mosaic LAB

BARWON DOWNS BOREFIELD GROUNDWATER LICENCE RENEWAL

COMMUNITY AND STAKEHOLDER WORKSHOP ONE FEEDBACK REPORT

October 2017

Limitations of use

This report has been prepared by MosaicLab on behalf of and for the exclusive use of Barwon Water.

The sole purpose of this report is to provide Barwon Water with the outputs from the workshop with community members on the 21st September.

This report has been prepared in accordance with the scope of services set out by Barwon Water. In preparing this report, MosaicLab has relied upon the information provided.

MosaicLab accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report by any third party.

MosaicLab is a Victorian-based consultancy that specialises in community & stakeholder engagement, facilitation, negotiation, strategic planning and coaching.

INTRODUCTION

On Thursday, September 21, about 30 community and stakeholders attended an independently facilitated workshop to discuss and provide feedback on how the borefield should be operated to ensure affordable water security for the region while balancing the needs of the environment.

This document is a verbatim account of the feedback provided from participants on a range of data which included environmental, social and economic impacts across three operating regimes.

The project team is now reviewing this feedback to develop a range of operating regimes for the borefield for the next 15 years.

These regimes will be presented to community and stakeholders for feedback on October 12.

WORKSHOP ACTIVITY 1 - WHAT WOULD SUCCESS LOOK LIKE?

Following this exercise, feedback was grouped and categorised by theme. The feedback (in no particular order) was:

Acknowledge and move forward

- Agreement moving forward together
- Reciprocal recognition

Repaired aquifer

- Repaired aquifer, sustaining the environment which depends on it and only accessed for potable water if a non-damaging regime can be found.
- Restore aquifer and stream ecology

No pumping

- No pumping
- Decommission borefield
- No pumping until recovery

Sustainable water supply

- Environmental sustainable water supply
- Balance – environment and supply

Remediation and restoration

- Restoration of Boundary and downstream
- No further damage to whole area and remediate Boundary Creek
- 100 per cent health of rivers and streams including full remediation of contaminated soils
- Environmental sustainable flows in local waterways
- Acknowledge sustainable intake from Barongarook / Boundary Creek <1500 ML/year
- Restored habitat along waterways

Early licence review

- Licence review in five-year periods instead of 15 so any damage can be controlled

Reduce demand

- Reduce consumptive demand
- Urban water users reduce and value the resource

WORKSHOP ACTIVITY 2 - WORLD CAFE SESSION

Participants were asked to get into groups of three to four and rotate across four topics. The topics included:

a) environmental part A,

b) environmental part B,

c) social, and

d) economic.

A table host was available at each table to provide background on each topic. There was also experts who were called on for specific questions.

Each rotation was allocated 15 minutes for discussion and to consider the strengths and weaknesses for a range of future pumping regimes. The pumping regimes included:

- baseline (no pumping),
- Constant pumping, and
- Intermittent pumping.

ENVIRONMENT A

The following feedback is based upon the data offered below for the first grouping of environmental data (Environment A). This information was offered as a starting point for discussion

This topic included:

- Greenhouse Gas Emissions over 50 years
- Vegetation - Groundwater dependent vegetation ecosystems
- Aquatic Ecology in Boundary Creek
- Land subsidence (to 2034)

The following tables outline the feedback from across the table discussions. Each table refers to one set of the data shared on the night. All feedback has been themed (where possible) into key headings to help make it easier to review the data.

Criteria	Important aspects of interest	Summary of technical findings		
		(Baseline – No Pumping)	(Constant Pumping)	(Intermittent Pumping)
Environment	**Greenhouse Gas Emissions over 50 years** (tCO2-e over 50 years, assuming 'black power')	1,400,000	900,000	500,000
	Vegetation - Groundwater dependent vegetation ecosystems (% of the study area where there is potential for a reduction in vegetation quality due to change in water table)	50% (due to climate impact) Previous studies have shown vegetation likely to be resilient to changes	75% (additional 25% through pumping) Previous studies have shown vegetation likely to be resilient to changes	75% (additional 25% through pumping) Previous studies have shown vegetation likely to be resilient to changes
	Aquatic Ecology - (In Boundary Creek) Groundwater dependent aquatic ecosystems	Aquatic ecology is impacted by stream flow and acid releases from Yeodene Swamp. Without mitigation measures, aquatic ecology will not improve.		
	Other - Fire risk at Big Swamp Boundary Creek	Fire risk at Big Swamp will remain the same under all scenarios, without mitigation measures		
	Other - Land subsidence (to 2034) Current licence maximum trigger is 20cm	2cm	4.5cm	4.5cm

THEMED WORKSHOP FEEDBACK

The following lists the feedback (general, strengths and weaknesses) that was provided by the participants at the workshop. Each comment has been faithfully reprinted here as it was written on the night. Other than theming these comments no other analysis has been undertaken.

Theme Heading	Workshop Comments
Pumping Volume Impact/Need	• Suggest we look at magnitude of impact of various total pumping volumes across intermittent and constant pumping regimes, as difference between these equal volumes is negligible • Good that Barwon Water has acknowledged that past pumping has had an impact • Land use change has caused significant impacts, how much has pumping added? • Add Barwon River aquatic ecology impact as another measure and all other waterways too • Subsidence is an issue for springs • Cover channels (opportunity) • All levels shown for subsidence are non-significant across range • No pumping is needed in future because there is plentiful rainfall • Opportunity to hold off on pumping until aquifer recovers? • More than happy to use desalinated water • Any additional subsidence is too much • No pumping will ensure opportunity to mitigate through renewable energy generation and usage
Greenhouse Gas Measurement	• Greenhouse gas emissions is a misleading parameter for all pumping ranges because the scope is broader than the borefield area itself • Misleading assumptions about GHG numbers because renewable energy is on the up • Misleading - emissions should be reduced due to sourcing from renewable energy • Greenhouse gas emissions from drying of peat swamp is a weakness within constant pumping range • Greenhouse gas emissions from drying of peat swamp is a weakness within intermittent pumping range

Theme Heading	Workshop Comments

Vegetation Impact	• Query legitimacy of previous studies for vegetation
	• Measure for vegetation is too broad, needs to be more targeted
	• Better articulate impact on vegetation at key sites (e.g. Boundary Creek)
	• Reduced vegetation quality increases risk of weed invasion
	• If no pumping, vegetation sites would still be healthy
	• Suggests vegetation is better at new sites not old sites. Studies at old sites should be complete
	• Query selection of vegetation survey sites – dropped sites from 1990s Ecology Australia swept under the carpet.
	• No pumping will have least impact on vegetation
	• No pumping will ensure damage to vegetation like Big Swamp can't get any worse
	• 50% is not believable and could be a weakness for vegetation under climate change
	  • Swamp would still be wet
	  • Bit of a reach/ too much change
	  • Timeframe questionable (50 years)
	• Constant pumping will have more impact to vegetation than no pumping
	• There is no difference between intermittent and constant for vegetation – impact still the same
	• Surprised that intermittent pumping and constant pumping have the same effect on vegetation
	• Intermittent pumping will have more impact to vegetation than no pumping
	• Pumping during dry conditions should have greater impact to vegetation – will need to be convinced
	• Severity of intermittent pumping to vegetation is a concern because of already dry conditions
	• Need to find "sweet spot" – stress on GDEs during dry periods

Data Accuracy	• Figures aren't accurate – figures likely to go down. Shouldn't compare • Validity and questions around studies as sites have been moved • Methodology of previous vegetation studies is incorrect: Long term affects (30 years), changing goal posts, change in sites • Provide data rather than summaries – distrust of data • How did we get the data? • Query accuracy of statement as does not consider mitigation (aquatic ecology) • Groundwater Dependent Ecosystems have already changed to non-Groundwater Dependent Ecosystems and Barwon Water studies have missed this due to change of scope (intentionally to hide this). • Jacobs too close to the project. Is someone else available?

Theme Heading	Workshop Comments
Fire Risk	• Fire risk will be fixed if Big Swamp fixed • Fire risk throughout Otways, not just Boundary Creek • Fire prone area, cannot afford to dry out the swamp • Impact to fire risk at Big Swamp same under all scenarios, all unacceptable • No pumping will increase fire risk across all sites • Fire risk across all sites
Water Storage & supply	• Every household should have rainwater tank • Constant pumping – how do we store the water? • Small weir at Boundary Creek
Impact on Aquatic Ecology	• Expand aquatic ecology investigations/studies to the Barwon River to prevent acid events • Mitigation for aquatic ecology for streamflow and life that lives in it (Blackfish, Platypus, Rikali (Water Rat)) and consider needs for migration • Impact to aquatic ecology same under all scenarios, all unacceptable • Important to get mitigation right and costs of mitigation right for aquatic ecology
Other	• Look into Indirect Potable Reuse • Credit for Barwon Water target for carbon neutrality • Surprised that current licence allows 20 cm • Weak argument as a reason to pump to use borefield as an example need to be across all BW sources (carbon footprint)

ENVIRONMENT B

The following feedback is based upon the data offered below for the second grouping of environmental data (Environment B). This information was offered as a starting point for discussion. This topic included:

- Surface water flows in Boundary Creek
- Surface water flows in Gellibrand River
- Surface water flows in Barongarook Creek
- Acid sulphate soils – acid release from Yeodene Swamp
- Acid sulphate soils – other acid sulphate soils activation

Criteria	Important aspects of interest	Summary of technical findings		
		(Baseline – No Pumping)	(Constant Pumping)	(Intermittent Pumping)
Environment	**Surface Water Flows** - Flow in Boundary Creek	Loses 100% of low flows to groundwater (2.4ML/d)	Loses 100% of low flows to groundwater. (3.0ML/d)	Loses 100% of low flows to groundwater. (3.7ML/d)
	Surface Water Flows – Flow in Gellibrand River	Groundwater contributes 11% of low river flows.	Groundwater contibutes 10.4% of low river flows.	Groundwater contributes 10.1% of low river flows.
	Surface Water Flows – Flow in Barongarook Creek	Groundwater contributes 30% of low flows	Groundwater contributes 26% of low flows	Groundwater contributes 27% of low flows
	Acid Sulphate Soils - Acid release from Yeodene Swamp	Acid release from Yeodene Swamp will remain the same as current under all scenarios, without mitigation measures.		
	Acid Sulphate Soils - Other acid sulphate soils activation (PASS Monitoring sites)	Predicted drawdown at PASS monitoring sites varies. Drawdown predicted is less than historic	Predicted drawdown at PASS monitoring sites varies. Drawdown predicted is less than historic	Predicted drawdown at PASS monitoring sites varies. Drawdown predicted is less than historic
		A baseline assessment in 2015 highlighted there was no evidence of drawdown from the borefield influencing PASS at these sites.		

THEMED WORKSHOP FEEDBACK

The following lists the feedback (general, strengths and weaknesses) that was provided by the participants at the workshop. Each comment has been faithfully reprinted here as it was written on the night. Other than theming these comments no other analysis has been undertaken.

Theme Heading	Workshop Comments
Pumping Volume Impact/Need	• Suggest we look at magnitude of impact of various total pumping volumes across intermittent and constant pumping regimes, as difference between these equal volumes is negligible • Good that Barwon Water has acknowledged that past pumping has had an impact • Land use change has caused significant impacts, how much has pumping added? • Subsidence is an issue for springs • Doesn't consider critical interface between groundwater and surface • Is impact significant? Does this change anything? • Seriousness of impacts not reflective • Can we allow for the aquifer to fully recover prior to starting pumping again? • Has there been consideration of future frequency and duration of intermittent pumping due to climate change and demand? • Need to consider return to previous condition – pre- pumping • Cover channels (opportunity) • Remediation before considering pumping options • Has the environmental impact increased with increased demand? • No pumping will ensure less of an impact on the Gellibrand which is positive • If there is constant pumping, can we measure the impact of 0.6ML/day to know what the full risk is to Boundary Creek? • Not a great difference between constant and intermittent pumping with Gellibrand River • Is the worst time of year to pump when there is the greatest level of risk – exaggerated impact
Flow Impacts	• What is the accumulative impact on the Gellibrand with Wannon Water pumping? • Where does the supplementary flow come from? The Colac Otway system released above McDonalds Dam. • Needs to consider location of supplementary flow for Boundary Creek • Need to consider impacts on other streams – expand monitoring to inform monitoring/ modelling • Model needs to consider recharge of aquifer and impact on Boundary Creek flows
Greenhouse Gas Measurement	• Greenhouse gas emissions is a misleading parameter for all pumping ranges because the scope is broader than the borefield area itself • Misleading assumptions about GHG numbers because renewable energy is on the up • Misleading - emissions should be reduced due to sourcing from renewable energy • Environmental indicators need to be considered and used in the model

Theme Heading	Workshop Comments
Vegetation Impact through ASS	• Query legitimacy of previous studies for vegetation • Measure for vegetation is too broad, needs to be more targeted • Better articulate impact on vegetation at key sites (e.g. Boundary Creek) • Reduced vegetation quality increases risk of weed invasion • If no pumping, vegetation sites would still be healthy • Suggests vegetation is better at new sites not old sites. Studies at old sites should be complete • Query selection of vegetation survey sites – dropped sites from 1990s Ecology Australia swept under the carpet. • Environmental indicators need to be considered and used in the model • We need to remediate Big Swamp prior to looking at impacts to Acid Sulphate Soils • Need to keep monitoring all sites for Acid Sulphate Soils • Acid Sulphate Soils are only just coming onto the radar now • There are 5 sites that are not recognised as Acid Sulphate Soils sites at this stage • Risk of Acid Sulphate Soils in Gellibrand catchment that has not been considered
Data accuracy	• Figures aren't accurate – figures likely to go down. Shouldn't compare • Validity and questions around studies as sites have been moved • Methodology of previous vegetation studies is incorrect: Long term affects (30 years), changing goal posts, change in sites • Provide data rather than summaries – distrust of data • How did we get the data? • Query accuracy of statement as does not consider mitigation (aquatic ecology) • Groundwater Dependent Ecosystems have already changed to non-Groundwater Dependent Ecosystems and Barwon Water studies have missed this due to change of scope (intentionally to hide this). • Based on science rather than anecdotal evidence • Modelling figures not representative of actual observations and reality • There are concerns around seeing the data and science around the numbers provided – hard to make a recommendation or point of view without this data • Need more complete information and less confusing • Less controlled / narrow information • Actual data needs to inform modelling • Unclear of what the modelling means • Experience says the modelling underestimates stream flow impacts • Can we get information/data – water in and water out of McDonalds Dam stream flow impacts • Jacobs too close to the project. Is someone else available? • Challenge the Barwon Water model numbers. Would like to have independent people run the model.
Fire Risk	• Fire risk will be fixed if Big Swamp fixed • Fire risk throughout Otways, not just Boundary Creek • Fire prone area, cannot afford to dry out the swamp

Theme Heading	Workshop Comments
Water Storage & Supply	• Every household should have rainwater tank • Constant pumping – how do we store the water? • Small weir at Boundary Creek • Water restrictions before pumping (x3) • Make consumers aware of impacts of water supply • Don't need bore water because rainwater is better quality and is being washed out to sea. Used to take salt to the sea. • The main concern is the balance of finding the water supply nexus
Governance and regulation	• Need for good regulation from Southern Rural Water • Groundwater management at Gerangamete • Weak argument as a reason to pump to use borefield as an example need to be across all BW sources (carbon footprint)
Remediation and restoration	• What has been the commitment to repatriation? • Remediation before considering pumping options • Look into Indirect Potable Reuse • Need to see the remediation proposal for acid release at Big Swamp • Need a more holistic approach to monitor the ecology of the rivers
Impact Aquatic Ecology	• Add Barwon River aquatic ecology impact as another measure and all other waterways too • Expand aquatic ecology investigations/studies to the Barwon River to prevent acid events • Mitigation for aquatic ecology for streamflow and life that lives in it (Blackfish, Platypus, Rikali (Water Rat)) and consider needs for migration
Other	• Look into Indirect Potable Reuse • Credit for Barwon Water target for carbon neutrality • Loves Creek

SOCIAL

The following feedback is based upon the data offered below for the 'social' data provided on the night. This information was offered as a starting point for discussion.

This topic included:

- Impact to regional amenity (water restrictions)
- Boundary Creek stock and domestic supply to farmers
- Impact on customer affordability (hardship)
- Impact on local recreation (access to natural amenity, fishing, bushwalking)
- Impact on cultural significance

Criteria	Important aspects of interest	Summary of technical findings		
		(Baseline – No Pumping)	(Constant Pumping)	(Intermittent Pumping)
Social	Impact to regional amenity (water restrictions)	All scenarios will meet our agreed level of service (ie. restrictions no more than 5% of the time).		
	Boundary Creek stock and domestic supply to farmers	Boundary Creek will continue to have periods of no flow in summer for all scenarios. As such, without mitigation measures, stock and domestic supply to farmers cannot be guaranteed		
	Impact on customer affordability (Hardship)	Increased hardship (Up to $70/year increase)	No additional hardship	No additional hardship
	Impact on local recreation (Access to natural amentity, fishing, bushwalking)	For discussion		
	Impact on cultural signficance	For discussion		

THEMED WORKSHOP FEEDBACK

The following lists the feedback (general, strengths and weaknesses) that was provided by the participants at the workshop. Each comment has been faithfully reprinted here as it was written on the night. Other than theming these comments no other analysis has been undertaken.

Theme Heading	Workshop Comments
Pumping Volume Impact	• No pumping will benefit farmers over time • No pumping, likely reduced water supply results in the need for demand management • Would be better without pumping. • No pumping would have bigger environmental benefits. • Do not accept that with no pumping there will be no flow. • Another option which is no pumping until the aquifer is fully recovered. • If aquifer was recharged it would have flow • Constant pumping will ensure water quality (containment) • Constant pumping will ensure flow (maintaining) • Constant pumping will result in Wurdee losses (evaporation) • Constantpumpingwillresultinlossesinflowsresultsimpactingtheenvironmentandfishstock • Constant pumping first 1,000 ML impacts Boundary Creek. • Best regime would be lowest volume when water restrictions in place. • Feels that all impacts worse under pumping scenario. • Feel that low flow / no flow must be longer. • Feelthatintermittentpumpingshouldstillimpactsummerflowsdespitethedata/information. • Barwon River summer flows are impacted flow data – only supplied twice a year. • Upstream extractions are a problem for downstream users.

Theme Heading	Workshop Comments
Water Storage, Use & Supply	• No pumping will Increase need for a more diverse water supply • No pumping will require other sources to be investigated which could be cheaper • No pumping will Increase need for community to use recycled water • During wet periods, flow will occur • Make tanks available to Geelong customers (natural tank program). • No pumping is better for cultural significance (more information required). • No pumping unless water restrictions are in place • 5% of the time with water restrictions is unrealistic. • More education of customer on water use and inputs and the need to value water. • Every house should have a tank – all supply. • No pumping will mean a need for alternative water supply to support farming. • Water restrictions should be all the time even during constant pumping • Constant pumping ensures cheaper water. • No pumping will mean an alternative source for Boundary Creek farmers. • Nopumpingwillrequireaneedtolookatconsumptivedemandreductiontotakepressureoff Barwon Downs first. • No pumping will require a meed to be on water restrictions full time. • Noneedtoaccesswaterconstantlyonlyforemergencies,onlyshouldbeforemergencies(not intermittent pumping). • Need to spread load across all water sources. • Constant pumping must be sustainable. • Should not be taking water in the height of summer when the environment needs it. • Don'tneedborewater,rainfallisthemainsourceofwater–mostgoesouttosea.Weonlyusea small amount. • Not enough summer flows – competition for water.

Theme Heading	Workshop Comments
Community impact & Recreation	• No pumping will have a positive impact on Indigenous communities • If the flows recover the streams can impact on human wellbeing and recreation • Recreationally aspects exceptionally important. • Deliver amenity / recreation benefits. • Visual amenity – bush walking etc • Better for amenity and local recreation. • No pumping translates to no incentive for community • Consumers need to value the resource more. • People are happy to have restrictions more often. • People in Geelong don't understand we have a borefield. • Should focus on public education about water conservation. • Constant pumping will impact social aspects of neighbouring areas – recreational areas in Geelong and Winchelsea. Water supply to sporting ovals. • Social responsibility to the recreational and cultural aspects are very high. • No interest in people wanting to go to an area where acid sulphate soils are created as a result of constant pumping • No ability to undertake recreational. • Intermittent water supply to Geelong and Winchelsea for sporting grounds
Impact Ecology (Aquatic/other)	• Increase in fishing aspects • 25 years of no pumping will result in flow back in the creek • No pumping means no water / poor quality = no fish (no fishing) • Constant pumping will encourage ecology along the creek (stem of the Barwon included) (Winchelsea) • Constant pumping causes pollution of Boundary Creek and Barwon River fish kills. • Problems at fish ladders. • Acid sulphate soils coming down into river • Impact to micro-invertebrates / loss of species / growling grass frogs? • Research into platypus species.
Governance and regulation	• Separate management regime for Boundary Creek • Wait until more is known – precautionary principle. • Bias may be impacting information provided specific to flow down Boundary Creek. • Constant pumping will require an agreement between Barwon Water and landholders/stakeholders along the creek which is a good thing • Some feel a management plan may not work. • Not enough info/date on Barwon River. • Info needed on Barwon River. • Southern Rural Water (SRW) handball management to Barwon Water. • Need report (and licence report) – latter is overdue. • Got decades of leeway before major new supply required under no pumping

Theme Heading	Workshop Comments
Remediation and restoration	• No pumping will give time for remediation • No pumping will have less impact on stock/domestic users (Boundary Creek and Barwon River). • Constant pumping will not allow the aquifer to recover • Allow the aquifer to recharge and find the best intermittent pumping (is there a sweet spot to balance lowering impact on the environment).
Flows and River Health Impact	• No pumping could increase acid sulphate coming down the river, lower part of Boundary Creek could get affected. • Pipeline to go further down the creek than just Boundary Creek. • Investigate how far the issue extends down the creek (i.e. fish stock and farming). • Damage may continue through constant pumping • Damage has been done. • Impacts on Barongarook Creek, Loves Creek and 10 Mile Creek. • Impacts to Lake Colac, Lake Modewarre and Lake Murdeduke. • Environment is suffering. • Creek is already damaged, not sure how it would get back to its original state.
Economic/Bill Impact	• Community comfortable with an increase of $70/year for no pumping model • $70 per year is affordable compared to filling a rural tank. • Cost of $70 increase in bills not something that should be considered. • Community will value water more • No pumping will increase usage charges (volume charge) • Under a high climate change scenario, community more accepting of increased cost • Price signal forcing behaviour change. • Need a more appropriate value applied to environmental water • Environmental water is not cheap water. • It is not a cheap resource / appreciation needed. • Need to wear the cost of $70 per year on customer bills. • Affordability – customers have received reductions in price, so can afford to pay more. • Need to balance environmental damage and financial costs.

ECONOMIC

The following feedback is based upon the data offered below for the 'economic' data provided on the night. This information was offered as a starting point for discussion.

This topic included:

- Impact to customer water bills during the next 15 years
- Change in water supply yield compared to existing
- Year when next major water supply investment required (~$210M cost)
- Economic cost due to earlier need for major water supply investment and earlier need to use more expensive water sources

Criteria	Important aspects of interest	Summary of technical findings		
		(Baseline – No Pumping)	(Constant Pumping)	(Intermittent Pumping)
Economic	Impact to customer water bills (during next 15 years)	Negligible (median climate change) $70/year increase (high climate change)	Negligible	Negligible
	Change in water supply yield (compared to existing)	11,000 ML	6,600 ML	0 ML
	Year when next major water supply investment required (~$210M cost)	2040 (median climate change) 2032 (high climate change)	2047 (median climate change) 2041 (high climate change)	2059 (median climate change) 2047 (high climate change)
	Economic cost (due to earlier need for major water supply investment and earlier need to use more expensive water sources)	$140M	$57M	$0

THEMED WORKSHOP FEEDBACK

The following lists the feedback (general, strengths and weaknesses) that was provided by the participants at the workshop. Each comment has been faithfully reprinted here as it was written on the night. Other than theming these comments no other analysis has been undertaken.

Theme Heading	Workshop Comments
Economic/Bill Impact	• $140 million is reasonable investment to achieve no pumping. • No pumping $70 impact on customer seems reasonable (especially under high climate change) (support for hardship cases required) • Some industries should be able to accommodate increase under no pumping model. • No pumping model 7% increase in water cost for industry (but might force industries to invest in efficiencies). • No pumping requiring 7% increase of water cost for farmers could be significant.
No pumping preference	• Got decades of leeway before major new supply required under no pumping • No pumping - should be retained as an emergency only • No pumping model - Dam on Dewings or increase West Barwon Dam • Need to educate to use less water to reduce impact under no pumping model
Remediation and restoration	• Intermittent pumping should only be considered if there was recharge to replace what is taken out. • Need to know cost of remediation under no pumping model
Intermittent pumping impacts	• Intermittent model doesn't include economic cost on agriculture or environment • Intermittent pumping should only be used when water restrictions in place

WORKSHOP ACTIVITY 3 - REACTIONS AND FEEDBACK

All participants were asked to provide some feedback on the spectrum of possible pumping options and to describe what they see as strengths and weaknesses of each given the data and ideas that were discussed at the workshop. The following are the results from this feedback at this stage.

BASELINE - NO PUMPING

Level of comfort with this option	No. of participants selecting this level of comfort
Confused	0
Loathe it	0
Lament it	1
Live with it	0
Like it	1
Love it	15

What would need to change for you to feel more comfortable or less confused
Stop pumping, gives us back our rivers and streams, use the desal plant we are already paying for!
Environment should be first consideration
Stop pumping OK
Stop Pumping
No pumping enviro vandals
Seek other options
Don't pump till aquifer restored
Let aquifer recover

Strengths and Opportunities	Weaknesses and Concerns
Good faith in Barwon Water will begin to be restored when Geelong and Colac etc populations are well informed by you as to the VALUE of WATER and the relationship between turning on the tap and the life of a fish in the river ecosystem	Will require earlier expenditure on alternatives - see figures in economic spreadsheet
Aquifer needs to be restored	This was a box ticking exercise to white wash people's minds and opinions with confusing, not real data or models were garbage
Aquifer could be artificially recharged	
Environment Water is not cheap water	

CONSTANT PUMPING

Level of comfort with this option	No. of participants selecting this level of comfort
Confused	0
Loathe it	10
Lament it	1
Live with it	7
Like it	0
Love it	0

What would need to change for you to feel more comfortable or less confused
Results of mitigation study
Must be 1500ML or less
Must be minimal i.e. up to 1500ML
Last resort
Disaster
Must consider aquifer recharge limit level drop
hard to store

Strengths and Opportunities	Weaknesses and Concerns
Live with it provided it is less than 1500ML/y	Security is needed in extreme drought so why "constant"?
Depending on level	Where will it be stored in wet years
	Should be related to drought

INTERMITTENT PUMPING

Level of comfort with this option	No. of participants selecting this level of comfort
Confused	0
Loathe it	8
Lament it	1
Live with it	7
Like it	3
Love it	0

What would need to change for you to feel more comfortable or less confused
Only extreme need
as a last resort - have to exhaust other options x2
As a last resort
Last resort
Ongoing community info sessions
Must be in concert with recharging the aquifer x2
With a conservative bulk entitlement and a limit on the amount that can be extracted in any five-year period
With Aquifer recharge
Remediation first (Big swamp etc). Only then second process - THE PRECAUTIONARY PRINCIPLE re: any further action
Full recharge is a must before any further extraction. Absolutely last resort.

Strengths and Opportunities	Weaknesses and Concerns
Only uses it when needed	Will always impact on surface waters detrimentally
Ongoing research and consultation engagement	Uses it at the worst time environmentally
	I agree

NEXT STEPS

This workshop was designed to be the first of a series of workshops where the broader community could provide feedback and get involved in the discussions around the Barwon Downs Borefield.

A second workshop will be run on the 12th October (5:30pm for a 6pm start – 8:30pm finish) at the Colac Bowling Club.

REPORT PREPARED BY:

mosaicLAB

www.mosaiclab.com.au