GLADSTONE AREA WATER BOARD

Key Assets

Gladstone Area Water Board

Lake Awoonga

- Fourth largest water storage in Queensland. The full capacity of Lake Awoonga is 777,000ML (1.4 times the water in Sydney Harbour)
- GAWB currently has an annual allocation of 78,000ML – enough water to supply Gladstone for 10 years
- The Awoonga Dam structure was raised from a spillway height of 30m (283,000ML) to its current height of 40m in 2002
- Cyclone Beni broke the 2003 drought, raising the water level in the lake by 10m in two days
- The dam first spilled when the water level reached 40m in December 2010. It reached its highest level of 48.3m (1,499,000 ML or 193% of capacity) in January 2013 following record inflows associated with Tropical Cyclone Oswald

Gladstone Water Treatment Plant

- Consists of two parallel treatment processes which merge to a common on site storage before the water is pumped to distribution reservoirs
- Plant One is a conventional treatment process, while Plant Two uses Dissolved Air Flotation (DAF) which is more efficient at removing high turbidity and algae
- When originally built in 1971, the process consisted of just two clarifiers and four filters. The process now includes two clarifiers, three DAF units and 12 filters, together with an additional pump station, chemical storage, system control and waste removal infrastructure
- Combined maximum output is over 50ML per day, while the average daily supply last calendar year was 26.5ML per day.

Gladstone-Fitzroy Pipeline

- 115km long and approximately 1m in diameter
- Capacity of up to 30,000ML per annum
- A Water Treatment Plant will produce raw water (non-potable) of comparable quality to water in Lake Awoonga
- Pump stations to be located at the river intake, the Water Treatment Plant and at Raglan, operating at 20–200m pressure
- Storages to be located at the Water Treatment Plant, Raglan and the main storage at Aldoga.

Yarwun Water Treatment Plant

- Built in 1989 and last upgraded in 2009
- Located 10km north of Gladstone, it primarily supplies industrial customers in the Yarwun Industrial Area
- Currently designed to produce 5ML per day, however current peak day demands frequently exceed this capacity
- Remotely monitored for key parameters (pH, turbidity and chlorine) and operated from the Gladstone Water Treatment Plant.

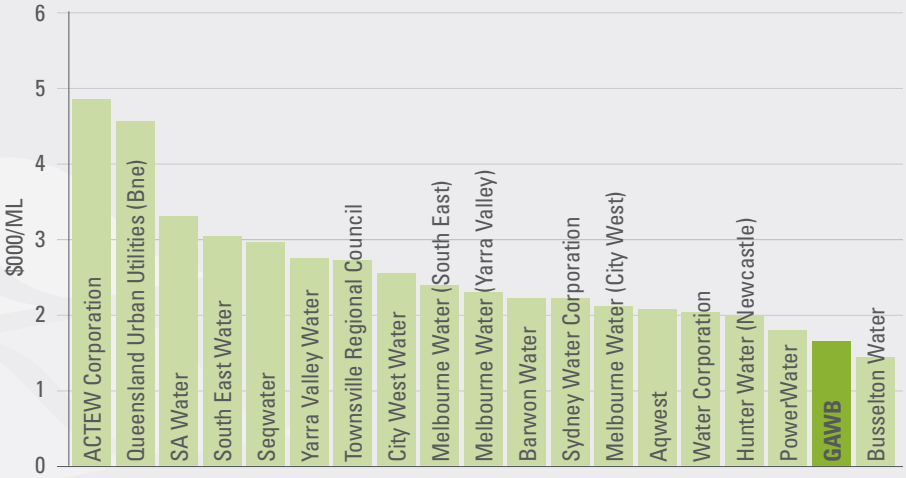
Customers

- Queensland Alumina Ltd – one of the largest alumina refineries in Australia, producing some 3.95 million tonnes of smelter grade alumina annually
- Rio Tinto Alcan Yarwun Alumina Refinery – world class alumina production at 3.4 million tonnes per annum and ranked highly in the world for cost efficiency
- Boyne Smelters Ltd – world class aluminium smelter and Australia's largest at 570,000 tonnes per annum
- Orica Yarwun Chemicals Complex – one of the world's largest producers of ammonium nitrate (500,000 tonnes per annum) and sodium cyanide
- Cement Australia – largest cement plant in Australia at 1.7 million tones per annum
- Three power stations – the Callide Power Stations (owned by CS Energy and Callide Power Management) and the NRG Gladstone Power Station (the largest in Queensland with 1,680 MW installed capacity)
- Gladstone Regional Council – population of approximately 66,000, experiencing rapid growth.

Comparison of Estimated 2015 Prices for Potable Water

Price is acknowledged as a key basis for public comparison between water service providers and can represent a valid indicator of efficiency.

GAWB has compared data illustrating potable water prices of a representative Australia-wide selection of other regulated water service providers to the weighted average potable delivery price charged to Gladstone Regional Council (GRC). GAWB's 2015 weighted average price is at the lower end of the water service providers included in the analysis.



Source: Synergies, *Australian Water Prices: Gladstone Area Water Board*, August 2014, pages 11 & 13

Source Selection

Based on the cost estimates provided by GAWB's engineering consultants, a pipeline from the Fitzroy River will result in lower prices to customers than an equivalent capacity desalination plant.

For both capacity increments modelled (15GL p.a. and 30GL p.a.), the pipeline project has lower capital costs and lower operating costs than the equivalent capacity desalination plant. That is, for capacities of this order and all other things being equal, there is no scenario where a desalination plant produces water at a lower expected price than a pipeline project with the same capacity.