The Hazardous Facility Screening Procedure (HFSP)

5 The Hazardous Facility Screening Procedure (HFSP)

Key Points

- The Hazardous Facility Screening Procedure (HFSP) was developed to assist district councils with managing activities involving hazardous substances under the RMA.
- This section includes background information on the HFSP as well as instructions on its use and application.
- The purpose of the HFSP is to establish whether a proposal for a hazardous facility requires a land use consent. The procedure is based on evaluating quantities of hazardous substances on a proposed site, based on a preliminary assessment of environmental effects.
- The section revises the HFSP originally introduced in the 1995 publication *Land Use Planning for Hazardous Facilities* with the aim of simplifying the method and making it more user-friendly.
- Explanations are given on how and when the HFSP is to be applied, where it should not be applied and which activities may be exempted.

5.1 Background

5.1.1 Development

When work began on new district plans in 1991, the requirements of the RMA led to the consideration and adoption of a new approach to the assessment and management of hazardous substances and facilities that use or store these substances. In 1993, the Auckland City Council adopted a new method for the screening of hazardous facilities in their Proposed Isthmus District Plan. This approach focused on assessing off-site environmental effects of hazardous facilities to determine whether a land use consent was required. However, some limitations and shortcomings of this method were identified and the need for an independent review became evident.

As part of the review process, an evaluation of the 'traditional' New Zealand list approach and overseas screening methods for hazardous substances was undertaken to assess their applicability to the New Zealand regulatory environment. None of these methods were thought to be suitable to provide an adequate focus on the environment and to satisfy the effects-based approach required by the RMA.

One of the findings of the review referred to the purpose of the procedure, which is the screening of proposed developments involving hazardous substances to determine whether a consent is required or not, rather than an actual risk assessment of the proposed facility. To better reflect this purpose, the procedure was renamed the Hazardous Facility Screening Procedure, or HFSP.

Throughout the initial review process and subsequent revision of the original method, advice was sought from a number of interested parties, including the New Zealand Fire Service and various industry representatives. As a result, the review process was lengthy, but incorporated a wide range of input from those involved in hazardous substances management.

The review resulted in the promulgation of a guide on land use planning for hazardous facilities, the so-called 'Red Book', in 1995 (Hazardous Facility Screening Procedure Review Group, 1995). Since that time, some 30 councils have adopted the HFSP as a land use planning method. The intention was to carry out a further review of the HFSP after it had been in use for some two to three years and update the procedure accordingly, which is the purpose of this document.

The current review was initiated with a survey of HFSP users to determine necessary and desirable improvements. Three major requirements were identified:

- simplification of the procedure
- enhanced user-friendliness
- reclassification of hazardous substances to comply with the new HSNO Act.

The peer review of the revised Procedure was carried out by industry and local and central government representatives.

5.1.2 Purpose

The purpose of the HFSP is to determine whether a particular proposal for the use, handling and/or storage of hazardous substances requires a land use consent under the RMA. While it is used to determine the resource consent status of a proposed hazardous facility, it is not suitable to determine the outcome of a resource consent application. This decision can only be made once additional information presented in AEE has been evaluated.

Nor is the HFSP suitable for assessing activities such as the transport or disposal of hazardous substances (although these activities will need to be addressed in resource consent applications if they form a significant part of the proposed activity). Individual councils may also wish to exempt particular activities from the scope of the HFSP, if the effects are well known and are comprehensively controlled by other mechanisms such as accepted industrial Codes of Practice or appropriate national/international standards.

Councils may also wish to deal with certain nominated extremely hazardous industries by way of non-complying or prohibited status, which would also mean that the HFSP does not apply. In such cases, the council needs to specify in its plan the conditions under which a proposed facility or activity would be exempted from the HFSP (refer Section 5.6).

5.1.3 Terminology

The terminology used for the revised HFSP is largely consistent with the 1995 'Red Book'. However, some terms (listed in Table 1) have been amended to better reflect their intention, as well as making them somewhat easier to remember.

Table 1: Overview of changed HFSP terminology

Old Term	New Term	Explanation
Base threshold	Base quantity	The pre-calibrated quantity of a hazardous substance that is deemed to be acceptable on a heavy industrial site without causing any significant off-site effects.
Adjusted threshold	Adjusted quantity	Equivalent to the Base Quantity that has been adjusted using Adjustment Factors.
Effect group	Effect type	Three Effect Types are used by the HFSP: • Fire/explosion • Effects on human health • Effects on the environment
Effects ratio	Quantity ratio	The ratio of the proposed quantity of a substance over the applicable Base Quantity.
Effects ratio trigger level	Consent status index	Numerical values in the district plan that are used to determine the consent status of a facility.
	Hazard rating	The level of hazard (high, medium or low) applied to a hazardous substance for the purpose of an HFSP calculation, based on its HSNO classification.

Other terms such as Proposed Quantity or Adjustment Factor remain the same:

Proposed quantity	The quantity of a hazardous substance proposed to be used or stored on a site.
Adjustment factor	Pre-calibrated factors that take into account substance, storage and site-specific circumstances.

5.2 Overview

The HFSP is designed to assess, on a preliminary basis, the environmental effects of hazardous substances proposed to be stored or used on a site by taking into account their quantities, characteristics, location, type of activity and local environmental conditions. This assessment is carried out for three defined Effect Types:

- Fire/Explosion
- Human Health
- Environment.

Basically, the HFSP provides for a comparison of proposed quantities of hazardous substances with maximum allowable quantities (Adjusted Quantities). The latter depend on the type of substances, how they are used and stored, and the location of the facility. A Quantity Ratio is calculated by dividing the proposed quantity of each hazardous substance by the Adjusted Quantity. The Quantity Ratios of individual substances are added up for each Effect Type. The cumulative Quantity Ratios are then compared with defined limits called Consent Status

Indices. These are listed in a Consent Status Matrix in the district plan and vary for different land use zones.

If the cumulative Quantity Ratios are below the applicable Consent Status Index for any of the three Effect Types, a land use consent is not required for the hazardous facility. If they are above, a consent is necessary.

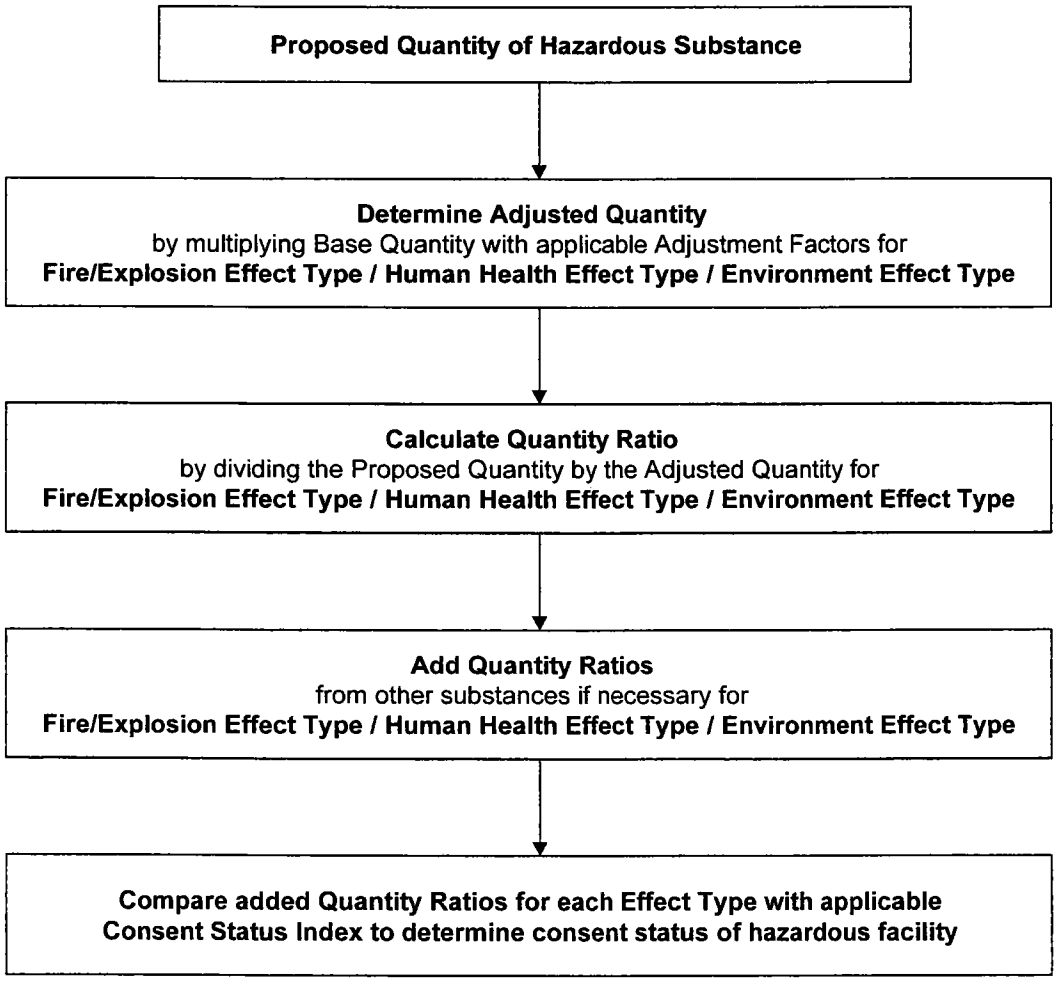
Some information needs to be assembled at the outset about the hazards of the substances concerned. This includes site *layout* and location, types of activities as well as the sensitivity of the surrounding environment.

In most cases, only a limited number of substances need to be assessed to determine the resource consent status of an activity. This particularly applies if one, two or three substances are either very hazardous or stored/used in large quantities.

However, if a land use consent is required, a full set of information on the types and quantities of hazardous substances proposed to be used and stored will be required to be able to fully assess the effects and risks of a proposed facility by way of an AEE (refer Section 4.6.1).

An overview of the HFSP is presented in Figure 1. Further detail about the individual steps of the HFSP is presented in Section 5.4.

Figure 1: Overview of the HFSP process for a single substance



5.3 Rating of hazardous substances for the HFSP

5.3.1 Purpose

To be able to assess hazardous substances under the HFSP, they must be rated first. The rating criteria, which are broadly based on the HSNO classification criteria, are specified in Appendix A.

It is important to note that these rating criteria are different from those presented in the original 'Red Book', when HSNO Regulations were still in their early development.

Rating criteria for the HFSP simplify the HSNO classification in some areas. This is because land use controls for hazardous substances under the HFSP differ somewhat from the substance-specific life-cycle requirements under HSNO. As a result, some HSNO categories have been combined to reflect the minimal differences in possible adverse effects from a land use perspective. Further, for some hazardous properties, the lowest hazard categories have no HFSP rating, as additional controls to the HSNO requirements are considered unnecessary for land use planning purposes.

5.3.2 Rating of hazardous substances

For the purposes of the HFSP, each substance receives a hazard rating based on three Effect Types:

- Fire/Explosion Effects: concerned with damage to property, the built environment and safety of people;
- Human Health Effects: concerned with the well-being, health and safety of people;
- Environmental Effects: concerned with damage to ecosystems and natural resources.

Each Effect Type is divided into three hazard levels:

♦ high ♦ medium ♦ low.

The rating of a hazardous substance for the HFSP requires each substance to be assessed in terms of each of the hazard categories listed in Appendix A (e.g. explosiveness, flammability of gases, liquids and solids etc.). However, this is often a very involved exercise and requires extensive research of Material Safety Data Sheets (MSDSs) and specialist hazardous substances databases.

This is clearly not very practical for a preliminary screening tool such as the HFSP, as the rating of hazardous substances can take a substantial amount of time. To reduce the need to establish the rating of hazardous substances, the following strategy has been developed:

1 More than 300 commonly used hazardous substances in New Zealand have already been assessed and rated for the HFSP. These are listed in Appendix B. The list is further enhanced by a synonym list (also in Appendix B), which makes provision for more than 1000 substance names. This database is available on the MfE website (http://www.mfe.govt.nz/about/laws/hsno/hazfacility.htm).

2 As part of the transitional provisions of HSNO, all substances previously controlled by repealed legislation such as the Dangerous Goods and Toxic Substances Acts will be classified according to the HSNO classification scheme. Further, all new substances approved in New Zealand will also be classified. This work will be carried out by ERMA

New Zealand, and a database of these substances is currently being developed and will be accessible through the ERMA web site (refer Section 7.2.4) in the future. Once the HSNO classification is known, rating of a hazardous substance for the HFSP can be easily carried out using the criteria in Appendix A

3 Where information for the rating of a hazardous substance for the HFSP is not or only partially available from Appendix B or the MfE/ERMA websites, a precautionary default rating of 'Medium' for the Fire/Explosion and Human Health Effect Types and 'High' for the Environmental Effect Type should be applied.

4 Where no HFSP rating is available through Options 1 or 2 above and the default ratings given in Option 3 are not considered suitable, Appendix C may be used to research and assign HFSP ratings to hazardous substances.

5.4 The step-by-step guide to the HFSP

This section presents a step-by-step guide on how to use the HFSP. An overview is shown in Figure 2, and details are provided in Table 2. **This information must be included into the relevant parts of the district plan if the HFSP has been adopted.**

Figure 2: Overview of the step-by-step guide to the HFSP

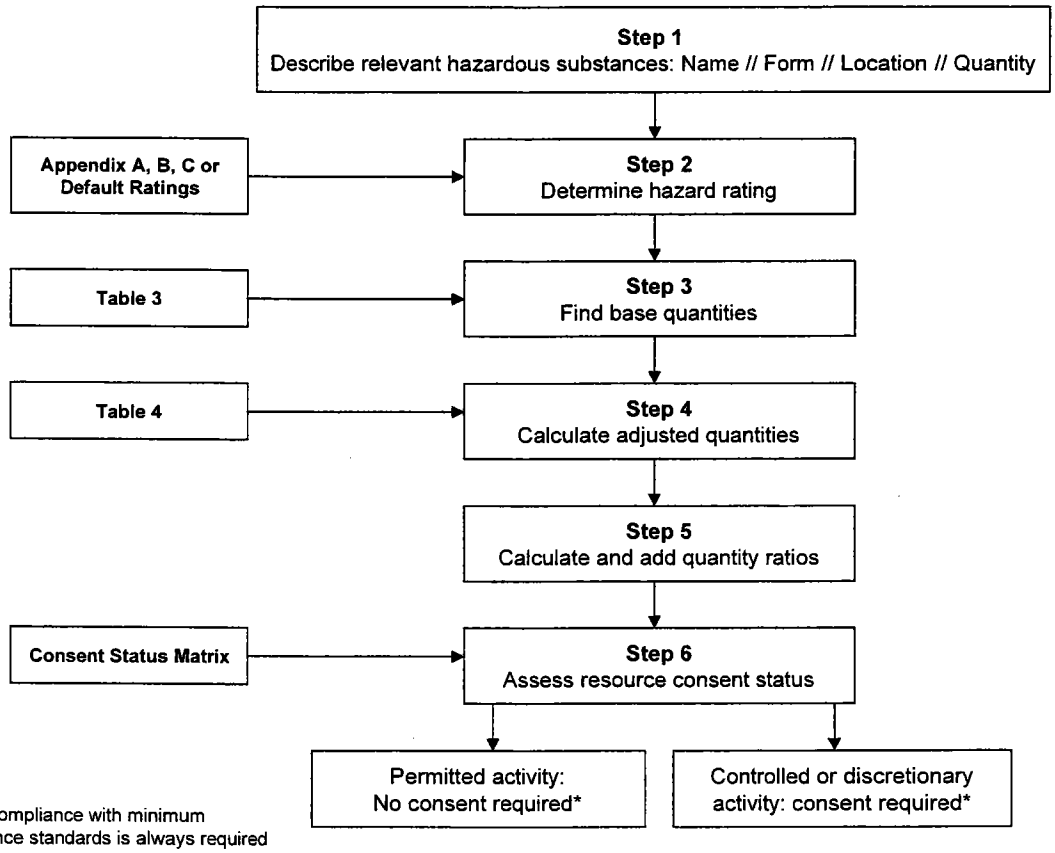


Table 2: The HFSP step-by-step guide

<table>
<tr><th>Steps</th><th colspan="4">HFSP calculations</th><th>Explanation</th></tr>
<tr><td rowspan="2">1 Describe the hazardous facility
Prior to using the HFSP, it is necessary to compile a full description of the hazardous facility in question. This includes the creation of an inventory of hazardous substances held on the site, including:
• names of the hazardous substances
• quantities of the hazardous substances
• the physical form of the substances at 20°C and 101.3 kPa
• the location of use or storage on the site, including separation distances from the site boundary and neighbouring hazardous facilities (on-site and off-site).
The description should also include site-specific details, including neighbouring land uses and the surrounding environment, with a focus on sensitive land uses and receptors (e.g. retirement accommodation, aquifers or wetlands).</td><td>Substance name
Substance 1
Substance 2
...
Substance 10</td><td>Substance form (liquid, solid, gas)</td><td>Location of substances on site</td><td>Proposed quantity (P) (tonnes or m³)</td><td rowspan="2">The HFSP uses standard units of tonnes (t) (for solids, liquids and liquefied gases) and cubic metres (m³) (for compressed gases). In some cases, it may therefore be necessary to convert substance quantities to these units. In the case of liquids, specific gravity (or density) must be taken into consideration when converting litres or m³ to tonnes (i.e.
volume of liquid (litres) x specific gravity / 1000
= tonnes).
Adjustments to quantities are also necessary where a substance is diluted with water or mixed with another substance. In this instance, only the percentage quantity of the hazardous substance or product in the dilution or mixture is assessed for the purposes of HFSP calculations (unless a mixture is more hazardous than its components, in which case data on the mixture need to be used).
An exception to this are products or brands that already constitute dilutions or mixtures of hazardous substances and which have been classified in terms of their hazardous properties as the 'whole' dilution or mixture for life cycle management purposes. Examples of this are corrosives, oxidising substances and pesticides, which are often sold commercially as standard solutions or strengths. In these cases, quantity adjustments are only applied when these commercially supplied concentrations are further diluted or mixed.</td></tr>
<tr><td colspan="4">Example
Petrol | Liquid | < 30 metres | 50 +</td></tr>
<tr><td rowspan="2">2 Determine hazard rating
For the purposes of the HFSP, the effects of substances are categorised into three Effect Types:
• Fire/Explosion Effect Type: addressing damage to the built environment and safety of people
• Human Health Effect Type: addressing adverse effects on the well-being, health and safety of people
• Environmental Effect Type: addressing adverse effects on ecosystems and natural resources.
Each Effect Type is divided into three Hazard Rating Levels:
♦ High ♦ Medium ♦ Low
The rating levels are based predominantly on the HSNO classification system.</td><td>Substance name
Substance 1
Substance 2
...
Substance 10</td><td colspan="3">Hazard rating</td><td rowspan="2">The HFSP rates hazardous substances in terms of each of the three Effect Types as having a high, medium or low hazard. The Hazard Rating of a substance is derived from:
1 The list of HFSP-rated hazardous substances in Appendix B.
2 The HSNO classification (refer Appendix A). Once a substance has been classified under HSNO, Hazard Ratings can be assigned for each Effect Type as shown in Appendix A.
3 Where a substance is neither found in Appendix B nor the HSNO database on the ERMA website, the following default ratings should be used:
• Fire/Explosion Effect Type: Medium
• Human Health Effect Type: Medium
• Environment Effect Type: High
4 The substance may be rated using Appendix C as a guide.</td></tr>
<tr><td>Fire/ Explosion
High (H) or Medium (M) or Low (L)</td><td>Human Health
High (H) or Medium (M) or Low (L)</td><td>Environ-ment
High (H) or Medium (M) or Low (L)</td></tr>
<tr><td colspan="4">Example
Petrol | High | Low | Medium</td></tr>
</table>

Steps	HFSP calculations				Explanation
3 Find base quantities The Base Quantity (B) is pre-calibrated. It is the amount of a substance that has been assessed as generating no significant off-site effects in a heavy industrial area before site- and substance-specific considerations have been taken into account (refer Step 4). Base Quantities for different hazardous properties and hazard ratings in each Effect Type are listed in Table 3.	**Substance name**	**Base quantities (B)**			For example, in the Fire/Explosion Effect Type (Sub-category Flammables), non-significant off-site effects in a heavy industrial area are represented by a Base Quantity of: • 100 tonnes of a HSNO Category D flammable liquid which has a low hazard level for the Fire/Explosion Effect Type. • 30 tonnes of a HSNO Category C flammable liquid which has a medium hazard level for the Fire/Explosion Effect Type.
	Substance 1	Fire/ Explosion	Human Health	Environ-ment	
	Substance 2	B_1	B_1	B_1	
	...	B_2	B_2	B_2	
	Substance 10	...	...	...	
		B_{10}	B_{10}	B_{10}	
	Example				
	Petrol	10 t	30 t	30 t	
4 Calculate Adjusted Quantity (A) The precalibrated Adjustment Factors (FF, HF, EF) are multiplied with the Base Quantities (B) to account for substance properties and site-specific environmental circumstances. This multiplication yields the Adjusted Quantity (A). Adjustment Factors differ for each of the Effect Types, and take into account the following considerations: • the physical state of the substance • the type of storage • the type of activity or use • separation distances to the site boundary • the environmental sensitivity of the site location. The Adjustment Factors are listed in Table 4.	**Substance name**	**Adjusted quantities (A)**			Different Adjustment Factors are applied for each Effect Type. For example, for the Fire/Explosion Effect Type, the temperature is relevant, while for the Human Health Effect Type, proximity to a potable water resource is important. In some instances, more than one Adjustment Factor within each Effect Type must be applied, which then need to be multiplied with each other to yield the total Adjustment Factor for the Effect Type. When the Adjustment Factors for each Effect Type have been calculated, they in turn are multiplied with the Base Quantity to yield the Adjusted Quantity). In the example given, the following parameters have been assumed: • <30m to site boundary • not adjacent to water body • underground storage.
	Substance 1	Fire/ Explosion	Human Health	Environ-ment	
	Substance 2	A_1	A_1	A_1	
	...	A_2	A_2	A_2	
	Substance 10	...	...	...	
		A_{10}	A_{10}	A_{10}	
	Example				
	Petrol	100 t (10 tonnes x 10)	300 t (30 tonnes x 30)	90 t (30 tonnes x 3)	
5 Calculate and add Quantity Ratios (FQ, HQ, EQ) This step requires the calculation of the Quantity Ratio for each hazardous substance in question. The Quantity Ratio is a dimensionless number. It is obtained by dividing the quantity of a substance that is proposed to be used or stored on a site, i.e. the Proposed Quantity (P) by the Adjusted Quantity (A). If several hazardous substances are used or stored on a site, the Quantity Ratios calculated for each of these substances are added up for each Effect Type. Note that $FQ/HQ/EQ_{Total}$ stands for the total sum of Quantity Ratio values from all assessed hazardous substances, within each Effect Type.	**Substance name**	**Quantity ratios (FQ, HQ, EQ)**			By using the dimensionless ratio of the Proposed Quantity of a hazardous substance over the Adjusted Quantity, it is possible to aggregate the effects presented by multiple substances held on the same site. Hence, it becomes possible to assess the cumulative potential effects which may be created by several substances present on the same site.
	Substance 1	Fire/ Explosion	Human Health	Environ-ment	
	Substance 2	FQ_1	FQ_1	FQ_1	
	...	FQ_2	FQ_2	FQ_2	
	Substance 10	...	...	...	
		FQ_{10}	FQ_{10}	FQ_{10}	
		FQ_{Total}	**HQ_{Total}**	**$EQ_{Tpta;}$**	
	Example				
	Petrol	0.50 **(50 tonnes / 100 tonnes)**	0.1667 **(50 tonnes / 300 tonnes)**	0.5556 **(50 tonnes / 90 tonnes)**	
6 Assess resource consent status of hazardous facility When assessing the resource consent status of a particular hazardous facility, the added Quantity Ratios for each Effect Type are compared with relevant Consent Status Indices in the Resource Consent Matrix in the district plan. If they are exceeded, a resource consent is required.	**Substance name**	**Does quantity ratio exceed consent status index?**			When examining total Quantity Ratios against applicable Consent Status Indices, one or several substances may trigger a resource consent. This highlights the fact that when assessing hazardous facilities, it is often sufficient to assess just a few hazardous substances to start off with, mainly those that are either highly hazardous or are used/stored in high quantities.
	Substance 1	Fire/ Explosion	Human Health	Environ-ment	
	Substance 2	**Yes / No**	**Yes / No**	**Yes / No**	
	...				
	Substance 10				
	Example In a typical industrial zone:				
	Petrol	No	No	No	

Table 3: Base quantities (B) for all effect types and hazard ratings

HSNO category	UN class equivalent	Hazard level	Unit tonnes or cubic metres	Base quantity (B)		
				Fire/ explosion	Human health	Environment
Explosive substances						
1.1	1.1	High	tonnes	0.1	–	–
1.2	1.2	Medium	tonnes	1	–	–
1.3	1.3	Low	tonnes	3	–	–
1.5	1.5	Low	tonnes	3	–	–
Flammable gases						
2.1.1A	2.1	High	m^3 tonnes	10,000* 10	–	–
2.1.2A	2.1	High	m^3 tonnes	10,000* 10	–	–
	LPG	Medium	tonnes	30	–	–
Flammable liquids						
3.1 A	3PGI	High	tonnes	10	–	–
3.1 B	3PGII	High	tonnes	10	–	–
3.1 C	3PGIII	Medium	tonnes	30	–	–
3.1 D	Combustible liquids	Low	tonnes	100	–	–
Liquid desensitised explosives						
3.2 A 3.2 B 3.2 C	3 PGI 3 PGII 3 PGIII	High	tonnes	1		
Flammable solids						
4.1.1.A	4.1 (a) PGII	Medium	tonnes	10	–	–
4.1.1 B	4.1 (a) PGIII	Low	tonnes	30	–	–
4.1.2 A 4.1.2 B	4.1 (b) PGII	High	tonnes	1	–	–
4.1.2 C 4.1.2 D	4.1 (b) PGII	Medium	tonnes	10	–	–
4.1.2 E 4.1.2 F 4.1.2 G	4.1 (b) PGII	Low	tonnes	30	–	–
4.1.3 A	4.1 (c) PGI	High	tonnes	1	–	–
4.1.3 B	4.1 (c) PGII	High	tonnes	1	–	–
4.1.3 C	4.1 (c) PGIII	High	tonnes	1	–	–
4.2 A	4.2 PGI	High	tonnes	1	–	–
4.2 B	4.2 PGII	High	tonnes	1	–	–
4.2 C	4.2 PGIII	Medium	tonnes	10	–	–
4.3 A	4.3 PGI	High	tonnes	1	–	–
4.3 B	4.3 PGII	High	tonnes	1	–	–
4.3 C	4.3 PGIII	Medium	tonnes	10	–	–
Oxidising substances						
5.1.1 A	5.1 PGI	High	tonnes	1		
5.1.1 B	5.1 PGII	High	tonnes	1		
5.1.1 C	5.1 PGIII	Medium	tonnes	10		

HSNO category	UN class equivalent	Hazard level	Unit tonnes or cubic metres	Base quantity (B)		
				Fire/ explosion	Human health	Environment
5.1.2 A	2.2	High	m^3 tonnes	10,000 10		
5.2 A 5.2 B	5.2 Types A and B	High	tonnes	1		
5.2 C 5.2 D	5.2 Types C and D	Medium	tonnes	10		
5.2 E 5.2 F 5.2 G	5.2 Types E, F and G	Low	tonnes	30		
Toxic substances						
6.1 A	6.1 PGI 2.3	High	tonnes m^3	–	1 50	–
6.1 B	6.1 PGII 2.3	High	tonnes m^3	–	1 50	–
6.1 C	6.1 PGIII 2.3	Medium	tonnes m^3	–	10 150	–
6.1 D	Standard poison	Low	tonnes m^3	–	30 500	–
Corrosive substances						
8.2 A	8 PGI	High	tonnes	–	1	–
8.2 B	8 PGII	Medium	tonnes	–	10	–
8.2 C	8 PGIII	Low	tonnes	–	30	–
Ecotoxic substances						
9.1 A	GHS	High	tonnes	–	–	3
9.1 B	GHS	Medium	tonnes	–	–	30
9.1 C	GHS	Low	tonnes	–	–	100
9.1 D	GHS	Low	tonnes			100

* Base threshold in m^3 at 101.3 kPA and 20°C for permanent or compressed gases.

Table 4: Adjustment factors for all effect types

Fire/explosion	Human health	Environment
FF1: Substance form	**FH1: Substance form**	**FE1: Substance form**
Solid = 1 Liquid, powder = 1 Gas (101.3 kPA and 20°C) = 0.1	Solid = 3 Liquid, powder = 1 Gas (101.3 kPA and 20°C) = 0.1	Solid = 3 Liquid, powder = 1 Gas (101.3 kPA and 20°C) = 0.1
FF2: Separation distance from site boundary (sub-facility)	**FH2: Separation distance from site boundary (sub-facility)** (gases only)	**FE2: Environmental sensitivity**
< 30 m = 1 > 30 m (>60 m)[4] = 3	< 30 m = 1 > 30 m (>60 m)[2] = 3	Normal = 1 Adjacent to water resource[5] = 0.3
FF3: Type of activity	**FH3: Type of activity**	**FE3: Type of activity**
Use = 0.3 Above-ground storage = 1 Underground storage[6] = 10	Use = 0.3 Above-ground storage = 1 Underground storage[6] = 10	Use = 0.3 Above-ground storage = 1 Underground storage[6] = 3
Final fire/explosion adjustment factor **FF = FF1 x FF2 x FF3**	Final human health adjustment factor **FH = FH1 x FH2 x FH3**	Final environment adjustment factor **FE = FE1 x FE2 x FE3**

5.5 Application of the HFSP

5.5.1 Carrying out HFSP calculations

Based on the Step-by-Step Guide outlined in Table 2, HFSP calculations can be carried out manually or using software based tools. Quick manual calculations are appropriate, especially for experienced practitioners and in situations where one or only few substances will exceed the Consent Status Indices. A sample calculation sheet (derived from the HFSP Calculation Spreadsheet Package) to assist with a manual calculation is included in Appendix D.

Alternatively, the HFSP Calculation Spreadsheet Package, based on Microsoft Excel® and downloadable from the MfE website (http://www.mfe.govt.nz/ about/laws/hsno/hazfacility.htm), may be used. Further information on electronic support is provided in Section 7.2.4.

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[4] If the facility is assessed as a sub-facility, the distance to the neighbouring sub-facility must be more than 60 metres (i.e. 2 x 30 metres) to qualify for an Adjustment Factor of 3 (refer Section 5.5.4).

[5] Water resources include aquifers and water supplies, streams, springs, lakes, wetlands, estuaries and the sea, but do not include entry points to the stormwater drainage network. 'Adjacent' must be defined in respective district plans and will depend on the type of water resource potentially affected (adjacent is variably defined as between 30 and 100 metres).

[6] Applicable to UN Class 3 substances (flammable liquids) only.

5.5.2 Where is the HFSP applied?

Historically, land use controls for hazardous substances have generally been restricted to industrial zones. However, hazardous substances tend to be used in almost all land use zones or environments, including rural and residential areas. Any hazardous substance-related controls should therefore apply across a district, regardless of whether the district is of largely urban, industrial or rural nature. Based on this assumption, the HFSP is applied to hazardous facilities in all land use zones as an 'overlay' control on top of other zone-specific land use controls. A proposed hazardous facility therefore needs to comply with the rules for individual land use zones as well as with those for hazardous facilities.

For example, a home enterprise using hazardous substances needs to comply with the rules applicable to both the residential land use zone and hazardous facilities. It is therefore possible that a proposed home enterprise is a permitted residential activity, but requires a resource consent for the use or storage of hazardous substances – or vice versa.

5.5.3 New and existing hazardous facilities

The HFSP is generally not applied to existing facilities as these are normally subject to existing use rights under the RMA. There are, however, two exceptions:

- Where an existing facility changes its operations to such an extent as to cause a change in the character, nature and/or scale of actual or potential effects, as defined in Sections 10, 10A and, as applicable, section 20 of the RMA. The district plan must define the extent and nature of the change that will trigger this provision.
- Where the HFSP is adopted as part of a regional plan. These plans are able to override existing use provisions.

The HFSP is applied to all new hazardous facilities, irrelevant of their type and size. Where the HFSP indicates that a hazardous facility is a permitted activity in a given land use zone, the facility does not require a resource consent although it must comply with any minimum performance standards specified in a district plan (refer Sections 4.4.1 and 8.3).

5.5.4 Facilities and sub-facilities

The HFSP is used to screen hazardous facilities and their sites. Where two separate hazardous facilities are located on the same site, the HFSP treats them as a single facility. However, there are some situations where this concept presents problems, particularly where large sites or sites with multiple ownership or occupancy are concerned.

The Palmerston North City Council (1996) addresses such sites by introducing the concept of a 'sub-facility'. The definition for sub-facility[7] is based on the assumption that if multiple hazardous facilities on the same site are separated by more than 30 metres from each other, they may be dealt with as sub-facilities and thus be assessed separately. If any of these sub-facilities exceeds the consent status index for the respective land use zone, potential risks to other sub-facilities or any other hazardous facilities located off-site need to be considered.

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[7] A sub-facility is any hazardous facility that is separated by more than 30 metres from any other hazardous facility on the same site.

If the concept of sub-facilities is adopted in a district plan, appropriate changes need to be made to the Adjustment Factors shown in Table 4. Adjustment Factors FE2 for the Fire/Explosion and FH2 for the Human Health Effect Types need to be adjusted to 60 metres for sub-facilities (refer Table 4).

5.6 Exceptions and exemptions from the HFSP

5.6.1 Exceptions: Where the HFSP should not be applied

The HFSP was developed to deal with most activities involving hazardous substances. However, there are situations where it is not suitable or appropriate, as described in Table 5.

Table 5: Exceptions to the HFSP

Exceptions	Explanation
Trade waste sewers	Difficult to cover as trade waste sewers transect land use zones. Also, trade waste sewers normally form part of larger developments requiring resource consents and are therefore already captured under the RMA.
Storage and use of hazardous consumer products for private domestic purposes	This is deemed to be an insignificant activity.
Retail outlets for the domestic-scale usage of hazardous substances such as supermarkets, hardware shops and pharmacies. This does not include wholesale outlets or outlets for the supply of trade.	The scale of these activities is deemed to be insignificant. However, activities which serve both the retail and wholesale trade are not excepted.
Developments that are or may be hazardous but do not involve hazardous substances (e.g. high voltage transmission lines, radio masts, natural hazard areas)	These activities do not involve hazardous substances and need to be covered by other land use planning provisions.
Facilities presenting a dust explosion risk of non-hazardous substances	This risk arises from the presence of finely powdered organic material such as milk powder or coal dust present in a building due to inadequate housekeeping practices. Such dust does not represent a contained storage of hazardous substances.
Gas or oil pipelines	Refer to trade waste sewers.
Fuel in motor vehicles, boats and small engines.	This is deemed to be an insignificant activity.

5.6.2 Exemptions: Where the HFSP may be waived

A council may wish to specifically exempt some activities involving hazardous substances from the HFSP on the basis that these activities are already well regulated by other controls, or because well established industry Codes of Practices or suitable regulations exist. This approach is also intended to serve as an incentive for industry to develop standards or Codes of Practice for self-regulation purposes. A similar approach has been adopted by HSNO, where ERMA may issue and/or approve Codes of Practice.

Exemptions merely apply to the application of the HFSP itself, but not to any other rules relating to hazardous substances or facilities contained in a district plan. The proponent of an exempt hazardous facility will therefore still need to carefully check any other controls which may apply, including minimum performance standards (refer Sections 4.4.1 and 8.3).

Although it was previously considered appropriate that exempt activities could become permitted activities, this has been revised since the implementation of the HFSP. The main reason is that Codes of Practice or standards are usually not legally binding, but are used on a voluntary basis, even if assurances are given through industry-wide agreements concerning such controls.

Therefore, district councils have taken the stance that exempt activities should be given a controlled resource consent status. This enables councils to implement rules to check that voluntary control measures have been implemented correctly and within the stated intent. It also enables councils to impose resource consent conditions to ensure that control measures are implemented and maintained in the long term.

The use of references to Codes of Practice or standards within district plan rules is legally questionable, due to the changing nature and editions of such documents. As a result, the practice is to include rules that state the intent of the standards or Codes of Practice. Reference can then be made in the explanation to the rule that adherence to a suitable standard or Code of Practice will be deemed to be a suitable means of compliance.

Examples of hazardous facilities that can be exempted from the HFSP, under the above stated assumptions, include:

- The retail sale of liquid fuel, up to a storage of 100,000 litres of petrol in underground storage tanks and up to 50,000 litres of diesel, provided that the *Code of Practice for the Design, Installation and Operation of Underground Petroleum Systems* (Department of Labour OSH, 1992) is adhered to.
- Retail LPG outlets, with storage of up to 6 tonnes (single vessel storage) of LPG, provided that the Australian/New Zealand *Standard AS 1596:1997 – Storage and Handling of LP Gas* is adhered to.
- The use, storage and transport of hazardous substances by teaching and research laboratories, provided that the following Standards are adhered to:
  - AS 2982.1:1997 (or more recent amendments/editions) – Laboratory Design and Construction
  - AS 2243.1:1997 (or more recent amendments/editions) – Safety in Laboratories – General
  - AS 2243.2:1997 (or more amendments/recent editions) – Safety in Laboratories – Chemical Aspects
  - AS 2243.3:1995 (or more recent amendments/editions) – Safety in Laboratories – Microbiology
  - AS 2243.5:1993 (or more recent amendments/editions) – Safety in Laboratories – Non-ionising Radiation
  - AS 2243.6:1990 (or more recent amendments/editions) – Safety in Laboratories – Mechanical Aspects
  - AS 2243.8:2001 (or more recent amendments/editions) – Safety in Laboratories – Fume Cupboards

- AS 2243.9:1991 (or more recent amendments/editions) – Safety in Laboratories – Recirculating Fume Cabinets
- AS 224310:1993 (or more recent amendments/editions) – Safety in Laboratories – Storage of Chemicals.

As ERMA will progressively introduce Codes of Practice to assist with HSNO compliance, district councils may consider that the HSNO Codes of Practices provide an appropriate basis for exempting a hazardous facility if the above conditions are complied with.

The Palmerston North City Council (1996) has also introduced an exemption for temporary military training activities. Similar to other exempt activities, temporary military training activities are controlled activities subject to specified hazardous substance quantities. Matters of control include compliance with minimum performance standards.

Section 8 provides a translation of the above exemptions into district plan rules.