

Barwon Water
Water for Our Future
Panel 3
Panel Report

REMIT: With less rain and a hotter climate, it's time to think differently about how we use water and where it comes from.

How can we create a new water future that balances all our needs?

28 November 2021

OUR VISION

Our water future is...

A secure future where our rivers flow, our foods grow and our impact is low.

Resilient, innovative and sustainable, with abundant water from a range of sources and where we actively protect and improve water for the environment.

Ethical, healthy and responsible, with affordable and equitable access for everyone.

A shared responsibility, by valuing and conserving water and respecting the diverse needs of our community, cultures, and the environment.

OUR PANEL

This document culminates the agreed nomination of 55 representative options by the Water for our Future Panel, resulting from extensive engagement over a 18-month period. The Panel broadly represents the demographics found within the Barwon Water region.

These options were either recommended to be included or not by the panel in light of our vision and the challenge set to us by Barwon Water to find 50,000,000,000 litres of water over the next 50 years.

1. Recycled water

'Yes' bucket – Recycled Water	
Option number & name	What are the conditions under which this option could be left in for consideration in the Urban Water Strategy (UWS)?
26. Direct Potable Reuse from Black Rock Water Reclamation Plant to storages basins	Extensive public education campaign will be required to change attitudes. Legislative change required.
27. Indirect potable re-use from Black Rock Water Reclamation Plant via Anglesea Aquifer Storage & Recovery to Wurdee Boluc	Extensive public education campaign will be required to change attitudes. Legislative change required.
28. Northern Water Reclamation Plant Dual-Pipe to Existing Suburbs	No conditions.
29. Recycled water for agricultural use	With regard to scalability this option should from the initial implementation process consider the ability to extend to other areas. (pilot)
55. Small decentralised new suburb dual-pipe	Use this option only if financially viable (presently high CAPEX, levelized cost and low yield).
31. Dual pipe recycled water to major future urban growth areas	Ensure efficient layout of services to ensure provision of street trees in nature strips.
32. Sewer mining for public open space or industry	Sewer mining only to be implemented if zero net emissions can be part of the initial agreement for each reclamation plant.

Recycled water – Group response

Write your reflections in the row that matches your Zoom room number.

	How well do you think BW has incorporated your recommendations in relation to this option theme? Please place an X in the column that matches your groups overall level of comfort with this theme as it is captured now in the strategy						What, if any, specific changes would you recommend for Barwon Water to consider in the FINAL strategy to improve your level of comfort ?
	Love it	Like it	Live with it	Lament it	Loathe it	Can't agree	
1	X						
2	X						
3	X						
4	X						
5	X						
6	X						
=	6	0	0	0	0	0	TOTAL

2. Desalination

'Yes' bucket - Desalination	
Option number & name	What are the conditions under which this option could be left in for consideration in the Urban Water Strategy (UWS)?
23. Regional desalination plant for Geelong	Must prioritise control, autonomy and accessibility for Barwon Water.
24. New State desalination plant, shared between Geelong and Melbourne	Not required if option 23 implemented. Significant pricing differential required for a shared plant to be agreed over a regional Geelong plant. Must prioritise control, autonomy and accessibility for Barwon Water.
25. Access desalinated water from additional 50GL upgrade of Victorian Desalination Plant	If a regional desal plant is unattainable (either exclusively local or shared) then this option is to be considered. Must prioritise control, autonomy and accessibility for Barwon Water.

Desalination – Group response

Write your reflections in the row that matches your Zoom room number.

	How well do you think BW has incorporated your recommendations in relation to this option theme? Please place an X in the column that matches your groups overall level of comfort with this theme as it is captured now in the strategy						What, if any, specific changes would you recommend for Barwon Water to consider in the FINAL strategy to improve your level of comfort ?
	Love it	Like it	Live with it	Lament it	Loathe it	Can't agree	
1		X					Need reassurance and clarity around the guarantee of water supply from Melbourne.
2						X	One out of the four panel members disagreed. 3x Loved it 1x Live with it. Would like the region to maintain autonomy.
3			X				If this were to become a choice after they studied options, GG3, we would prefer a regional stand alone desal, not shared with Melbourne.
4	X						
5		X					Remembering that part of our focus is to have the region maintain autonomy, we would like there to be guarantees that we will not be subject to the whim of decisions made in Melbourne for our regional water supply. We currently do not have the guarantees that we want about control over the water.
6		X					Ensure monitoring of costing into the future.
=	2	3	1	0	0	0	TOTAL

3. Improve efficiency

'Yes' bucket – Improve efficiency	
Option number & name	What are the conditions under which this option could be left in for consideration in the Urban Water Strategy (UWS)?
3. Reallocate Ballan Channel bulk entitlement to Bostock Channel	No conditions.
5. Optimise operation of Melbourne Geelong Pipeline within existing entitlement constraints	No conditions.
8. Water efficient showerhead program	No conditions.
9. Waterwise gardens	No conditions, program to continue or extend.
10. Smart networks (digital metering) across Geelong system	Unconditional
11. WaterAssist Program	To be linked with other educational programs.
12. Farm leakage detection program	Review extension beyond the 2000 farmers to take advantage of any future technology or cost improvements.

Improve efficiency – Group response

Write your reflections in the row that matches your Zoom room number.

	How well do you think BW has incorporated your recommendations in relation to this option theme? Please place an X in the column that matches your groups overall level of comfort with this theme as it is captured now in the strategy						What, if any, specific changes would you recommend for Barwon Water to consider in the FINAL strategy to improve your level of comfort ?
	Love it	Like it	Live with it	Lament it	Loathe it	Can't agree	
1	X						
2	X						
3	X						
4	X						
5	X						
6	X						3. We couldn't find any information about this option in the draft strategy. 8. Can we widen this program instead of just focusing on showerheads, to extend and keep exploring water saving innovations from overseas.
=	6	0	0	0	0	0	TOTAL

4. Behaviour change

'Yes' bucket - Behaviour change	
Option number & name	What are the conditions under which this option could be left in for consideration in the Urban Water Strategy (UWS)?
13. Work with schools to help educate young people	Educate on water cycle (how it affects the environment, not just us), climate reality and efficient water use.
14. Gamification/ competitive water use using smart meters and apps	Inclusion is important for this idea to work well. Great, as long as there is an easy way of teaching older people, and less tech savvy people how to join in.
53. General water literacy	Educate on water cycle (how it affects the environment, not just us), climate reality and efficient water use.
16. Subsidies for rainwater tanks	Should have a highly structured system that benefits homeowners and renters.
17. Water efficiency grant program for major water users	No conditions required.
20. Social allocation of water	Develop a fair set of rules and conditions that deals with transient populations, vacancies during holidays etc and for disadvantaged or people with special needs. Needs to be monitored and checked by BW (i.e. how many people in a household at a time).
21. Review the restriction curves	No conditions required.
22. Tighter permanent water saving rules	No conditions required.

	How well do you think BW has incorporated your recommendations in relation to this option theme? Please place an X in the column that matches your groups overall level of comfort with this theme as it is captured now in the strategy						What, if any, specific changes would you recommend for Barwon Water to consider in the FINAL strategy to improve your level of comfort ?
	Love it	Like it	Live with it	Lament it	Loathe it	Can't agree	
1	X						Ensure support for digital literacy and use of smart meters.
2	X						
3	X						
4		X					NEEDED more emphasis on better general understanding /education about the meaning of water to the environment, to riverine and coastal ecosystems etc, esp in context of climate change - 'we are part of a community of life' as a motivator for care. Ensure that as part of campaigns to change behaviour includes "why" our behaviour needs to change. Use the work and build from the Climate Change movement.
5	X						We agree with the requests for digital literacy to be made available.
6		X					53. Some themes should be included in water literacy education, for example information about water leaks, diet changes, where your food comes from and how much water the diet you eat requires.
=	4	2	0	0	0	0	TOTAL

Plenary comments:

Importance of anthropologists in Barwon Water's workforce

5. Better design and planning (+ Stormwater, Roof water, Grey water)

'Yes' bucket - Better design and planning	
Option number & name	What are the conditions under which this option could be left in for consideration in the Urban Water Strategy (UWS)?
1. Improved plumbing standards and house efficiency star ratings	Legislation and regulatory standards are implemented prior to development to ensure this strategy meets environmental and building standards. Initial and on-going audit(s) implemented to ensure developers do not overcharge. A target should be set to endeavour to meet zero net emissions achieved by effective offsets.
2. Northern and Western Geelong Growth Area IWM Plan	That project costs passed onto new home owners does not adversely affect the affordability of homes. E.g. New home owners grants. Ensure zero net emission offsets are effective. Consider this option for all new developments in the region.

'Yes' bucket – Grey Water and Roof Water	
Option number & name	What are the conditions under which this option could be left in for consideration in the Urban Water Strategy (UWS)?
33. Household on-site treatment for garden and toilet use	Guidelines to ensure public safety (i.e. potable vs non-potable uses at different taps) and with educational program to ensure full understanding of households. Rolled out through initial pilot program with careful selection of households to participate to ensure best applications and yield.
36. Residential rainwater tanks to garden and toilet	Make compulsory in new builds and have incentives for retro fitting to existing residences. Encourage prolonged behaviour change.
37. Roof water harvesting scheme for suburb	Must be a compulsory condition on houses built to ensure yield and ability to monitor long term success of program.

'Yes' bucket - Stormwater

Option number & name	What are the conditions under which this option could be left in for consideration in the Urban Water Strategy (UWS)?
38. Recover stormwater for industrial estate	No conditions.
39. Divert stormwater to recreational facilities or Public Open Spaces	No conditions.
41. Stormwater to Wurdee Boluc Reservoir	As the financial cost to the water user is quite high, developers and new home builders must absorb the majority of the cost. If the man-made wetlands become significant flora and fauna areas in the future a new environmental study should be undertaken.

'Yes' bucket – Buy from willing sellers

Option number & name	What are the conditions under which this option could be left in for consideration in the Urban Water Strategy (UWS)?
50. Purchase unutilised water from existing allocations from the Victorian Desalination Plant	In times of need, we see this option as viable. In accordance with the rejection of no.30, any desalinated water is not to go back into the rivers.

Better design and planning (+ Stormwater, Roof water, Grey water) and Buy from willing sellers – Group response

Write your reflections in the row that matches your Zoom room number.

	How well do you think BW has incorporated your recommendations in relation to this option theme? Please place an X in the column that matches your groups overall level of comfort with this theme as it is captured now in the strategy						What, if any, specific changes would you recommend for Barwon Water to consider in the FINAL strategy to improve your level of comfort ?
	Love it	Like it	Live with it	Lament it	Loathe it	Can't agree	
1	X						Would be great to get more detailed information on the role of traditional owners in planning and design.
2	X						
3	X						
4		X					Action GG4 - Some costs are still hidden, such as the ongoing maintenance costs. Costs need to be more transparent, what costs will be passed on/the responsibility of the consumer.
5	X						
6		X					How is compliance being monitored? How is barwon water ensuring transparency in the reporting of offsets? Explain what the offsets are.
=	4	2	0	0	0	0	TOTAL

General plenary comments:

Why remove willows if they keep riverbanks stable?

No bucket:

'No' bucket – Improve efficiency	
Option number & name	What are your reasons/rationale for why it should be removed for consideration in the final Urban Water Strategy (UWS)? E.g. How does it not meet the vision and criteria?
4. Optimise operation of Anglesea Borefield within existing entitlement constraints	Environmental impacts, and it is contradictory to vision statement.
6. Reduce losses along Wurdee Boluc Inlet Channel	Due to high costs and little yield. Long timeframe before seeing any yields.
7. Wurdee Buloc Reservoir - shade balls	Due to a much more negative environmental impact than first thought.

'No' bucket – Behaviour change	
Option number & name	What are your reasons/rationale for why it should be removed for consideration in the final Urban Water Strategy (UWS)? E.g. How does it not meet the vision and criteria?
15. Tourist Education Program	Concerns that it will not lead to behavior change. If tourists go home and make changes BW doesn't benefit from it. In terms of tourist education program, very expensive, little certainty on yield.
18. Reduced fixed service charge but higher volume charge	Discrepancy between bill impact to household and renter, didn't support our vision due to big impact on renters. Provides no employment benefit.
19. Scarcity Pricing Tariff	Potential to compound disadvantage to low socio economic areas in an already difficult period, does not align with vision. Preference to review/maintain water restrictions.

'No' bucket - Desalination	
Option number & name	What are your reasons/rationale for why it should be removed for consideration in the final Urban Water Strategy (UWS)? E.g. How does it not meet the vision and criteria?

54. Modular Desalination Plants	Very low yield compared to other desalination options High levelised cost, almost 4 times the other desal options per ML More regulatory/approval difficulty due to multiple sites Could reconsider if technology changes - check at 5 yearly review
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'No' bucket – Recycled water

Option number & name	What are your reasons/rationale for why it should be removed for consideration in the final Urban Water Strategy (UWS)? E.g. How does it not meet the vision and criteria?
30. Recycled water for river environmental flows	Very expensive and Black Rock is distant to the river feed in points. Better and more effective ways to increase environmental flows eg using water savings through recycled and reclaimed water use for farms, industry etc Adverse environmental impacts through developing unnecessary infrastructure to pipe the water.

'No' bucket - Groundwater

Option number & name	What are your reasons/rationale for why it should be removed for consideration in the final Urban Water Strategy (UWS)? E.g. How does it not meet the vision and criteria?
34. Access to Upper Eastern View Formation Groundwater	This option does not align with vision (rivers flowing and impact is low). Does not align with criteria environmental impacts, sustainability and social. Community survey wants the environment protected.
35. Newllingbrook groundwater bores	This option does not align with vision (rivers flowing and impact is low). Does not align with criteria environmental impacts, sustainability and social. Community survey wants the environment protected.

'No' bucket – Buy from willing sellers

Option number & name	What are your reasons/rationale for why it should be removed for consideration in the final Urban Water Strategy (UWS)? E.g. How does it not meet the vision and criteria?

<p>49. Purchase water from Northern Victoria, trade by substitution with Central Highlands Water</p>	<p>This option is very dependent on rainfall. Lot of pressure on the current Murray-Goulburn system. Climate change is not going to relieve this pressure. Despite low levelised cost compared to other options, it's not on balance of the other requirements of the vision and criteria. Buying water in both options whereby 49 causes more stress on farmers and 50 is unutilised desal water with little impact on the environment. Dependent on rainfall with NO certainty of yield.</p>
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'No' bucket - Stormwater

<p>Option number & name -</p>	<p>What are your reasons/rationale for why it should be removed for consideration in the final Urban Water Strategy (UWS)? E.g. How does it not meet the vision and criteria?</p>
<p>40. Corio Bay dam</p>	<p>Not enough information and detail on the overall project. No current legislation to support this option. The economic impact is unknown. Uncertainty of yield and cost.</p>

'No' bucket - Other

<p>Option number & name</p>	<p>What are your reasons/rationale for why it should be removed for consideration in the final Urban Water Strategy (UWS)? E.g. How does it not meet the vision and criteria?</p>
<p>51. Tow Icebergs from Antarctica to Corio Bay</p>	<p>Cost far too high, for example approx. \$150, 000 per day for 2 ships and will take approximately x 2 months to tow an iceberg to Geelong The ownership of icebergs is not determine, therefore we cannot use it Environmental impact is significant It can be counterproductive interfering with the environment without potentially knowing the long term repercussions.</p>
<p>52. Cloud Seeding</p>	<p>No information on yield or costs, but seems expensive, most times a plane is used to reach the required clouds At present, Australia's dry continent our clouds don't have enough moisture for this to be viable, however climate change could alter this in future The chemical used for cloud seeding, such as Silver iodide, has potential health effects to humans and animals, can cause contamination of soil and waterways</p>

'No' bucket - Rivers

Option number & name	What are your reasons/rationale for why it should be removed for consideration in the final Urban Water Strategy (UWS)? E.g. How does it not meet the vision and criteria?
42. West Gellibrand Reservoir to West Barwon Reservoir via Olangolah tunnel	Leave in no bucket based on negative social and environmental impacts together with high costs and minimal detailed environmental impact information available at this time. In making this decision we did consider the potential high yield but have left it as no due to the aforementioned reasons.
43. Colac Pipeline to Wurdee Boluc Channel via Barwon-Colac Transfer Main	Similar to option 42, while acknowledging the reduced cost there is also significantly lower yield and the social impacts and regulatory constraints push this option definitively into the no bucket.
44. Barwon River weir and pump station at Winchelsea	Reliant on rainfall,, high levelised cost, low certainty of significant yield, significant regulatory policy constraints.
45. Small dam behind Barwon Weirs	Reliant on rainfall, long time frame before any yield (10 to 20 years), high levelised cost, low certainty of significant yield, significant regulatory policy constraints.
46. Lardner creek dam	Reliant on rainfall, long time frame before any yield (10 to 20 years), high levelised cost, low certainty of significant yield, significant regulatory policy constraints.
47. Coastal river diversion	Reliant on rainfall, long time frame before any yield (5 to 10 years), high levelised cost, low certainty of significant yield, significant regulatory policy constraints.
48. West Gellibrand Enlargement & diversion	Leave in no bucket based on negative social and environmental impacts together with high costs and minimal detailed environmental impact information available at this time.

Write your reflections in the row that matches your Zoom room number.

	How well do you think BW has achieved your 'no bucket' recommendations? Please place an X in the column that matches your group's overall level of comfort with how the 'no bucket' has been handled by BW.						What, if any, specific changes would you recommend for Barwon Water to consider in the FINAL strategy to improve your level of comfort?
	Love it	Like it	Live with it	Lament it	Loathe it	Can't agree	
1	X						-
2	X						Community consolation has already agreed to dismiss all options in the No bucket. If BW want to re assess these options they will need to re engage the community.
3	X						We do not have any specific changes to recommend.
4		X					We would request that BW add into the Lorne and Apollo Bay options under consideration that the environmental impacts of taking and storing more water from the rivers be emphasised in their consultation with the community. The Vision developed by the Panel be highlighted when in consultation with these communities.
5		X					We feel that even in engaging in a commentary on the 'no' bucket items we are risking BW re-considering them as possible options. Option 4: Anglesea borefield - as a group we were highly concerned about this and feel strongly that it should not be an option; it was put in the no bucket for clear, evidential reasons. Option 7: shade balls - more research is justifiable, but they are in the no bucket due to serious concerns about the potential environmental impact and the limited information we had at the time, (and still).
6		X					34. Leave the groundwater alone as much as possible 15. Would this be a theme to explore further, instead of discounting as expensive? 6. Could this option be reconsidered? The infrastructure is very old, how is the evaporation going to impact water losses in 50 years time? 7. Still unsure about research on shade balls. Are there any results from California? Can the research be extended to the use of solar panels instead or added?
=	3	3	0	0	0	0	TOTAL

Overall Summary of responses

Option Theme	Love it	Like it	Live with it	Lament it	Loathe it	Can't agree
1 Recycled Water	6	0	0	0	0	0
2 Desal	2	3	1	0	0	0
3 Improve Eff.	6	0	0	0	0	0
4 Behaviour change	4	2	0	0	0	0
5 Better design	4	2	0	0	0	0
No Bucket	3	3	0	0	0	0

Level of comfort on vision and cost - survey results

Q1 HOW COMFORTABLE ARE YOU WITH HOW THE VISION HAS BEEN INCORPORATED INTO THE WFOF STRATEGY?

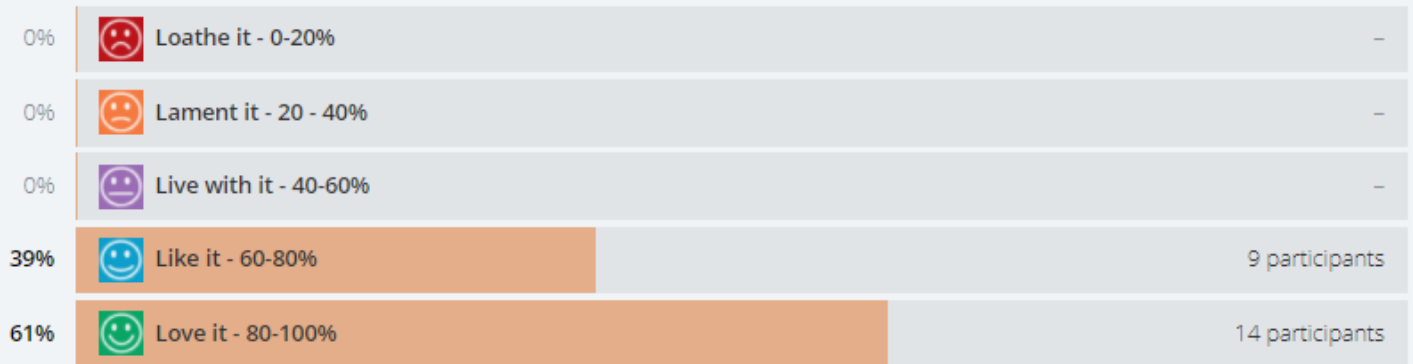
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A shared responsibility, by valuing and conserving water and respecting the diverse needs of our community, cultures, and the environment.

23 out of 51 participants answered this question



Q2 What would make you more comfortable with how the vision has been adapted and incorporated?

All good.

nothing

Nothing - all good

N/A

No, there is nothing comes to mind that would make me more comfortable.

More than happy with the vision

I'm a bit concerned about river sources still being included in AB and Lorne - agree that any consultation should include ed about env impacts.

Also, not sure why there is a conversation about 'unallocated' water re the Gellibrand - I get it that this is pretty strongly dealt with as Not an option, but flagging it like this suggests a certain ambivalence. It would be good if this had a different name.

ALSO this vision is great and should be a focus of your behaviour change. Thanks

The vision report is targeted at a specific audience(s). I personally would prefer more technical details but I understand that this would not achieve the aims of the printed product.

Happy with how the vision has been adapted.

N/A

I think it has been taken quite literally and was followed very well in how the draft has been made and presented to us
Climate change known unknowns - ability to manage floods excess water in future - also Climate change predictions
.... water level/ sea levels rises - for coastal communities ?

Prior to today I would have said 'love it', but now that I see that two of the 'no' bucket items are not entirely gone I am at a 'like it' level.

I'm happy

More Innovation would be better but maybe in time.

How our foods grow - more info on how is BW going to engage with primary producers to implement more river/water friendly savings

if the Anglesea bore field option was left in the NO bucket where we firmly put it

No issues

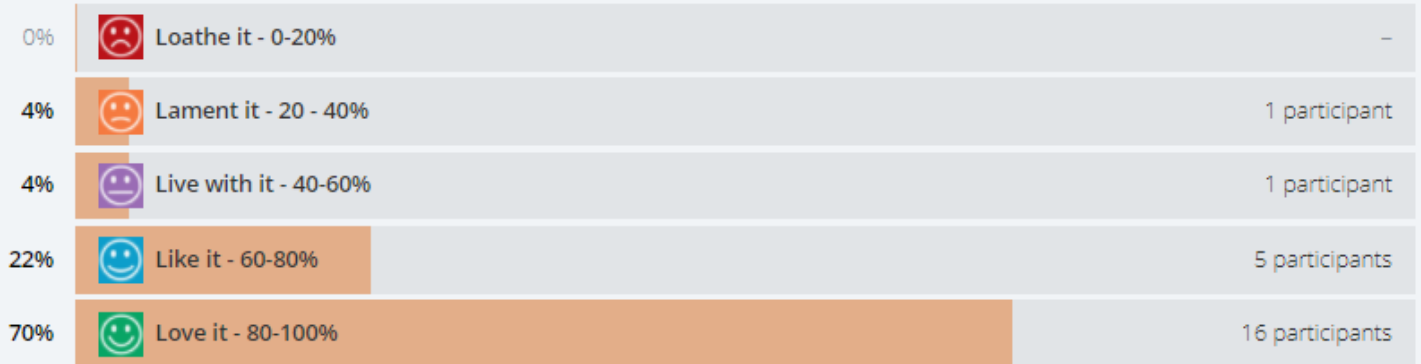
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N/A

Q3 In the attempt to balance water security and affordability, looking across all of these actions, how comfortable are you with the average cost implications on the average customer?

(Average person is someone who can pay their bills, for the purpose of this section we are not talking about people who cannot pay their bills)

23 out of 51 participants answered this question



Q4 What would make you more comfortable with the average cost implications?

All good.

nothing

Cost implications are comfortable.

Not all costs are included in the reports. eg. Maintenance costs resulting from increased activity in leaks' etc. have been left out.

Nothing - all good

N/A

only thing that might be helpful is a cost impact per average bill cost bracket, eg. household pays this much normally, will pay this much extra

Your cant make change without any costs

I'm still of the opinion that cost of water is a means to save water - if too "cheap" then no incentive to save water

I think BW has done exceptionally well on the cost implications.

No cost ;)

There has to be cost implications

N/A

BW has done a fantastic job to make changes affordable for the end user

is there anything greater than LOVE????

More insights for cost (cost breakdown rather than NPV) of desal.

I still think that costs should be higher, which allows more dramatic changes to be enacted. water is highly undervalued.

Fed/State Gov support for disadvantaged

N/A