Response to the Economic Regulation Authority's

Inquiry into the Cost of Supplying Bulk Potable Water to Kalgoorlie-Boulder

Draft Report

29 July 2005

WATER CORPORATION

Introduction

The Economic Regulation Authority's (ERA) Draft Report for the Inquiry into the Cost of Supplying Bulk Potable Water to Kalgoorlie-Boulder reflects a sound analysis of the economics of United Utilities Australia's (UUA) proposal to construct a desalination plant at Esperance and pipe desalinated water to Kalgoorlie.

The Corporation endorses the methodology used and generally concurs with the calculations for the avoidable costs associated with the Goldfields and Agricultural Water Supply (G&AWS). The results demonstrate that the project is not economically viable, even under the optimistic set of assumptions used in the base case.

This submission provides further discussion on three issues addressed in the Draft Report:

- the relative security of supply between UUA's proposed project compared to the Goldfields and Agricultural Water Supply (G&AWS);

- the significant risks associated with the water demand projections included in the Draft Report base case;

- the ability to continue to progressively upgrade the capacity of the G&AWS scheme to meet the future demand for water in Kalgoorlie.

Security of Supply

The Water Corporation's primary concern is to maintain the security of supply to Kalgoorlie and Esperance in the most economic manner.

It is the Corporation's view that UUA's proposal to terminate the G&AWS and rely on a desalination plant as the sole supply to Kalgoorlie and Esperance represents an overall reduction in the security of supply for customers.

For day-to-day supply security, the Corporation concurs with the ERA's analysis of the relative source and pipeline risk associated with UUA's proposal compared to continuing the G&AWS supply. It should be noted that the Corporation is undertaking additional source development for the Integrated Water Supply Scheme, which includes Kalgoorlie, aimed at significantly reducing the probability of restrictions.

Additionally, the Corporation has undertaken significant upgrades to improve the security of the supply into Kalgoorlie. In response to water restrictions that occurred in the summer of 1997/98, the Corporation has invested around $70 million upgrading the scheme, including increasing the capacity of the Perth-Kalgoorlie pipeline with the upgrades to five major pump stations along the Perth-Kalgoorlie pipeline and replacement of pipe to increase capacity of the main.

The security of supply has been improved by an increase in town storage at Kalgoorlie-Boulder by 200 ML and adding a further 50ML of reserve storage near Southern Cross. The increase in water storage in Kalgoorlie-Boulder has almost doubled the amount of water available (from 5 to 10 days of storage during summer

months) in Kalgoorlie-Boulder if the water supply from Perth is interrupted. Additionally, refurbishment of Locking bar pipeline between Southern Cross and Kalgoorlie has nearly halved the number of major pipe bursts on the pipeline

However, the Draft Report does not include consideration of the consequences of a catastrophic source failure. This is more likely to occur with a desalination plant than the existing supply source (Mundaring Weir). Additionally, the Corporation has scheduled works that will make it possible to bypass Mundaring Weir and supply the G&AWS from other sources should this source fail.

While the probability of catastrophic failure may be low, without the backup of the G&AWS, there would be no alternative supply. It would not be possible to tanker enough water to maintain a supply to a city the size of Kalgoorlie**.**

The Corporation's assessment is that this risk is likely to be unacceptable. The Corporation's potential avoidable cost savings should therefore be reduced by the amount required to keep the existing schemes as a standby, reducing the price it could afford to pay UUA for water. In addition to the planned maintenance currently recognised in the ERA's avoidable cost calculation, additional costs may be incurred keeping the pipe on standby but unused.

If the G&AWS is to be retained as a standby supply to Kalgoorlie, consideration should be given to continuation of its use to meet existing demand. A simple examination of UUA's marginal cost for supplying the existing G&AWS demand would suggest that these are higher than the Corporation's avoidable cost for the G&AWS scheme.[1]

Supplying the existing scheme water at an avoidable cost of around $1 per kilolitre will require other customers to be charged significantly more than the $3.33 per kilolitre that has been identified for the benefits for supplying additional mining water. It would therefore appear uneconomic for UUA to supply the Corporation's existing customer base in Kalgoorlie.

Water Demand Projection

The analysis in the Draft Report shows that UUA's project has a net cost to the State based on what the Corporation believes to be a highly optimistic scenario for growth in demand in the Kalgoorlie and Esperance region. UUA's proposal rests on this assumption.

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[1] Once the sunk cost for the pipeline, pump stations and storages are taken into account, the avoidable cost of supplying the existing 11.8GL to Kalgoorlie is around $0.97/kL to $1.03/kL (source costs of 75/kL to 81c/kL *plus* pumping cost of 31c/kL *minus* water quality modifications of 9c/kL *minus* additional unidentified cost if the pipeline being unused).

The Draft Report identifies the UUA's energy costs at 85c/kL. This leaves around 22 to 28c/kL ($0.97 to $1.03/kL *minus* 85c/kL) to pay for the additional 32ML/day desalination plant and pipeline capacity required to supply existing demand and balancing storages to meet summer demand peaks. This would require UUA's marginal capital costs to be half the average cost of the Perth Seawater Desalination Plant, even without taking into account the pipeline capacity or the cost of non-energy items such as maintenance and membrane replacement.

The scheme growth projections are those included in the Corporation's scheme planning. These assumptions are used to ensure that planning is in place to meet potential growth scenarios. The cost benefit analysis assumes an initial demand of 22GL in 2008 compared with current annual demand of 12.9GL. The assumed rate for growth in demand is then 1.9% per annum compared with an average growth rate of 0.8% for the last 5 years. Kalgoorlie-Boulder's population actually declined by 0.7% in the year to June 2004.

In the medium-term, consideration should also be given to the expected life of existing mining operations and when mine closures may impact on the demand projections.

The Draft Report only includes a sensitivity analysis on the initial demand. A sensitivity analysis based on lower growth rates would also significantly reduce the project's viability.

While UUA is entitled to take a position on the demand projections and risk its owners equity on this basis, the Corporation would be concerned if UUA sought to pass the demand risk back to taxpayers via the Corporation. This could happen in a number of ways, including:

- Through fixed take-or-pay contracts with the Corporation for volumes that are greater than our expectation of future demand, thereby guaranteeing the project proponents a profit from an unviable project;

- Through seeking a bulk water price based on a projection of the Corporation's long-term average avoidable costs (rather than tracking the actual avoidable costs which are lower in the early years);

- If the customer risk associated with new mining demand is contractually passed back to the Corporation.

If UUA is willing to commit to developing the project bearing all the demand related risks, their demand scenario is their business. However, if UUA or their financiers require the Corporation and/or Government to underwrite these risks, the Corporation could not possibly commit to the scenario used in the Draft Report. The ERA should therefore seek a firm commitment from UUA that they will bear the demand risk associated with their proposal before accepting their demand scenario for the Final Report.

UUA has sought a mandate to undertake additional investigation work to reduce the uncertainty associated with the initial mining demand. However, additional investigations will not be able to confirm either the future mining demand projections or the future scheme water demands in Kalgoorlie and Esperance. These projections will remain as a significant risk that will continue to impact on the viability of the project.

G&AWS Capacity Upgrades

While the Draft Report is based on an acceptance that the capacity of the G&AWS can be incrementally increased without a significant impact on unit costs, the ERA has sought further submissions on this issue.

The G&AWS Main Conduit is the pipeline system that conveys potable water to the goldfields and agricultural regions from Perth's Integrated Water Supply Scheme. The Main Conduit was originally designed to supply 23 megalitres per day (MLD) to the region and has been incrementally upgraded over the past century such that it now delivers almost 150 MLD out of Mundaring.

The Main Conduit includes 549 km of pipeline ranging from dual 900mm pipes out of Mundaring to a single 600mm pipe into Kalgoorlie. There are 19 main line pump stations with output ranging from 124 MLD to 46 MLD, in addition to thirteen separate storage sites. The recently announced reservoir at Kalgoorlie will see storage capacity in the city almost double to 880 ML.

The Water Corporation has undertaken a number of comprehensive reviews of the Main Conduit scheme, one of which examined increasing the capacity into Kalgoorlie to 100MLD.

The reviews were based on optimising the progressive upgrading of the pipeline based on the demand projections expected at the time. As the pipeline already exists and does not have to be completely duplicated at any one time, it will nearly always be more economical to upgrade rather than replace the scheme. Only a very large step increase in demand could justify developing an alternative scheme.

There are no diseconomies of scale in upgrading the pipeline. Ultimately every part could be duplicated as demand grows, and then duplicated again. The cost of progressive expansion will be less than the cost of a single step duplication as this process can be optimised.

The most recent planning study was completed in 2004. This examines the works required to increase the capacity of all sections of the Main Conduit to meet expected demands from the G&AWS, including delivering 50MLD into Kalgoorlie. This capacity is sufficient to meet expected demand until 2020, and does not represent the ultimate capacity of the scheme.

In summary, the 2004 report identifies the upgrades required to cater for growth as:

Pump Stations
- Upgrade 3 by 2010
- Upgrade further 4 by 2015
- Upgrade further 6 by 2020

Locking Bar Pipe
- Replace 12.5km by 2010
- Replace a further 4.5km by 2015
- Replace a further 12.8km by 2020

The ability to progressively upgrade the scheme without cost penalty underlies the Corporation's charging for major consumers in Kalgoorlie and throughout the G&AWS. The Corporation would not be using this basis if it believed that there were significant diseconomies of scale in expanding the pipeline. The charges for major consumers are also aligned with the avoidable cost calculation included in the ERA cost-benefit analysis.

Conclusion

The Water Corporation's primary concern is to maintain the security of supply to Kalgoorlie and Esperance in the most economic manner.

$70 million has been spent in the last five years upgrading capacity and improving the security of supply. The G&AWS can continue to be augmented in incremental steps to match growth in demand.

The Corporation notes the analysis presented in the Draft Report shows that even under a highly optimistic scenario UUA's project is not economically justified. However, should the ERA identify additional benefits or reduced costs in the Final Report, then the ERA should either:

- seek UUA's commitment that their owners and financiers will unconditionally bear the demand risk associated with the current scenario; or

- adopt a realistic demand scenario.

The Corporation believes that there is a danger that the current analysis based on UUA's demand projections could give the public a false impression on how close the project is to being viable.