



Cardno Report titled "Review of SA  
Water Supply mix optimisation" May  
2013

## SA Water feedback

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## Executive Summary

Thank you for the opportunity to comment on the report titled “Review of SA Water Supply Mix optimisation”. As you are aware, SA Water is very supportive of the regulatory process and we appreciate the need to ensure reviews such as the one contained in this report are robust and comprehensive. To that end SA Water has been as comprehensive as possible within the short timeframe set by ESCOSA and we trust that the limitations of this timeframe are understood.

In order to provide comments on the report in the timeframe required, SA Water has also sought independent expert advice from Tonkin Consulting. This report details a range of areas where there appears to have been a misunderstanding regarding the operation of SA Water’s system and how HOMA is used.

It is clear from SA Water’s review of the report that Cardno have completed a large amount of work in a very short timeframe, and have attempted to understand a very complex, unique and inter-connected water system. As noted in the report, Cardno’s review was limited by the time available (Cardno, 2013, p. 3) and it appears that they may not had time to fully understand the interactions between the different parts of SA Water’s system. Unfortunately these conditions have resulted in recommendations and conclusions which if adopted will not result in an optimised outcome for SA Water’s customers.

SA Water notes that Cardno have reinforced the recommendation that the proving period for the ADP has been “accepted by ESCOSA as prudent and efficient” (Cardno, 2013, p. 3). SA Water also notes that Cardno considers it “reasonable that the median catchment inflow determined from SA Water’s reservoir water balance from the last 10 years be used for the purposes of RBP modelling” (Cardno, 2013, p. 8).

In addition, there are several key issues which warrant further comment. These issues are addressed in the attached and are the same issues SA Water raised in response to the Draft report which was issued in April 2013. We note that these matters of clarification have not been addressed by Cardno in finalising their report, although some of the points made in SA Water’s response to the draft have been noted by Cardno in the subsequent report titled “Review of supply mix optimisation” dated May 2013.

# 1 Key Issues

## 1.1 Environmental Flow Releases in the Torrens System

Cardno have made an observation regarding the 4.1GL sourced from the River Murray and the E-flows released at Gorge weir. SA Water has discussed this issue with our independent technical reviewer and agrees that there is a potential improvement to be made as to how SA Water have modelled these E-flows. Although the impact to SA Water's major pumping volumes will be less than 4GL we would be happy to discuss this issue further with ESCOSA and confirm whether this improvement should be adopted in the additional modelling ESCOSA have requested.

## 1.2 Use of Millbrook Reservoir

SA Water is concerned that Cardno have not appreciated the significant Cryptosporidium risk associated with using Millbrook Reservoir between June and January. SA Water's RBP modelling assumes that water is only extracted from the Millbrook Reservoir between February and May. SA Water maintains that the assumptions we have made in the RBP represents the most prudent and efficient plan to manage the risk of Cryptosporidium to our customers. In support of this assumption, SA Water provides the following comments which supplement information we have already provided you previously.

- Millbrook reservoir is primarily supplied from Gumeracha weir (transfers from the River Torrens) and receives major uncontrolled inflows via Kersbrook Creek (catchment area 23km<sup>2</sup>).
- Inflows from Kersbrook Creek carry the highest Cryptosporidium loads of any reservoir inflow creeks monitored by SA Water (highest count to date was 2259 confirmed Cryptosporidium/10L which is a Department of Health and Ageing (DHA) Type 1 incident, reportable to DHA and the Minister for Water).
- In addition to the intensive land use in the catchment (predominantly grazing), flows in Kersbrook creek can be also be impacted from the Kersbrook Community Wastewater Management Scheme upstream.
- Importantly, Millbrook reservoir is the only reservoir which has had Cryptosporidium hominis detected (human derived Cryptosporidium) and is therefore considered at higher risk by the Department for Health and Ageing.

We are concerned that if ESCOSA were to adopt Cardno's recommendation and changes this assumption, there will be a significant increase in the risk to Public Health. We suggest that ESCOSA speak to DHA and receive some advice on this issue.

### 1.3 Hope Valley WTP

Cardno have included a recommendation that the “Hope Valley WTP output for all years...be at full capacity” and that “ADP water should be transferred to its next best use” (Cardno, 2013, p. 20). Tonkin Consulting anticipates that with Hope Valley WTP operating at full capacity, the volume of water produced will be well in excess of customer demand in the entire area able to be supplied by the Hope Valley WTP. This means that there will still be “spill” from the system, but the spill will be moved to another location. Given that many of SA Water’s other WTPs must operate at minimum flow, spilling excess water from the ADP into Happy Valley reservoir is the likely outcome, which in effect will mean wasting high quality treated water to a reservoir. The “spilled” volume of water will need to be re-treated through Happy Valley WTP prior to entering the distribution system i.e. the water will be treated twice, once by ADP and once by Happy Valley WTP. This will be evident in the additional modelling requested by ESCOSA. This is unlikely to result in an optimised solution for SA Water’s customers and shows a lack of appreciation on the part of Cardno of the constraints facing SA Water while the ADP is in its proving period. As previously advised, this modelling will be available by COB Wednesday the 17th April.

### 1.4 Analysis of Mannum-Adelaide system in 2013/14 (South Para system water balance)

Tonkin Consulting have concluded that there is an error in Cardno’s discussion on the water balance in the South Para system (termed “Barossa system” in Cardno’s report). In particular Cardno have not considered the contractual demand from the Barossa Infrastructure Limited (BIL) for commercial irrigation supply, have not accounted for evaporation loss from the three reservoirs that make up the Barossa/South Para supply system and have not considered environmental flow releases from Barossa Weir under the trial environmental flow agreement. Correctly accounting for these volumes shows that there is no excessive transfer of River Murray water into the South Para system. SA Water is concerned that this error has influenced some of Cardno’s recommendations.

### 1.5 Cost of meeting medium term recommendations

Cardno has provided some medium term recommendations which will require additional capital and/or operating investment that was not included in SA Water’s RBP. Should ESCOSA choose to adopt these recommendations, the appropriate level of funding would need to be calculated and included within any revenue determination. Also, should ESCOSA choose to adopt recommendations which require a more detailed level of hydrological modelling than SA Water has undertaken as part of this RBP, the issue of which government department is responsible for this work would need to be resolved and SA Water provided with additional funding as required. SA Water would be happy to work with ESCOSA to determine an appropriate allowance for this additional investment as required.