

EMERGENCY WATER LINE update.

what's in the box?



2021 has seen the most significant upgrade and improvement to the Emergency Water system in years.

The Problem:

The Island Emergency water line has always relied on what mains pressure arrived at the Bells platform. Recently the mains pressure hasn't been enough to push enough water to the homes at the top of the Island which means long water booking were required to get a modest amount of water, i.e. 12 hours might get 3,000 to 10,000 litres total depending on the home location and the mains pressure on that day or evening. The mains water pressure has dropped or to be more correct fluctuates by approx 200kpa which has a huge impact when it comes to pushing water around our Island especially to the top of the island. In some cases the Fire truck was required to be located at Bells platform and used to pump water to some homes at the top of the island who couldn't get water.

The Solution:

After a lot of time and effort to establish what the actual cause of issue was resulted in 3 tenders being sort for the best possible solution to the problem by reliable and experienced contractors. This resulted in a significant financial investment and the installation of a computer controlled twin pump system at the Bells platform housed in an Acoustic noise reducing box. It's the same kind of pumping system you find in apartment blocks or schools etc. Our pump system has been configured to be a pressure assist system with the objective of delivering a reliable water flow to all standpipes on all our emergency water lines.



What started as a quest to solve only the Line 3 problem of how to get water to the homes at the top of the Island with an initial target to deliver 3000 liters per hour to each Line 3 stand pipe has resulted in a solution that delivers approx 5000 litres per hour to **All Line 1, 2 and 3 standpipes** meaning a major improvement for all water lines.

Keeping within the NSW EPA requirements (residential noise) was required to respect the Bells residents objections who were living next door to the Bells platform, this means the pump can

only operate within the following hours: 7.00am to 10.00pm Weekdays and 8.00am to 10.00pm Weekends. Unless we are in a genuine Emergency situation.

The Outcome and what does it all mean:

Just a couple of examples: Previously a Line 3 booking took 12 hours to get 10,000 litres (on a good day) can now get 10,000 Litres in 2 hours, a Line 1 booking that took 6 hours to get 15,000 litres can now get 15,000 litres in 3 hours all during pump hours. The increase in water delivery varies between 9% and 714% depending on the water line and home location.

This all results in a massive freeing up of available water booking slots which has been the biggest issue for Island residents the last 2 dry summers.

Still to Come:

Pump improvements;

Currently the pumps are required to be monitored for each water booking while we await a revised software upgrade to improve its operation and stability due to our unique environment. This update has been delayed due to COVID restrictions.

Booking system improvements;

Now that there is no difference in water delivery between water lines 1, 2 and 3 during pump hours we also have the ability to make improvements to the Automatic booking system.

In time for summer an update will be made to the booking system which will allow any user on any line to make a water booking on any day!

This will further free up booking availability as currently you can only make a water booking on the days your water line is allocated even if there's available time available on another water line which hasn't been booked.

We can't forget:

It's an Emergency Water Line!

Despite these significant improvements it is still "An Emergency Water Line" so it has physical limitations and no ability to become the main water source for all Island homes, so it's vital that home owners are encouraged to capture and use rain water if they have the ability. SIRA should make available on the web site information regarding rain water harvesting and how important it is so as to reduce the demand on the Emergency Water System.

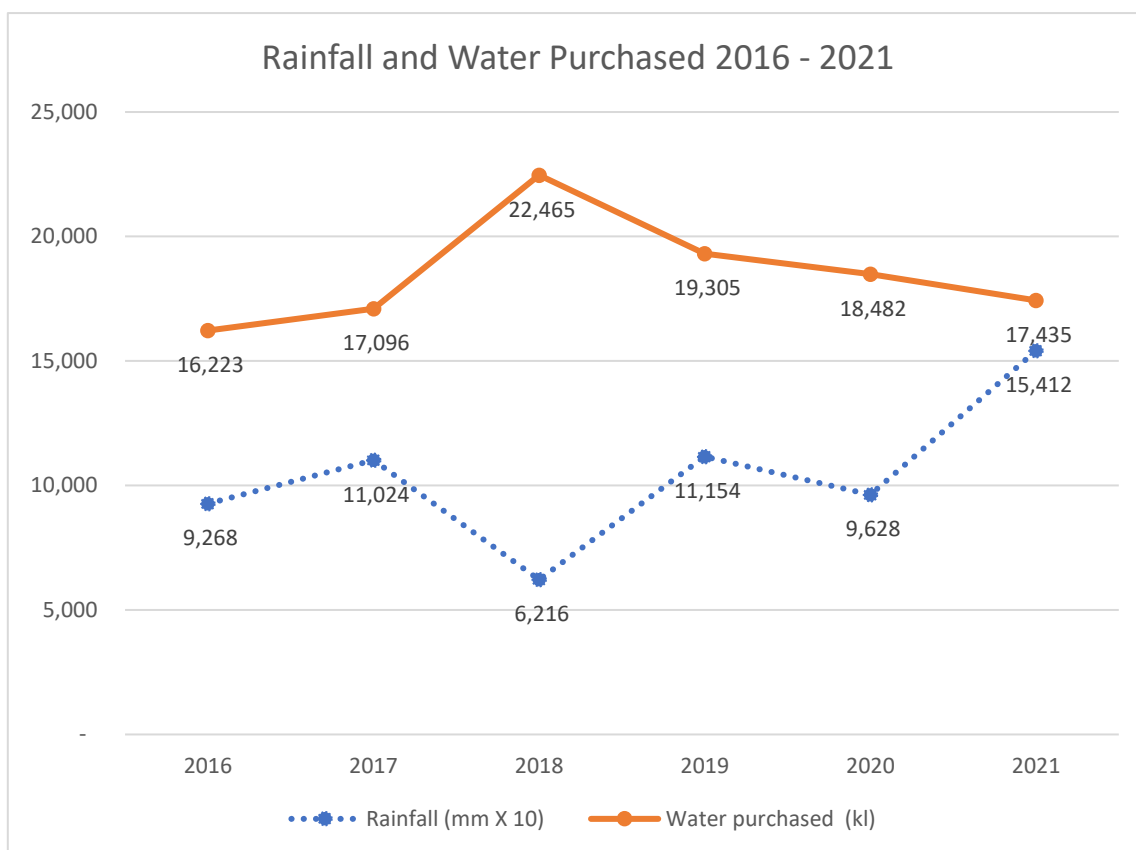
Emergency Water Purchased and Rainfall (Scotland Island 2016-2021)

Boyd has been monitoring water purchased over the past five years and has now compiled these tables showing both water purchased, and rainfall recorded at Terrey Hills.

SIRA has been monitoring emergency water purchased over the past five years and comparing this with rainfall recorded at Terrey Hills Weather Station. Summary data are presented in the figure below. In this figure water purchased is recorded in kilolitres and rainfall is recorded in millimetres X 10. This enables both sets of data to be presented in the same graphic.

These annual summary data show that for the financial year ending in June 2021, 17,435 kL were purchased during the year, down from 18,482 the previous year and down from the record high of 22,465 in year ended June 2018 when the drought was at its worst. The 2021 level reflects the increased rainfall. 1.54 metres of rain fell in the financial year ending in June 2021. Only 0.62 metres fell in the financial year ending in June 2018.

A comparison between 2016 and 2021 shows that although rainfall was considerably higher in the latter year, water purchased was still higher than it was in the year ending June 2016. This may suggest that there has been an increase in permanent residency on the island. Alternatively, it may suggest more residents are using emergency water as an ongoing permanent source of supply, rather than capturing and storing rainwater



Note: Rainfall is shown as millilitres X 10

