

## Frequently Asked Questions

### 1. What is the current demand for water on Kangaroo Island?

SA Water operates two water supply systems on Kangaroo Island. One provides water to Kingscote, Brownlow, Parndana and surrounding rural areas from the Middle River Reservoir. The other supplies the township of Penneshaw from a desalination plant.

The current demand on the Middle River system is 356 megalitres (ML) per year, with demand varying from 18-20ML per month during winter, to 50-65ML per month during summer.

The current demand on the desalination plant at Penneshaw is 52ML per year. Over the last three years, peak demand has reached 400 kilolitres (kL) per day. Low demand periods are around 86 to 172kL per day.

### 2. Given past experience what would be the predicted annual demand in a drought year?

The graph below indicates our predicted demand for water on Kangaroo Island. The pink line at the top of the graph shows the 95 percentile. This is the predicted demand during a drought. This model accounts for climate variables including changes in rainfall and evaporation.

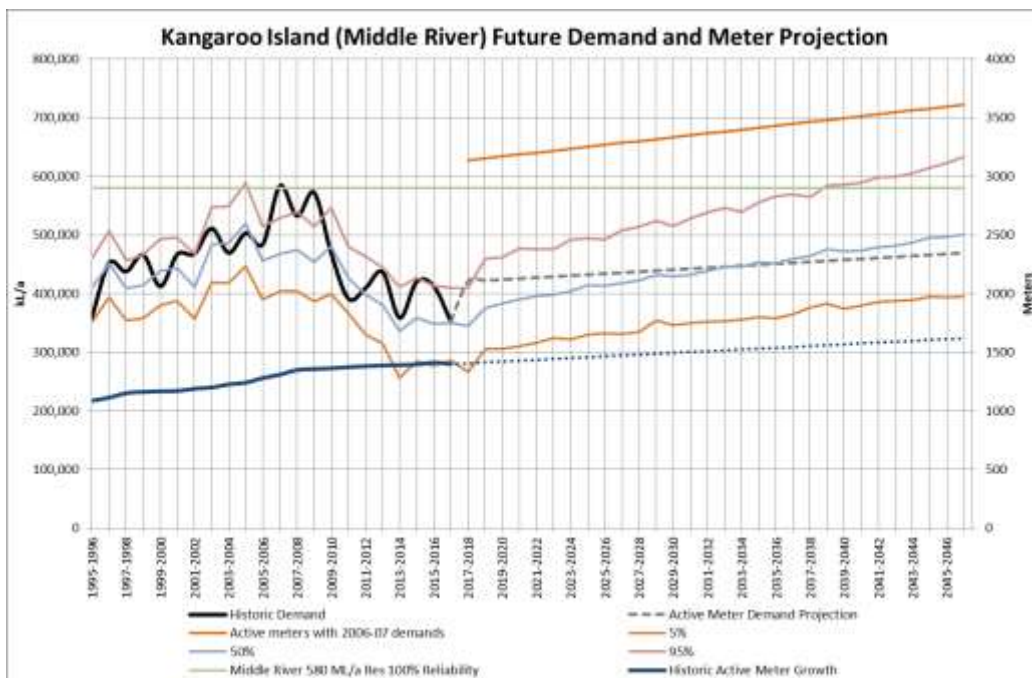


Figure 1: Preliminary demand model, Middle River system (excludes emerging major development demand)

### **3. What is the projected water demand for Kangaroo Island and how does it account for population growth and developments?**

We have assumed that organic growth for business and residential demand will continue in line with the average growth over the past three years. This is higher than the past five year average for Penneshaw and equal with the average for Middle River.

We expect the following connection growth per year:

Middle River

- Residential 6
- Non-residential 1

Penneshaw

- Residential 3
- Non-residential 1

We have generally seen a decrease in the average usage volume per connection in line with wider shifts in water use behaviours and values. Our models used for planning purposes however take a conservative approach and assume that usage volumes per connection will remain the same as the past three years.

In addition to organic growth, we're working with a number of major developers and Kangaroo Island communities to understand their potential water supply needs over the long term.

### **4. How much of the overall water demand comes from stand-pipes?**

We have six standpipes in the Middle River system and one in Penneshaw. These account for approximately 4% and 2% of overall demand in Middle River and Penneshaw respectively (not including Country Fire Service use which is unmetered).

### **5. Does projected demand take into account that there may be future developments on vacant blocks with meters installed but very little or no usage?**

Yes, our demand projections assume that every connection uses the same usage volume, so they assume that these blocks will be developed at some point.

### **6. What is the projected demand for American River Township?**

In the past, local residents of American River have indicated they do not wish to connect to an SA Water supply. Recently, at the request of the American River Progress Association, we have commenced an expression of interest process to understand if this is still the case. Our current demand projections do not include any additional demand from the American River township.

## **7. What are the impacts of the proposed Pelican Lagoon golf course and American River resort on the water supply systems?**

The additional demand projected by major developments such as the Pelican Lagoon golf course and American River resort is significant when compared to our current organic supply and demand projections. We are working with the developers to find ways to deliver their water needs without compromising the reliability or quality of supply to our existing and future customers.

We are committed to providing safe, clean water supplies to our customers. Our water security plans are just one way of helping us to offer this reliable service. The plans also provide strategic direction for our capital, maintenance and operational projects and are adapted to meet the needs of customers as needed.

## **8. What is the holding capacity of the Kingscote storage tanks and can they meet peak demand in summer?**

The current holding capacity of the storage tanks in Kingscote is 4.5ML. Over the last three years, peak demand has reached 1.4ML per day. If supply from the Middle River treatment plant is interrupted this storage would provide water to the community for approximately three days, or 1.5 days in peak summer period. To allow for the probability that the storage tanks may not be full when needed, we operate on the assumption that 1.6 days of supply will be available.

## **9. Are there plans to upgrade the offline tanks at the SA Water depot in Kingscote to increase storage for Kingscote?**

Yes, we are currently increasing the storage capacity at Kingscote to increase operational flexibility and to reduce reliance on the treatment plant during peak summer periods. Once these upgrades are complete the storage capacity will be equivalent to approximately 6 days at peak summer demand.

## **10. What plans and procedures are in place to prevent or manage a water shortage during peak tourism season?**

Our highest priority is ensuring a reliable and safe supply to our customers and the community. We have sound procedures in place to minimise risk to supply.

These include:

- Seasonal forecasting of rainfall and catchment levels to determine potential supply challenges for any given year and over the long term
- Adjusting plant production and tank storage levels to meet demand requirements
- Scheduling maintenance and asset upgrades during low demand periods
- Ensuring we can mobilise support crews from our wider workforce on the mainland when required.

In the unlikely event of an emergency causing a shortage of supply we would:

- Mobilise water tankers to cart from alternative water supply systems either on-island or from the mainland
- Distribute drinking water supplies such as bottled water to critical community centres

- Implement our media and communication plan to inform the community and relevant stakeholders of the situation.

We ensure that measures such as water rationing to ensure critical human needs are met are an absolute last resort.

## **11. Does SA Water have a drought relief plan for Kangaroo Island?**

Our planning is based on peak demand, or the amount of water that would be needed in times of extended dry periods. This enables us to ensure there is reliable water supply in times of drought.

## **12. What risk management plans exist for interruption to operations at treatment plants and storage sites?**

When operations are compromised, experienced SA Water staff from across our operations will attend the issue. The nature of the issue will determine the speed of the response.

## **13. Do trihalomethane (THM) levels remain a challenge for water treatment?**

Yes. While there have been improvements in THM results for the Middle River system, disinfection by-products continue to be a challenge due to the complexity of Middle River source water. Raw water from the reservoir contains high levels of dissolved organic carbon which comes from vegetation in the catchment area and causes its natural tea-like colour. There is also suspended dirt, organic material and microorganisms. The water goes through a number of processes to clean and treat it including a world-first process developed by SA Water, Orica Watercare and the CSIRO Division of Molecular Science, called Magnetic Ion Exchange (MIEX) as well as conventional treatment processes such as sedimentation, filtration, chlorine and ultraviolet light.

We work closely with the Department for Health and Ageing (DHA) to manage compliance with the Australian Drinking Water Guidelines (ADWG) and implement improvements. Recent actions to reduce disinfection by-products include:

- New aeration and spray recirculation systems at the Middle River Treated Water Storage and Kingscote tanks
- Optimisation of tank level control points to improve water age
- Flushing programs.

The DHA encourage the reduction of disinfection by-products but recognise the importance of not compromising disinfection. Poor microbiological quality represents a greater and more immediate risk to human health (National Health and Medical Research Council).

You can search water sampling data by postcode on [our website](#).

## **14. What is the maximum storage capacity of Middle River reservoir?**

The Middle River reservoir has an operational capacity of 549ML.

## 15. How old is the Middle River reservoir and what condition is it in?

Middle River reservoir constructed	1968
Useful life span	150 years
Occurrence of reservoir inspections	Three times a week and detailed inspections yearly
Current condition	The current performance of the dam is considered acceptable

All our reservoirs are maintained to ensure safe and reliable operation and to meet current and future demand. Our current investment plan for the Middle River reservoir includes an upgrade to the dam in approximately 10 years to maintain its capacity.

## 16. How much water spills out of the Middle River reservoir each year?

Generally the Middle River reservoir spills between June and November each year. The amount spilled can vary from 4GL to 29GL.

## 17. What is the capacity of the Middle River treatment plant?

The Middle River treatment plant is able to treat 3ML per day. However, to allow for down-time to clean and maintain the plant, we operate on the assumption that it has an operational capacity of 685ML per year.

## 18. What is the capacity of the pipeline between the Middle River treatment plant and Kingscote?

To ensure pressure across the whole system remains within an acceptable range, we operate on the assumption that the transfer pipeline has an operational capacity of approximately 35 litres per second or 3 ML per day.

## 19. What is the maximum daily output from the Penneshaw desalination plant?

The Penneshaw desalination plant is capable of producing 400kL of water per day.

## 20. What is the expected life of the Penneshaw desalination plant?

The Penneshaw desalination plant was built to operate for approximately 20 years. An upgrade of this facility was undertaken in late 2017 to renew equipment and increase the capacity from 330kL/day to 400kL/day. No further upgrade is required before 2024.

## 21. What is the holding capacity of the Penneshaw water storage and can it meet peak demand in summer?

The Penneshaw storage has a capacity of 29ML which represents 72 days at peak demand levels.

## **22. What is the cost of a new connection?**

The fee for a standard connection is determined by the type and size of connection you request. You can nominate the size of service you would like on your application form or we can advise you of the most suitable size.

If difficult construction conditions exist (such as existing services in the construction path, road reinstatement, underground water, trees, rock or requirements for traffic management), additional costs may be required. The cost you will be required to pay will be set out in a fixed quotation provided in our offer to connect.

Visit our [Connect a new service page](#) for more information or to submit a connection application.

## **23. Does SA Water use contractors from the mainland to conduct work on Kangaroo Island?**

Yes, through our construction services panel over the past two years we've invested around \$400,000 in extension and connection work with approximately 15 local suppliers. We are also working with the Kangaroo Island Council to explore further opportunities to work together.