

Assessment of materials handling facilities

Updated September 2017

EPA 677/17: This guideline will assist a relevant authority (as defined by the Development Act 1993) to undertake an environmental assessment of proposals for material handling facilities.

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, materials handling is defined as the conduct of facilities where sand and gravel are stored and despatched, or where materials (including grain or fertilisers) are bagged for sale (apart from on-farm bagging of grain for sale). Development proposals that involve bulk shipping, coal handling and storage, or chemical storage and warehousing must be referred to the EPA under Schedule 8 Item 11 Schedule 22 of the *Development Regulations 2008*.

Assessing environmental issues

Air quality

To minimise dust emissions material should be stored within bunkers or silos at all times. Bunker walls should be constructed to be at least 0.5 m above the stored material. Fine particles may also require covers, tarpaulins or a water spray system to prevent wind-blown nuisance dust.

When dried, coarse material can release fine particulates that may become a dust nuisance or may enter the stormwater system.

Entrances, roadways and unloading areas should be hard surfaced with materials such as concrete or bitumen to enable clean up of spilt material and to prevent damage to the unsealed surface, which can be transported off site (dragout).

To avoid onsite dust generation from mobile plant and dragout, the site should be kept clear of spilt material. Watering, using water carts or in situ sprays will suppress dust, but may increase the likelihood of dragout. A wheel wash at the site exit can minimise the transfer of mud to prevent it becoming a road hazard.

Temporary stockpiles of fine materials not stored in bays should be limited to a maximum of 3 m in height, and be covered with tarpaulins when not in use (including overnight). Temporary, mobile or fixed sprinkler systems may also be required to stabilise this material to minimise the potential for wind-driven dust impact offsite.

When grains, fertilisers or mushroom compost are stored, offensive odours need to be managed to avoid amenity impacts on sensitive land uses. If grains are fumigated, odours will need to be dispersed.

Even with good design and good management there may be some dust emissions. There should be sufficient separation between materials handling facilities and sensitive land uses¹ taking into account the type of material stored, the size and location of the facility and the sensitivity of the surrounding environment.

Noise

Noise nuisance from materials handlers includes noise generated from the movement of trucks, front-end loaders and forklifts, particularly early in the morning or late at night, and reversing alarms on mobile plant.

The applicant will also need to demonstrate that relevant indicative noise levels specified in clause 5 of the *Environment Protection (Noise) Policy 2007*² (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 materials handling 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 landfill³. 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 materials handling facility 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 generated is likely to include empty storage containers and packaging, general litter, byproducts of any vehicle maintenance (including petroleum products, coolants, degreasing agents, sediment, rubber particles and detergents), and other hazardous materials.

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 – *Evaluation distances for effective air quality and noise management* (2016).

² The Noise Policy sets noise goals and provides a consistent approach to noise issues in the assessment of development applications. Clause 5 identifies indicative noise levels considered to be acceptable in various land use categories, including industrial and commercial. Clause 20 sets out the process the relevant authority should use when assessing development applications.

³ 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.

The development should include:

- provision for implementation of the waste management hierarchy⁴ 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

Pollutants associated with materials handling facilities may include suspended solids, grease, lubricants, solvents, nutrients and oils. Such pollutants must be prevented from entering water bodies (including groundwater) through direct discharge, seepage or through contamination of stormwater.

Hazardous materials (fuels, oils, pesticides and other chemicals) need to be stored in a bunded and preferably rainproof area to minimise the risk of surface/groundwater contamination.

The facility should incorporate a stormwater management system for all areas where contaminated runoff may be generated (including carparks). Structural controls such as bunded storage areas, first flush diverters, gross pollutant traps, oil/water separators, hydrocarbon absorbers, sediment traps or soluble pollutant removers are all acceptable methods.

Stormwater – 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.

Water sensitive urban design could be used in many parts of a materials handling facility including treatment of roadways and footpaths with bio-filtration systems or capturing roof water and using this for toilet flushing. Further information on water sensitive urban design can be found at:

- [Planning professionals and developers](#)
- [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.

⁴ 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.

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
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General information

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