

# Hazardous substances

How can we improve the management of hazardous substances in our regional plans? This is a summary of our initial ideas.

## What are hazardous substances?

Hazardous substances are substances which present a danger to people and the environment due to their chemically reactive, explosive, flammable, corrosive, toxic, ecotoxic or disease causing nature. A variety of substances fall into this category including fuels, pesticides, metallic products (e.g. copper used in timber treatment) and liquid waste produced in landfills (leachate).

Hazardous substances are commonly used throughout the region and are an important contributor to our economic and social wellbeing. However, when they are poorly managed hazardous substances can contaminate land and water, which has the potential to affect human and ecological health.

This topic encompasses two key components:

- Activities that have the potential to contaminate land or water (solid waste disposal to land and the use or disposal of hazardous substances); and
- Management of land contaminated by historic activities.

This topic does not include:

- Subdivision or change of use on contaminated land (addressed by district plans);
- The use, storage, and transport of hazardous substances on land (addressed by district plans);
- Burning hazardous substances (covered by air quality topic); and
- The discharge of effluent (covered by water quality topic).

## Overview of the regional plans review

This is one of 10 summary reports for the review of Northland's regional plans.

Northland has three regional plans:

- Regional Air Quality
- Regional Coastal Plan
- Regional Water and Soil Plan

We are required to review the regional plans every 10 years. We have reviewed all three regional plans at the same time.

The review is the first step to prepare a new regional plan. The review looks at:

- What we know about our resources and their use;
- Lessons learnt from administering the regional plans
- Current legal and policy drivers; and
- Feedback from key stakeholders and tangata whenua

The review concludes with options or recommendations for the new regional plan.

We've split the review up into 10 topics:

- Water quality
- Water quantity
- Marine ecosystems and biodiversity
- Coastal water space
- Air quality
- Significant natural heritage values
- Māori participation in resource management
- Natural hazards
- Infrastructure and mineral extraction
- Hazardous substances

For more information go to - [nrc.govt.nz/newregionalplan](http://nrc.govt.nz/newregionalplan)

# What needs to change in the regional plans?

## 1 Discharges from contaminated land

The Regional Water and Soil Plan has controls in place for the discharge of hazardous substances to land and water. These controls focus on trade and industrial activities (sections 20 and 21) with other activities being addressed through a general catch-all rule (section 23.3). Both rules require resource consent to be obtained to discharge hazardous substances to land or water. They apply to new and historic hazardous substance discharges. The intention is that the resource consent process is used to ensure controls are in place to protect the environment from the potentially negative impacts hazardous substances can have on water quality and ecosystems..

Feedback from council staff and other stakeholders indicates that these rules work well for activities that involve on-going or anticipated hazardous substance discharges and that there is support to maintain the existing discretionary status. The existing regime is seen as an appropriate mechanism to discourage hazardous substance discharges while providing an opportunity to discharge where environmental effects can be managed to an acceptable level.

Other key point made by stakeholders are that that industry specific education is crucial to improving environmental performance / compliance and council needs to be able to exercise discretion around when it enforces these rules.. Accidents do happen from time to time and council officers need to have the ability to exercise discretion in instances where a discharge is likely to have less than minor effects. It is generally accepted that there is some discretion in the application of s84 of the Resource Management Act and some discretion can be exercised when enforcing plans with the Environment Court generally accepting there are often better courses of action than enforcement. In the past council has used its discretion and has not taken enforcement action where small discharges have resulted in less than minor environmental effects (i.e. where a lawn mower fuel container has been knocked over). If these rules are carried through to a new regional plan it is expected that discretion will be exercised in similar circumstances.

While the existing rules are working well in some situations the review has highlighted that they do not work as well for accidental, historic and passive discharges. In practice the rules are infrequently applied to historic and passive discharges of hazardous substances which has lead to inconsistent application of the rules. For example resource consent was required for a passive discharge of fuel in Kaikohe but the requirement to apply for resource consent for an equivalent discharge at Mangawhai was not enforced. This is an issue in terms of equity for applicants and increases the risk of negative environmental effects and legal implications for council.

Also, while council is aware of many potentially contaminated sites, the current rule requires council to monitor and demonstrate non-compliance. A lack of resources to proactively undertake this work means that the majority of these sites have not been confirmed as being contaminated and remediation has not taken place.

While this review has identified some administration issues water quality monitoring has not signalled that the presence of hazardous substances in our water ways is a significant issue at this time (with the exception of a handful of sites that are being managed to improve water quality).

Lastly, the Regional Water and Soil Plan provides no guidance for how contaminated sites should be managed<sup>2</sup>, and therefore there is a risk of inconsistent and inappropriate controls being applied.

### 1.1 Possible changes to the regional plans

- Introduce policy articulating council's expectations for hazardous substance discharges and for monitoring and remediating contaminated land. It is anticipated that councils expectation will be for new hazardous substances discharges to be avoided and that contaminated sites are to be remediated unless it can be demonstrated that there is no risk to water quality
- Retain rules discouraging the discharge of hazardous substances to land and water to avoid contamination of land<sup>3</sup> or water.
- Introduce provisions specifically relating to discharges from contaminated land.
  - Contaminated sites should be managed to avoid migration of contaminants from the site and ensure contamination does not have adverse effects on surface water or groundwater.
  - This will be done by setting limits for acceptable concentrations of contaminants in soil (onsite) and/or water at the boundary (groundwater and surface water). Acceptable levels of contamination will reflect ANZECC and Ministry for the Environment Guidance except where natural background levels of contaminants exceed these guideline values.
  - Where these standards cannot be met resource consent will be required and will be used to assess the nature of contamination on the site, the impacts on the environment, and methods for remedying or mitigating those effects.
  - This solution however will not deal with the issue of resourcing the 'proving' of non-compliance. This will require further consideration.

## 2 Use of waste oil for dust suppression on unsealed roads

A high percentage of roads in Northland remain unsealed. During periods of dry weather, dust from unsealed roads can be a nuisance for nearby residents and in some instances may exacerbate existing respiratory illnesses, particularly when dry weather coincides with increases in traffic. Increases in traffic on the region's unsealed roads is typically sudden and of limited duration, resulting from temporary activities (for example, harvesting plantation forestry), in which case sealing of these roads may not be practicable.

One option to manage the dust is to use dust suppressants.

The Regional Water and Soil Plan currently states that:

- the use of lignin-based products for dust suppression on unsealed roads is a permitted activity<sup>4</sup>;
- The use of bituminous emulsions<sup>5</sup> and unused or un-contaminated oil for dust suppression are discretionary activities; and
- The use of waste oil<sup>6</sup> as a dust suppressant is currently prohibited.

Since the Regional Water and Soil Plan was developed the use of dust suppressants has evolved. Lignin based dust suppressants are now rarely used because of poor performance

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<sup>4</sup> Rule 23.1 of the Northland Regional Water and Soil Plan

<sup>5</sup> An emulsion can be defined as a dispersion of small droplets of one liquid in another. Bitumen emulsions are generally bitumen dispersed in water with the aid of a small quantity of emulsifying agent.

<sup>6</sup> During use, oil becomes contaminated with substances that are hazardous to human health and the environment, including heavy metals and polyaromatic hydrocarbons, some of which are potential carcinogens

and unused oil is rarely used because of its cost. Refined oils products such as ‘dustlock’ are used from time to time over short stretches of road and other products such as light bituminous coatings are being tested. However dust from roads continues to be an issue.

Over recent years there has been a call from some district councils and some members of the public to allow the use of waste oil as a low-cost dust suppressant. Waste oil is used as a dust suppressant in Gisborne, Hawkes Bay, Otago and Southland.

The key concern with the use of waste oil on roads are that waste oil has the potential to reduce water quality and effect the healthy functioning of aquatic organisms and that waste oil can have carcinogenic and non-carcinogenic effects on the health of people who come into contact with treated dust. Woodward-Clyde investigated these effects for the Ministry for the Environment in 2000<sup>7</sup>. The key findings were:

- Road oiling is likely to have an impact on sediment quality and water quality where it is applied within seven metres of a watercourse.
- Human health impacts are a concern particularly where exposure is over decades.
- Health risk can be decreased by, for example, washing fruit and vegetables before consumption, not allowing dairy cows to graze roadside verges and increasing the setback of vegetable gardens from the road.

Feedback on the use of waste oil to date has been mixed. Some district councils and ratepayers are supportive of the regional council allowing the use of waste oil on unsealed roads. Other stakeholders, including Northland District Health Board and Whangarei District Council staff would not support reducing the controls on waste oil as a dust suppressant. Whangarei District Council roading staff do not see waste oil as a practical solution to their districts dust issues. They stated that using waste oil on unsealed roads is no longer economically viable. The product needs regular application to be effective, the price of waste oil has increased and the volume of waste oil available has significantly reduced over recent years.

## 2.1 Possible changes to the regional plans

The prohibited status of using waste oil as a dust suppressant should be reviewed. A non-complying activity class may be more appropriate than the current prohibited status. It would provide the option for an applicant to demonstrate the environmental and health effects can be managed to an acceptable level (i.e. ANZECC and Ministry of Health guidelines).

## 3 Impacts of small landfills on farms is not well understood

Many of Northland’s rural areas do not have easy access to recycling or municipal land fills to dispose of their waste. While there are some waste collection programmes in place, for example, Plasback<sup>8</sup>, the majority of rural waste needs to be disposed of in other ways.

The Regional Water and Soil Plan provides for small-scale landfills (fewer than 12 m<sup>3</sup>per annum) as a permitted activity. The rules focus on internalising the effects of a landfill within the property and protecting water quality. A key assumption is that small volumes of waste produce small volumes of leachate which can be managed through setbacks from watercourses and groundwater. This is a similar approach to other regions.

Studies from the Canterbury region indicate that traditional practises of burning and burying waste account for the majority of rural waste disposal. The study also indicated that the

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<sup>7</sup>Woodard-Clyde for Ministry for the Environment, Assessment of the effects of combustion of waste oil and health effects associated with the use of waste oil as a dust suppressant, August 2000.

<sup>8</sup> Plasback is a product stewardship scheme to recover used farm plastics for recycling.

volume of waste produced was higher than initially thought with an average of 9.2 tonnes of non-natural waste (scrap metal, hazardous waste, construction and demolition waste, agricultural plastics, waste agrichemicals and their containers, feed and seed bags, and animal health products) and 0.5 tonnes of domestic waste<sup>9</sup>. There is very limited information available on the composition and volume of rural waste in Northland. Assuming that the characteristics of rural waste in Northland are similar to that produced in Canterbury, then the volume of waste produced on average per farm is likely to be greater than 12 m<sup>3</sup>. Assuming that most of it is buried, it means that many farm landfills do not meet the permitted activity rule in the RWSP. Only four resource consents have been granted since 2004 for non-municipal landfills over 12 m<sup>3</sup>.

There are a number of potential issues that result from current rural waste practises:

- In theory, increasing the volume of waste to landfill increases the risk of leachate contaminating groundwater and surface water;
- Legacy of contamination – landfills are hazardous facilities and as such regional councils should include them on their contaminated sites registers. Currently there is no requirement for small-scale landfill operators to notify council on the location of their landfill.
- Council does not know what waste is being disposed of or how much waste is being disposed of. Therefore it is difficult to determine the appropriateness of the existing permitted activity rule or gauge environmental effects.

### 3.1 Possible changes to the regional plans

Council does not currently have information on the volume of waste being disposed of through small-scale landfills in Northland. In addition, discharges from permitted small-scale landfills have not been monitored (volume and composition of leachate and if it is migrating to groundwater or surface water). Therefore it is difficult to assess the effectiveness of the current rules or determine if changes are required until this information is available. Several regional councils are looking at this issue and national guidance is expected mid to late 2015.

## 4 Clean fill and managed fill

Clean fills<sup>10</sup> are low-cost alternatives to landfills for “inert” waste that will have potentially no adverse environmental effect, or only minor effects. There is no need for the construction of liners, leachate collection systems or gas control systems, and the required environmental monitoring can be reduced.

The Regional Waste and Soil Plan states that clean filling is a permitted activity if less than 1000m<sup>3</sup> are deposited within any 12 month period, subject to certain standards. Operations depositing a greater volume require resource consent (discretionary)

Key issues identified by stakeholders and the review to date include;

- Disparity between permitted activity thresholds for earthworks (5000 m<sup>3</sup>) and clean fill (1000 m<sup>3</sup>)
- Difficult to determine volumes of fill once it has been deposited.
- There is no requirement to have sediment controls for clean fill sites.
- There is no middle ground between clean fill and land fill. Therefore any fill that does not meet the strict clean fill criteria must be disposed of at a landfill at a much higher

<sup>9</sup> Environment Canterbury, Non-natural Rural Wastes Site Survey Data Analysis Report: Full Report R13/52 , June 2013.

<sup>10</sup> Clean fill is soil, rock, concrete or other material that is not combustible, organic and is not subject of biological or chemical breakdown.

cost that may not reflect the environmental risk. For example road side slips often contain small amounts of vegetation. Under the current regime it does not meet the clean fill criteria and must be disposed of at landfill.

- Key controls for clean fill are to control the material deposited and the sediment discharged.

#### **4.1 Possible changes to the regional plans**

Council's proposal is to retain clean fill and land fill activities in the new plan and to roll over the existing controls for land fills to a large extent. It is also proposed to introduce a new category called managed fill to cater for lightly contaminated fill i.e. clean fill that contaminated with some biodegradable material or minor chemical contamination.

Land fill, clean fill and managed fill activities will be required to have sediment controls in place (TP901 or similar). Another change suggested is to move away from volume based thresholds to thresholds based on area exposed / area without vegetative cover. It is expected that this will make it easier for the public to determine when they are complying with the permitted activity rule and also make it easier for council to enforce the rules.