

# Wastewater and the South Australian planning system

Updated August 2016

*EPA1084/16: This position statement will assist planning authorities and proponents of development understand the position of the Environment Protection Authority (EPA) on wastewater management in relation to the South Australian planning system.*

## Introduction

This position statement describes how the management of wastewater is to be addressed at each stage of the South Australian planning system to meet the requirements of the *Environment Protection Act 1993*, *Environment Protection (Noise) Policy 2007*, *Environment Protection (Water Quality) Policy 2015* and *Environment Protection (Air Quality) Policy 2016*.

## Proper assessment of wastewater management

Wastewater management processes have the potential to expose sensitive land uses<sup>1</sup> to unacceptable air emissions and/or noise. A waste water treatment plant (WWTP) may generate odour from the wastewater treatment process and sludge handling, and noise emissions from mechanical plant, transport onto site, audible alarms, and other noise sources.

The impacts from odours can vary from being just detectable to levels that can cause nuisance and become objectionable and offensive. The main effect of environmental odour is nuisance, but stronger or persistent odours can lead to feelings of nausea, headache, loss of sleep and other symptoms of stress. Repeated exposure to nuisance levels of odour can lead to a high level of annoyance. While some people may become acclimatised to odours, others may become sensitised to them.

Noise is an inherent part of most activities, but may become annoying if it intrudes into people's awareness or is heard against their wishes. An introduced noise that disturbs a person's everyday life or working environment can be very annoying or harmful, and may cause adverse health effects due to sleep disturbance, and affect wellbeing.

Wastewater management systems may produce treated wastewater that could have a detrimental impact on surface (fresh and marine) or underground waters if not managed appropriately. The primary water quality issue that requires

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<sup>1</sup> Sensitive land uses include, but are not limited to, residential housing, childcare centres, educational institutions, hospitals, nursing homes and retirement villages, parklands and recreation areas, tourism accommodation. Industrial and commercial premises can also be affected by noise and air emissions – [Evaluation Distances for Effective Air Quality and Noise Management](#) (2016).

management is the discharge of treated wastewater to surface waters and uncontrolled discharge (in the form of spills, leaks, overflows) causing impacts to surface or ground water.

The EPA works through the planning system to protect South Australian waters from the adverse impacts of pollution that might reduce their value to current and future generations.

The state's water resources support a diverse range of ecosystems, including wetlands along the River Murray, creeks in the Mount Lofty Ranges and the groundwater resources of the South East. In addition, the state's marine ecosystems are unique and among the most biologically diverse in the world, with many endemic species, and internationally and nationally important species.

## **Addressing wastewater at each stage of the South Australian planning system**

The major components of the South Australian planning system—Planning Strategy, Development Plans, development application, and major development or project—are interconnected and the system is regulated through the *Development Act 1993* and the *Development Regulations 2008*.

Within this framework the EPA provides advice on proposed changes to the Planning Strategy and Development Plans, and assesses referred development applications, and major development or project applications.

The South Australian planning system provides the opportunity to ensure that a proposed land use area (such as a Residential Zone) or an individual development proposal (such as a new wastewater treatment plant) are located or designed in such a way that the community is not exposed to odour or noise from wastewater management processes and that treated wastewater is appropriately managed.

The EPA will assess any new proposals or changes to existing activities against assessment criteria listed in the EPA guideline, [Wastewater treatment plants and the South Australian planning system](#) (2016). Refer to the guideline for information on compliance with air quality, noise and water quality criteria.

### **South Australian Planning Strategy**

At the Planning Strategy stage of the planning system the EPA will have an interest in the location of land identified for future development of wastewater management systems or sensitive land uses, and in ensuring that high-level planning policy in respect of wastewater management is incorporated into the various volumes of the Planning Strategy.

When an amendment to the South Australian Planning Strategy is prepared it is the EPA's position that:

- key development areas identified for establishment of wastewater management systems or development of sensitive land uses will not create land use conflicts through exposure of sensitive land uses to unacceptable odour and noise.
- principles and policies that reference wastewater management, including appropriate separation from sensitive land uses, and avoidance or minimisation of wastewater generation, recycling, and reuse opportunities, are included to enable further consideration and expansion of those principles and policies in other levels of the planning system.

### **Strategic Directions Reports**

When reviewing a Strategic Directions Report the EPA will examine any proposed amendments to the Development Plan that may involve development in respect of wastewater management infrastructure. The EPA will also review the Council's priorities for infrastructure planning where that infrastructure is for the purpose of wastewater management.

When a Strategic Directions Report is prepared it is the EPA's positions that:

- future Development Plan amendments involving wastewater management infrastructure be identified
- master planning for future wastewater management infrastructure requirements be undertaken within the context of the future land use and the disposal needs of the wider surrounding area.

## Development Plan Amendment (DPA)

At this stage the EPA will have an interest in proposed changes to planning policy or rezoning of land that could result in land use conflicts through exposure to unacceptable odour and noise (such as rezoning land to Residential Zone adjacent to a wastewater treatment plant), or that may require a wastewater management system that produces treated wastewater.

When a DPA is prepared the Statement of Intent should propose to investigate any potential wastewater management issues; if not the EPA will recommend additional investigations to be undertaken.

It is the EPA's position that when changes to planning policy or rezoning of land are proposed through the DPA process:

- key development areas identified for establishment of wastewater management systems or development of sensitive land uses will not create land use conflicts through exposure of sensitive land uses to unacceptable odour and noise from a WWTP
- any development areas proposed for residential development be planned to manage wastewater through SA Water sewerage infrastructure or a community wastewater management system<sup>2</sup> in preference to individual onsite disposal systems<sup>3</sup>.

The potential for cumulative environmental impacts and contamination is reduced with community systems. In addition reuse opportunities are supported. Consideration must be given to the future land use and the disposal needs of the wider surrounding area. If an area will potentially be rezoned or subdivided, the capacity of a town community wastewater management system to cope with additional wastewater volumes and pollutant loads, as well as associated odour and noise issues must be considered. The capacity of existing facilities to manage potential volumes will need to be addressed in order to prevent future mismanagement and possible pollution.

- the Statement of Intent proposes to investigate any potential wastewater management issues in accordance with the waste management hierarchy<sup>4</sup>; if not the EPA will recommend additional investigations that should be undertaken.
- the DPA proposes policy for inclusion in the development plan, or there is existing policy in the development plan, to:
  - avoid or mitigate adverse air quality and noise impacts arising from wastewater management.
  - enable the proper management of treated wastewater, including the application of the waste management hierarchy.

The inclusion of such policy enables the proper assessment of air quality and noise impacts, and management of treated wastewater at the development application stage.

## Development application, and major development or project

At the development application or major development or project stage the interest of the EPA is in whether the development would expose sensitive land uses to unacceptable odour or noise from a proposed or existing wastewater management system, and how wastewater from any proposed development would be managed.

When a development application or major development is referred to the EPA for the purpose of assessing the wastewater management component, it will review, assess, and advise or direct how wastewater should be managed to prevent impacts on sensitive uses, and to be in accordance with the principles of the waste management hierarchy, including ensuring that treated wastewater would be managed to prevent impacts on surface or underground waters.

<sup>2</sup> 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)

<sup>3</sup> On-site 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.

<sup>4</sup> In preferred order with respect to waste: avoid, minimise, reuse, recycle, treat and dispose.

When a development application is prepared for a wastewater management system or any major development or project involving a wastewater management system, or for a land division near to an existing wastewater management system or one that would require wastewater management, it is the EPA's position that:

- the proposed development will not create land use conflicts through exposure of sensitive land uses to unacceptable odour and noise. This could be achieved by:
  - demonstrating that the proposed development would be able to achieve the evaluation distance recommended by the [Evaluation distances for effective air quality and noise management](#); or
  - providing odour modelling to demonstrate that odour criteria in the Air Quality Policy can be met level<sup>5</sup>; and
  - providing an environmental noise assessment in the form of an acoustic report that demonstrates that the *Environment Protection (Noise) Policy 2007*, the general environmental duty, and any relevant Australian Standards would be able to be achieved.
- in accordance with the waste management hierarchy, generation of wastewater is avoided or minimised and reuse and recycling opportunities are applied.

The EPA supports the use of decentralised wastewater treatment plants to maximise reuse of treated wastewater at the source as a means of implementing the waste management hierarchy<sup>6</sup>.

- sustainable recycled water use be implemented to avoid discharge to surface or underground waters.

Where discharge is proposed, treatment should incorporate best available technology economically achievable (ie BATEA). The treatment technology should be regularly reviewed and updated, delivering continuous improvement to discharge water quality. Controlled discharge is licensed and managed to ensure impacts to the receiving environment are appropriately minimised.

- treatment proposals consider the customer and service base (ie the source of the wastewater) and ensure treatment protocols suit the type of waste stream (whether it be residential, a variety of industrial sources or a mixture of both) and likely effluent flow.

Wastewater should be sufficiently treated with appropriate quality control, ensuring it is fit for purpose. This is relevant to existing plants and new plants servicing existing network infrastructure. Seasonality and potential for stormwater ingress and high rainfall events should also be considered to ensure the plant has the capacity to manage the influx. Consideration should be given to the quality of the wastewater and whether a high salinity or low salinity plant is necessary to ensure wastewater is sufficiently treated with appropriate quality control and is fit for purpose.

- low-energy wastewater management systems are implemented in preference to high-energy wastewater management systems.

Wastewater treatment can include active, mechanical technologies and/or passive, wetland systems and, in general, the EPA promotes the use of BATEA and achievement of the lowest energy footprint possible. The low energy objective tends to favour passive treatment systems that can achieve the environmental outcomes required, treating water to an appropriate quality with compliance of air quality and noise criteria.

- changes to existing activities demonstrate a net environmental benefit to the receiving environment, increasing the quality of wastewater.

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<sup>5</sup> Further information can be found in the EPA document, [Ambient air quality assessment](#) (2016).

<sup>6</sup> This position supports Action 20 of the *Water for Good* (2010) plan – 'Encourage decentralised wastewater recycling schemes in new developments, in partnership with the implementation of the Plan for Greater Adelaide', The *30-year Plan for Greater Adelaide* (2010) contains policy requiring 'new greenfield developments that are subject to Structure Plans from 2011 to source water for outdoor use from non-mains water supplies. This recognises the need to plan alternative water sources at the commencement of new large greenfields developments, rather than retrofit these sources for latter stages of the development' (Water Policy 4).

- early and comprehensive wastewater master planning be undertaken for large scale residential land divisions. Collaboration between Council and developers will ensure effective future management and prevent negative long term environmental impact.
  - any proposed residential development area be planned to manage wastewater through SA Water sewerage infrastructure or a community wastewater management system<sup>7</sup> in preference to an onsite wastewater disposal system<sup>8</sup>.
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## 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](http://shop.service.sa.gov.au)>  
Email: <[ServiceSAcustomerservice@sa.gov.au](mailto:ServiceSAcustomerservice@sa.gov.au)>

### General information

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Website: <[www.epa.sa.gov.au](http://www.epa.sa.gov.au)>  
Email: <[epainfo@epa.sa.gov.au](mailto:epainfo@epa.sa.gov.au)>

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