



## FUTURE WATER PROJECT 2060



### Clarence Moreton Basin (Alstonville) Groundwater Scheme

There are two groundwater sources accessible in the Alstonville area –  
The Alstonville Basalt Plateau Groundwater Source and the deeper Clarence  
Moreton Basin Groundwater Source.

#### Alstonville Basalt Plateau Groundwater Source

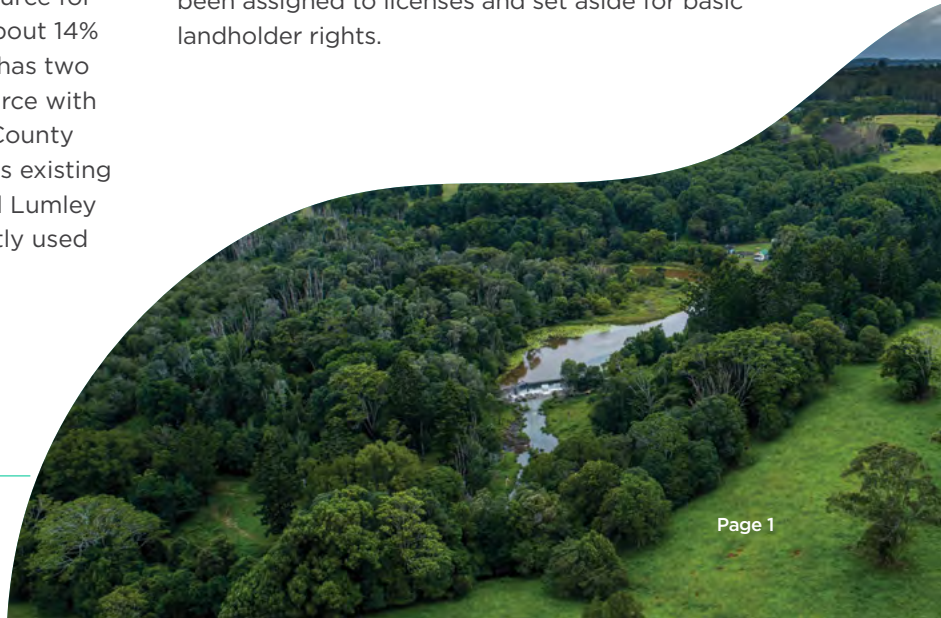
The Alstonville Basalt Plateau Groundwater Source contains multiple layers of fractured basalt interspersed with water-bearing layers which are accessed for groundwater supply. This aquifer system covers an area of around 390km<sup>2</sup> and has a typical thickness varying from 50m to 200m. The depth to reach the aquifer depends on the overlying topography. The groundwater in this aquifer system available for use is 8,895ML (megalitres) per year.

The available water in the Alstonville Basalt Plateau Groundwater Source is fully allocated. No additional allocations can be made from this groundwater source.

Water allocations in this groundwater source for local water utilities is 1,230ML/year, or about 14% of available water. Rous County Council has two existing licences in this groundwater source with a total allocation of 680ML/year. Rous County Council uses these allocations through its existing bores at Converys Lane, Wollongbar and Lumley Park, Alstonville. These bores are currently used as drought supplies only.

#### Clarence Moreton Basin Groundwater Source

Underlying the Alstonville Basalt Plateau Groundwater Source are the older sedimentary rock layers of the Clarence Moreton Basin. The basin is estimated to cover around 38,000km<sup>2</sup> from the Lockyer Valley near Brisbane in south-east Queensland and down to the Richmond and Clarence River basins in northern New South Wales. The available water in NSW from the Clarence Moreton Basin Groundwater Source, defined in the water sharing plan, is 300,000ML/year – more than 30 times the water available in the Alstonville Basalt Plateau Groundwater Source. Less than 2% of the available water in the Clarence Moreton Basin Groundwater Source has been assigned to licenses and set aside for basic landholder rights.



## Alstonville Basalt Plateau Groundwater Source



### About Groundwater

Groundwater is a common water source used for urban water supply around the world. Naturally occurring fresh groundwater is from rainfall that has seeped through the ground. It is stored in fractured rocks or layers of sand or other water-bearing layers called aquifers. The water is accessed through bores and is treated to drinking water standards.

### Benefits of groundwater

Groundwater offers a relatively reliable water supply, including during drought.

Benefit	Level	Other information
<b>Available water and quality</b>	Medium	Investigations indicate the deeper Clarence Moreton Basin Groundwater Source has available water of a suitable quality for urban water supply.
<b>Reliability of supply</b>	High	Groundwater is a relatively reliable water supply, including during drought, but it is still reliant on rainfall to recharge this source.



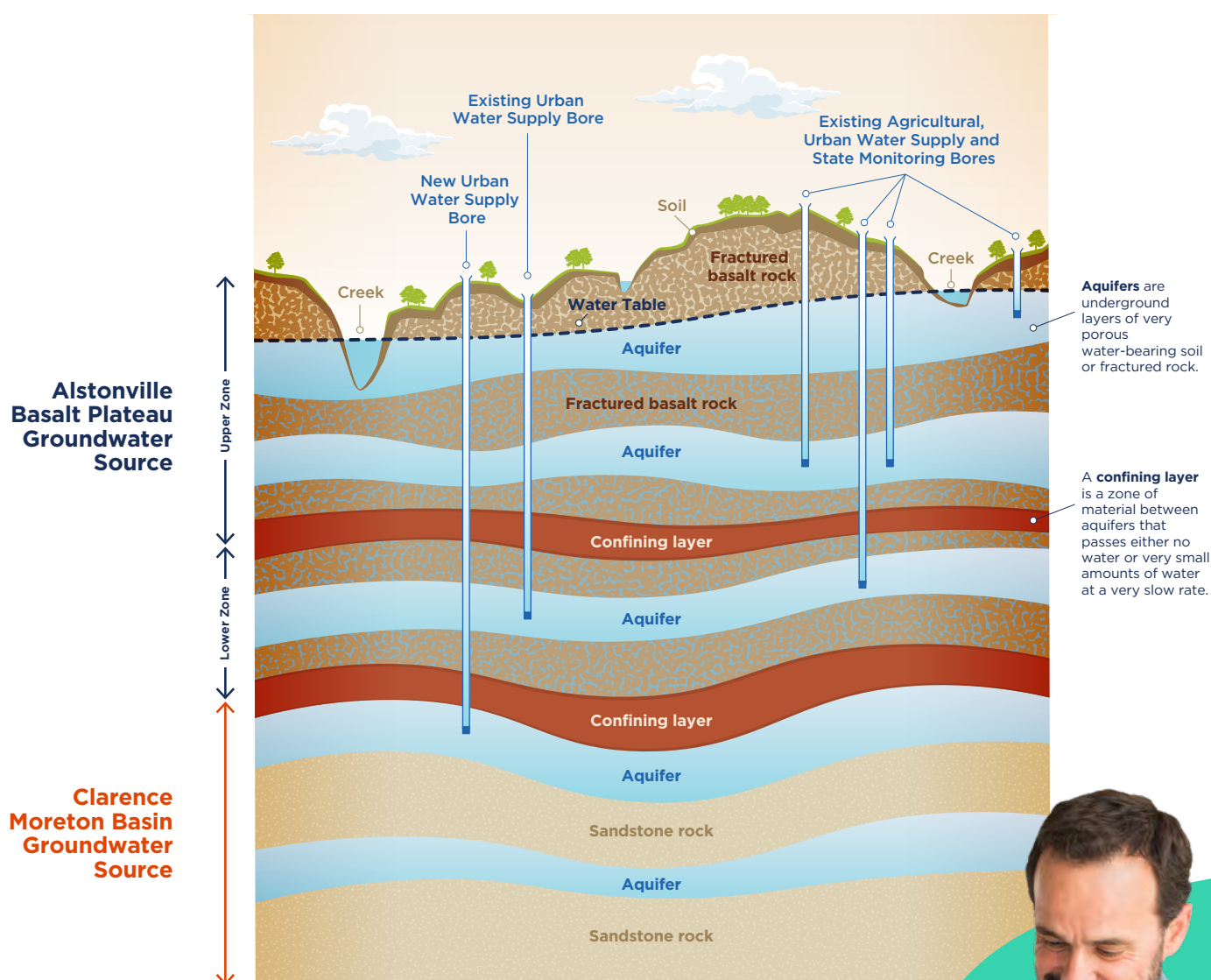
## Converys Lane New Deep Bore

Groundwater investigations have shown that a new deep bore adjacent to Rous County Council's existing Converys Lane Bore would likely be suitable as an urban water supply. Review of bore log information from a "pilot" or test borehole by independent hydrogeologists engaged by Rous County Council determined that at around 220m

below the ground surface the new deep bore at Converys Lane will access water from the Clarence Moreton Basin Groundwater Source.

Hydrogeologists from the NSW Department of Planning, Industry and Environment concur with these findings from the test drilling program into the deeper Clarence Moreton Basin Groundwater Source.

## Alstonville Groundwater Sources - Conceptual Diagram



## Potential impacts to consider

Groundwater generally has lower operating costs and environmental impacts than other sources, however care must be taken to avoid impacts to groundwater dependent environments and other groundwater users.

Impact	Level	Other Information
<b>Whole-of-life costs</b>	Medium	Infrastructure costs for bores are relatively low, however water treatment infrastructure can add to the capital and operating costs of this water supply option.
<b>Energy use</b>	Medium	Low to medium energy costs which are dependent on pumping and treatment requirements.
<b>Environmental impacts</b>	Low	Relatively low environmental impact to aquatic and terrestrial environments.
<b>Social impacts</b>	Low	Relatively low social impact.

## Planning and design considerations

Our aim is to plan and design a groundwater system to improve regional water security, use these sources sustainably and ensure operational efficiency. As we develop new groundwater sources in the Alstonville plateau area we will determine the reliable quantity and quality of water from the available groundwater sources and design suitable treatment systems to meet drinking water standards. Our investigations and planning will also assess the impacts of developing groundwater sources on other groundwater users and the local environment.



## What is the Future Water Project 2060?

Through our Future Water Project 2060, we are delivering the new water sources needed – in conjunction with ongoing water saving measures – to tackle the critical water security challenges facing our regional drinking water supply.

With population growth set to continue across the Northern Rivers, demand for water from our regional supply is forecast to increase almost 40 percent by 2060. At the same time, the amount of water available from our existing sources is forecast to decrease by over 20 percent due to changing climate conditions.

The Future Water Project 2060 sets out a three-stage approach to secure our regional water supply until 2060 and beyond. As part of Stage 1 we're developing new infrastructure to access water in the Clarence Moreton Basin Groundwater Source to boost the regional supply and meet forecast demand.

