

Assessment of composting works

Updated September 2017

EPA 675/17: This guideline will assist a relevant authority (as defined by the Development Act 1993) to undertake an environmental assessment of proposals for composting works.

Introduction

The information contained in this guideline is in lieu of the advice given by the Environment Protection Authority (EPA) in responses to referred development applications prior to removal of the activity from Schedule 21 of the *Development Regulations 2008*.

For the purposes of this guide, composting works include works at which mushroom or other compost, organic fertiliser or soil conditioner with organic components are produced or are capable of being produced at a rate not exceeding 200 tonnes per year. When a composting proposal exceeds this scale it must be referred to the EPA as a Schedule 8 Item 11 Schedule 22 (6)(3) activity of the Development Regulations 2008.

Further information on composting can be found in the [Compost guideline](#).

Assessing environmental issues

Air quality and noise

The EPA guideline [Evaluation distances for effective air quality and noise management](#) recommends evaluation distances between developments that may result in noise, odour, or polluting air emissions, and sensitive land uses¹. The following evaluation distances are recommended for composting works:

- >20 and <200 tonnes/year – 300 m
- <20 tonnes/year – 100 m.

If the proposed development is located within the recommended evaluation distance the applicant should demonstrate that a lesser distance would be appropriate. The Evaluation distances guideline explains the type of information to be provided to facilitate smooth processing and assessment of applications/submissions, avoiding unnecessary delays and costs to proponents.

The potential for offensive odours from the composting process is generally related to the type and condition (eg nutrient and moisture content, porosity) of the organic waste that comes in and the composting method employed. High nutrient

¹ Sensitive land uses include, but are not limited to, residential housing, child care centres, educational establishments, hospitals, nursing homes, parklands and recreation areas. Industrial and commercial premises can also be affected by noise and air emissions.

wastes (eg manures, animal carcasses) and anaerobic wastes have the greatest potential to generate offensive odours and need to be incorporated into the composting process immediately or undergo pretreatment to minimise odour emission. Composting processes should be designed and operated to achieve appropriate temperature and moisture levels and to ensure that composting material is maintained in an aerobic condition. Material that has completed the composting process should be stored in a way that prevents anaerobic conditions and the release of offensive odours. These measures should also minimise the potential occurrence of fires during the composting process.

Composting activities also have the potential to cause environmental nuisance by generating dust from vehicle movements within the site, formation and turning of windrows, material screening and stockpiling or loading compost for transport off site. Measures need to be taken to minimise the potential for dust to be generated and migrate off site. This can include sealing and 'wetting' access roads and activity areas, maintaining compost windrows and material stockpiles at a suitable moisture content and minimising the quantities and height of material stockpiles on site. Screening, using earthen walls and thick vegetation and misting sprinkler systems may also assist in minimising the migration of dust offsite.

Noise nuisance includes that generated from trucks transporting compost to and from the site, grinders, turners and screening equipment. The applicant will also need to demonstrate that relevant indicative noise levels specified in Clause 5 of the *Environment Protection (Noise) Policy 2007* (Noise Policy) would not be exceeded at the nearest sensitive receiver, both during the day and at night. This may require a report from an acoustic engineer stating that noise from all fixed and transient noise sources on site will meet the Noise Policy at the nearest sensitive receivers; otherwise the acoustic report should recommend measures to achieve this.

Landfill sites

When considering a site for a composting facility, consideration needs to be given to the presence of any closed or operational landfills.

There are a range of inherent risks associated with landfills including adverse impact on the environment and human health due to landfill gas, odour, litter, vermin, dust and leachate.

The EPA guideline, [Environmental management of landfill facilities \(municipal solid waste and commercial and industrial general waste\)](#), recommends a minimum separation distance of 500 m between development and a landfill boundary, historic, currently operational and future designated landfill areas and active tipping face. The buffer should be maintained for the life of the landfill². Maintaining a 500-m separation distance will reduce the likelihood of impacts from the landfill, including the accumulation of landfill gas in structures.

A proposed facility for composting works in which landfill gas could accumulate and that is within 500 m of a landfill should proceed only on the basis of a landfill risk assessment undertaken by a site contamination consultant or a site contamination auditor. Any development within the buffer should be assessed and determined as suitable and compatible. The [Landfill gas and development near landfills – advice for planning authorities and developers](#) contains further information.

Waste management

Waste management issues are often related to the type of wastes received for composting. Waste that is free of contaminants generally poses few risks as it is unlikely to result in the generation of litter and enables feedstocks to be readily incorporated into the composting process. Waste that contains significant quantities of contamination (eg organics collected at kerbside) should undergo pre-treatment prior to introduction into the composting process to minimise the generation of litter throughout the composting process. Contaminants and litter should be stored securely in containers

² The life of the landfill includes the period after closure and capping, and continues for as long as the landfill has the potential to create offsite impacts to the environment (particularly due to landfill gas emissions or leaching to groundwater), which may be decades after the landfill has closed.

and regularly transported to a facility that is licensed by the EPA to receive that kind of waste. Litter fencing may need to be constructed around some activities.

If unsuitable or 'off-specification' waste is delivered to composting sites, it will need to be managed to prevent offensive odours, surface and groundwater pollution and the generation of litter. Consideration should be given to whether such waste should go to a suitably licensed landfill for disposal.

The development should include:

- provision for implementation of the waste management hierarchy³ as identified in the *Environment Protection (Waste to Resources) Policy 2010*
- dedicated covered areas for all non-toxic solid waste materials
- dedicated covered and bunded areas for all toxic waste materials
 - liquid wastes should be contained and/or treated before transport off site by an EPA-licensed transporter
 - solid toxic wastes should be removed from the site regularly by an EPA-licensed transporter.

The EPA guideline, [Bunding and spill management](#), contains further information on design, capacity, operation and maintenance of bunds.

Water quality

Clean rainfall from outside the composting area needs to be excluded so that it does not flow through the area and become contaminated. All runoff from within the operational areas needs to be collected and managed as it is likely to be contaminated with debris and nutrients. Under the *Environment Protection (Water Quality) Policy 2015* contaminated stormwater is defined as 'wastewater' and should be managed as such.

The composting process generates leachate that can pollute surface water, stormwater and groundwater if not managed effectively. All activities involving receiving, processing, composting and storing the final product should be conducted on a hardstand area capable of withstanding heavy equipment (eg compacted quarry rubble, concrete or bitumen). The pad needs to be designed and constructed to ensure that leachate flows to a low point for collection and subsequent storage, treatment, disposal or re-application onto windrows. Suitable collection devices include concrete sumps, while suitable storage, treatment and disposal facilities include appropriately sized tanks or lagoons.

Leachate storage facilities should be located as far away as possible from watercourses, stormwater drains and underlying groundwater. A minimum separation distance of 100 metres from watercourses and 2 metres above seasonal high groundwater levels is recommended. Inbuilt structural water conservation controls are also advisable. The facility should incorporate systems that enable water to be contained and reused (including stormwater and wastewater), and replace potable (mains) supplies for operations such as landscape irrigation, toilet flushing and process water (eg machine cooling, cleaning, wetting of access roads and maintaining moisture content in windrows).

Water sensitive urban design

Water sensitive urban design is an approach to urban planning and design that seeks to integrate the management of the total water cycle to minimise the impacts of development, protect water quality, make more efficient use of water, reduce the cost of water infrastructure, and address flooding.

Further information on water sensitive urban design can be found at:

- [Planning professionals and developers](#)

³ Waste management hierarchy, as described in the *Zero Waste SA Act 2004*, refers to an order of priority for the management of waste, being: avoidance of the production of waste, minimisation of the production of waste, reuse of waste, recycling of waste, recovery of energy and other resources from waste, treatment of waste to reduce potentially degrading impacts, and disposal of waste in an environmentally sound manner.

- [Water Sensitive SA](#)
- [Creating more liveable and water sensitive cities in South Australia.](#)

Construction management

Construction activities undertaken as part of a development can detrimentally affect the environment and community health. Air emissions, noise, site contamination, stormwater and waste need to be managed to prevent impacts on nearby land uses and the natural environment.

The relevant authority may require a construction environmental management plan (CEMP) from the proponent. The plan describes how activities undertaken during the construction phase of development will be managed to avoid or mitigate negative environmental impacts on site and how the environmental management requirements will be implemented.

For further information on the impacts of construction activities and preparing a CEMP refer to the EPA's guideline, [Construction environmental management plans](#).

Disclaimer

This publication is a guide only and does not necessarily provide adequate information in relation to every situation. This publication seeks to explain your possible obligations in a helpful and accessible way. In doing so, however, some detail may not be captured. It is important, therefore, that you seek information from the EPA itself regarding your possible obligations and, where appropriate, that you seek your own legal advice.

Further information

Legislation

[Online legislation](#) is freely available. Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet
Adelaide Service SA Centre
108 North Terrace
Adelaide SA 5000

Telephone: 13 23 24
Facsimile: (08) 8204 1909
Website: shop.service.sa.gov.au
Email: ServiceSAcustomerservice@sa.gov.au

General information

Environment Protection Authority
GPO Box 2607
Adelaide SA 5001

Telephone: (08) 8204 2004
Facsimile: (08) 8124 4670
Freecall: 1800 623 445 (country)
Website: www.epa.sa.gov.au
Email: epainfo@sa.gov.au
