
Northern and Yorke Demand and Supply Statement

Annual Review 2012



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1 Executive Summary

The 2011–12 review of the demand-supply projections has indicated that based on current population growth, demand for drinking quality water is not projected to exceed supply prior to 2050. Given the results from the review, an Independent Planning Process is not considered to be required in the foreseeable future.

The Northern and Yorke Demand and Supply Statement, released in December 2011, indicated that under a worst-case scenario, demand for drinking-quality water was not projected to exceed supply until 2044–45. As such, it was anticipated that an Independent Planning Process would not be required to be initiated until 2039–40.

Water for Good outlines that Regional Demand and Supply Statements will be annually reviewed. This commitment is further enhanced through the Water Industry Act 2012, which states that the Minister for Water and the River Murray will produce an annual report providing information about the demand and supply status of the various regions of the State.

The annual review for the Northern and Yorke Statement is based on the best available information, provided by a range of organisations including, but not limited to, local government, the Resources and Energy Sector Infrastructure Council, the Australian Bureau of Statistics, the Department of Environment, Water and Natural Resources, SA Water, the Department of Planning, Transport and Infrastructure and the Department for Manufacturing, Innovation, Trade, Resources and Energy.

The review of the demand-supply projections has indicated that, based on current population growth, demand for drinking quality water is not projected to exceed supply prior to 2050. Given the results from the review, an Independent Planning Process is not considered to be required in the foreseeable future.

During the 2011–12 annual review period, demand for drinking quality water in the Northern and Yorke region was lower than the best and worst-case scenarios of low and high population growth outlined in the statement. Mains water consumption for the Northern and Yorke region was 17.7 GL, compared with projected demands of 27.2 GL in the best-case scenario and 27.3 GL in the worst-case scenario. This is based on metered data from SA Water.

A 2614 ML surplus of drinking quality water was recorded in the Northern and Yorke region, compared with projected best-case and worst-case scenario surpluses of 5330 ML and 5229 ML respectively. If the quantities of drinking quality and non-drinking quality water (i.e. including recycled stormwater and wastewater and other non-prescribed water resources such as groundwater) are combined, there was a surplus of 3727 ML compared with projected best-case and worst-case scenario surpluses of 9683 ML and 9453 ML respectively.

The key factor that has led to the updated demand-supply projections for drinking quality water in 2011–12 is that actual population growth is tracking lower than the high population growth projection used in the Northern and Yorke Statement.

In keeping with the Water Industry Act 2012, the assumptions underlying the projections will be reviewed in 12 months' time. Should anything change, such as less water being available from the River Murray or prescribed wells areas or increased demand from population growth or viticulture, the timing for the demand-supply projections and associated Independent Planning Process will be adjusted accordingly.

Table 1: Revised demand-supply projections

Scenario	Projection 1: Drinking-quality water demand and supply only	Projection 2: All water sources and all human demands
Actual population growth	Demand is not projected to exceed supply prior to 2050	Demand is not projected to exceed supply prior to 2050

2 INTRODUCTION

A key priority for the South Australian Government is ensuring that all South Australians have sufficient water supplies for a sustainable lifestyle, economy and environment.

Under Water for Good, the State Government is required to ensure Regional Demand and Supply Statements are in place across the State in consultation with regional communities, building on existing plans and incorporating local knowledge. Developing such statements is one tool to enable the State Government to secure the State's water resources by taking stock of the resources available, the current and projected future demands on them, and the likely timing of any potential demand-supply imbalance.

Water supply to all South Australian regions is a key priority for the State Government. The Northern and Yorke Statement aims to provide a 40-year overview of water supply and demand in the Northern and Yorke region by outlining the state of all water resources for drinking and non-drinking water, the major demands on these resources and likely timeframes for any possible future demand-supply imbalance.

The statement will be used to plan for the timing and nature of future demand management or supply options. It will help ensure that long-term solutions are based on a thorough understanding of the state of local resources, the demand for them, and likely future pressures.

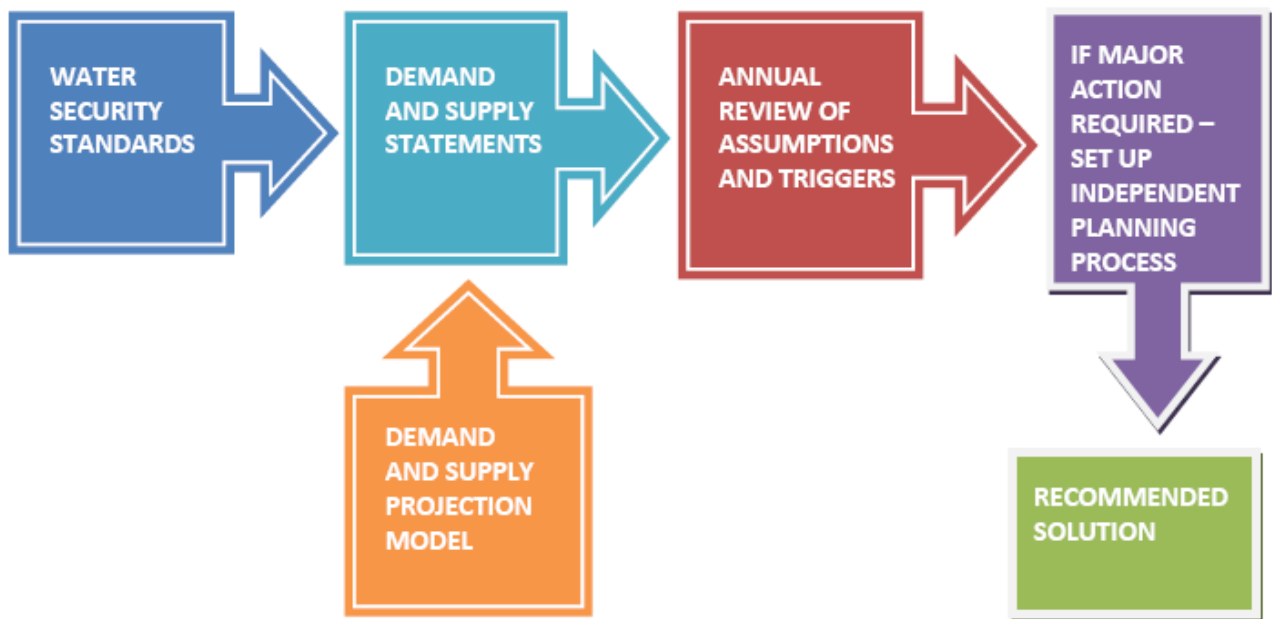
In the event that a Regional Demand and Supply Statement indicates a shortfall in supply it will trigger the State Government to initiate an Independent Planning Process five years prior to when demand for water is projected to exceed supply. This process will assess demand management or supply options to address the shortfall, and will include local community engagement.

The Independent Planning Process will include a cost-benefit analysis and recommendations will be made on how to address the shortfall in supply, including the possible role of Government, funding options and opportunities to engage the private sector in the delivery of the recommended approach.

The statement, released in December 2011, indicated that under a worst-case scenario demand for drinking-quality water was not projected to exceed supply until 2044–45. As such, it was anticipated that an Independent Planning Process would not need to be initiated until 2039–40.

Water for Good indicates that Regional Demand and Supply Statements will be analysed and reviewed annually as an integral part of an adaptive management framework (see figure 1).

Figure 1: Adaptive Management Framework



The aim of this report is to review the assumptions behind the demand-supply projections in the statement. This review will identify how we are tracking as per the projections, and indicate if the timing for the Independent Planning Process requires adjusting.

3 ASSESSMENT OF DEMAND-SUPPLY PROJECTIONS

The Northern and Yorke Statement developed demand-supply projections to 2050 based on four prudently chosen scenarios – high and low population growth and climate change impact. They are intended to illustrate the possible water demand and supply levels in any given year, depending on a range of assumptions including population, climate change, the available supply from the Clare Valley Prescribed Water Resources Area and River Murray supply. When released in December 2011, the Northern and Yorke Statement projected that under a worst-case scenario of high population growth, demand for drinking quality water was projected to exceed supply in 2044–45.

3.1 2011–12 SUPPLY AND DEMAND

South Australia had its fifth-wettest year on record in 2011, with the state-wide area averaging, in total, more than one and a half times the long-term annual average rainfall [Bureau of Meteorology (BoM), 2012]. During the second half of 2011, however, most months tended to be below average (BOM, 2012). Rainfall for South Australia as a whole in 2012 was 77 per cent of the long-term annual average (i.e. 23 per cent below normal) – the lowest since 2006. The start of 2012, however, saw cooler and wetter-than-usual conditions for South Australia (BOM, 2013a).

The wetter-than-usual start of 2012 in South Australia was consistent with the rest of the Murray-Darling Basin. For the Basin as a whole, 27 February 2012 to 4 March 2012 was the wettest seven-day period on record for any month since at least 1900 (BOM, 2013b).

The majority of groundwater level observations wells in the Clare Valley Prescribed Water Resources Area (PWRA) display declining long-term trends over the past 20 years up to 2009, followed by rising water levels up to and including 2011. In 2011 the majority (113 out of 152) of observation wells show a rise (up to 4.55 m) in the maximum water level attained in comparison to the maximum water level observed in 2010 (Department of Environment, Water and Natural Resources (DEWNR) 2012)

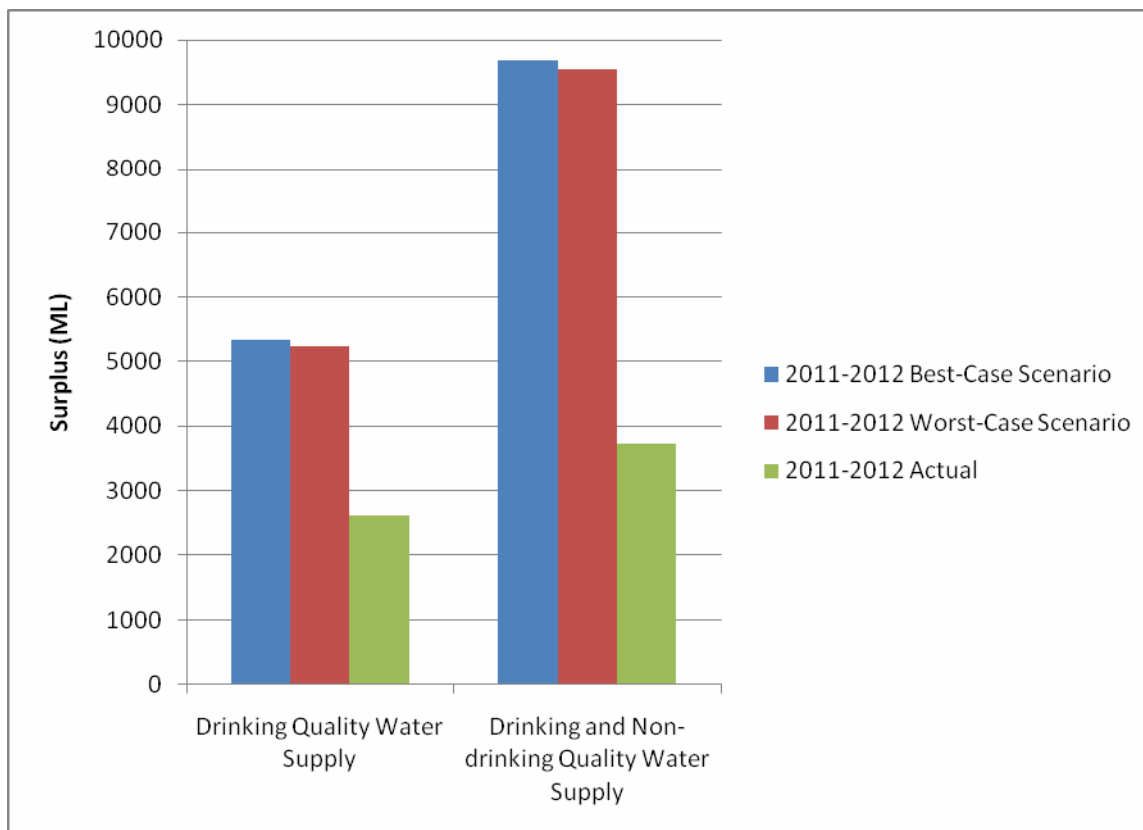
During 2011–12, demand for drinking quality water in the Northern and Yorke region was lower than the best and worst-case scenarios of low and high population growth in the Northern and Yorke Demand and Supply Statement. Mains water consumption for the Northern and Yorke region was 17.7 gigalitres, compared with projected demands of 27.2 gigalitres in the best-case scenario and 27.3 gigalitres in the worst-case scenario.

3.2 2011–12 ACTUAL AND PROJECTED AVAILABLE SUPPLY

Significantly lower actual demand from the mains water supply compared to projections in the Northern and Yorke Demand and Supply Statement resulted in a surplus in available supply for the Northern and Yorke region over 2011–12. There was also less water supplied from the River Murray than projected; however, this reduction in supply was outweighed by the decrease in demand.

A 2614 megalitre surplus of drinking quality water was recorded in the Northern and Yorke region, compared with projected best-case and worst-case scenario surplus of 5330 megalitres and 5229 megalitres respectively (see Figure 8). If the quantities of drinking quality and non-drinking quality water (i.e. including recycled stormwater and wastewater and other prescribed water resources such as groundwater) were combined, there was a surplus of 3727 megalitres (see Figure 8). The projections for the best-case and worst-case scenarios were for surpluses of 9683 megalitres and 9453 megalitres respectively.

Figure 2: Northern and Yorke 2011–12 available supply compared to projections



3.3 REVIEW OF ASSUMPTIONS

During development of the statement, a number of factors were identified that could affect the demand-supply balance for the Northern and Yorke region and lead to a surplus or deficit. To better understand the future water supply and the demands it will face, it is important to recognise the influences. The table below illustrates the key drivers for the demand and supply projections.

Table 2: Drivers for the Northern and Yorke region demand-supply projections

KEY SUPPLY DRIVERS	KEY DEMAND DRIVERS
River Murray supply	Total demand for water
Clare Valley Prescribed Water Resources Area supply	Population growth
Baroota Prescribed Water Resources Area supply	Viticulture
Bundaleer, Beetaloo and Baroota Reservoirs	Stock
Non-prescribed groundwater resources	
Alternative supplies	
Climate change	

3.4 SUPPLY DRIVERS

River Murray supply

Under normal flow and operating conditions, South Australia has a minimum entitlement of 1850 GL per year, of which SA Water has a licence for 50 GL per year for country town water supply purposes and their five-year rolling licence of 650 GL for metropolitan Adelaide. In extreme circumstances, i.e. drought or periods of low flow conditions, special water-sharing arrangements are triggered to ensure South Australia has access to water for critical human needs. The Northern and Yorke region receives most of their River Murray water from the country town licence, with a smaller portion from the metropolitan Adelaide licence.

In 2011–12 SA Water supplied approximately 19.9 gigalitres of River Murray water to the Northern and Yorke region. This includes 230 megalitres that was supplied through the Clare Valley Water Supply Scheme for irrigation purposes. The Northern and Yorke Demand and Supply Statement assumed a maximum supply capacity of 31.8 gigalitres. Demand for water in the region during 2011–12 did not require that SA Water utilise the full system capacity.

Clare Valley Prescribed Water Resources Area supply

In 2011–12 there was a total of 1504 megalitres of licensed surface water, 713 megalitres of licensed watercourse water and 2228 megalitres of licensed groundwater available for allocation from the Clare Valley PWRA. Under a worst-case scenario, the Northern and Yorke Demand and Supply Statement assumed a maximum licensed available supply capacity in 2011–12 of 1312 megalitres of surface water, 657 megalitres of watercourse water and 2165 megalitres of groundwater. The total available licensed allocations in 2012–13 will remain consistent with the 2011–12 volume.

Baroota Prescribed Water Resources Area supply

The water allocation plan for the Baroota PWRA is under development. As such, there is no new data available regarding volumes of water available for supply from the Baroota surface water, watercourse water or groundwater resources. As such, the volumes used in the Northern and Yorke Demand and Supply Statement remain valid.

Bundaleer, Beetaloo and Baroota Reservoirs

The Bundaleer, Beetaloo and Baroota reservoirs remain as stand-by water supplies as part of SA Water's State Disaster and Emergency Management Plan. The volumes used in the Northern and Yorke Demand and Supply Statement remain valid.

Non-prescribed groundwater resources

There is no new information regarding the volumes of water available from the non-prescribed groundwater resources in the Northern and Yorke region and, as such, the volumes used in the Northern and Yorke Demand and Supply Statement remain valid.

Alternative supplies

Local government throughout the Northern and Yorke region has well developed capacities for capturing and reusing stormwater, and reusing treated wastewater for non-drinking purposes. The annual review showed that less stormwater was being captured and reused than had been projected, and that less treated wastewater from community wastewater

management schemes was being reused than had been projected. However, this is likely to be due to difficulties in obtaining data rather than actual reductions in stormwater capture and reuse.

The available volume of treated wastewater available from SA Water Waste Water Treatment Plants for non-drinking purposes was greater during the reporting period than was projected; however, the demand was lower than projected.

Climate change

Current advice from the Department of Environment, Water and Natural Resources is that the climate change projections used in the Northern and Yorke Statement remain valid.

3.5 DEMAND DRIVERS

Demand

During the reporting period, demand for drinking quality water in the Northern and Yorke region was approximately 9.6 gigalitres lower than the Northern and Yorke Demand and Supply Statement projections. Demand for drinking and non-drinking quality water combined was approximately 6 gigalitres lower than the Northern and Yorke Demand and Supply Statement projections.

Population growth

The Northern and Yorke Demand and Supply Statement adopted the South Australia and Statistical Divisions 2006–2036 population projections. Advice from the Department of Planning, Transport and Infrastructure (DPTI) suggests that actual population growth was above the low population growth rate used in the projections but lower than the high population growth rate used.

DPTI has advised that the population growth rate, when averaged out to 2050, is tracking only slightly higher than the low population growth rate scenario used in the Northern and Yorke Demand and Supply Statement.

Viticulture demand

The Northern and Yorke Demand and Supply Statement based the demand on water resources from the viticulture industry on the irrigation demand in the water allocation plan for the Clare Valley PWRA and the 2009–10 usage through the Clare Irrigation Scheme. The projected volume demanded, as outlined in the Northern and Yorke Demand and Supply Statement, was approximately 4 gigalitres. Actual demand, based on water taken from the Clare Valley PWRA in 2011–12, as well as the volume of water supplied through the Clare Irrigation Scheme, was approximately 2.2 gigalitres.

Stock

Based on advice from the then-Primary Industries and Resources South Australia, the Northern and Yorke Demand and Supply Statement projections assume that stock demand will increase by 1.5 per cent on the 2010–11 level for 10 years and then remain constant. Current advice from Primary Industries and Regions South Australia is that the Northern and Yorke Demand and Supply Statement projections remain valid.

4 CONCLUSION

The annual review of the assumptions underlying the statement’s demand-supply projections provides for the opportunity to revise the timing of when an Independent Planning Process is required.

The key factor that has led to the updated demand-supply projections for drinking quality water in 2011–12 is that actual population growth is tracking lower than the high population growth projection used in the Northern and Yorke Statement.

In light of this, the demand-supply projections have been revised. As in the statement, two different demand-supply projections are considered:

- Projection 1: Drinking-quality water demand and supply only
- Projection 2: All water sources and all human demands

The first projection refers to water supply and demand of high-quality, treated water from the SA Water mains distribution network. The second projection refers to drinking quality water and non-drinking quality water supplies; and demand for water for all human purposes such as domestic use, stock use, irrigation, industrial, commercial etc.

Table 3 outlines the impact on demand-supply for both projections based on current population growth.

Table 3: Revised demand-supply projections

Scenario	Projection 1: Drinking-quality water demand and supply only	Projection 2: All water sources and all human demands
Actual population growth	Demand is not projected to exceed supply prior to 2050	Demand is not projected to exceed supply prior to 2050

Upon review of the demand-supply projections, based on current population growth, demand for drinking quality water is not projected to exceed supply prior to 2050. Therefore an Independent Planning Process is not considered to be required in the foreseeable future.

However, in keeping with the Water Industry Act 2012, the assumptions underlying the projections will be reviewed in 12 months’ time. Should anything change, such as less water available from the River Murray or prescribed wells areas or increased demand from population growth or viticulture, the timing for the demand-supply projections and associated Independent Planning Process will be adjusted accordingly.

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