

EPA Board Landfill Subcommittee

Report—EPA Landfill Guidelines

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ISBN 978-1-921125-42-3

May 2006

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CONTENTS

1	INTRODUCTION.....	1
	1.1 Background.....	1
	1.2 Purpose	1
	1.3 Process.....	2
2	KEY FINDINGS	3
	2.1 The role of the Guidelines.....	3
	2.2 Role of the EPA.....	4
	2.3 Technical issues	5
	2.4 Strategic issues.....	5
	2.5 Implementation and timeframes	6
	2.6 Financial impacts	7
3	RECOMMENDATIONS.....	10

1 INTRODUCTION

1.1 Background

Poor environmental practices have universally led to a degradation of the world's water, air and land resources. National and international environmental protection authorities are continually refining policies, regulation, practices and procedures with the aim of minimising the risk of environmental harm as part of transitioning to a sustainable future.

Landfill has an important role to play as part of the transition required to achieve sustainable resource recovery and waste management—the zero waste concept. The role for landfill primarily involves accepting those residual materials that are unable to be 'avoided, reduced, reused, recycled or recovered'. It is therefore vital that a precautionary approach be adopted to adequately address the environmental risks of landfill facilities.

The Environment Protection Authority (EPA) Landfill Guidelines are intended to provide guidance to landfill operators, developers, planning authorities and regulatory bodies on the site selection, development, design, construction, operation, closure and post-closure management of municipal solid waste and commercial and industrial general waste landfill facilities so that they can comply with *Environment Protection (EP) Act 1993*.

The EPA Board was aware of some ongoing concerns still held by a few rural councils and the waste industry, for example, as they relate to compliance costs, and established the Landfill Subcommittee at its Board meeting on 20 June 2006. The Landfill Subcommittee was created specifically to consider issues as they relate to the EPA Landfill Guidelines.

1.2 Purpose

The EPA Board agreed that the Landfill Subcommittee would:

- receive submissions from stakeholders, including public and private sector, on the economic, social and environmental impacts of the EPA Landfill Guidelines at a local or regional level
- convene meetings, as required, to enable presentations from stakeholders on the impact of the Guidelines
- seek response from the EPA on all relevant matters raised in submissions and presentations
- review all submissions and make recommendation to the EPA Board on its findings.

1.3 Process

The Landfill Guidelines were prepared to provide:

- more detailed guidance for planning, designing, operating, monitoring and closure of landfills based on environmental risk
- greater transparency in the development and implementation of standards
- more assurance for short-, medium- and long-term planning of waste management facilities
- advice on compliance with the EP Act, including compliance with the general environmental duty.

The Board established the Landfill Subcommittee, to specifically consider issues as they relate to the EPA Landfill Guidelines.

The Landfill Subcommittee:

- viewed presentations from stakeholders on the impact of the Guidelines
- reviewed all submissions received
- sought responses from the EPA on all relevant matters raised in submissions and presentations
- submits this report to the EPA Board on its findings, as required, by 1 December 2006.

Currently the implementation plan for the EPA Landfill Guidelines is as follows:

- the Landfill Guidelines will apply to all new developments (new developments and any new development within an existing site)
- 1 July 2008
If a landfill is closed by this day, or scheduled for closure with closure plans completed the Guidelines do not need to be implemented in full, however, some aspects of the Guidelines, as applicable to an individual site, may be applied.
- 1 July 2010
All operational landfills must comply with the Guidelines.

This staged implementation, it is understood, was designed to assist local councils and other landfill operators in the forecasting and planning of short-, medium- and long-term financial requirements and allocation of resources with regard to waste management.

2 KEY FINDINGS

The Subcommittee, having considered the submissions received, has chosen to make its report in accordance with the following issues:

- the role of the Guidelines
- technical issues
- the appropriate role of the EPA
- strategic issues of waste management in isolated communities
- timing of implementation
- financial imposts and the role of government.

2.1 The role of the Guidelines

Legal status

Of considerable concern to stakeholders was the legal status of the Landfill Guidelines, and a clear concern that they would be enforced without regard to localised circumstances.

In general, guidelines appear across everyday society. All sections of our communities and councils alike, regularly find themselves using, adopting, or following, guidelines. For example, Zero Waste SA (ZWSA) have an established set of guidelines which must be followed if an applicant wishes to be considered for ZWSA funding. A guideline is intended to provide guidance as to how compliance with a specific piece of legislation can best be achieved.

The EPA Landfill Guidelines are no different. Current proven industry standards, knowledge and experience are reflected in the Landfill Guidelines. The Guideline states what it is that the EPA regards as a minimum requirement, ie a benchmark for the design, construction, operation and closure of landfills in South Australia.

It is intended that the EPA uses the Landfill Guidelines as a tool to assess development applications and compliance matters, to draft licence conditions and to assess landfill proposals. These Guidelines are to be applied uniformly across the waste industry in South Australia and ensure a consistent and transparent EPA approach to landfilling. It is essential that the EPA communicates its expectations to stakeholders and the guidelines are the most appropriate avenue in which this can occur.

The Landfill Guidelines structure provides objectives and required outcomes, and presents a set of suggested measures as to how to achieve those required outcomes. This addresses continual demands by stakeholders to the EPA for direction and guidance. However, the Guidelines provide flexibility by giving proponents the option to use other technologies should they be proven to deliver equivalent performance, and there is a clear expectation that they are to be applied with a clear understanding of any special local circumstances that exist.

Discretionary application of Guidelines

The Guidelines recognise that existing and proposed landfill sites are each subject to a different suite of individual site-specific circumstances. These circumstances fall into two categories, being the physical, and the environmental ie location and demographic characteristics.

It is important that the EPA does not use a 'one glove fits all' approach to guideline implementation across the state, as it would be unreasonable to expect that any two sites will ever share the same characteristics. Based on a risk-based approach, the Guidelines set an acceptable standard for the design, construction, operation and closure of landfill sites, however inbuilt within the Guidelines are mechanisms that allow the consideration of individual site-specific circumstances.

One such mechanism is the establishment of five categories of landfill. This classification combines the waste disposal rate and total landfill capacity with site conditions that may give rise to risk to protected environmental values and the potential to generate leachate based on the risk of water flow into waste, waste moisture content and climate conditions.

Chapter 14 of the Guidelines, by virtue of its prescriptive nature, provides a high level of in-built flexibility and reduces the level of ambiguity in previous drafts of the Landfill Guideline. This chapter gives guidance as to how a variation, or the development of an alternative to the Landfill Guidelines requirements, should be developed, before submission to the EPA. It specifically provides scope to those individual landfill operators who wish to deviate from measures outlined in the Guidelines.

The Subcommittee is of the opinion that Chapter 14 embodies an acceptable process; and it is evident from comments received during this round of consultation that it was of major interest to the majority of stakeholders.

This EPA approach to landfill guideline implementation should result in acceptable outcomes that are commensurate to the particular site circumstances, whilst maintaining minimum environmental and landfill construction and operational standards. To demonstrate this by example, the EPA has applied these principles of extended discretion to the Corporation of the City of Whyalla.

In addition, EPA licence management in the future, will be conducted by a project team which includes senior specialist advisers to facilitate high-level consistent advice in the resolution of site-specific issues.

The Subcommittee supports the use of this approach, when and where warranted, whilst still maintaining 'in principle' the objectives of the Landfill Guidelines; and while continuing to maintain a landfill benchmark that will prevent or minimise potential environmental harm on protected environmental values.

2.2 Role of the EPA

A number of submissions took the view that the EPA has a role and responsibility to work with proponents and to provide advice and guidance to assist them establish their landfills.

Quite apart from the capacity of the EPA to undertake this role, the Subcommittee does not believe that the EPA can, as a regulator, also be an advisor in the design of sites. That having been said, it should be expected that officers will work closely with proponents and provide clear advice at all stages on interpretation of the Guidelines as they may apply to local conditions.

There is little option for proponents than to attempt to obtain the best possible technical advice in designing their applications. Given that there are only a limited number of consultants in this field, the Subcommittee believes that it may be appropriate for the EPA to conduct special briefing sessions for these consultants to assist them in their interpretation of requirements for their clients.

2.3 Technical issues

In considering the submissions received, the Landfill Subcommittee wishes to acknowledge the valuable contribution made by stakeholders who have taken the opportunity and time to provide detail of their specific experiences; and their perceptions of how the Landfill Guidelines may impact directly upon their operations. The Subcommittee has received further detailed information regarding certain landfill sites, both existing and proposed, that had not been previously provided.

As noted above, the Subcommittee recognises that, in applying the Guidelines, the EPA will take account of local site conditions, and will provide an opportunity for proponents to satisfy the equivalency test. Many of the submissions received on technical questions in the Guidelines should be satisfied on this point.

One recurring issue in submissions was the definition of site size. While to some extent these concerns arose from some misunderstanding as to terminology, it was also apparent that some local councils wanted to define a site area well in excess of their needs over a reasonable time frame, which led to a problem in classification. This issue is best dealt with under 'strategic issues' below.

The Subcommittee recognises the importance of the EPA Landfill Register Scorecard and Database project and recommends that the EPA finalises the project by 30 June 2007.

2.4 Strategic issues

Provision of a waste collection service is core business for local government. While it is clear that local government accepts the need for improved standards in waste disposal, it is also clear that many rural and remote councils are wedded to the provision of a local landfill facility, even where a rational analysis of the costs of that provision may suggest alternative disposal options.

Whole-of-government approach

It is generally acknowledged that there are too many small and uneconomic landfill sites in South Australia, and the Subcommittee was impressed with the submission of the Local Government Association (LGA), which called for a whole-of-government response to resolving this problem. In that sense, the LGA called for assistance to regional local governments in evaluating the most economic disposal options (including removal of waste from where it was generated), and in the closure and capping of redundant landfills.

A whole-of-government approach to waste management is a recognised concern to all stakeholders. The EPA is the state's prime environmental regulator, whereas ZWSA seeks to promote waste management practices that, as far as possible, eliminate waste or its consignment to landfill and to advance the development of resource recovery and recycling.

There is an identified need for further integration and cooperation between these two agencies. The EPA and ZWSA share common goals and objectives and consider waste management as an integrated activity including waste minimisation, resource recovery and waste disposal to landfill. Landfilling is a legitimate stage of waste management for residual waste that cannot be avoided, reused or recycled, and should not only be recognised by the EPA, but also by ZWSA and the State Waste Strategy (SWS). The Subcommittee understands that landfilling is a necessary step in the waste management process, and should be recognised by ZWSA and the SWS if a holistic and integrated approach to waste management is to occur. Financial assistance is available from ZWSA to assist with other stages of waste management, but currently is not available for improving landfilling practices or landfill rationalisation and closure. It is considered that improved communication between the two agencies is necessary to ensure EPA and ZWSA programs are aligned and are working toward common goals.

2.5 Implementation and timeframes

A theme throughout the submissions received was stakeholders concerns regarding the Landfill Guidelines implementation timeframes. The Subcommittee acknowledges this concern.

The waste industry including local government have been aware of landfill guidelines containing similar requirements to the revised Landfill Guidelines that have been in place since 1997. As a direct result of the 1997 Guidelines, some councils, and some sections of the private sector, are currently operating a number of fully compliant landfills. These organisations have successfully negated cost concerns arising from its implementation, demonstrating how guidelines have been successfully accepted and integrated into landfill operations.

Proponents must establish the total costs of waste management and work toward a solution that minimises these costs. Waste management plans can identify ways to achieve this.

Regional approaches bring the benefits of improved economies of scale through a larger quantity of waste received, and having fewer landfill sites to operate and maintain. The EPA is actively involved in the development of all regional concepts and is also directly involved with individual operators to assist with developing sustainable and cost-effective solutions to waste management.

EPA officers are of the opinion that often the best and most reliable local knowledge regarding waste management practices and site-specific circumstances can be found 'in-house' ie within existing employees or authority. These skills, knowledge and experience base should be evaluated, considered and drawn upon in the initial stages of planning, prior to engaging outside assistance.

The Subcommittee strongly recommends that stakeholders, including councils, commence proactive planning for the short-, medium- and long-term future of their waste management activities. They also believe that the implementation timeframes currently proposed within

the Guidelines provides a fair and reasonable timetable and encourages timely landfill rationalisation.

Timeframe Clarification

- January 2006—Landfill Guidelines apply to all new developments
- 1 July 2008
 - proponents either close landfills before or by 1 July 2008 OR
 - proponents must have completed a closure plan (that has been accepted by the EPA) for implementation no later than 1 July 2010.

In either case proponents would not need to implement the Guidelines in full, however, some aspects of the Guidelines as applicable to some individual sites may apply.

- 1 July 2010—all landfills must comply with the Guidelines.

The Subcommittee however encourages the EPA to exercise discretion when applying these timeframes and to have regard to an individual stakeholders planning progress, planned and executed actions and associated justifications.

Retrospectivity

The revised Landfill Guidelines are not retrospective.

The current Landfill Guidelines have been in place since 1997. This review became necessary in response to:

- a recognised need to clarify requirements for landfills (planning, design, construction, operation and closure)
- the waste management reform
- support initiatives by ZWSA and others
- ensure that waste management facilities in SA be designed, operated and closed in accordance with objectives of the EP Act
- foster sustainable waste management practices.

While technical principles and required outcomes have not changed, the revised Landfill Guidelines now provide clear guidance on how to present all relevant information and sufficient detail. In addition, consideration has now been given to a risk-based, site-specific approach.

2.6 Financial impacts

The Subcommittee is aware of the many challenges local government is facing and is sympathetic to the diverse range of issues they are facing. It is acknowledged that waste management is only one out of many issues and challenges. In addition, the Subcommittee acknowledges the even greater pressure currently affecting small remote councils.

The issue of increased costs of waste management was the foremost concern of stakeholders as it was considered as a major factor in determining strategic directions in management of their landfills. EPA licence fees, waste levy payments and the implementation costs of the Landfill Guidelines, as well as the requirements under the SWS, were also identified as additional concerns. However, the Subcommittee recommends that these costs must be accurately assessed in-depth by the industry to determine viable and sustainable waste management practices. A report was commissioned by the EPA, the Office of Local Government, LGA and ZWSA last year, entitled *Audit of Selected Rural Council Landfill facilities* (Hyder Report 2006). Its aim was to provide an independent assessment of the costs of applying modern environmental standards and practices to the disposal of solid waste in regional and rural landfill facilities; and to better inform implementation processes. The Hyder Report was based upon its assessment of:

- current costs of each landfill operation
- the cost of compliance with existing landfill licence conditions
- estimated costs for each landfill to comply with the revised draft Landfill Guidelines
- estimated cost of compliance with the revised EPA Landfill Facilities Guidelines using the EPA cost model.

Six selected rural landfills, representing different landfill categories in accordance with the revised Guidelines were chosen. A total cost approach was used to assess costs to councils. This incorporates a 'whole of landfill life' approach, including cost of land, development, operation, closure and post closure management. This method of costing landfilling activities determines the real cost of landfilling.

Historically, council landfills have been operated as a community service and not as a business and real costs have been overlooked. The report confirmed this by revealing a general lack of appropriate cost recovery in landfill operation for medium and small landfills. Inadequate future planning (ie operational, maintenance, closure and post-closure) has resulted in a persistent underestimation of waste management costs. Although Landfill Guidelines containing similar technical expectations have been in place since 1997, these planning and cost estimates have not been broadly applied and implemented by councils.

For example, many council landfill operators do not recover any costs from their sites. They expend funds in construction, operation, maintenance and closure but allow private operators to collect and keep all revenue raised. Proponents must consider facts such as these when assessing costs and cost recovery as they are factors outside the control of the EPA.

Individual proponents must evaluate the future of their landfilling practices to determine the most cost-effective and sustainable management options. These steps are crucial in establishing a waste management plan to set the strategic direction of waste management for a proponent or region. Landfilling of waste is a practice that in all probability will be required indefinitely, albeit at a smaller and smaller rate as waste production rates decline and resource recovery increases.

Some councils have used findings and recommendations from the Hyder Report to assess the Landfill Guideline implementation costs. The EPA Board has previously supported the

findings of the Hyder Report: its approach, outcomes and recommendations. The Subcommittee recommends that proponents implement a thorough planning process as a way forward. All waste management options should be taken into consideration using a total cost approach; this approach may lead to the rationalisation of landfilling operations and associated costs, and supports minimising environmental risks.

Stakeholders have identified a number of key cost imposts which will be impacting in the future:

- the pending EPA licence fee re-structure and fee increase
- the recent budget announcement increasing the waste levy
- the expected increase of licence fees pending the outcome of the licence fee review.

The Subcommittee recognises that although the waste industry is concerned about these costs, these increases are unavoidable and will not only affect the waste industry, but all other licencees across South Australia. Stakeholders are encouraged to investigate resource recovery options and strategies to reduce the amount of waste going to landfill to manage levy costs.

However, as noted above, the Subcommittee strongly suggests that information be provided to both the Minister for Environment and Conservation and the Board of ZWSA, that highlights these pressures, and fosters the provision of a whole-of-government funding approach to the achievement of the state's strategic goals for waste disposal.

3 RECOMMENDATIONS

The Subcommittee recommends that:

- the EPA should exercise discretion when applying Landfill Guidelines implementation timeframes and to have regard to an individual stakeholder's planning progress, planned and executed actions, and associated justifications
- the EPA to have careful regard to local site conditions when making decisions under the Landfill Guidelines
- the EPA to conduct special briefing sessions for consultants to assist them in their interpretation of Landfill Guideline requirements
- the EPA continues to meet regularly with officers of ZWSA to align action plans and coordinate future expectations for the waste industry
- the EPA Landfill Register Scorecard and Database project be concluded by 30 June 2007
- the government be encouraged to provide funding for rural and regional communities to support the adoption of a regional approach to waste disposal and the closure of uneconomic and inappropriate landfills
- the Minister for Environment and Conservation be advised of the importance in implementing a whole-of-government approach to assist with the achievement of the South Australian State Waste Strategy
- the EPA provide written advice on site-specific, operational issues to those individuals or organisations, who seek clarification, within three to six months of receiving an enquiry
- the EPA Landfill Guidelines be made available to the public
- this report be forwarded to those parties that made submissions.