

Prepared for

Waikato District Council

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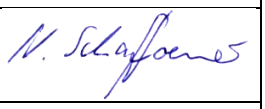
2	25/5/2020	Final	N Schaffoener	

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EXECUTIVE SUMMARY

This report was prepared at the request of the Waikato District Council to address the Hearings Panel's direction for an analysis of the relevant legislative instruments to identify gaps and potential overlaps between land use controls and applicable HSNO/HSW regulations. As directed the analysis is robust but not line-by-line.

The key legislative instruments other than the RMA which include specific requirements for the management of hazardous substances identified at the hearing are the:

- Health and Safety at Work (Hazardous Substances) Regulations 2017
- Hazardous Substances (Hazardous Property Controls) Notice 2017.

In summary the Health and Safety at Work (Hazardous Substances) Regulations 2017 and the Hazardous Substances (Hazardous Property Controls) Notice 2017 apply to specific matters for particular circumstances for specified Classes or sub-Classes of hazardous substances above minimum quantities, primarily within workplaces. Apart from the variations included in the requirements of the legislative instruments themselves, controls can be varied in many instances, even reduced or removed through a number of mechanisms (exemptions, safe work instruments).

The legislative instruments analysed do not include any requirements (which represents gaps) with regard to:

- A differentiation in sensitivity between land uses within the area of influence of a hazardous facility
- A differentiation in sensitivity of natural environments/eco-systems within the area of influence of a hazardous facility
- Carrying out a facility- and location-specific risk assessment (apart from the specific case of calculating some separation distances for mega-storage facilities (>500 tonnes) of highly hazardous Class 3.2, 4 and 6.1 substances)
- Potential natural hazards relevant to the location
- Cumulative effects of hazardous facilities within the area of influence of each other
- Reverse sensitivity effects of new land uses in relation to existing hazardous facilities.

In addition the legislative instruments do not address substances outside the HSNO scope, such as radioactive substances or environmentally harmful substances other than in relation to defined eco-toxicity (such as high biochemical oxygen demand). These are also considered gaps.

There are further areas such as

- secondary containment in addition to minimum requirements (e.g., to allow for rainwater),
- additional separation distances (or other risk management measures),
- site-specific emergency management, or
- communication and information sharing issues,

where site-specific characteristics in the land use planning context (including surrounding land uses and natural environments) are not taken into account. These are gaps which can only be addressed through land use Plan provisions.

It is noted that the principle of requirements being linked to aggregate quantity thresholds of substances in the various hazard classes is a common factor between the legislative instruments and the Activity Status Table (AST) in the proposed Waikato District Plan provisions. This provides a high degree of consistency and efficiency and does not represent a duplication of controls.

It is also noted that the maximum penalties under the Health and Safety at Work (Hazardous Substances) Regulations 2017 are generally fines not exceeding $ 10,000 for individuals and $ 50,000 for others. The Hazardous Substances (Hazardous Property Controls) Notice 2017 do not include any fines. Under the RMA maximum penalties are imprisonment for up to two years or a fine of up to $300,000 (for individuals) or up to $600,000 (for any parties other than individuals). These significant differences are a matter for Council to consider with regard to effectiveness of controls.

1.0 INTRODUCTION

The Hearings Panel expressed the view that the Hazardous Substances topic is too important to determine its position based on the information presented at the hearing. The Panel requested a robust analysis of any specific duplication, gaps or contradictions between applicable HSNO and HSW regulations and the proposed District Plan provisions.

As directed by the Hearings Panel, Council has undertaken an analysis of the key legislative instruments other than the RMA identified at the hearing, which include specific requirements for the management of hazardous substances, namely the:

- Health and Safety at Work (Hazardous Substances) Regulations 2017
- Hazardous Substances (Hazardous Property Controls) Notice 2017.

Council does not consider it relevant to cover the Health and Safety at Work (Major Hazard Facilities) Regulations 2016 as there are currently no Major Hazard Facilities in the Waikato District listed on the WorkSafe NZ public database (and controls under those regulations are not applied to any other facility).

Non-legislative instruments informed by the Regulations and Notice such as codes and standards are not considered in this analysis as they implement, or provide means of compliance with, the legislative instruments analysed, or at least provide a defence in case of failure.

As alerted to above, from the directions given by the Panel Chair, the analysis is not intended to be a "line by line" approach. Consequently this analysis of the Health and Safety at Work (Hazardous Substances) Regulations 2017 and the Hazardous Substances (Hazardous Property Controls) Notice 2017 is carried out Part by Part of the two legislative instruments. Relevant clauses are examined in more detail. Other matters such as relevant elements of the Interpretation and Schedules are also addressed.

As agreed at the hearing, Council was to collate and address the response from submitters into this report to the Panel. Due to varying demands by a few submitters such as a 'line-by-line' analysis, the inclusion of other statutory as well as numerous non-statutory documents, delays in the process and a new direction by the Panel with binding target dates to complete the process, this report was not provided as draft to submitters. It is noted that no submitter put forward any names of independent experts or peer reviewers at any point in the process.

The Role of the RMA

There is agreement that local authorities have in principle a role in land use planning under the RMA in relation to sites and activities involving the management of hazardous substances. There is general agreement that the following matters are relevant in land use safety planning for hazardous facilities:

-The effects of a hazardous facility in a particular location on any part of the natural environment and eco-systems within a district (and possibly beyond)

-The effects of a hazardous facility in a particular location on public health and safety, particularly, but not exclusively, in relation to sensitive land uses (off-site)

-The interaction of identified natural hazards and hazardous facilities, and possible synergistic effects due to that interaction

-Cumulative risks from hazardous facilities on different sites (in particular where a new hazardous facility is proposed in the vicinity of an existing hazardous facility)

-The reverse sensitivity effects of new sensitive land uses on existing hazardous facilities with relevant off-site risks

-The management of hazardous substances outside the scope of the HSNO definition of the term.

There is also widespread agreement that the following do generally not need to be addressed in the resource management context:

-The design and details of hazardous substances packaging and containers, and associated fittings and equipment

-Labelling, marking, signage, safety data sheets and other general hazard information

-Competency of people in charge of, or handling, hazardous substances

-The health and safety of workers in a workplace where hazardous substances are managed

-The licensing and tracking of highly hazardous substances.

This analysis focuses on the matters identified above where there are land use planning issues. It examines whether the wording of any requirements of the legislative instruments analysed refer directly to such matters, or clearly imply a land use planning role. It also evaluates whether, and if so, to what degree, the currently proposed Plan provisions repeat, contradict or otherwise are repetitions of, or inconsistent with, the wording of the legislative instruments.

Any interpretation of intentions or opinions of agencies such as WorkSafe NZ, MfE, EPA or any staff of those agencies has been avoided. Actual compliance/monitoring/enforcement (CME) of any legislative instrument has not been taken into account.

The evaluation which examines the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of the Act (such as provided for under s32) is not part of this analysis.

For clarification, the substance Class numbering used in the Regulation/Notice basically applies to the following hazardous properties:

Class 1 – explosive

Class 2 – gas (mainly flammable)

Class 3 – flammable liquid

Class 4 – flammable solids

Class 5 – oxidising capacity

Class 6 – toxic

Class 8 – corrosive.

2.0 HEALTH AND SAFETY AT WORK (HAZARDOUS SUBSTANCES) REGULATIONS 2017

Contents: While the majority of Content matters is not relevant in the HSW-RMA relationship, of potential relevance may be some definitions in s3 – Interpretation. This could apply to the following terms:

area of high intensity land use, in relation to an area beyond the boundary of a place where a hazardous substance location is situated, includes an area of regular habitation, any other hazardous substance location, and a high density traffic route

area of low intensity land use, in relation to an area beyond the boundary of a place where a hazardous substance location is situated,—

(a) includes—

(i) an area where any person may be legally present occasionally; and
(ii) a public park or reserve; and
(iii) a public traffic route of low or medium traffic density; but

(b) does not include an area of regular habitation

area of regular habitation includes any dwelling, hospital, school, airport, commercial premises, office, or other area where people regularly congregate

hazardous substance location,—

(a) in relation to a class 1 substance,—

(i) means an area where a quantity of the substance that is in excess of the relevant quantity specified in table 5 in Schedule 8 is manufactured, or is located for more than 2 hours:
(ii) does not include a designated use zone, a discharge area, a designated transfer zone, a location authorised by WorkSafe under regulation 9.10(1)(e), or a means of transport within a transfer zone for the purpose of transfer:
(iii) does not include a vehicle, a ship, or an aircraft while it remains under the direct control of its driver, master, or pilot and under the jurisdiction of the Land Transport Rules, the Maritime Rules, or the Civil Aviation Rules (as the case may be):

(b) in relation to a class 2, 3, 4, 5, 6, or 8 substance,—

(i) means an area where a quantity of the substance exceeds the relevant quantity specified in table 4 in Schedule 9, table 1 or 2 in Schedule 10, table 1 in Schedule 11, or regulation 13.38 is located for more than—
(A) 24 hours, in the case of a substance that is not subject to the tracking provisions of Part 19:
(B) 2 hours, in the case of a substance subject to the tracking provisions of Part 19:
(ii) does not include a vehicle, a ship, or an aircraft while it remains under the direct control of its driver, master, or pilot and under the jurisdiction of the Land Transport Rules, the Maritime Rules, or the Civil Aviation Rules (as the case may be):
(iii) does not include a transit depot

high density, in relation to a public traffic route, means more than medium density

low density, in relation to a public traffic route, means not more than an average per 24 hours of—

(a) 1 000 vehicles on a road; or
(b) 50 rail wagons on a railway; or
(c) 400 people on a waterway; or
(d) 200 people along a public right of way

medium density, in relation to a public traffic route, means more than low density but not more than an average per 24 hours of—

(a) 5 000 vehicles on a road; or
(b) 250 rail wagons on a railway; or
(c) 1 800 people on a waterway; or
(d) 900 people along a public right of way

protected place—

(a) includes—

(i) a dwelling, residential building, place of worship, public building, school or college, hospital, child care facility, or theatre, or any building or open area in which persons are accustomed to assemble in large numbers, whether within or outside the property boundary of a place where a hazardous substance location is situated:
(ii) any factory, workshop, office, store, warehouse, shop, or building where persons are regularly employed, whether within or outside the property boundary of a place where a hazardous substance location is situated:
(iii) a ship lying at permanent berthing facilities:
(iv) a public railway; but

(b) does not include a small office or other small building associated with a place where storage, handling, use, manufacture, or disposal of a class 2, 3, 4, 5, 6, or 8 substance is a major function

public place—

(a) means a place (other than private property or a protected place) that is open to, and frequented by, the public; and

(b) includes a public road

transit depot means a permanent place (except a means of transport or any place where hazardous substances are held for sale or supply) used as a transport depot that is intended to hold hazardous substances in containers that remain unopened during the time that they are present at the depot for periods—

(a) that are more than—

(i) 24 hours, for a substance that is not subject to the tracking provisions in Part 19:

(ii) 2 hours, for a substance subject to the tracking provisions in Part 19; but

(b) that in no case exceeds 3 days

vulnerable facility means any of the following facilities:

(a) buildings of 4 storeys or more, of curtain wall construction with panels more than 1 500 mm square:

(b) buildings of 4 storeys or more with more than 50% of the wall area glazed:

(c) a hospital care institution, residential disability care institution, or rest home (as defined in section 58(4) of the Health and Disability Services (Safety) Act 2001), early childhood education and care centre (as defined in section 310 of the Education Act 1989), or school (as established under section 146 of the Education Act 1989):

(d) public buildings or structures of historic value:

(e) major transport and traffic terminals such as railway stations and airports handling more than 1 800 people in 24 hours:

(f) major public utilities whose service could be disrupted by a blast of 5 kPa:

(g) any similar facilities.

Analysis:

The terms ***area of high intensity land use*** and ***area of low intensity land use*** provide a rough differentiation between 'intensity' (undefined) of land use immediately next to a *hazardous substance location* (i.e., not applicable to all workplaces with hazardous substances). They do not differentiate between sensitivity of land uses in the resource management context. Sensitive land uses such as residential, child

care facilities are considered in the same manner as factories and other workplaces. There is no reference made in the definition of these terms to protected places and public places. Activities of medium intensity land use (including areas where people can congregate in high numbers such as a stadium, (movie) theatres etc. representing an increased societal risk) exist but are not defined, and consequently not addressed. (Or they are assumed to represent 'an area where any person may be legally present occasionally' meaning low intensity, which neglects the societal risk aspect altogether.)

A ***hazardous substance location*** is defined in relation to minimum quantities for Class 1 (table 5 Schedule 8), Classes 2, 3 and 4 (table 4 Schedule 9), Class 5 (table 1 or 2 in Schedule 10, table 1 in Schedule 11) and Classes 6.1A/B/C and Class 8.2A/B (clause 13.38). It is noted that the quantities for farms of not less than 4 ha are substantially increased (by factors of 2 to 10) compared to other hazardous substances locations that store the same substances. That means that, for example, storage of a Class 6.1C toxic substance on such a farm must exceed 3.5 tonnes or 3,500 litres before it is defined a hazardous substance location, and applicable requirements apply. It is also noted that toxic substances other than Class 6.1A/B/C or corrosive substances other than 8.2A/B are not included in the scope of the definition at all, and hence requirements with regard to a hazardous substance location do not apply to those substance, regardless of quantity.

All this represents a number of differences and gaps between these regulations and a land use plan under the RMA which the latter may need to address.

Density is only used in the context of traffic on traffic routes, not for land use activities. This is a further gap.

The term ***protected place*** (like ***area of high intensity land use***) also does not differentiate between sensitive land uses such as residential, child care facilities on the one hand and factories and other workplaces on the other. The term includes a public railway but not a public road. The term ***public place*** includes public roads but not public railways and is not specific about including or excluding, for example, ships not lying on a permanent berthing facility. A small office or other small building associated with a place where certain hazardous substances are managed is not defined as either a protected place or a public place. Overall the two terms are neither comprehensive, entirely clear or specific, nor relating to the land use planning context under the RMA. Consequently there are potentially a number of gaps in terms of compatibility of land uses in the vicinity of each other.

The term ***transit depot*** is specific to the temporary storage of unmodified and unopened containers between one day (for most substances) and a maximum of three days. Any other transit facility is not a transit depot. Many rail, airport or port hazardous substance storage facilities are therefore by this definition not transit depots for the purpose of these Regulations. Requirements for transit depots are not more stringent than requirements for other hazardous substance storage facilities under these Regulations but equivalent to, or in some regards less than, those requirements.

The term ***vulnerable facility*** is used solely in the context of maximum blast overpressure from initiation of substances with explosive properties. It does not include general residential land use and does not apply to substances with other hazardous properties. Consequently there are potentially a number of gaps with regard to sensitive activities/land uses.

Overall the defined terms are not used in a manner applicable to land use planning in the RMA context. They are also not consistent with relevant terms defined in the NZ Planning Standard. On the basis of the definitions alone the scope and details of the Regulations and the proposed Plan provisions differ.

Part 1 Application: This part refers to the application to the Armed Forces and hazardous wastes and provides a number of exemptions. It does not have specific reference or relevance to land use planning. There are no inconsistencies or overlaps with the proposed Plan provisions.

Part 2 Labelling, signage, safety data sheets and packaging: This part as evident in the heading deals with particular life-cycle controls that are substance specific and not included in the proposed Plan provisions. There are no inconsistencies or overlaps with the proposed Plan provisions.

Part 3 General duties relating to risk management: This part addresses duties of a PCBU to keep a hazardous substances inventory, managing risks associated with hazardous substances and in reviewing control measures. Considered relevant could be s3.2(1) and 3.2(2):

3.2 Managing risks associated with hazardous substances

(1) A PCBU must manage risks to health and safety associated with using, handling, manufacturing, or storing a hazardous substance or a group of hazardous substances with the same hazardous properties at a workplace.

(2) In managing risks, the PCBU must have regard to the following:

(a) the quantity of the hazardous substances used, handled, manufactured, or stored:

(b) the health and physico-chemical hazards associated with the hazardous substance:

(c) any potential chemical or physical reaction between the hazardous substance and another substance, including a substance that may be generated by the reaction:

(d) any ignition sources (for example, flames, heat, or sparks) that might ignite the hazardous substance:

(e) any structure, plant, or system of work that is used in the use, handling, manufacture, or storage of the hazardous substance:

(f) the nature of the work to be carried out by workers with the hazardous substance, including—

(i) the workers' risks of exposure to the substance; and
(ii) the likely degree of exposure:

(g) any prescribed exposure standard for the hazardous substance:

(h) any restricted entry interval for the substance, if one has been set.

...

Analysis:

While s3.2(1) does not specify who's health and safety may be at risk, reference is made to hazardous substances 'at a workplace'. This means cumulative risks in relation to hazardous substances outside the workplace are not included. Under s3.2(2) the matters a PCBU must have regard to are specifically related to the substances and their hazardous properties, ignition sources and the 'nature of the work' being carried out. Specific reference in that regard is made to 'the workers' risks of exposure to the substance'. The risk to members of the public is not mentioned – the protection of public health and safety is a gap. There is no specific reference or relevance to land use planning. There are no inconsistencies or overlaps with the proposed Plan provisions.

Part 4 Certified handlers and supervision and training of workers: This part deals with staff competency issues and does not have specific reference or relevance to land use planning. There are no inconsistencies or overlaps with the proposed Plan provisions as staff competency in a workplace is not included in any proposed requirements.

Part 5 Emergency management: Sub-part 1 deals with fire extinguishers, a requirement not included in the proposed Plan provisions. There are no inconsistencies or overlaps.

Sub-part 2 is on Emergency response plans. Sections 5.6 to 5.13 specify the circumstances and content of emergency response plans. Considered to be of relevance could be s5.7 which is effectively on the required content of an emergency response plan. It states:

5.7 Duty to prepare emergency response plan

(1) A PCBU with management or control of a workplace must ensure that an emergency response plan is prepared for the workplace.

(2) The emergency response plan must describe and apply to all reasonably foreseeable emergencies that may arise from a breach or failure of the controls on any hazardous substance present or likely to be present at the workplace.

(3) The emergency response plan must, for each reasonably foreseeable emergency,—

(a) describe the actions to be taken to—

(i) warn people at the workplace, and in surrounding areas that may be adversely affected by the emergency, that the emergency has occurred; and
(ii) advise those people about the actions they should take to protect themselves; and
(iii) help or treat any person injured in the emergency; and
(iv) manage the emergency so that its adverse effects are, in the order set out below,—
(A) restricted to the area initially affected; and
(B) reduced in severity as soon as practicable; and
(C) eliminated, if reasonably possible; and

(v) re-establish the controls put in place by the PCBU in respect of the hazardous substances at the workplace, including the use of protective equipment or agents (for example, neutralisers or absorbents); and

(b) identify each person with responsibility for the actions described in paragraph (a) (or any part of any of those actions) and give information on—

(i) how to contact the person; and
(ii) any skills the person is required to have; and
(iii) any special training needed to deal with an emergency involving the substance; and
(iv) any actions the person is expected to take; and

(c) specify—

(i) how to obtain information about the hazardous properties of, and means of controlling, the substance or substances that may be involved; and
(ii) actions to be taken to contact any emergency service provider; and
(iii) the purpose and location of each item of equipment or facilities to be used to manage the emergency; and
(iv) how to decide which actions to take; and
(v) the sequence in which actions should be taken; and

(d) provide—

(i) an inventory of hazardous substances present at the workplace; and
(ii) a site plan that shows the physical position of all hazardous substance locations within the boundary of the workplace (if applicable).

(4) The emergency response plan—

(a) must specify the type and location of the fire extinguishers provided in accordance with regulation 5.3, and any extra fire-fighting equipment or facilities provided, if any of the reasonably foreseeable emergencies identified in the plan is a fire; and

(b) must provide for the retention of any liquid or liquefied oxidising substance or organic peroxide to prevent it from contacting any incompatible substance.

(5) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $10,000:

(b) for any other person, to a fine not exceeding $50,000.

Analysis:

Emergency response plans under this Part only apply for reasonably foreseeable emergencies (Regulations 5.7 (2) and 5.7 (3)), less likely events are not required to be covered. This is different to a case where an adverse effect of an emergency in a particular location may fall within the definition of

RMA s.3(f) as one of low probability which has a high potential impact. The ability to manage such rarer but more devastating emergencies, in addition to the minimum HSW requirements for reasonably foreseeable emergencies, is location specific and hence a resource management matter. The requirements also do not cover any of the following:

1. Any involvement of the Council, local community or affected parties off-site to be involved in the development, testing/review or implementation of emergency response plans, be it in the form of consultation about off-site effects and the appropriate response to those, or even being informed about the existence or content of such plans;

2. Any response in terms of buildings, structures or environmental features off-site potentially affected by an emergency (specific reference in Regulation 5.7 (3) (iii) is limited to injury to persons);

3. Any response to hazardous substance emergencies off-site to manage potential cumulative effects;

4. Any information to be provided to potentially affected off-site parties before an emergency, even just to inform about the type of emergency likely or possible;

5. Any meaningful differentiation in emergency response plans for more sensitive land use activities or environments reflecting variable risks.

All these matters identify gaps in emergency response (or rather: emergency management) in the resource management context. While the proposed Plan provisions do not require any specific content of emergency management plans, the adequacy of plans in the resource management context is a matter for controlled activities (currently retail of fuel in some zones in the proposed provisions) and needs to be considered as part of a risk assessment as an assessment matter for (restricted) discretionary activities. There is no inconsistency or duplication in that regard with any of the proposed Plan provisions.

S5.11 provides for an optional review of an emergency response plan by Fire and Emergency NZ. This is in relation to FENZ role only and not on other matters – a generic third-party review is not provided for. There is no inconsistency or duplication in that regard with any of the proposed Plan provisions.

Part 6 Compliance certification: This part sets out the processes in relation to compliance certification and addresses matters such as certifier competency and authorisation. It includes complaints and disciplinary procedures and auditing.

While s6.21 states that WorkSafe may employ or engage compliance certifiers, they are generally private sector certifiers. Compliance certificates are not issued by WorkSafe.

S6.34 describes the process by which a person can be exempt from the compliance certification requirements (i.e., the requirements are not universal).

This part does not have specific reference or relevance to land use planning. There are no inconsistencies or duplication by the proposed Plan provisions as a land use consent (if required) is part of a different process than a compliance certificate.

Note: Location compliance certificates are required under **Parts 9, 10, 12** and **Part 13**. The purpose of location compliance certification through private sector certifiers is essentially to document that:

(a) maximum quantities of substances as notified are not exceeded; and

(b) the substances can be secured from access by unauthorised persons; and

(c) all workers handling the substances are competent; and

(d) required signage is provided; and

(e) necessary equipment (including PPE) is compliant; and

(f) as necessary, requirements for secondary containment are met; and

(g) as necessary, requirements for emergency management are met.

The compliance certification therefore documents compliance with applicable requirements and does not in itself add any requirements. The certification applies in principle to Class 2, 3, 4, 5, 6 and 8 substances but varies somewhat for Class 1 substances.

Part 7 Controlled substance licenses: Controlled substances are those extremely poisonous substances listed in Schedule 13. Neither the licensing process itself nor the criteria for a license are in relation to land use planning. There are no inconsistencies or overlaps with the proposed Plan provisions.

Part 8 Controls applying to all Class 1 to 5 substances: This part deals with the compliance certification process in relation to Class 1 to 5 substances, public transportation and exemptions. This part does not have specific reference or relevance to land use planning. There are no inconsistencies or overlaps with the proposed Plan provisions.

Part 9 Class 1 substances: This part sets out the generic controls for Class 1 substances (explosives), controlling effects of unintended and intended deflagration and detonation, pyrotechnic displays and the transport/transfer of explosives. Of potential relevance may be sections 9.11(1), 9.12(1), 9.13(1), 9.14(1), 9.23(1) and 9.27, as follows:

9.11 Limits on impact or pressure shock

(1) A PCBU with management or control of a class 1 substance must ensure that the substance is not subject to any impact or pressure shock that could inadvertently result in an explosion or a fire.

9.12 Limits on spark energy

(1) A PCBU with management or control of a class 1 substance must ensure that the substance is not exposed to any ignition source that may release spark energy in a way that could inadvertently result in an explosion or a fire.

9.13 Limits on heat and fire

(1) A PCBU with management or control of a class 1 substance must ensure that the substance is not exposed to any ignition source capable of generating heat or fire where that could inadvertently result in an explosion or a fire.

9.14 Limits on static electricity in relation to equipment

(1) A PCBU with management or control of a class 1 substance must ensure that the substance is not exposed to a build-up of static electrical charge that could result in an unintended explosion or fire.

9.23 PCBU to reduce likelihood of unintended initiation

(1) A PCBU with management or control of a hazardous substance location must ensure that—

> **(a)** all handling systems and equipment used in relation to class 1 substances meet the requirements of regulation 9.11; and
>
> **(b)** any piece of fixed equipment or part of the facility structure that is capable of producing a spark or transferring spark energy to any class 1 substance meets the requirements of regulation 9.12; and
>
> **(c)** any piece of equipment or part of the facility structure that is capable of generating heat or fire meets the requirements of regulation 9.13; and
>
> **(d)** for a class 1 substance other than retail fireworks, no readily combustible material is present within 5 m of the outside of the hazardous substance location; and
>
> **(e)** for retail fireworks, no readily combustible material is present within 2 m of the outside of a hazardous substance location holding no more than 10 000 kg of fireworks in a standard ISO transport container, or within 5 m of the outside of a hazardous substance location holding more than 10 000 kg of fireworks; and
>
> **(f)** any equipment or part of the facility structure that is capable of accumulating a static electrical charge meets the requirements of regulation 9.14; and

(g) where the quantity of class 1 substances (except retail fireworks) requires, there is a lightning conducting system in place that meets the requirements of regulations 9.24 and 9.25; and

(h) where an electro-explosive device or a class 1 category A substance is being manufactured or is unprotected, or where a class 1 category B substance is being manufactured,—

(i) every entrance to the immediate area where the device or substance is present is equipped with a means of grounding any person who enters, and every person who enters is grounded; and
(ii) any person handling the substance in that area wears clothing and footwear or has earthing systems that meet the requirements of subclause (2); and

(i) where there are unprotected electro-explosive devices,—

(i) the hazardous substance location meets the safety distance requirements imposed by regulation 9.16 and has in place documented procedures to exclude devices that are sources of electromagnetic radiation unless those safety distance requirements continue to be met when the device is operating; and
(ii) any equipment for holding or handling an unprotected electro-explosive device meets the requirements of regulation 9.16(2).

9.27 PCBU to control adverse effects of unintended initiation

(1) A PCBU with management or control of a hazardous substance location must—

(a) authorise to be in the hazardous substance location or its abutting controlled zone only—

(i) those persons necessary for the handling of class 1 substances; and
(ii) for limited periods only, persons carrying out maintenance, inspection, or management activities, or site visitors under the direct supervision of a certified handler; and

(b) exclude from the hazardous substance location and controlled zone persons not authorised to be there.

(2) A PCBU with management or control of a hazardous substance location must manage all class 1 substances present within the location (except safety ammunition) to ensure that, in the event of an unintended initiation,—

(a) public traffic routes of low density and places where people may occasionally be present in numbers up to 200 persons on average in any 24-hour period are not subject to any of the following:

(i) a blast overpressure more than 13 kPa:
(ii) for class 1 substances that have a fire hazard or a minor projection hazard (or both) but not a mass explosion hazard, being within a distance described by the following formula:
$D = 4.3Q^{1/3}$
where—
D is distance in metres
Q is quantity in kilograms:
(iii) more than 2 hazardous fragments per 60 m^2 of surface area; and

(b) public traffic routes of medium density, places where people may occasionally be present in numbers up to 900 persons on average in any 24-hour period, and the interior of any proximate building within the boundary of the place where people not directly handling explosive substances are present are not subject to any of the following:

(i) a blast overpressure more than 9 kPa:
(ii) for class 1 substances that have a fire hazard or a minor projection hazard (or both) but not a mass explosion hazard, being within a distance described by the following formula:
$D = 4.3Q^{1/3}$
D is distance in metres
Q is quantity in kilograms:
(iii) more than 2 hazardous fragments per 60 m^2 of surface area; and

(c) public traffic routes of high density, areas of high intensity land use, or any area where a person may be legally present inside the boundary of the place where the hazardous substance location is located are not subject to any of the following:

(i) a blast overpressure more than 5 kPa:
(ii) for class 1 substances that have a fire hazard or a minor projection hazard (or both) but not a mass explosion hazard, being within a distance described by the following formula:
$D = 6.4Q^{1/3}$
D is distance in metres
Q is quantity in kilograms:
(iii) more than 1 hazardous fragment per 60 m^2 of surface area; or

(d) vulnerable facilities are not subject to more than a blast overpressure of 2 kPa.

(3) A hazardous substance location complies with subclause (2) if—

(a) the total quantity and type of class 1 substances are limited to meet the requirements of subclause (2) at the boundary of the hazardous substance location; or

(b) the distances between the class 1 substances and the boundary of the hazardous substance location are set to meet the requirements of subclause (2); or

(c) the PCBU with management or control of the hazardous substance location complies with requirements in a relevant safe work instrument.

(4) A PCBU with management or control of a hazardous substance location that is used solely for securing and holding a class 1 substance must limit the quantities of any class 1 substance at the location to ensure that, in the event of an unintended initiation,—

(a) the interior of any proximate building where a class 1 substance is manufactured would not be subject to a blast overpressure of more than 24 kPa; and

(b) the exterior of any proximate building where a class 1 substance is manufactured would not be subject to more than 3 hazardous fragments per 60 m^2 of exterior surface area.

(5) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $10,000:

(b) for any other person, to a fine not exceeding $50,000.

9.30 Duty of PCBU to control adverse effects of intended detonation or deflagration

(1) A PCBU with management or control of a class 1 substance must limit the quantity of any class 1 substances to be detonated or deflagrated at any place within a workplace, so as to ensure that—

(a) no place where a person may legally be present is,—

(i) for a vulnerable facility, subject to a blast overpressure more than 2 kPa, and for an area of high intensity land use, to a blast overpressure of more than 5 kPa; or
(ii) for class 1 substances that have a fire hazard or a minor projection hazard (or both) but not a mass explosion hazard, within a distance described by the following formula:
$D = 6.4Q^{1/3}$
where—
D is distance in metres
Q is quantity in kilograms; or
(iii) subject to any hazardous fragment; and

(b) no low-rise residential building outside the designated use zone is subject to a ground vibration leading to more than 10 mm per second peak particle velocity; and

(c) no commercial or industrial building outside the designated use zone is subject to a ground vibration leading to more than 25 mm per second peak particle velocity; and

(d) no other building for which WorkSafe has specified a lesser peak particle velocity limit is subject to a ground vibration of more than that peak particle velocity; and

(e) no person authorised by the PCBU to be present in the place—

(i) is subject to a blast overpressure more than 9 kPa; or
(ii) for class 1 substances that have a fire hazard or a minor projection hazard (or both) but not a mass explosion hazard, is within a distance described by the following formula:
$D = 4.3Q^{1/3}$
where—
D is distance in metres
Q is quantity in kilograms; or
(iii) is subject to any hazardous fragment.

(2) Despite the limits specified in subclause (1)(b), (c), and (d), the PCBU may calculate a variation to the specified limit that takes account of the frequency of ground vibration expected to result from the blast in accordance with Appendix J of AS 2187.2—2006—Explosives—Storage, transport and use, and undertake detonations in accordance with that limit provided the operating practice requirements of Appendix J5 of that standard are complied with.

(3) Despite subclause (1)(e), an authorised person who is directly involved with the detonation or deflagration of a class 1 substance may be subject to a blast overpressure of up to 24 kPa, and for class 1 substances that have a fire hazard or a minor projection hazard (or both) but not a mass explosion hazard, a distance described by the formula, $D = 3.2Q^{1/3}$ if—

(a) the PCBU has obtained a compliance certificate to certify that, if the documented procedures are followed, those figures represent the highest levels of blast overpressure and fire hazard or minor projection hazard to which the person could be subject; and

(b) the authorised person has accepted those figures in writing.

(4) For the purposes of this regulation, *peak particle velocity* means the maximum velocity of ground particles resulting from a detonation and measured as described in Appendix J of AS 2187.2—2006—Explosives—Storage, transport and use, where the particle velocity is measured as the sum of the instantaneous components of particle velocity on the x, y, and z axes given by the following formula:

$v_p = (v_x^2 + v_y^2 + v_z^2)^{½}$

where v equals velocity.

Analysis:

While the requirements in relation to Class 1 substances are phrased to be applicable in principle both on-site and off-site, they do not specify risks and apply acceptable consequences only in relative terms. The probability of unintended events is not addressed. The NSW Hazardous Industry Planning Advisory Paper No 4 - Risk Criteria for Land Use Safety Planning (HIPAP No. 4) sets out risk criteria which have been widely adopted in New Zealand in the planning context. They suggest that an explosion overpressure level of 7 kPa be the appropriate cut-off level above which significant effects to people and properly damage may occur. A frequency of 50 in a million per year is not to be exceeded for residential areas.

It is considered that a potential for duplication can exist in the case of specific consent conditions if applicable requirements are not considered, however, there are no corresponding rules or other specific requirements in the proposed Plan provisions for Class 1 substances. Hence there are no inconsistencies or overlaps with the proposed Plan provisions. Low hazard explosives are not included in the scope of the Plan provisions at all. There are gaps in terms of risk management (due to a lack of required assessment under the HSW HS Regs) which justify controls on a case-by-case basis for hazardous facilities with larger quantities of explosives, particularly high hazard explosives.

Part 10 Class 2, 3 and 4 substances: This part sets out the generic controls for Class 2,3 and 4 substances (gases, flammable liquids, flammable solids), reducing the likelihood of unintended ignition, secondary containment of pooling substances and compliance certification. There are a

number of prescriptive methods specified in regulation (such as 10.12, 10.14, 10.16, 10.18, 10.20) to provide clarity on the more performance-based regulations (such as 10.11, 10.13, 10.15, 10.17, 10.19). While compliance with all requirements in this Part could influence the overall risk of a land use activity involving Class 2, 3 and 4 substances, there is no reference to land use, location in the land use context or variations in sensitivity of the surrounding environment in this Part.

Inconsistencies or duplication of requirements can occur in relation to secondary containment of pooling substances. S10.33 states:

10.33 Requirements for surface containers of more than 450 L

(1) If pooling substances that are class 3 or 4 substances are held above ground in a place within a workplace in containers 1 or more of which have a capacity of more than 450 L,—

> **(a)** if the place's total pooling potential is less than 5 000 L, the secondary containment system must have a capacity of at least that total pooling potential:
>
> **(b)** if the place's total pooling potential is 5 000 L or more, the secondary containment system must have a capacity of the greater of—
>
> > **(i)** 5 000 L; and
> > **(ii)** 50% of that total pooling potential.

(1A) Despite subclause (1), if the pooling substances are contained in a portable tank, the secondary containment system must have a capacity of at least 110% of the capacity of the largest portable tank at the place.

(2) Despite the requirements of subclause (1), if the pooling substances are contained in a tank wagon, the secondary containment system must have a capacity of at least 110% of the capacity of the largest compartment of the tank wagon.

(3) This regulation does not apply to a stationary container to which regulation 17.100 applies.

Analysis:

If in the resource management context secondary containment of less than what is specified in the Regulations was required, this would be in conflict with this Part. If the same rate of containment was required, it would be duplication. If additional containment was required, for example to allow for the absence of roofing and the collection of stormwater or firefighting water in a containment area (consequently reducing the effective containment capacity), this would be an additional requirement. [Example 1: Ten 1000 l ISO tanks of a flammable liquid are stored in a workplace – the requirement for secondary containment is 50 % of that storage capacity. Example 2: The permanent storage of four 209 (44 gallon) drums of petrol – no secondary containment required.] In that instance such requirement can be used to protect soil, natural waters or stormwater systems from contamination in a specific location on a case-by-case basis. This could occur with the proposed Plan provisions in the rare case of a consent condition but is not a requirement for the vast majority of permitted hazardous facilities. There are no overlaps or duplications with proposed Plan provisions.

Part 11 Controls relating to adverse effects of unintended ignition of class 2 and 3.1 substances: This part sets out separation requirements for Class 2 and 3.1 substances, and some additional controls on flammable gases. Essentially this Part specifies the circumstances where minimum separation distances (mainly specified in Schedule 12 but some also within the regulations) apply. The equivalent requirements for Class 4 substances are actually included in Part 10.

The separation distances vary depending on type and size of packaging and containers, quantity per Class and aggregate quantities for several sub-classes combined, and type of workroom or type of storage.

It is noted that s11.39 provides for a safe work instrument if the specified separation distances (or other requirements) do not appropriately control risk:

11.39 Additional and modified separation distances or other matters in subparts 1 and 2

(1) This regulation applies to separation distances or other matters in subpart 1 or 2 if the Minister approves a safe work instrument in relation to those separation distances or other matters for the purposes of this regulation.

(2) The Minister may approve a safe work instrument for the purposes of this regulation if satisfied that compliance with the provisions of these regulations that apply to separation distances or other matters in subpart 1 or 2 will not appropriately control risk associated with those separation distances or other matters.

...

S11.40 provides for exemptions from requirements for separation distances or other matters in this Part.

Analysis:

The applicable separation distances under this Part are basically minimum requirements for Classes 2 and 3 flammables which are still not necessarily absolutes but can be varied under particular circumstances (safe work instrument, exemptions). Due to the complexity of land use patterns they may not be sufficient in all situations, as the examples below show. In particular sensitive land uses are not necessarily appropriately protected. Separation distances in relation to natural environment or eco-systems are not specified. There are no applicable separation requirements for Class 4 flammable solids specified.

Some **examples** of required separation distances under these Regulations: Half a tonne of LPG in cylinders is not required to be separated by a care facility for the elderly by more than 2 metres; a 2.5 tonne LPG tank is not required to be separated by a dwelling by more than 8 metres. An above-ground tank of 25,000 litres of petrol, highly flammable solvent or equivalent is not required to be separated by a kindergarten by more than 5 metres; a bulk storage tank for the same type of hazardous substance of 10,000,000 litres is not required to be separated by a shop, a park or a playground by more than 10 metres. A transfer point to fill a tank wagon with petrol is not required to be separated by a child care facility by more than 10 metres. A type 2 workroom where solvents, thinners etc. of Class 3.1A or 3.1B are used (mixed, decanted etc.) .i.e., in open containers up to 5,000 litres, is not required to be separated by a dwelling by more than 5 metres (for a type 3 workroom it is 0 (zero) metres).

S11.39 indicates that the separation distances specified in this Part (and Schedule 12) are minimum requirements which may not control risks appropriately. The possible work instrument has not been developed to date. There is no available data on the number, type or location of exemptions from separation requirements granted under s11.40.

Overall there are gaps in this Part in the land use planning context where planning requirements can and ought to be applied for all three Classes of hazardous substances addressed in this Part. There are no overlaps or inconsistencies with regard to the proposed Plan provisions. Overlaps or inconsistencies could occur in individual cases of the few hazardous facilities requiring consent if the minimum requirements of the HSW HS Regs are not taken into account in consent conditions.

Part 12 Class 5 substances: This part sets out in Sub-parts 1 and 2 general and workplace controls for Class 5.1.1 and 5.1.2 substances (oxidising substances), and, as applicable, secondary containment requirements. Sub-part 3 includes general and workplace controls for Class 5.2 substances (organic peroxides), and, as applicable, secondary containment requirements.

It is noted that the 'control of adverse effects' of unintended combustion or explosion in relation to Class 5.1.1 and 5.1.2 substances (clause 12.12) is in fact to be achieved through reducing the likelihood of unintended ignition (clause 12.9(1)) in the workplace, rather than actually controlling adverse effects.

There are no separation distances specified in this Part of the Regulations between workplaces where any Class 5 substances are used or stored and other land uses or environments, not even public places.

There are gaps in this Part in the land use planning context where planning requirements can and ought to be applied for any Class 5 hazardous substances addressed in this Part, such as assessing

location-specific risks, controlling adverse effects on sensitive land uses and environments (including by separation), additional secondary containment and cumulative effects with other facilities. There are no overlaps or inconsistencies with regard to the proposed Plan provisions.

Part 13 Class 6 and 8 substances: This part sets out general duties and equipment requirements, licensing for highly poisonous substances, transport restrictions, controls on application/discharge, secondary containment requirements (if applicable), general storage requirements and requirements for minimum separation. Of potential relevance may be sections 13.27 and 13.38 in relation to farms and hazardous substance locations, as follows:

13.27 Requirements applicable to farms

(1) This regulation applies to the storage of a class 6.1A, 6.1B, 6.1C, 8.2A, or 8.2B substance at a farm of not less than 4 ha in respect of which a PCBU is not required to establish a hazardous substance location in accordance with regulation 13.34.

(2) The PCBU with management or control of the farm must ensure that—

(a) the storage area is situated not less than 10 m from any protected place; and

(b) the ground around the storage area is kept clear of combustible vegetation or refuse for a distance of 3 m; and

(c) the storage area is located, or secondary containment is used, so that any spillage of the hazardous substance will not reach any protected place, watercourse, or property boundary; and

(d) any storage area is separated from the boundary of the property by at least 15 m.

(3) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $6,000:

(b) for any other person, to a fine not exceeding $30,000.

13.38 Compliance certificate required for hazardous substance location

(1) A PCBU with management or control of a hazardous substance location where more than the following quantities of hazardous substance, in solid or liquid form in the following hazard classifications, are present must ensure that the location has a current compliance certificate that certifies compliance with the requirements specified in regulation 13.34:

(a) 50 kg or 50 L of class 6.1A:

(b) 250 kg or 250 L of class 6.1B:

(c) 1 000 kg or 1 000 L of class 6.1C:

(d) 50 kg or 50 L of class 8.2A:

(e) 250 kg or 250 L of class 8.2B:

(f) the quantity and the hazard classification of the substance specified in a relevant safe work instrument.

(2) A PCBU must ensure that the compliance certificate is renewed at intervals not exceeding 36 months.

(3) If there is a requirement to obtain more than 1 compliance certificate,—

(a) the compliance certifier may, at the request of the person or persons required to obtain the compliance certificates, examine at the same time any or all of those matters that require compliance certification for which the certifier is competent to certify; and

(b) if more than 1 matter has been examined, the report provided by the certifier must indicate whether the respective requirements have been met and must give the reasons for any failure to meet those requirements; and

(c) a single compliance certificate may be issued for any or all of those matters if the requirements have been met.

(4) In relation to a hazardous substance location situated on a farm of not less than 4 ha, subclause (1) applies if—

(a) the quantity of each class 6.1A substance present at the location exceeds 100 kg or 100 L; or

(b) the quantity of each class 6.1B substance present at the location exceeds 500 kg or 500 L; or

(c) the quantity of each class 6.1C substance present at the location exceeds 3 500 kg or 3 500 L; or

(d) the quantity of each class 8.2A substance present at the location exceeds 500 kg or 500 L; or

(e) the quantity of each class 8.2B substance present at the location exceeds 3 500 kg or 3 500 L; or

(f) the quantity of each substance specified in a relevant safe work instrument present at the location exceeds the quantity specified in the instrument.

(5) Despite subclauses (1) and (4), a relevant safe work instrument may, for a hazardous substance location that contains a substance described in regulation 13.34(1)(f), provide that the location is not required to have a current compliance certificate.

(6) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $10,000:

(b) for any other person, to a fine not exceeding $50,000.

For secondary containment, s13.30 to 13.33 may be relevant, as follows:

13.30 Requirement to have secondary containment system for pooling substances

(1) This regulation applies to a place within a workplace if—

(a) an aggregate quantity of class 6 or 8 substances greater than the quantity specified in Schedule 16 is held, or is reasonably likely to be held, at the place at any time; and

b) the place is not a port, or part of a port facility, that is used to store hazardous substances for 72 hours or less.

(2) The PCBU with management or control of the place must ensure that the place has a secondary containment system that complies with regulation 13.31, 13.32, 13.33, 17.100, or 17.101, depending on the capacities of the above ground container or containers in which the substances are held.

(3) If 2 or more containers of different capacities (as described in regulations 13.31, 13.32, and 13.33) are held at one place, the PCBU with management or control of the place must ensure that the secondary containment system has a capacity of at least the sum of each container category.

(4) The PCBU with management or control of the place must ensure, in relation to a secondary containment system, that there are controls, or controls are capable of being instituted, that—

(a) prevent people from being directly exposed to any toxic or biological corrosive substances contained in the system:

(b) prevent any of the substances contained in the system from being contaminated by incompatible substances and materials.

(5) For the purposes of this regulation and regulations 13.31, 13.32, 13.33, 17.100, and 17.101, if a class 6 or 8 substance is contained in pipework that is installed and operated so as to manage any loss of containment in the pipework, the substance—

(a) is not to be taken into account in determining whether a place is required to have a secondary containment system; and

(b) is not required to be located in a secondary containment system.

(6) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $10,000:

(b) for any other person, to a fine not exceeding $50,000.

13.31 Requirements for surface containers of up to 60 L

(1) If pooling substances that are class 6 or 8 substances are held above ground in a place within a workplace in containers each of which has a capacity of 60 L or less,—

(a) if the place's total pooling potential is less than 5 000 L, the secondary containment system must have a capacity of at least 50% of that total pooling potential:

(b) if the place's total pooling potential is 5 000 L or more, the secondary containment system must have a capacity of the greater of—

(i) 2 500 L; and
(ii) 25% of that total pooling potential.

(2) Despite subclause (1), if the pooling substances do not have class 1 to 5 hazard classifications,—

(a) if the place's total pooling potential is less than 20 000 L, the secondary containment system must have a capacity of at least 25% of that total pooling potential:

(b) if the place's total pooling potential is 20 000 L or more, the secondary containment system must have a capacity of the greater of—

(i) 5% of the total pooling potential; or
(ii) 5 000 L.

13.32 Requirements for surface containers of more than 60 L and up to 450 L

(1) If pooling substances that are class 6 or 8 substances are held above ground in a place within a workplace in containers 1 or more of which have a capacity of more than 60 L but none of which has a capacity of more than 450 L,—

(a) if the place's total pooling potential is less than 5 000 L, the secondary containment system must have a capacity of at least that total pooling potential:

(b) if the place's total pooling potential is 5 000 L or more, the secondary containment system must have a capacity of the greater of—

(i) 5 000 L; and
(ii) 50% of that total pooling potential.

(2) Despite subclause (1), if the pooling substances do not have class 1 to 5 hazard classifications,—

(a) if the place's total pooling potential is less than 20 000 L, the secondary containment system must have a capacity of the greater of—

(i) 25% of the total pooling potential; or
(ii) 110% of the capacity of the largest container:

(b) if the place's total pooling potential is 20 000 L or more, the secondary containment system must have a capacity of the greater of—

(i) 5% of the total pooling potential; or
(ii) 5 000 L.

13.33 Requirements for surface containers of more than 450 L

(1) If pooling substances that are class 6 or 8 substances are held above ground in a place within a workplace in containers 1 or more of which has a capacity of more than 450 L,—

(a) if the place's total pooling potential is less than 5 000 L, the secondary containment system must have a capacity of at least that total pooling potential:

(b) if the places's total pooling potential is 5 000 L or more, the secondary containment system must have a capacity of the greater of—

(i) 5 000 L; and
(ii) 50% of that total pooling potential.

(1A) Despite subclause (1), if the pooling substances do not have class 1 to 5 hazard classifications and—

(a) if the place's total pooling potential is less than 20 000 L, the secondary containment system must have a capacity of the greater of—

(i) 25% of the total pooling potential; and
(ii) 110% of the capacity of the largest container:

(b) if the place's total pooling potential is 20 000 L or more, the secondary containment system must have a capacity of the greater of—

(i) 5% of the total pooling potential; and
(ii) 5 000 L.

(1B) Despite subclause (1), if the pooling substances are contained in a portable tank, the secondary containment system must have a capacity of at least 110% of the capacity of the largest portable tank at the place.

(2) Despite the requirements of subclause (1), if the pooling substances are contained in a tank wagon, the secondary containment system must have a capacity of at least 110% of the capacity of the largest compartment of the tank wagon.

(3) This regulation does not apply to a stationary tank to which regulation 17.100 applies.

For separation distances applicable to hazardous substances locations holding relevant sub-categories of Class 6 and 8 substances, s13.41 to 13.44 may be relevant, as follows:

13.41 Minimum separation between protected places and hazardous substance locations containing packaged class 6.1 substances

(1) A PCBU with management or control of a hazardous substance location containing class 6.1A, 6.1B, or 6.1C substances in quantities exceeding the quantities specified in regulation 13.38 must ensure that the substances are separated from protected places in accordance with table 1 or 2 in Schedule 17.

(2) However, in any retail store to which the public has access and that holds class 6.1B or 6.1C substances for retail sale, the relevant minimum separation distance from and within the building is zero, but only while all packages containing the substances remain closed.

(3) If a class 6.1A, 6.1B, or 6.1C substance also has a class 2.1.1, 2.1.2, or 3.1 classification,—

(a) this regulation does not apply to that substance; and

(b) the separation distances prescribed in Part 11 apply.

(4) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $10,000:

(b) for any other person, to a fine not exceeding $50,000.

13.42 Minimum separation between public places and hazardous substance locations containing packaged class 6.1 substances

(1) A PCBU with management or control of a hazardous substance location containing class 6.1A, 6.1B, or 6.1C substances in quantities exceeding the maximum quantities specified in regulation 13.38 must ensure that the substances are separated from public places in accordance with table 3 or 4 in Schedule 17.

(2) However, in any retail store to which the public has access and that holds class 6.1B or 6.1C substances for retail sale, the relevant minimum separation distance from and within the building is zero, but only while all packages containing the substances remain closed.

(3) If a class 6.1A, 6.1B, or 6.1C substance also has a class 2.1.1, 2.1.2, or 3.1 classification,—

(a) this regulation does not apply to that substance; and

(b) the separation distances prescribed in Part 11 apply.

(4) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $10,000:

(b) for any other person, to a fine not exceeding $50,000.

13.43 Minimum separation between protected places and hazardous substance locations containing class 8.2A or 8.2B substances

(1) A PCBU with management or control of a hazardous substance location containing class 8.2A or 8.2B substances in quantities exceeding the maximum quantities specified in regulation 13.38 must ensure that the substances are separated from protected places in accordance with subclauses (2) and (3).

(2) If the location is a store where containers are opened,—

(a) the minimum separation distance for class 8.2A substances is 10 m from a protected place:

(b) the minimum separation distance for class 8.2B substances is 5 m from a protected place.

(3) If the location is a store where containers remain closed,—

(a) the minimum separation distance for class 8.2A substances is 5 m from a protected place:

(b) the minimum separation distance for class 8.2B substances is 3 m from a protected place.

(4) However, in any retail store to which the public has access and that holds class 8.2A or 8.2B substances for retail sale, the relevant minimum separation distance from and within the building is zero, but only while all packages containing the substances remain closed.

(5) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $10,000:

(b) for any other person, to a fine not exceeding $50,000.

Minimum separation distances for Class 6.1A, 6.1B and 6.1C substances are included in Schedule 17 (or Schedule 12 if a gas). There are no separation distances specified for other Class 6 substances. Minimum separation distances for Class 8.2A and 8.2B substances only apply to protected places, not public places, vary between 3 and 10 metres and are included in s13.43. There are no separation distances specified for other Class 8 substances.

It is noted that s13.46 provides for a safe work instrument if the specified separation distances will not appropriately control risk:

13.46 Additional and modified requirements in safe work instrument

(1) This regulation applies to a class 6 or 8 substance if the Minister approves a safe work instrument in relation to the substance for the purposes of this regulation.

(2) The Minister may approve a safe work instrument for the purposes of this regulation if satisfied that compliance with the provisions of these regulations that apply to a class 6 or 8 substance will not appropriately control risk associated with the substance.

...

S13.44 provides for exemptions from various requirements in this Part.

Analysis:

The requirements for farms only apply to particular farms, as defined. Similar to transit depots the requirements are never more stringent, in some part equivalent to, and in some less than, the corresponding requirements elsewhere.

The applicable requirements for secondary containment under this Part are basically minimum requirements for most, but not all, sub-classes of Classes 6 and 8 and are not necessarily absolutes but can be varied under particular circumstances (safe work instrument, exemptions). Due to the complexity of land use patterns they may not be sufficient in all situations, as the examples below show. If in the resource management context secondary containment of less than what is specified in the Regulations was required, this would be in conflict with this Part. If the same rate of containment was required, it would be duplication. If additional containment was required, for example to allow for the absence of roofing and the collection of stormwater or firefighting water in a containment area (consequently reducing the effective containment capacity), this would be an additional requirement. In that instance such requirement can be used to protect soil, natural waters or stormwater systems from contamination in a specific location on a case-by-case basis. This could occur with the proposed Plan provisions in the rare case of a consent condition but is not a requirement for the vast majority of hazardous facilities which are permitted. Based on the limitations of controls there are a number of gaps in relation to effective secondary containment. There are no overlaps or duplications in the proposed Plan provisions in this regard.

Some **examples** of required secondary containment under these Regulations: Five hundred 50 litre containers of Class 6.1B toxic substances (which are not also explosive, flammable or oxidising) located together in a workplace require secondary containment of 5000 litre capacity (20 % of total pooling potential, unless a lesser capacity has been approved by WorkSafe); two hundred 209 litre drums of Class 6.1B toxic substances (which are not also explosive, flammable or oxidising) located together require secondary containment of 5,000 litre capacity (about 12 % of total pooling potential, unless a lesser capacity has been approved by WorkSafe); 30 1,000 litre IBC of Class 8 corrosive substances (which are not also explosive, flammable or oxidising) located together in a workplace require secondary containment of 5000 litre capacity (13,34 % of total pooling potential, unless a lesser capacity has been approved by WorkSafe).

S13.46 indicates that the requirements for secondary containment specified in this Part (and Schedule 16) are minimum requirements which may not control risks appropriately. *Additional and modified requirements for specified class 6 and 8 substances – Safe Work Instrument 2017* have been approved as the Minister for Workplace Relations and Safety was satisfied that compliance with provisions of the Regulations that apply to certain class 6 and 8 substances will not appropriately

control workplace risk associated with those substances. However, the requirements apply mainly to the application/discharge of certain pesticides, not secondary containment, and are consequently not of relevance to the proposed Plan provisions.

The applicable separation distances under this Part are basically minimum requirements for some sub-classes of Classes 6 and 8 which are still not necessarily absolutes but can be varied under particular circumstances (safe work instrument, exemptions). Due to the complexity of land use patterns they may not be sufficient in all situations, as the examples below show. In particular sensitive land uses are not necessarily appropriately protected. Separation distances in relation to natural environment or eco-systems are not specified. As identified above, there are no separation distances specified for Class 6 substances other than 6.1A/B/C. Minimum separation distances for Class 8.2A and 8.2B substances specified in this Part only apply to protected places, not public places. There are no separation distances specified for other Class 8 substances. Based on the limitations of controls there are a number of gaps in relation to separation (and other responses to address potential risks) in the land use planning context.

Some **examples** of required separation distances under these Regulations: 50 t (or 50,000 litre) of a Class 6.1C toxic substance in closed packaging is to be separated from a sportsfield by 3 metres (the current entry in column 4 of table 4 is incorrect, as is the reference to protected places generally for table 4) - unless a lesser distance has been approved by WorkSafe; 20 t (or 20,000 litre) of a more toxic Class 6.1B substance in closed packaging from a residential care facility by 6 metres (unless a lesser distance has been approved by WorkSafe); a hardware store storing packaged toxic Class 6.1B substances from any land use by 0 metres; 50 t (or 50,000 litre) of a Class 8 corrosive substance in either closed or open packaging (i.e., in use) from a playground in a park by 0 metres.

S13.46 indicates that the separation distances specified in this Part (and Schedule 17) are minimum requirements which may not control risks appropriately. A *Additional and modified requirements for specified class 6 and 8 substances – Safe Work Instrument 2017* has been approved as the Minister for Workplace Relations and Safety was satisfied that compliance with provisions of the Regulations that apply to certain class 6 and 8 substances will not appropriately control workplace risk associated with those substances. However, the requirements apply mainly to the application/discharge of certain pesticides, not separation distances, and are consequently not of relevance to the proposed Plan provisions.

There is no publicly available data on the number, type or location of exemptions from various requirements of this Part granted under s13.44. Hence this option only indicates variability of controls but does not demonstrate any degree of effectiveness.

Overall there are gaps in this Part in the land use planning context where planning requirements can and ought to be applied for any Class 6 and 8 hazardous substances (whether included in the scope of this Part or not), such as assessing location-specific risks, controlling adverse effects on sensitive land uses and environments (including by separation), additional secondary containment and cumulative effects with other facilities. There are no overlaps or inconsistencies with regard to the proposed Plan provisions.

Part 14 Fumigants: This part includes specific requirements for the application of fumigants, in addition to Part 13. There are some further requirements for the use of methyl bromide. This part is essentially about discharges and does not contain specific storage requirements or any land use planning related matters. Consequently there are no inconsistencies or overlaps with the proposed Plan provisions.

Part 15 Gases under pressure: This part deals with the design, manufacture and import of refillable cylinders; low-pressure fire extinguishers; cylinder fittings, labelling and marking; testing of cylinders and fittings; the charging of gas containers and (gas) tank wagons, and cylinder repair. These are container-specific requirements that do not have a land use planning aspect; hence there are no inconsistencies or overlaps with the proposed Plan provisions.

Part 16 Tank wagons and transportable containers: This part sets out the requirements for the design, construction and design certification of mobile tanks (wagons and trailers) as well as some operating requirements such as fire-fighting facilities and equipment. Being primarily about specific transport container performance, there are no inconsistencies or overlaps with the proposed Plan provisions.

Part 17 Stationary container systems: This part specifies the requirements for a number of stationary container systems in workplaces. It does not apply to small containers (< 250 l), process containers otherwise controlled, containers for solids or Class 6.3/6.4 substances (skin/eye irritants) and storage in refrigeration units. It is applicable, for example, to fuel tanks. Matters covered are the design, construction and installation of tanks; fire fighting equipment and facilities; markings and records; compliance certification; minimum separation distances and secondary containment.

The regulations specify (or refer to) minimum separation distances of above ground stationary tanks containing class 6 or 8 substances from protected places and public places. Of potential relevance may be sections 17.28 and 17.29 in relation to those separation distances, as follows:

17.28 Location of tank containing class 6 substance

(1) A relevant PCBU must ensure that an above ground stationary tank that contains a class 6.1A, 6.1B, 6.1C, or 6.1D substance that does not have a flammable classification is separated from a protected place or public place—

(a) by at least the distance specified in the second, third, or fourth column of table 2 or 4 in Schedule 17 that corresponds to the quantity of those hazardous substances in the tank specified in the first column of those tables; or

(b) in accordance with separation requirements set out in a relevant safe work instrument.

(2) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $10,000:

(b) for any other person, to a fine not exceeding $50,000.

17.29 Location of tank containing class 8 substance

(1) A relevant PCBU must ensure that an above ground stationary tank that contains a class 8 substance that does not have a flammable classification or an acutely toxic class 6.1A, 6.1B, or 6.1C substance is separated from a protected place or a public place in accordance with—

(a) the requirements specified in section 5.3.2.2(b) to (d) of AS 3780—2008 (2nd Edition) (R2009); or

(b) requirements in a relevant safe work instrument.

(2) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $10,000:

(b) for any other person, to a fine not exceeding $50,000.

The regulations specify secondary containment for above ground stationary tanks containing pooling substances (Note: farm tanks for petrol or diesel up to 2500 litres are exempt from these requirements – other exemptions apply).Of potential relevance may be sections 17.99 to 17.104, as follows:

17.99 Requirement to have secondary containment system for pooling substances

(1) This regulation applies to a place within a workplace—

(a) where—

(i) 1 or more stationary container systems are located; and
(ii) an aggregate quantity of a hazardous substance greater than the quantity specified in table 9 in Schedule 9, table 5 in Schedule 10, table 7 in Schedule 11, or the table in Schedule 16 for that substance is present or likely to be present; and

(b) that is not a port, or part of a port facility, that is used to store hazardous substances for 72 hours or less.

(2) A relevant PCBU must ensure that the place has a secondary containment system.

(3) The secondary containment system must comply with regulation 17.100, regulation 17.101, and (if applicable) regulation 17.102.

(4) A relevant PCBU must ensure that controls for a secondary containment system are implemented that,—

(a) if the stationary container system contains flammable or organic peroxides, exclude any energy source capable of igniting them or causing them to decompose thermally:

(b) if the stationary container system contains explosive substances, exclude any energy source capable of causing them to explode or deflagrate:

(c) if the stationary container system contains corrosive or toxic substances, prevent people from being directly exposed to them:

(d) prevent the substances retained by the stationary container system from being contaminated by incompatible substances and materials.

(5) For the purposes of this regulation and regulations 17.100 and 17.101, the quantity of any hazardous substance contained in pipework of the stationary container system is not to be taken into account in determining whether a place is required to have a secondary containment system.

(6) This regulation does not apply to a place where there is stored—

(a) petrol, aviation gasoline, racing gasoline, kerosene, E10, or E85 in total quantities of less than 1 000 L; or

(b) at a farm of not less than 4 ha, petrol, aviation gasoline, racing gasoline, kerosene, E10, or E85 in total quantities of less than 2 500 L that is located so that any spillage will not endanger any building or flow into any stream, lake, or natural water; or

(c) petrol, aviation gasoline, racing gasoline, kerosene, E10, or E85 that is—

(i) in total quantities of less than 2 000 L; and
(ii) contained in—
(A) a tank wagon; or
(B) secure containers, each of which has a capacity of less than 250 L; and
(iii) located so that any spillage will not endanger any building or flow into any stream, lake, or natural water; and
(iv) stored or proposed to be stored for a continuous period of less than 14 days; or

(d) at a farm of not less than 4 ha, diesel that is—

(i) in quantities of less than 2 500 L; and
(ii) used in farm work; and
(iii) located so that any spillage will not endanger any building or flow into any stream, lake, or natural water.

(7) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $10,000:

(b) for any other person, to a fine not exceeding $50,000.

17.100 Secondary containment for above ground stationary containers

(1) Subject to this regulation, if the pooling substances above ground in a place within a workplace are in stationary containers, 1 or more of which have a capacity of at least 250 L, a relevant PCBU must ensure that the capacity of the secondary containment system for the stationary container system is at least 110% of the capacity of the largest container.

(2) Subclause (1) applies to a container (**container A**) that is so connected to 1 or more other containers that leakage from it will cause another container to empty, as if the capacity of container A were the sum of the capacities of all the connected containers.

(3) The capacity that a secondary containment system is required to have under this regulation may be reduced—

(a) by WorkSafe on application by any PCBU and subject to such conditions as WorkSafe considers appropriate; or

(b) in accordance with a relevant safe work instrument.

(4) An application for approval of a lesser capacity of a secondary containment system, for the purposes of subclause (3)(a), must—

(a) be in the form required by WorkSafe (if any); and

(b) be accompanied by the fee (if any) prescribed in Schedule 2**.**

(5) WorkSafe must not approve a capacity that is less than 100% of the capacity of the largest stationary tank located in the secondary containment system to which the application relates.

(6) In considering an application under subclause (5), WorkSafe must take into account any means provided to prevent the capacity of the secondary containment system to which the application relates being taken up by rainwater.

(7) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $10,000:

(b) for any other person, to a fine not exceeding $50,000.

17.101 Secondary containment for below ground stationary containers

(1) If pooling substances held in a place within a workplace are in 1 or more below ground stationary containers, a relevant PCBU must ensure that the secondary containment system for the stationary container system has a capacity at least equal to the total pooling potential.

(2) In subclause (1), *below ground stationary container*—

(a) means a container that is situated below ground; and

(b) includes—

(i) a container below ground, the level of which has been raised to provide cover for the container; and
(ii) a container covered by other incombustible material instead of ground.

(3) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $10,000:

(b) for any other person, to a fine not exceeding $50,000.

17.102 Secondary containment systems for storage of class 3.1 substances in above ground stationary tank

(1) This regulation applies to a secondary containment system—

(a) to which regulation 17.100 applies; and

(b) that contains a class 3.1 substance.

(2) A relevant PCBU must ensure that a secondary containment system that was constructed or significantly altered after the commencement of these regulations is—

(a) impervious to the class 3.1 substance it contains; and

(b) fire resistant.

(3) A relevant PCBU must ensure that the total quantity of class 3.1 substances in the stationary tanks (whether 1 tank or more than 1) in a secondary containment system does not exceed 75 000 000 L, unless a greater capacity for that tank or those tanks is approved by WorkSafe under regulation 17.103.

(4) If the total quantity of class 3.1 substances in the stationary tanks in a secondary containment system is greater than 25 000 000 L, a relevant PCBU must ensure that those tanks are divided into groups.

(5) A relevant PCBU must ensure that the aggregate capacity of a group of stationary tanks does not exceed—

(a) 25 000 000 L; or

(b) a greater capacity approved by WorkSafe under regulation 17.104.

(6) A relevant PCBU must ensure that each group of stationary tanks is separated from all other stationary tanks in the secondary containment system by an intermediate secondary containment system.

(7) A relevant PCBU must ensure that an intermediate secondary containment system complies with all requirements applying to a secondary containment system, except that—

(a) it must have a capacity of at least 50% of the capacity of the largest stationary tank located within it; and

(b) the walls that form a subdivision of the intermediate secondary containment system must not be higher than 0.25 m below the top of the lowest wall of the secondary containment system in which it is located.

(8) A PCBU who contravenes this regulation commits an offence and is liable on conviction,—

(a) for an individual, to a fine not exceeding $10,000:

(b) for any other person, to a fine not exceeding $50,000.

17.103 WorkSafe may increase capacity of tanks in secondary containment systems

(1) For the purposes of regulation 17.102(3), WorkSafe may, on application from a relevant PCBU, increase the capacity of the stationary tanks within a secondary containment system to contain a class 3.1 substance.

(2) An application to increase the capacity of stationary tanks must be—

(a) be in the form required by WorkSafe (if any); and

(b) be accompanied by the fee (if any) prescribed in Schedule 2.

(3) WorkSafe must not approve an increased capacity that exceeds 120 000 000 L.

(4) In considering whether to increase capacity, WorkSafe must have regard to the following matters:

(a) the degree of hazard associated with the class 3.1 substance or substances within the secondary containment system to which the application relates and (if applicable) any existing secondary containment system:

(b) for each secondary containment system, the relationship between the capacity of the system's largest stationary tank and the capacity of the system:

(c) the type of design and construction of the stationary tank:

(d) the availability of means to prevent unintended ignition, and of means to control the effects of unintended ignition, of hazardous substances within the secondary containment system:

(e) any other matter that WorkSafe considers appropriate.

17.104 WorkSafe may increase aggregate capacity for groups of stationary tanks

(1) For the purposes of regulation 17.102(5), WorkSafe may, on application by a relevant PCBU, approve an increase of the aggregate capacity of a group of stationary tanks within a intermediate secondary containment system that contains a class 3.1 substance.

(2) An application to increase the aggregate capacity of a group of stationary tanks must—

(a) be in the form required by WorkSafe (if any); and

(b) be accompanied by the fee (if any) prescribed in Schedule 2.

(3) WorkSafe must not approve an increased aggregate capacity that exceeds 40 000 000 L.

(4) In considering whether to approve an increase, WorkSafe must take the following into account:

(a) the degree of hazard associated with any hazardous substance within each intermediate secondary containment system in the secondary containment system:

(b) the capacity of the largest stationary tank within each intermediate secondary containment system in the secondary containment system and the relationship of that capacity to the total capacity of the relevant intermediate secondary containment system:

(c) in relation to each intermediate secondary containment system to which the application relates, the capacity of the intermediate secondary containment systems adjacent to it:

(d) the availability of means to prevent unintended ignition, and of means to control the effects of unintended ignition, of hazardous substances stored within each intermediate secondary containment system to which the application relates:

(e) any other matter that WorkSafe considers appropriate.

Analysis:

The minimum separation distances only apply to above ground stationary tanks containing class 6 or 8 substances from protected places and public places, not for other hazard Classes, or underground tanks.

Some **examples** of required separation distances under these Regulations: A 100 t (or 100,000 litre) bulk storage tank of a Class 6.1C toxic substance is to be separated from a school or healthcare facility by 8 metres (the current entry in column 4 of table 2 is incorrect); a 50 t (or 50,000 litre) bulk storage tank of a more toxic Class 6.1B substance from a playground in a park by 4 metres.

There are no safe work instruments at present applying to separation of above ground tanks for Classes 6 and 8. S17.28 is essentially included in s13.41 and s13.42. Consistency between s17.29 and s13.43 has not been established as part of this analysis.

The requirements for secondary containment under this Part for stationary tanks are basically minimum requirements for most, but not all, sub-classes of hazardous substances and are not necessarily absolutes but can be reduced by WorkSafe. Due to the complexity of land use patterns they may not be sufficient in all situations, as the examples below show. If in the resource management context secondary containment of less than what is specified in the Regulations was required, this would be in conflict with this Part. If the same rate of containment was required, it would

be duplication. If additional containment was required, for example to allow for the absence of roofing and the collection of stormwater or firefighting water in a containment area (consequently reducing the effective containment capacity), this would be an additional requirement. In that instance such requirement can be used to protect soil, natural waters or stormwater systems from contamination in a specific location on a case-by-case basis. This could occur with the proposed Plan provisions in the rare case of a consent condition but is not a requirement for the vast majority of hazardous facilities which are permitted. It is noted that the only reference in the Regulations to account for 'rainwater' is in s17.100(6) in relation to a possible reduction of containment capacity approved by WorkSafe. Otherwise the effectiveness of secondary containment in this regard is not reflected in any of the regulations.

Some **examples** of required secondary containment under these Regulations: Four 5,000 litre tanks of a Class 3.1A/B flammable or 6.1B toxic substance located together in a workplace require secondary containment of 5500 litre capacity (27.5 % of total pooling potential, unless a lesser capacity has been approved by WorkSafe); four 10,000,000 litre bulk storage tank of a Class 3.1 substance located together require secondary containment of 11,000,000 litre capacity (27.5 % of total pooling potential, unless a lesser capacity has been approved by WorkSafe) with two bulk storage tanks each separated by the other two by an intermediate secondary containment system of at least 5,000,000 litres capacity (25 % of the total pooling potential within the intermediate secondary containment system, unless WorkSafe has on application increased the capacity for groups of stationary tanks – in this instance the total 40,000,000 litres could be within one containment system under s17.104(3)); a 2,000 litre farm tank for diesel on a farm – no secondary containment required.

S17.3 is noted with regard to the variability in the applicability of containment requirements:

17.3 Accepted engineering principles and practice to be applied

The question whether a stationary container system complies with this Part is to be determined having regard to the need to comply with this Part in a way that is—

(a) reasonably practicable; and

(b) consistent with accepted engineering principles and practice.

There is no reference to innovation, best practice or relevant outcomes in this section. Whether complying "with this Part is to be determined having regard to the need to comply with this Part" can in any way be meaningfully interpreted has not been established as part of this analysis.

The general performance requirements apply to likely operating and environmental conditions, unlikely (but possible) conditions are not addressed. There is also reference to reasonably foreseeable situations; less likely situations are not required to be covered. This is different to a case where an adverse effect of an emergency in a particular location may fall within the definition of RMA s.3(f) as one of low probability which has a high potential impact. There is also the ability of WorkSafe to reduce minimum requirements even further.

Overall there are gaps in this Part in the land use planning context where planning requirements can and ought to be applied for some stationary tanks (whether included in the scope of this Part or not), such as assessing location-specific risks, controlling adverse effects on sensitive land uses and environments (including by separation), additional secondary containment and cumulative effects with other facilities. There are no overlaps or inconsistencies with regard to the proposed Plan provisions.

Part 18 Laboratories: This part sets out the specific but generally equivalent requirements where laboratories use hazardous substances in research and development, analytical testing, or teaching. There are no inconsistencies or overlaps with the proposed Plan provisions.

Part 19 Tracking hazardous substances: This part specifies the tracking requirements for highly hazardous substances. There are no inconsistencies or overlaps with the proposed Plan provisions.

Schedules:

Some of the Schedules to the Regulations are important as they specify quantity thresholds and some circumstances where specific controls apply. In terms of classification and quantity thresholds the schedules are the equivalent of the Activity Status Table (AST) in the Appendix of the proposed Plan provisions (i.e., understanding one means understanding the other). Of relevance in relation to the matters identified above are the following Schedules:

Schedule 5 Threshold quantities for emergency response plans: This schedule refers exclusively to Part 5 (Emergency management) of the Regulations and applies specifically to emergency response plans. Thresholds cover most of the hazard categories. Some variations (fuels, farms) apply. The analysis with regard to Part 5 applies and there are gaps in requirements for emergency response (or: emergency management). There is no inconsistency or duplication in regard to the thresholds with any of the proposed Plan provisions.

Schedule 9 Matters relevant to class 2, 3, and 4 substances: This schedule includes minimum separation distances for Class 3.2 and Class 4 substances and threshold quantities for secondary containment. The matters relate largely to Part 10 (Class 2, 3 and 4 substances) with some applying to Part 17 (Stationary containers). The analysis with regard to Parts 10 and 17 applies and there are gaps in that regard. There is no inconsistency or duplication in regard to the thresholds or separation distances with any of the proposed Plan provisions.

Schedule 10 Matters relevant to class 5.1.1 and 5.1.2 substances: This schedule includes threshold quantities for secondary containment (in kg/l respectively, assuming equivalence of mass and volume). The matters relate largely to Part 12 (Class 5 substances) with some applying to Part 17 (Stationary containers). There are no separation distances for Class 5.1 substances required. The analysis with regard to Parts 12 and 17 apply including the identification of gaps. There is no inconsistency or duplication in regard to the thresholds with any of the proposed Plan provisions.

Schedule 11 Matters relevant to class 5.2 substances: This schedule includes minimum separation distances for Class 5.2 substances and threshold quantities for secondary containment. The matters relate largely to Part 12 (Class 5 substances) with some applying to Part 17 (Stationary containers). The analysis with regard to Parts 12 and 17 apply. There is no inconsistency or duplication in regard to the thresholds or separation distances with any of the proposed Plan provisions.

Schedule 12 Calculation of separation distances: This schedule contains 10 tables 8 of which specify minimum separation distances for Classes 2.1.1 and 3.1. (Table 9 and Table 10 are neither specifying distances nor calculation methods but maximum quantities for certain retail outlets and residential properties.) The distances apply largely to Part 11 (Controls relating to adverse effects of unintended ignition of class 2 and 3.1 substances) with some applying to Part 17 (Stationary containers). The analysis with regard to Parts 11 and 17 applies and there are examples included which identify gaps. There is no inconsistency or duplication in regard to the thresholds with any of the proposed Plan provisions.

Note: The Health and Safety at Work (Reduced Secondary Containment for Certain Above Ground Stationary Tanks) Safe Work Instrument 2017 reduce the required capacity of secondary containment for some types of Class 3.1 tanks.

Schedule 16 Threshold quantities for secondary containment of class 6, 8, and 9 substances: This schedule refers specifically to s13.30 in Part 13 (Class 6 and 8 substances) and s17.99 in Part 17 (Stationary containers) with thresholds in kg/l respectively, assuming equivalence of mass and volume. Thresholds cover most of the hazard categories within these three Classes. The analysis with regard to Parts 13 and 17 apply and there are gaps in requirements for secondary containment. There is no inconsistency or duplication in regard to the thresholds with any of the proposed Plan provisions.

Schedule 17 Minimum separation distances for stores of packaged class 6.1 substances: This schedule contains 4 tables which specify minimum separation distances between hazardous

substances locations or above ground stationary tank and protected or public places. It does actually not include any separation distances for (retail) stores (applicable to Class 6.1B and 6.1C substances) which are 0 (zero). The distances apply largely to Part 13 (Class 6 and 8 substances) with some applying to Part 17 (Stationary containers). They apply specifically to Class 6.1A/B/C substances, not 6.1D or Class 8 (despite s17.28 referring to Class 6.1D, however, the Schedule does not include any separation distance for any type of storage of Class 6.1D). The analysis with regard to Parts 13 and 17 applies and there are examples included which identify gaps. There is no inconsistency or duplication in regard to the thresholds with any of the proposed Plan provisions.

It is noted that the distances in the fourth column of all tables in Schedule 17 are incorrect, and lower separation distances (which are based on a 23-year old standard) apply to Class 6.1C substances. The reference to protected places for Table 4 is also incorrect.

3.0 HAZARDOUS SUBSTANCES (HAZARDOUS PROPERTY CONTROLS) NOTICE 2017

In essence the Hazardous Substances (Hazardous Property Controls) Notice 2017 includes most of the repealed HSNO Class 9 Regulations and provides some links to requirements applicable to Class 9 (not covered in the HSW HS Regs) in workplaces. In addition it specifies which HSW HS requirements apply to other hazardous substances outside of workplaces (i.e., primarily private dwellings).

Part 1: Preliminary Provisions: This part includes explanations on scope and applicability and a section 3 Interpretation. Potentially relevant terms are *protected place* (same meaning as in HSW HS Regs) and *sensitive habitat* ('means a habitat that may be adversely affected by the application of a substance, and includes wetlands, indigenous vegetation habitat areas, or reserves'). As the application means a discharge to the environment, this is not a land use matter and not addressed in the proposed Plan provisions. Overall this Part does not have specific reference or relevance to land use planning. There are no inconsistencies or overlaps with the proposed Plan provisions.

Part 2 Substances restricted to Workplaces: This part has only one clause which deals with the supply of certain substances to workplaces only. There are no inconsistencies or overlaps with the proposed Plan provisions.

Part 3 Requirements for hazardous substances in a place other than a workplace to which the HSW Act applies management: This part has two subparts of which only Subpart A may be relevant. It addresses requirements in a place other than a workplace. Many of the provisions refer to certain provisions of the HSW HS Regulations, and apply them for the purposes of the Notice as if they applied to a place other than a workplace. However, various modifications to the application of the relevant HSW HS Regulations are made, as these are necessary to ensure the requirements are relevant to the context in which they apply; the provisions of the relevant HSW HS Regulations which relate to the exercise of WorkSafe's discretionary powers under the HSW Act are not applied, and many of the requirements under the HSW HS Regulations to obtain a compliance certificate are not applied - requirements to obtain HSNO certificates from HSNO certifiers are imposed instead in accordance with s 82(a) of the Act.

This Subpart applies to large quantities of hazardous substances (small quantities only have some 'common sense' requirements on matters such as containers and labels), LPG storage and domestic oil burner installations or SCUBA cylinders. The large quantities where controls apply (s19) are listed in Schedule 3 and apply to, e.g., over half a tonne of fireworks of classes 1.3G, 1.4G or 1.4S under the Hazardous Substances (Fireworks) Regulations 2001; over 1000 l of diesel; over 10 tonnes or 10,000 litres of a Class 6.7B suspected carcinogen; over 10 tonnes or 10,000 litres of a Class 8.2C, or 8.3A corrosive substance. No requirements of this Subpart apply to hazardous substances in quantities below these thresholds.

Analysis:

The relevant issues with regard to applicable HSW HS Regs are not repeated here. There are gaps in this Subpart in the land use planning context where planning requirements can and ought to be applied for hazardous substances below the thresholds in Schedule 3 of the Notice, such as assessing location-specific risks, cumulative effects with other substances – particularly if the storage of such large quantities is proposed within a sensitive zone (such as residential, being likely as it is not a workplace matter). There are no overlaps or inconsistencies with regard to the proposed Plan provisions.

Subpart B of Part 3 of the Notice applies to ships – not a land use issue.

Part 4: Class 9 substances: This part addresses specific matters in relation to substances with eco-toxic properties (which are not included in the definition of a hazardous substance under the HSW HS Regulations).

Part 4 Subpart A effectively sets out which specific requirements of the HSW HS Regulations apply to Class 9 substances as if Class 9 substances were treated in some respects like other hazardous substances (within the limits of the HSNO definition and with some modifications). However, the provisions of the relevant HSW HS Regulations which relate to the exercise of WorkSafe's

discretionary powers under the HSW Act are not applied. Of potential relevance are requirements with regard to stationary container systems (clause 17 of HSW HS Regs is applicable), secondary containment and emergency response plans in s40 to 42 of the Notice:

40 Separation of above ground stationary tanks containing class 9 hazardous substances

(1) An above ground stationary tank that contains a hazardous substance of class 9.1 that does not also have a flammable classification must be separated from another above ground stationary tank that contains a class 9.1 substance by not less than 1 metre.

(2) An above ground stationary tank that contains a class 9.1 hazardous substance that does not also have a flammable classification, or a class 5, 6.1A, 6.1B, 6.1C, 6.1D, or 8 classification, must be separated from a protected place by a distance not less than the distance specified in Schedule 6 in relation to the size of the tank.

41 Requirement to have secondary containment systems for pooling substances

(1) This clause applies to a place within a workplace if—

(a) there is held in it, or reasonably likely to be held in it on occasion, an aggregate quantity of class 9 pooling substances more than the quantity specified in Schedule 7; and

(b) it is not a port, or part of a port facility, that is used to store hazardous substances for 72 hours or less.

(2) Regulation 13.30(2) to (5) of the HSW HS Regulations (including all requirements that are referred to within those provisions) apply for the purposes of this clause as if:

(a) any reference to a class 6 or 8 substance is replaced with a reference to a class 9 pooling substance; and

(b) regulation 17.100(3)(a) (which relates to reductions in required capacity for secondary containment on application to WorkSafe, and is incorporated into regulation 13.30) is omitted; and

(c) any reference in those regulations to a "relevant safe work instrument" is replaced with a reference to any safe work instrument that would be relevant to a class 6 or 8 substance.

42 Emergency response plans

(1) Regulations 5.6 to 5.12 of the HSW HS Regulations apply for the purposes of this notice in relation to a class 9 substance, as if the references to Schedule 5 in those regulations were references to Schedule 7 of this notice.

(2) An emergency response plan required by this clause may be part of any other management documentation for an emergency whether—

(a) required by or under the HSW Act or another enactment; or

(b) undertaken by a PCBU for some other reason.

The applicable separation distances are specified in Schedule 6 of the Notice, and the applicable thresholds for secondary containment and emergency response plans in Schedule 7 of the Notice.

Part 4 Subpart B deals with the application (discharge) of Class 9 substances. Specific controls are set for pesticide application, pesticides, plant growth regulators, vertebrate bait and invertebrate eco-toxins in specific circumstances. It does not address the management of other substances with eco-toxic properties. It does not address the storage of any Class 9 substances or any other matter related to land use planning. There are no inconsistencies or overlaps with the proposed Plan provisions.

Part 4 Subpart C deals with the application (discharge) of some agrichemicals, specifically highly hazardous pesticide or plant growth regulators, and qualifications of handlers and contractors in this specific area. It does not address the management of substances with eco-toxic properties in general. It does not address the storage of any Class 9 substances or any other matter related to land use planning. There are no inconsistencies or overlaps with the proposed Plan provisions.

Analysis:

Potential issues with regard to land use planning could be some matters of Part 4 Subpart A. The relevant issues with regard to applicable HSW HS Regs are not repeated here. The rationale for the required separation distances between an above ground stationary tank in a workplace and a protected place of between 3 and 8 metres, depending on quantity of Class 9 substance held, is unclear as protected places do not have a particular sensitivity to Class 9 substances. There are no separation distances specified with regard to sensitive environments or eco-systems (which actually is relevant for substances with eco-toxic properties).

The matters identified with regard to secondary containment of toxic or corrosive substances required under Part 13 of the HSW HS Regs apply with regard to eco-toxic substances. Secondary containment may be as low as 5 % of pooling potential. Environmental sensitivity or any other locational matters are not taken into account.

The matters identified with regard to emergency response plans required under Part 5 of the HSW HS Regs apply with regard to eco-toxic substances. The specified content of emergency response plans is primarily about the effects on people not eco-systems or the natural environment. While such plans, if properly prepared, implemented, monitored and updated, will have some positive effect with regard to the environment, they are not necessarily comprehensive enough in a particular location with regard to off-site environmental effects.

Overall there are gaps in this Subpart in the land use planning context where planning requirements can and ought to be applied for Class 9 hazardous substances, such as assessing location-specific risks, providing additional secondary containment and other emergency management measures. There are no overlaps or inconsistencies with regard to the proposed Plan provisions.

There are 10 **Schedules** to the Notice, four of which may be relevant. These are

- Schedule 2 which relates to Part 3, Subpart A;
- Schedule 3 which relates to Clause 19 only;
- Schedule 6 which relates to Clause 40 only, and
- Schedule 7 for clauses 41 and 41, with threshold quantities for secondary containment and emergency response plan in relation to Class 9 substances.

Schedule 2 sets out which specific provisions of the HSW HS Regulations are applicable to a hazardous substance (excluding Class 9) in a place that is not a workplace. Schedule 3 sets out the corresponding quantities of hazardous substances that require management in accordance with some HSW HS Regulations. It is noted that, while Schedule 3 lists various Class 1 substances, the applicable clause 19 specifically excludes Class 1 substances. There are also some unexplainable inconsistencies between the thresholds applicable to a place that is not a workplace and those scheduled in the HSW HS Regulations. For example, Class 8.2B corrosives have a threshold of 50 kg for a workplace (Schedule 5 HSW HS Regs) but 1000 kg for a place that is not a workplace (Schedule 3 of the Notice). Some substances such as 3.1C are not listed with any quantity in Schedule 3 and, according to Part 2 'restricted to workplaces', but are in fact available to the general public (kerosene, methanol, turps, thinners, solvents, paints, primers, glues/adhesives etc.). [S13.41 of the HSW HS Regs also refers to "any retail store to which the public has access and that holds class 6.1B or 6.1C substances for retail sale" which is contrary to the wording in Part 2.] Despite these inconsistencies and lack of clarity there are no identified conflicts or overlaps with any of the proposed Plan provisions.

Schedule 6 specifies separation distances between an above ground stationary tank in a workplace containing a Class 9 substance and a *protected place* of between 3 and 8 metres, depending on quantity of Class 9 substance held. The rationale for this required separation is unclear as protected places do not have a particular sensitivity to Class 9 substances. It would make some sense if the Class 9 substance had any of a Class 6.3 to 6.9 classification as well (various human toxicity criteria). However, the HSW HS Regulations themselves do not state any applicable separation distances for

substances with Classes 6.3 to 6.9. Consequently there is inconsistency between the HSW HS Regs and the HS (HPC) Notice in this regard. There are no inconsistencies or overlaps with the proposed Plan provisions.

Schedule 7 Threshold quantities for secondary containment and emergency response plan lists three thresholds (in kg/l respectively, assuming equivalence of mass and volume) for Class 9 substances, treating 9.1B and 9.1C as the same (which may not be appropriate for all toxic substances in these categories). The observations on requirements for secondary containment and emergency response plans under the HSW HS Regs above apply. There are no inconsistencies or overlaps with the proposed Plan provisions.

4.0 LIMITATIONS

This report has been prepared by Norbert Schaffoener of *resources consulting* at the request of the Waikato District Council. The particular purpose of this report is to provide an analysis of statutory requirements under relevant HSNO and HSW regulations in relation to notified provisions of the Proposed Waikato District Plan. This report is not to be used in other contexts, for other districts or for any other purpose without agreement of the author.