

# Planning our water future

Central Coast Council is planning for our future now to ensure our region has a sustainable and resilient water system that can adapt and respond to change. We need to consider new sources of water (supply) and find new ways to reduce the water we all use (demand). This series of information sheets provide an overview of the potential water supply and demand option types we are discussing with our community as we plan our water future together.



## Supply option: Groundwater

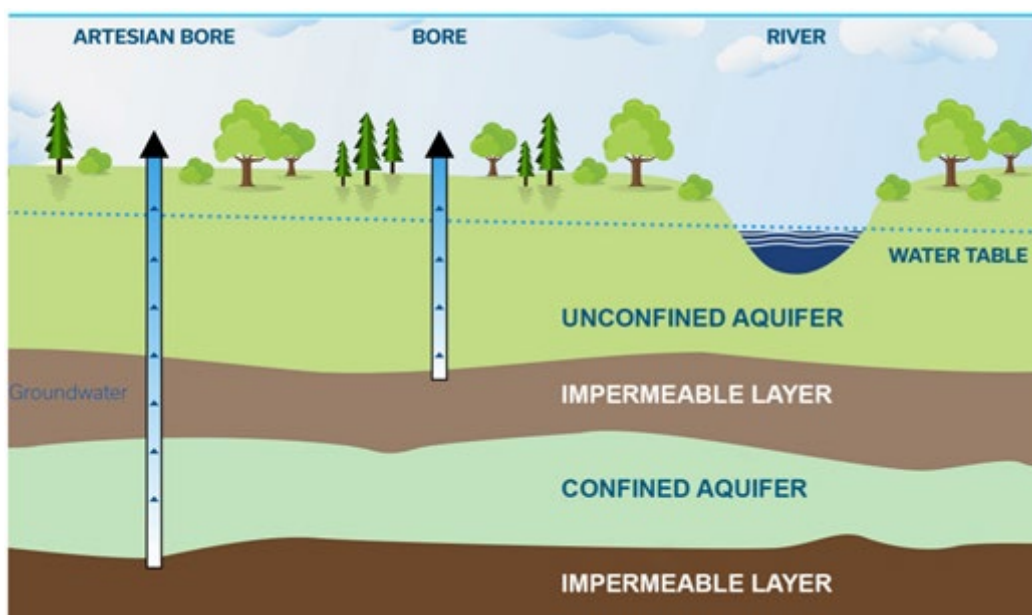
### What is it and how does it work?

Fresh groundwater is one of the most common water sources used throughout the world. Groundwater can be found in fractured rock or layers of sand and gravel called aquifers. Aquifers provide natural underground reservoirs that can offer a reliable supply of water, even in times of drought. Water is pumped out of the ground through wells and treated for drinking water supply. All naturally occurring fresh groundwater originally came from rainfall, though this may have occurred a very long time ago.

### What is currently in place on the Central Coast?

Council currently sources groundwater from a shallow aquifer below the Woy Woy peninsula. 13 Council-owned production bores have been installed across the peninsula that extract groundwater and pump it to the Woy Woy groundwater treatment plant. The amount of water that can be treated at the Woy Woy groundwater treatment plant is around 3 million litres per day. Once treated, water is transferred into the town water distribution network. This scheme is typically used during periods of drought.

Council also has groundwater resources at Ourimbah, Lower Mangrove and Narara that can also provide supply during times of drought.





## Things we need to consider

Harvesting groundwater can have relatively low environmental impacts provided it is carefully managed to protect surrounding flora and fauna.

The infrastructure required to harvest the water is generally limited to extraction wells and pipes. Therefore, this option has relatively low social impacts and low cost to construct and operate.

There is also potential to use a saline water aquifer as an underground reservoir by pumping fresh water into it when surplus water is available. This process is known as aquifer storage and recovery.

## How we're considering this option for the Central Coast Water Security Plan

### Optimise Existing Borefields

Council is looking to further investigate the potential of groundwater systems on the Central Coast to provide alternate additional town water supply through our existing borefields and infrastructure.

Council is looking to provide 5 megalitres per day from Groundwater. Commencing the production

output at the Woy Woy Groundwater Treatment Plant to produce 3 megalitres per day and refurbish the existing the existing Mangrove Creek and Bangalow borefields to produce approximately 2 megalitres per day.

### Palaeochannels

Palaeochannels are water bearing sands and gravels associated with ancient river systems. Council has identified potential palaeochannels on the Central Coast, which may provide alternate and additional water supply in the future.

The extent and connectedness of the palaeochannels, and any potential pathways from the surface are still unknown. The next phase of investigations would be to install exploratory bores to further investigate these sources and better understand their geology and water quality parameters.

We will continue to investigate this option, as well as aquifer storage and recovery, as potential future resources. Council is also investigating sustainable methods to further increase the utilisation of its existing groundwater sources.

## Key results

The table below provides further detail about how this option is being considered in the plan.

	Category	Additional information
<b>Potential additional water available</b>	Low	This option is expected to yield a maximum of 5 ML/day of water which is relatively low compared to other options.
<b>Reliability and resilience</b>	High	Natural underground reservoirs provide a reliable source of water, but still rely on rainfall to recharge.

	Impact	Cost	Additional information
<b>Indicative cost to build</b>	Low	\$500,000	Majority of required infrastructure is currently in place.
<b>Indicative cost to operate</b>	Low	\$400,000 per year	Relatively low operating costs associated with the current scheme.
<b>Levelised cost</b>	Low	\$0.66/kL	This is the lowest levelised cost compared with Council's other shortlisted options.

	Impact	Additional information
<b>Environmental impacts</b>	Low	Low energy use dependent on the level of treatment provided. Environmental baseline monitoring required to ensure potential ecological risks are understood and managed.
<b>Cultural and social impacts</b>	Low	Community interest in process, reliability and safety.
<b>Timeframe for delivery</b>	Medium	Between three to seven years.

*Some information contained in this fact sheet was sourced from Hunter Water Corporation*