
CLOSED LANDFILLS POLICY 2003

Section 3

Managing Exposure to Risks

Objective:	To ensure that Council meets its landowner and regulatory obligations under the Resource Management Act, Building Act and Building Code, Health Act and Health and Safety in Employment Act to control the actual or potential effects of the use of land on or adjacent to landfill sites
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This section is concerned with ensuring that the potential hazardous effect on human health and environment from closed landfills is mitigated in strict compliance with health and safety rules. Monitoring and mitigation measures will reduce the level of potential risk while land-use management, education, information and management of landfill assets and controlling the sale of land will reduce the level of human exposure.

Council as landowner, must comply with the requirements of Regional and District plans developed under the RMA, the Health and Safety in Employment Act and the Health Act.

The RMA imposes a general duty on **all** persons to avoid, remedy or mitigate any adverse effects on the environment from activities carried out by or on behalf of those persons (s. 17). It also requires compliance with Regional and District plans and / or requiring persons to obtain resource consents. If anyone is actively in a way that causes or exacerbates the release of contaminants from a closed landfill, that person could, depending on the circumstances be held responsible for the breach of the RMA and or to avoid remedy or mitigate the effects. Enforcement action may, again depending on the circumstances, be taken against that person for not doing so.

As landowner, Council also has a level of responsibility under the Health and Safety in Employment Act and the Health Act.

The Council's potential responsibilities under the RMA arise from both being a landowner and from its statutory powers and duties as a territorial authority. The statutory responsibilities include the functions conferred under section 31 of the RMA to control any actual or potential effects of the use, development or protection of land. Section 35 confers responsibility to gather such information, and undertake or commission such research, as is necessary to effectively carryout its functions under

the Act. The Council also has wide ranging enforcement powers and duties under the RMA.

However, parallel responsibilities are imposed on Regional Councils under sections 30 and 35 of the RMA. Under section 30 (1)(f) of the Act, Regional Councils are responsible for the control of discharges of contaminants into, or onto land, air and water. Regional councils also have similar enforcement powers and duties.

Under the RMA therefore, it is arguable that the responsibilities for controlling the adverse effects of contaminated sites are shared between territorial authorities and Regional Councils.

3.1 Information

Policy:	To ensure that utility operators, the public and landowners are informed, as necessary, of the risks posed by closed landfills.
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Under section 44A of the Local Government Official Information and Meetings Act 1987, a territorial local authority must issue a Land Information Memorandum (LIM) in relation to matters affecting any land in the district of the authority.

LIM's must include information that is known to the territorial authority as to any 'special feature or characteristic of the land' including the likely presence of hazardous contaminants that is not apparent from the district plan. In addition, the territorial authority must provide 'information concerning any ... notice [or] order... affecting the land... previously issued by the territorial authority'. This would include an enforcement order or abatement notice issued under the RMA.

Methods to implement this policy are:

- Develop a general communication strategy to inform people of the LIM's process and the need to use it.
- Develop protocols to ensure that appropriate information on sites adjacent to and at risk from closed landfills is consistently included in LIM's and PIM's.

WCC files contain information on contaminated sites, including closed landfills that is not in an easily accessible form or linked to property boundaries, and may therefore not be included in LIM's and PIM's. The establishment of guidelines and protocols will ensure that LIM's and PIM's issued by the Environmental Control Business Unit under the LGOIMA and the Building Act 1991 respectively include relevant information on possible landfill gas, contaminated soil risks and ground settlement.

Council will encourage potential purchasers and other interested persons to use the LIM's and PIM's systems. However, if a Purchaser does not request a LIM he or she may not receive the appropriate information on a closed landfill. To deal with this situation, work is under way to investigate other means of making information on closed landfills known to the public.

Issues have arisen in the past where residential development has encroached on a closed landfill site. To prevent further development of sites without suitable mitigation measures in place, it is essential to know the extent of the fill in a closed landfill, and the level of accuracy of that information. Where the extent of the fill is uncertain, Council will take a conservative approach to advise the need for investigations before approving development in the area of uncertainty.

For those landfills, which are classified as lower risk, the information is currently in the LIM's and PIM's systems or the District Plan therefore the level of risk from development on or near a closed landfill site will be less.

3.2 Dissemination of information: managing work practices

Policy:	To ensure that utility operators who carry out works on or around closed landfills (including internal WCC staff and contractors) undertake work according to clear guidelines and standards.
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Methods to implement this policy are:

Develop a process with utility operators to ensure long term best practice.

Work via this process to:

- apply appropriate safety provisions guidelines for the sites (e.g. Department of Labour Exposure Limits and Short Term Exposure Limits (for both gases and soil contaminants) for maintenance and service workers;
- develop and apply protocols for preventing gas migration along newly installed service corridors (e.g. sealing service trenches and ducts at critical locations and providing passive vents on the landfill side of the seal);
- develop and apply protocols for minimising the risks of the excavation of contaminants;
- develop and apply guidelines for retrofitting of existing service corridors, where gas migration problems have been previously identified.

Assess whether the development of sealed utility corridors through and around Former Landfill sites is appropriate in high-risk cases.

The sealed utility corridor would prevent gas migration and avoid exposure to contaminated fill material. All underground utilities would then be required to locate within these corridors.

Assess the appropriateness of using signage and utility management plans at high priority sites.

Ensure that Council staff and contractors working on the sites of closed landfills are aware of all hazards to meet the requirements of the Health and Safety in Employment Act.

During the course of repair and maintenance work required for structures and services, which are, located on closed landfill sites, workers may be exposed to either elevated levels of soil contaminants or landfill gas. Persons who control a workplace must take all reasonable steps to ensure that people in the place of work or in the vicinity are not harmed by hazards. This may include hazards arising from a contaminated work site. Council's responsibility under this Act is limited to its status as workplace controller and an employer. Since many of Council's open space reserves are on closed landfills, Council has a responsibility to ensure its staff and contractors who work on these sites are protected from the risks.

Increased risks are likely to occur only during excavation operations, although these risks are not expected to be high.

3.3 Managing Land-Uses

Policy:	To ensure that the intensification and extension of land-uses, in particular residential land-uses, is managed in a way to prevent increased population exposure to potential risks from closed landfills.
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Methods to implement this policy are:

- Consideration of the location and potential impacts of closed landfills as part of wider urban development planning processes.
- Review where necessary the appropriateness of District Plan provisions to control the actual or potential effects of the use or development of closed landfills and adjacent sites.

The District Plan already has provisions dealing with subdivision and development of contaminated sites. For time to time, there will be a need to revisit those provisions in light of any changes to the District Plan to ensure they remain appropriate.

Before any additional provisions are included in the District Plan section 32 of the RMA requires the Council to, assess whether the provisions are necessary to achieve the purpose of the Act whether inclusion in the District Plan is the most appropriate means for achieving the purpose, and evaluate the costs and benefits for each possible method to achieve the purpose.

A change to the District Plan could then be initiated to the extent that this is appropriate, to deal with the actual or potential effects of the use or development of closed landfills and affected adjacent sites.

Policy:	That any changes in use of any closed landfill site are managed to minimise the risk of exposure to the adverse effects of any contaminant that may be present on that site.
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Methods to implement this policy are:

- Continued implementation of District Plan rules as set out in Wellington City Council Operative District Plan 2000 and any changes to or reviews of that District Plan.

3.4 Disposal of Closed Landfill Assets

Policy:	To only make closed landfills available for passive recreation or active recreation where it is clear that there are no known environmental issues or hazards
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Methods to implement this policy are:

- To implement a general "no disposal" policy for closed landfills owned by Council.

Any local authority has the potential to sell a closed landfill. However prior to deciding on disposal, it needs to be assured that there is no potential adverse effects to human health or environment, that all potential risks and liabilities are known, and that future development will not proceed in an uncontrolled manner.

The principle difficulty is that the Council may become exposed to potential future liabilities after the land is sold a number of times and subsequent purchasers/ vendors are unaware of potential risks. An additional issue may arise where previous owners have not adequately maintained mitigation measures, such as gas collection systems and landfill gas continues migrating away from the fill in the closed landfill.

In the cases where Council does not own the site of a closed landfills which it formerly operated, the landowner may not intend to keep the land in an open space or other passive use. There is therefore a need to recognise the effects of potential development, and to put in place appropriate mechanisms to restrict or control that development.

There are a number of measures that can be utilised including zoning, other development controls, contractual arrangements, or potential acquisition for reserves purposes.

3.5 Maintenance and mitigation measures for closed landfills

Policy:	To promote appropriate measures to mitigate the potential risks of closed landfills.
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Mitigation plans are aimed at the preservation of the integrity and effectiveness of the final cover and any amenity plantings, operation and maintenance of any leachate collection systems, monitoring groundwater quality and maintaining and operating any gas collection systems.

Management Plans provide a mechanism for the monitoring of the proposed after-use of the site, physical investigation, and checking of any structures which have been erected on or near the boundary of the closed landfill and provide an emergency management plan in case of adverse environmental effect or natural disaster.

Methods to implement this policy are:

- Monitoring and Investigation - to ensure that Council has in place an appropriate strategy to monitor and investigate the potential risks posed by closed landfills in Wellington.

The Council is required under the RMA to gather information, and undertake or commission such research as is necessary to monitor the state of the environment and to take such action as may be necessary under the RMA. The investigation of closed landfill sites where Council is still the landowner can be readily achieved.

The Council will continue to gather information about other sites. However, the Council has limited ability to actively investigate such sites in other ownership (except with the concurrence of the owner), or to require other parties to investigate and assess them.

- Undertake a staged programme of initial assessment to identify those landfills which pose a potential hazard to human health and safety and the environment from landfill gas, leachate, site contamination and subsidence and determine priorities for mitigation works where appropriate.

The assessment programme would typically include:

- Site engineering assessment (gas , leachate, stormwater systems etc);
- Evaluate construction and other disturbances that occur on the landfill during the post-closure period;
- Water quality monitoring (leachate, streams and or groundwater);
- Assessment and evaluation of potential gas migration routes and receptors (e.g. site offices and buildings, monitoring bores, electrical or pipe conduits, manholes and utility service corridors);

- Assessment of capping integrity and vegetation.

Once an initial hazard assessments are completed, classification of sites and mitigation works have been completed ongoing monitoring programmes will be implemented to ensure the level of risk associated with those sites do not increase over time.

The monitoring frequency will be based on the degree of landfill stabilisation and gradually reduce with time if warranted. Reports on the inspections and monitoring will need to be prepared for appropriate action.

Further information may be required on a site by site basis for each closed landfill. However, obtaining a complete and comprehensive set of information for each closed landfill is an extremely costly exercise therefore sites which present a high risk will be given priority for further investigation.

The programme is staged and contains the following detailed approach:

- Hazard assessment in line with the risk posed by each landfill using the Ministry for the Environment Guide to the Management of Closing and Closed Landfills in New Zealand;
- More detailed site investigation of those sites where the potential level of risk to human health and the environment has been assessed as high;
- Identification of the appropriate preventative or remedial action needed;
- Peer review site investigations on a case by case basis to ensure risk assessment is accurate and recommended actions are appropriate.

Due to the inherent uncertainty in estimating the risks posed by closed landfills and in particular the volume of gas which would be generated in the landfill, it is prudent to obtain peer reviews of all assessments and proposals for mitigation measures.

The assessment of risk closed landfills pose to human health or the environment from the contaminants on site is essential to ensure that the contaminated sites provisions in the District Plan are complied with, as are any applicable provisions in the various regional plans. However, it is noted that the majority of closed landfills are zoned Open Space, and that there are currently no contaminated site provisions for these sections of the District Plan.

- Determine the maximum distance landfill gas is likely to migrate away from identified former landfill sites in Wellington

To assess the risks that closed landfills pose, their impact on the surrounding environment must be identified. Commonly used international standards for landfill gas migration distances may be extremely conservative in the Wellington geology and an appropriate standard will be developed for the local environment.

- Determine the level of certainty of the currently identified extent of the fill material in closed landfills. For those closed landfills, which have been identified as requiring further work, ascertain extent of the fill.

As noted in Section 3, the closed landfill area may have been encroached upon by other land-uses. Investigating the extent of the fill area for those closed landfills that have been identified as requiring further work is a key part of the investigation programme.

- Make information available as necessary to the owner/occupier of sites of closed landfills and work with owner/occupiers to identify the most appropriate way of dealing with either contamination, subsidence and/or landfill gas issues;
- Provide information on possible mitigation options for the adverse effects of closed landfills for new developments on or adjacent to closed landfill sites.

The Council has experience in assessing mitigation options and will work with owners and occupiers to find the best practicable solution to reduce the risk to such persons and users of the site.