



Gellibrand Summer Flows Improvement Project Project Update – April 2017

Welcome to the first project update!

For background information about the project objectives, project partners and proposed activities, please refer to the project [fact sheet](#) available at www.wannonwater.com.au.

Project progress to date

Funding announced

In December 2016 the Department of Environment, Land, Water and Planning announced that they would contribute \$100,000 toward the project to help fund the groundwater investigations.

Community meetings held

- Stakeholder Reverence Group (SRG), Meeting 1 - Princetown, 21st November 2016
- Stakeholder Reverence Group (SRG), Meeting 2 - Carlisle River, 7th December 2016
- Drop-in community information session - Carlisle River, 7th December 2016.

At these sessions, the Corangamite CMA, Southern Rural Water and Wannon Water presented information about the project. Questions and concerns from the community were raised and discussed. A summary of stakeholder questions and concerns and corresponding responses is provided below.

Hydrogeologist engaged and drilling contractor appointed

In December 2017 Wannon Water engaged hydrogeologists David Stanley and Geoff Morgan of GHD Group to carry out the groundwater investigation. A drilling contractor was appointed this month.

Flora and fauna assessment of the surrounding site and contact with landholders

From the second meeting of the Stakeholder Reference Group, a buffer area defined by a 500m radius from the proposed bore site was considered sufficient to include any areas that may be at risk of localised impacts from the 7-day pump test. Throughout February to April 2017, Wannon Water contacted local landholders for local knowledge about springs and acid sulphate soil risk areas within this buffer area. No sensitive areas were reported.

A flora and fauna assessment within the buffer area was completed, no evidence of wetland vegetation was found, indicating no groundwater dependant springs or wetlands are present. No threatened flora species or vegetation communities were present within the works footprint. Additional inspection of the surrounding area will be undertaken during drilling prior to any pump test commencing.

Next steps

May 2017	Construct bore for pump trial and observation bores. (Note: these bores are for the 7-day pump trial only, at this stage, no licence for on-going extraction as been applied for.)
May 2017	Results of soil tests from bore drilling
May 2017	Report to SRG by email / Project news up-date
May/June 2017	Carryout 7-day pump test.
June 2017	Report from the trial
July 2017	Meeting of the SRG to review the report findings
July 2017	Report from the trial made public for comment
Aug 2017	Wannon Water make a decision on how to proceed

Community concerns and questions with responses from the project team

Broader policy and planning context of water for urban use and demand management		
	Concerns / Question raised	Responses provided / Actions required
1	There were a number of points (listed below) that related to the broader context of urban water policy and planning.	Wannon Water is currently undertaking community and other stakeholder engagement to inform their 5 year expenditure and pricing plan and their 50 year urban water supply strategy. The comments and discussions raised by the SRG relating to how we plan water supply, protect the environment and work on demand management will be taken forward into these planning processes.
2	Urban water authorities seem to get first rights to the water from the river – should be the environment.	The allocation of water for human and environmental uses is governed by Bulk Entitlements that were issued by the Victorian Government in 1997. This requires Wannon Water to reduce extractions as the river flows decline. The Entitlement is scheduled for review in the coming years.
3	How is Wannon Water planning to service the growth of Warrnambool? Has the impacts of climate change been feed into the modelling?	Growth will be serviced by increasing extraction of water up to the bulk entitlement limit, harvesting water from roofs in Warrnambool and increasing the volume of Warrnambool groundwater. Climate change is taken into account for in the modelling of available water. Water needs beyond the bulk entitlement limit will be met by groundwater from the Curdievale bore (likely to be needed around 2045).
4	What is the percentage of rural versus urban users for the Otway pipe system?	19% of use is rural. 40% is residential. 27% is by major customers including the milk industry. 14% is by non-residential users (including small businesses and public open space).
5	What are the plans to cater for industry growth? Can industry be support to be more efficient with water, programs like other water authorities deliver, for example, Barwon Water working with farmers.	As per growth in Warrnambool above. Industry are proactive in being more efficient with water due to the high cost of water. The Barwon Water farmer program is electronic metering that allows detection of leaks on farm, allowing faster repair. Such a system is being considered by Wannon Water.

6	The Warrnambool community seems to consider itself exempt from the water restrictions that the rest of the Victorian community is subject to.	<p>The Millennium drought (1997-2009) resulted in water shortages in Melbourne, but not in Warrnambool; however the response of the Warrnambool community has been to reduce per capita consumption by 24% over the period 2006 to 2016 (227 to 173 l/p/d).</p> <p>Wannon Water is currently conducting broad customer consultation to raise issues such as water for the environment and demand management.</p>
7	Warrnambool's consumption rate of 240 litres per person per day is very high. It should be 150 litres per day	The 240 l/p/d figure is based on combined residential and non-residential use. The figure for residential only (which "target 155" is based on) is 173 l/p/d.

Concerns about the preferred option of investigating groundwater substitution

	Concerns / Question raised	Responses provided / Actions required
8	Comment about groundwater extraction in North Otway being problematic.	Substitution of groundwater for River water during 2014/15 was not considered problematic. In fact, the long-term trial substitution demonstrated that the groundwater level stabilised above the "turn off pump trigger level". This provides confidence that greater substitution at this site is worth pursuing in the future.
9	Need to monitor flows at other parts of the estuary, not just Burrupa.	<p>There are two flow gauges on the river that are calibrated, maintained and data collected by the State. Burrupa is one and the second one is called Bunkers Hill, which is downstream of the Gellibrand township. These gauges are used by the State to monitor and manage the River providing long term data sets for modelling and projecting climate change impacts.</p> <p>Wannon Water has a gauge downstream of the north and south Otway extraction points which does not measure high flows. These are calibrated, maintained and monitored by Wannon Water as part of our Bulk Entitlement conditions. We have supplied access to this data to the CCMA and Estuary Watch to support the monitoring and management of the environmental health of the estuary and lower reaches of the river.</p> <p>Monitoring of flows during the test at Burrupa and South Otway and North Otway will be sufficient to determine any pumping impacts on stream flows.</p>
10	The bore placement at the end of the main pipeline, giving ease of access means changes in use of the water (from substitution for environmental flows improvement to general increase in extractions) could be made too easily.	Groundwater extraction licences are issued and managed by SRW. Conditions are able to be placed on these licences to limit when and what water is used for. The bore volume limit can be linked into the bulk entitlement volume to ensure the licence does not increase the overall volume able to be extracted.

11	<p>Not sure that the stated aim is reflective of the real aim - is it to</p> <ul style="list-style-type: none"> a) Achieve an environmental outcome (summer low flows), or b) To maintain total extraction levels? 	<p>The aim is to achieve environmental outcome. Total extractions are governed by the bulk entitlement and associated flow sharing rules.</p> <p>There is no intention to change these as part of the substitution initiative.</p>
12	The focus is too heavily placed on the economics to determine the preferred option- need to also factor in costs of potential environmental damages caused by ground water extraction.	The options analysis was done assuming all other factor equal, that is, no adverse environmental impacts. The purpose of this trial is to test that assumption.
13	Why not raise the money for a winter storage dam?	Apart from being 3 times the cost of groundwater substitution options, additional water is removed from the environment through evaporation effects and has a much higher energy requirement (adding to GHG generation).
14	What would be the preferred option if cost were not a factor?	Use of groundwater – avoiding the evaporation and higher energy requirements.
15	What is the risk management framework?	<p>The regulators of groundwater and surface water extractions, Southern Rural Water and the Department of Environment, Land, Water and Planning.</p> <p>The Alluvium report commissioned by the Corangamite CMA to understand the risk of not addressing low summer flows and quantify the improvements needed to make a worthwhile impact on reducing those risks.</p> <p>Suitably qualified and experienced Hydrogeologist leading the groundwater trial.</p> <p>Establishing a SRG and working with them to better understand identified risks and identify further risks.</p>

Concerns about the proposed trial

	Concerns / Question raised	Responses provided / Actions required
16	<p>Is it feasible?</p> <ul style="list-style-type: none"> • Water yield and quality <p>Will it deliver improved flows?</p> <ul style="list-style-type: none"> • Groundwater / river water interactions 	<p>Conduct a seven day extraction trial to include:</p> <ul style="list-style-type: none"> • recovery rates, • assess water quality • model area of drawdown, • cross section profile of layers above extraction level • connectivity with the river and flats at the estuary. <p>Note: The assessment of “will it deliver improved flows” may involve a trade-off. For example, if the connectivity of the groundwater and the river water is such that the river levels suffer a flow reduction of say, 10% of what is being drawn from the bore, It would still be considered a substantial net benefit with the other 90% yield that would have otherwise been taken from the river.</p>

17	Potential of a longitudinal study of the groundwater / surface water interactions along the length of the Gellibrand River?	<p>Findings from an SKM report for the Upper Gellibrand River were referred to. This report concluded that the level of connectivity between ground and surface water was variable along the length of the study area (upstream of Carlisle River) and at times significant.</p> <p>Action:</p> <p>The 7-day pump test (including observation bores on the other side of the river will provide good information about the surface water groundwater interactions for the area of interest for this investigation, the Southern Otway Offtake indicated in the map.</p>
18	How can a 7-day pump test in May give a fair indication of impacts from longer-term pumping over summer?	<p>There will be observation bores at various distances from the pumped bore and the river. The change in groundwater depth at these observation points during a 7-day pump test provide enough data to model the basic characteristics of the aquifer. This will give us a reasonable prediction of how the aquifer will respond to pumping for longer periods and during wetter or drier seasons and how this will impact river flows and groundwater levels.</p> <p>We expect any future extraction licence will be conditional on monitoring the longer-term water level impacts over summer.</p>
19	Will a 7-day pump trial create issues with acid sulphate soils (ASS)?	<p>Action:</p> <p>Identification of potential ASS locations within 500 m of the test bore through visual inspection.</p> <p>Contact with landowners of land within a 500m radius of the bore for local knowledge about ASS, springs, peats and wetlands.</p> <p>The observation bores will be strategically located to monitor these areas.</p> <p>Soils samples will be taken as the bores are drilled to test for ASS risks.</p> <p>Trigger to stop the pump test to avoid any dewatering of ASS.</p>
Phase two investigations before a licence is granted for regular groundwater extraction to substitute for river water extraction during low flow periods		
	Concerns / Question raised	Responses provided / Actions required
20	Long-term impacts on ASS, springs and stream flows, wetland, riparian and forest vegetation and fauna	<p>Subsequent investigation stage as part of any extraction licence application.</p> <p>Trigger levels as part of the licence condition to stop pumping</p>
25	Restricting the extraction licences of other users – no good if Wannon Water stops pumping from the river but then others take-up the flows that been reclaimed for the environment.	<p>Action:</p> <p>The Project Team send the message to Southern Rural Water to prevent downstream irrigators from accessing water for irrigation over summer low flow times that they would otherwise not have been allowed to access.</p>