Land division

Guideline

Assessment of large-scale residential land division within the metropolitan Adelaide region

Introduction

This Guideline will assist a relevant authority (as defined by the *Development Act 1993*) to undertake an environmental assessment of proposals for large scale residential land divisions within the metropolitan Adelaide region[1].

The information contained in this Guideline is in lieu of the advice that was given by the Environment Protection Authority in responses to referred development applications prior to removal of the activity from Schedule 21 of the *Development Act 1993*.

Large scale residential land division is considered to be one that covers a land area of >0.5 hectares[2] or involves a division of approximately 10 or more allotments. This guideline could also be used by the relevant authority to assess smaller proposed divisions.

Where a proposed development falls within the definition of land division set out in Schedule 21 activity 7(4)(a) of the *Development Regulations 2008*, the proposal must be referred to the Environment Protection Authority under Schedule 8(2)(10) of the same *Regulations.*

Assessing environmental issues

A land division needs to be assessed to determine whether there is existing site contamination that could affect residential development, to prevent a residential land division from encroaching on established industries or other development that emits noise and adverse air quality, and to ensure a residential land division can be designed and managed to minimise impacts on the natural environment.

Interface between land uses

Noise and air emissions from land uses such as industry (including activities licensed under the *Environment Protection Act 1993*), arterial roads, railway lines, and airports may have a detrimental impact on the health and amenity of residents. Conversely, encroachment of residential development on an industry or other land use can compromise its ability to undertake approved activities.

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1 Metropolitan Adelaide is considered to be the area within the urban boundary declared by the Minister for Planning as per GRO Plan 639/93 (http://www.atlas.sa.gov.au/resources/metropolitan-adelaide-boundary).

2 0.5 hectares is the scale at which a soil erosion and drainage management plan is required under the *Stormwater pollution prevention code of practice for the building and construction industry* (1999).

Interface issues are caused when there is an insufficient separation distance between a land use that generates noise and air emissions and a residence, or insufficient consideration has been given to control or design techniques to mitigate potential noise and air impacts.

Industry

The EPA's *Guidelines for separation distances* (2007) identifies recommended separation distances between sensitive land uses and certain activities that may result in adverse noise and air quality impacts. Application of the *Guidelines for separation distances* (2007) will assist in protecting amenity in residential and other sensitive areas as well as protecting existing industry from encroachment by sensitive land uses.

If the proposed development is within the recommended separation distance the applicant should demonstrate that a lesser distance would be appropriate. How this can be demonstrated will depend on how the activity is to be undertaken. The *Guidelines for separation distances* (2007) contains criteria in section '5 Amendments to Separation Distances' that should be addressed when a site-specific variation from the recommended separation distance is being sought. However, some of the criteria may be overly complicated for low risk activities, and it may not be necessary for them to be addressed. For example, it may be sufficient for a dust management plan to be prepared rather than air quality modelling being undertaken.

The applicant will need to demonstrate that relevant indicative noise levels specified in Clause 5 of the *Environment Protection (Noise) Policy 2007* are not exceeded on the subject land, both during the day and at night. This could be achieved by providing an acoustic report prepared by a suitably qualified and experienced acoustics engineer which demonstrates that noise meets the relevant noise levels, or provides details of what is required to ensure noise levels meet the relevant noise criteria.

Railway lines

If the residential land division would be located within 35m of a tram line or within 180m of a train line, the impact of noise and vibration should be predicted and considered in the design of the land division as recommended in the EPA's *Guidelines for the assessment of noise from rail infrastructure* (2013). This may require preparation of an environmental noise assessment in the form of an acoustic report.

Roads

If the residential land division would be located less than 100m from roads classified Class 1, 2, 3, 6 and 7[3], the potential adverse impacts of air quality should be predicted and considered in the design of the land division.

Motor vehicle traffic noise is excluded from the *Environment Protection (Noise) Policy 2007* so, in accordance with *World Health Organisation Environmental Noise Guidelines 1999*, an outdoor noise criteria of 52dB(A) LAeq, 15hr (day, 7am – 10pm) should be achieved on all proposed residential allotments. Assessment of outdoor noise levels is important to ensure a level of outdoor amenity appropriate for residential land use is achieved. Outdoor noise impacts should be considered prior to making a decision on this development application.

In respect of built form, design techniques to protect sensitive development from air and noise emissions are contained in *Reducing noise and air impacts from road, rail and mixed land use - A guide for builders, designers and the community* (2012) and *Minister's Specification SA 78B Construction requirements for the control of external sound* (2013). SA78B provides sound exposure categories for up to 200 metres from major roads (dependent on the road type and posted speed limit). As such, it is considered that outside of this distance road traffic noise is unlikely to require consideration.

[3] Local Government Association and Department for Transport, Energy and Infrastructure *Road Classification Guidelines in South Australia* (July 2008).

Airports

If the residential land division would be located near an airport for which Australian Noise Exposure Forecast contours have been prepared, the residential land division should be able to achieve the 'acceptable' requirements in Tables 2.1 in *Australian Standard 2021-2015 Acoustics – Aircraft noise intrusion – building siting and construction*.

If the residential land division would be located where a set of Australian Noise Exposure Forecast contours have not been prepared, the residential land division should be able to achieve the 'acceptable' requirements in Table E1 of *Australian Standard 2021-2015 Acoustics – Aircraft noise intrusion – building siting and construction*. Determination of the acceptability of the land in this case will require the assistance of a suitably qualified and experienced acoustic engineer to predict the aircraft noise level for comparison with the criteria contained in Table E1.

If aircraft noise meets the 'conditionally acceptable' criteria in either Table 2.1 or E1 then residential development should only occur where it can be guaranteed that future dwellings will be constructed to sufficiently attenuate noise to meet the relevant indoor design sound levels contained in Table 3.3 of AS 2021-2015. Such design will require the assistance of a suitably qualified and experienced acoustic engineer.

Landfills

When assessing a site for a large scale residential land division consideration needs to be given to the presence of any historic (ie closed) or currently operational landfills.

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

Schedule 21 activity 7(4)(a) of the *Development Regulations 2008* identifies that a land division creating one or more additional allotments for residential purposes within 500 metres of land used as a landfill waste depot is to be referred to the Environment Protection Authority.

A historic landfill may still have risks attached to it, particularly in respect of landfill gas. If a large-scale residential land division within 500m of a historic is not referred to the Environment Protection Authority the relevant authority will need to consider the potential impacts.

The EPA guideline *Environmental management of landfill facilities (municipal solid waste and commercial and industrial general waste)* (2007) recommends a minimum separation distance of 500m between development and a landfill boundary, including from historic, currently operational and future designated landfill areas, not just the active tipping face. The buffer should be maintained for the life of the landfill[4]. Maintaining a 500m separation distance will reduce the likelihood of impacts from the landfill, including the accumulation of landfill gas in structures.

A proposed land division within 500m of a historic or currently operational 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 EPA Information Sheet, *Landfill gas and development near landfills – advice for planning authorities and developers* (2012) contains further information.

Site contamination

The role of the planning system in relation to site contamination is to ensure the ongoing protection and sustainable management of our environment so that communities are protected and can enjoy a clean environment. Addressing site contamination through the planning system can ensure, as far as is practically possible, that land is not developed for a

[4] 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 off site impacts to the environment (particularly due to landfill gas emissions or leaching to groundwater), which may be decades after the landfill has closed.

more sensitive use unless/until site contamination risks have been considered and it is ensured that the land is suitable for the proposed use.

Site contamination is addressed in the planning system via a risk-management approach which allows for progressive certainty to be delivered within the lowest prudent cost and time parameters. The *Framework for managing site contamination through the South Australian Planning System* describes the staged approach for addressing site contamination through the planning system to ensure that land that is being developed for a more sensitive uses does not move from one stage in the development process to the next without clear measures being in place to ensure that site contamination either:

- has been appropriately addressed; or
- will be appropriately addressed at or before occupation of development.

The *Framework for managing site contamination through the South Australian Planning System* should be consulted to determine the process for assessing site contamination.

Wastewater management

A large scale residential land division within the metropolitan Adelaide region should be planned to manage wastewater through SA Water sewerage infrastructure or a community wastewater management system[5] in preference to individual onsite disposal systems[6]. The potential for cumulative environmental impacts and contamination is reduced with community systems and reuse opportunities are supported.

The EPA's *Wastewater and the South Australian planning system* position statement provides further information on wastewater management.

Water quality

Surface water or groundwater may support a variety of purposes (also known as environmental values) for which it should be protected, including maintenance and protection of aquatic ecosystems, agriculture, recreational, aesthetics, and cultural and spiritual values.

Land subdivision and subsequent built environment are associated with vegetation clearance and increased impermeable surfaces that will increase runoff and pollutants in stormwater. Stormwater drains into our natural water bodies (creeks, rivers, groundwater, wetlands and the sea) and water quality needs to be protected through stormwater management techniques during construction and on-going management of the development.

Water sensitive urban design seeks to better utilise all potential water sources, including stormwater, groundwater, potable water and wastewater while managing them to minimise detrimental impacts on health and the environment. It emphasises the collection, treatment and utilisation of these water sources. It assists in offsetting the effects of urban development through improving management of urban stormwater and is considered best practice stormwater management.

Best management practices for new development is to not increase stormwater flows above pre-development flows and minimise the amount of pollutants in the stormwater that does flow. For residential land divisions the following minimum reductions in total pollutant load, compared with that in untreated stormwater runoff, from the developed part of the site are recommended**:**

[5] Community wastewater management systems refer to a system for the collection and management of wastewater generated in a town, regional area or other community (with the exclusion of SA Water sewerage infrastructure) and includes a decentralised wastewater treatment plant.

[6] Onsite disposal system refers to a system on premises for the on-site collection and management of wastewater generated, including but not limited to septic tank or a waterless composting toilet.

- Total suspended solids by 80 per cent
- Total phosphorus by 60 per cent
- Total nitrogen by 45 per cent
- Litter/gross pollutants by 90 percent.

The criteria are taken from *Water sensitive urban design – creating more liveable and water sensitive cities in South Australia (2013)*.

This can be demonstrated using a standard modelling tool known as MUSIC (Model for Urban Stormwater Improvement Conceptualisation) that can be undertaken at the same time as modelling such as DRAINS, a standard modelling tool for designing and analysing urban stormwater systems.

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

https://www.sa.gov.au/topics/housing-property-and-land/building-and-development/land-supply-and-planning-system/water-sensitive-urban-design
http://www.watersensitivesa.com
http://www.environment.sa.gov.au/files/sharedassets/public/water/water-sensitive-urban-design-policy-gen.pdf

In areas where groundwater is close to the surface or comes to the surface such as in a wetland or waterlogged area, the groundwater needs to be protected from direct interception or indirect impacts caused, for example, by building of infrastructure, basements or cellars. Removal of the water in a process known as dewatering may be required and advice from the EPA is recommended if this is the case.

The applicant should demonstrate that a proposed large scale land division will be designed to prevent impacts on surface water and groundwater, both in respect of suitable separation from water bodies and protection of stormwater quality. This may require the preparation of plans showing the location of water bodies, a stormwater management plan, and the undertaking of stormwater modelling.

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 from the proponent. A construction environmental management 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 construction environmental management plan 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

Legislation may be viewed on the Internet at: <www.legislation.sa.gov.au>

Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet	Telephone:	13 23 24
Adelaide Service SA Centre	Facsimile:	(08) 8204 1909
108 North Terrace	Website:	<shop.service.sa.gov.au>
Adelaide SA 5000		

For general information please contact:

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