

## River Murray shack wastewater management

Issued June 2016

*EPA 1090/16: This position statement assists planning authorities and proponents of development understand the Environment Protection Authority's (EPA) position on wastewater management for River Murray shack settlement areas.*

### Introduction

To ensure the requirements of the *Environment Protection Act 1993* (EP Act) and *Environment Protection (Water Quality) Policy 2015* (WQ Policy) are met, this position statement outlines the criteria on which the EPA will respond to the assessment of River Murray shack wastewater issues and risks within the River Murray Water Protection Area.

This position statement is not legally binding and cannot be used to alter, broaden or narrow the exercise of the EPA's function and powers.

### River Murray Water Protection Area

The River Murray Water Protection Area (RMWPA) extends the full 640-km length of the River Murray in South Australia. The RMWPA includes the River Murray floodplain, Lower Lakes and Coorong (see Figure 1). The RMWPA extends beyond (typically 500 metres) the highest recorded flood event in the Murray valley which occurred in 1956. During this flood a peak daily flow of 341,000 mega litres<sup>1</sup> (ML) was recorded.

The River Murray and Lower Lakes are vital to South Australia's economy, communities and the environment<sup>2</sup>. The River Murray is the primary source of mains water supply to many cities and towns in the State. Irrigated horticulture and river-based tourism also rely on good water quality in the River Murray.

Threats to water quality are clearly evident during a flood or drought event. Less visible are the water quality threats from different land uses and wastewater management practices within the River Murray basin at other times. The RMWPA declaration<sup>3</sup> recognises the significance of the River Murray to the state. Controlling land use and adopting suitable wastewater management practices are key strategies in protecting the river from pollution.

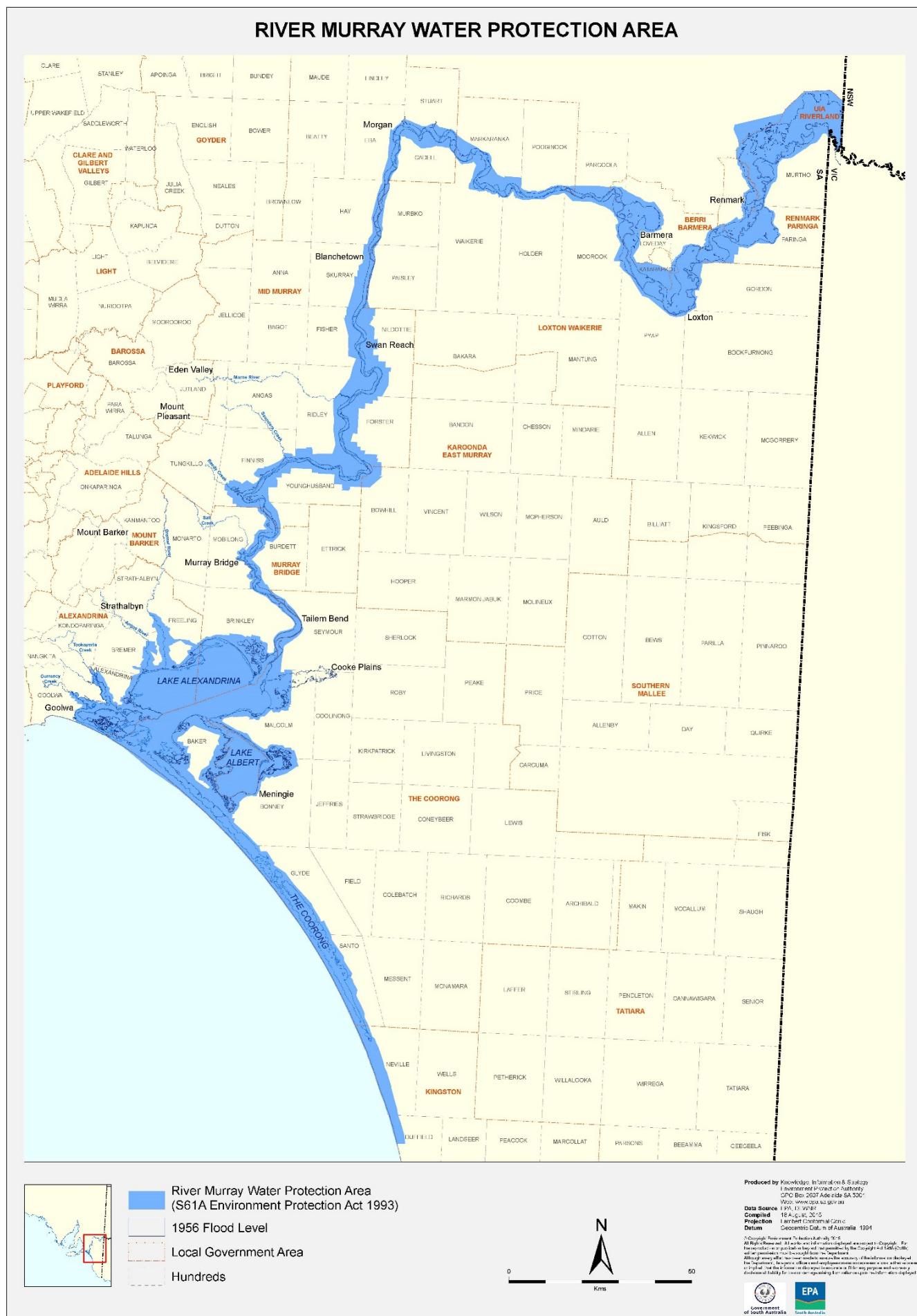
Pollution sources along the River Murray and Lower Lakes, include:

- contaminated stormwater runoff
- river vessel grey water discharges

<sup>1</sup> Department of Environment, Water and Natural Resources 2015, *WaterConnect*, available at [www.waterconnect.sa.gov.au/Systems/RMIM/SitePages/Home.aspx](http://www.waterconnect.sa.gov.au/Systems/RMIM/SitePages/Home.aspx)

<sup>2</sup> EPA 2013, *State of the Environment South Australia*,

<sup>3</sup> As proclaimed under section 61A, *Environment Protection Act 1993*



**Figure 1 Map of the River Murray Water Protection Area**

- drainage return from irrigation areas
- cumulative impacts associated with septic systems<sup>4</sup>.

Typical pollutants from septic systems are nutrients (nitrogen and phosphorus), pathogens (eg *Cryptosporidium*, *faecal coliforms* or *E coli*), virus and protozoans (non-bacterial pathogens). High nutrient levels in the river leads to too much plant growth (often algae) which can impact the river system<sup>5</sup>. Algal toxins can also enter public water supply systems.

Elevated pathogen levels have been measured in the river and may present public health risks to recreational users of the river. Pathogens may also impact on drinking water supplies as a number of water treatment plant offtakes exists along the river.

While water quality impacts from a single septic systems may be small, the cumulative effect of many *septic systems* along the length of the River Murray is likely to be significant.

More than 2,500 shacks are located along the length of the river and Lower Lakes in South Australia. Some shack settlements have more than 140 shacks, others have less than five, and in some cases a single shack. The Mid Murray Council area has the largest shack concentration in South Australia.

Although some River Murray shack areas have a connection to a community wastewater management system (CWMS), many do not. Across the state, septic systems frequently fail or have the potential to fail resulting in environmental pollution. Failures can occur for a number of reasons, including:

- poor (or no) maintenance
- undersized compared to hydraulic volume and pollution load
- age and deterioration
- installation standards
- reckless behaviour/abuse by owners (through such things as installing holes in holding tanks, pumping from holding tanks to land or river, and building over part/all of the storage and disposal system).

As a consequence, the EPA seeks to avoid the intensification of land use within the RMWPA, and for existing River Murray shack and residential developments to be connected to an approved CWMS.

## EPA's role in the planning system

### General obligations

River water quality is primarily regulated through the *Environment Protection Act 1993* (EP Act) and the Environmental Protection (Water Quality) Policy or WQ Policy. A key objective of the WQ Policy is to protect the environmental values of a water body from pollution.

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<sup>4</sup> Septic system means a system used on premises for the on-site collection, treatment and disposal of sewage generated at the premises and includes a septic tank

<sup>5</sup> EPA 2014, *Aquatic Ecosystem Condition Reports*, [www.epa.sa.gov.au/data\\_and\\_publications/water\\_quality\\_monitoring/aquatic\\_ecosystem\\_monitoring\\_evaluation\\_and\\_reporting](http://www.epa.sa.gov.au/data_and_publications/water_quality_monitoring/aquatic_ecosystem_monitoring_evaluation_and_reporting)

Water pollution refers to inputs of a chemical, waste or sediment into a water body that has the potential to cause an environmental impact and can be from a point source<sup>6</sup> or diffuse pollution<sup>7</sup>.

The discharge or deposit of sewage or waste from a septic system into any waters of the River Murray, including onto land where it might enter groundwater or move through the soil to the river, is an offence under the WQ Policy.

The EPA uses a range of legislative and non-legislative tools, including education campaigns, to minimise the entry of pollutants into the River Murray.

### **Development Plan Amendments**

At the Development Plan Amendment stage the EPA will have an interest in proposed changes to planning policy or rezoning of land within the RMWPA. The EPA will be particularly interested in any policy change that could lead to an intensification of landuse and associated threats to water quality.

### **Development applications**

Non-complying development applications within the RMWPA must be referred to the EPA. The EPA may exercise its power to *direct* refusal of such applications, or *direct* the planning authority to impose conditions on any approval.

EPA assessment of referred developments applications is governed by section 57 of the EP Act. In undertaking an assessment the EPA must have regard to, and seek to further, the objects of the EP Act and have regard to the general environmental duty, any relevant environment protection policies and the waste strategy for the State adopted under the *Zero Waste SA Act 2004*.

Water protection areas declared under the EP Act are considered particularly sensitive environments. When assessing referred development applications within the RMWPA the EPA must (refer section 10A of the EP Act) have regard to the *Objectives for a Healthy River Murray* under the *River Murray Act 2003* (insofar as they may be relevant).

### **Wastewater holding tank referrals**

The *On-site Wastewater Systems Code* (April 2013) is a prescribed code for the purposes of the South Australian *Public Health Act 2011* and the *Public Health (Wastewater) Regulations 2013*. The code applies to the design, approval, installation and operation of on-site wastewater systems up to certain capacities specified.

Section 10.2.2 of the code states:

Holding tanks are not permitted for existing allotments in Water Protection Areas as proclaimed under Section 61A of the Environment Protection Act 1993 without written approval from the Department of Health and Aging (DHA) and the Environment Protection Authority (EPA).

EPA assessment of referred wastewater holding tanks application under the code is governed by the objects of the EP Act the general environmental duty and the WQ Policy. Therefore, the EPA has regard to the same assessment considerations as it would for a non-complying development within the RMWPA.

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<sup>6</sup> Point source pollution: refers to the entry of pollutants from readily identified locations, such as a pipe or sewer outflow. Industrial factories, sewage treatment plants, and stormwater outflow pipes are common point sources of water pollution.

<sup>7</sup> Diffuse pollution: refers to non-point source pollutants that run off or seep into waterways from broad areas of land such as agriculture or urban settings, as well as dispersal from airborne pollutant sources. Major forms of diffuse pollution include seepage from septic tanks, sediment run-off from construction sites, and pesticides and fertilisers from agricultural operations. Non-point sources are generally the largest contributors to water pollution at the catchment scale.

## EPA's position

The EPA takes a precautionary approach to assessing water quality risks arising from River Murray shack/residential development and associated wastewater management.

### In relation to Development Plan Amendments, the EPA:

- will seek to avoid further intensification of landuse within the RMWPA (such as the creation of addition shack settlement policy areas, rural living zones or similar planning policy which could lead to increased threats to river water quality)

### In relation to non-complying development application referrals, the EPA:

- will apply the *waste management hierarchy* (in order of priority: waste avoidance, and then waste minimisation, reuse, recycling, recovery, treatment and disposal) to referred development applications, to avoid on-site containment or disposal of wastewater in preference for a communal wastewater scheme
- will consider the exposure of the development site to various river flow scenarios in determining the risk of likely flood inundation and associated water quality risks
- considers sites that might be inundated by a 90,000-ML/day flow (when measured at the SA border) as a high flood risk<sup>8</sup>
- will consider available reports<sup>9</sup> examining barriers to establishing wastewater connections to wastewater treatments plants or community wastewater management schemes in particular shack/residential settlement areas when assessing referred development applications
- advises that where a communal wastewater scheme is impractical, the applicant must demonstrate how the proposed wastewater management solution would have a *neutral* or *beneficial* effect on River Murray water quality:
  - neutral effect (may be acceptable) – no change in water quality risks
  - beneficial effect (preferable) – contributes directly to improving water quality.

### In relation to wastewater holding tank referrals, the EPA:

- will not support a wastewater holding tank application in areas that are currently serviced by a Community Wastewater Management System (CWMS) as these proposals are not consistent with the *waste management hierarchy*
- will assess the suitability of a wastewater holding tank for existing dwellings/shacks in the following circumstances:
  - communal wastewater management is not a viable solution, and
  - it represents an upgrade to an existing on-site wastewater disposal system in terms of water quality risks (eg replacing failing subsurface soakage system draining into the River Murray with a holding tank with off-site tankering and disposal), and/or
  - it was a temporary wastewater management strategy pending the construction of a CWMS to service the area, and/or
  - there was a high likelihood that the council would approve of a proposed dwelling on the site based on the current development plan provisions (dwellings are considered on their 'merits').

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<sup>8</sup> River Murray Inundation Mapping is currently available for two flow scenarios through [WaterConnect](#). A 90,000-ML/day flow was observed during February 2011. Many septic tanks, holding tanks and pump stations were under flood waters at this time. Publicly available River Murray Inundation Mapping will be used as a guide only to inform whether a more detailed flood risk assessment might be required.

<sup>9</sup> Such as J Outhred 2014, *Options paper into wastewater management for River Murray shack site areas with no community wastewater management system*, Adelaide.

- will not support a wastewater holding tank for sites likely to be inundated by a 90,000-ML/day flow or less (when measured at the SA border).
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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)>  
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### General information

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