

# **ENVIRONMENT, NATURAL RESOURCES AND REGIONAL DEVELOPMENT COMMITTEE**

## **Inquiry into the management, governance and use of environmental water**

Shepparton — 24 October 2017

### Members

Mr Josh Bull — Chair

Mr Simon Ramsay — Deputy Chair

Ms Bronwyn Halfpenny

Mr Luke O’Sullivan

Mr Tim Richardson

Mr Richard Riordan

Mr Daniel Young

### Witness

Dr Mark Bailey, Head of Water Resources, Goulburn-Murray Water.

**The ACTING CHAIR (Ms Halfpenny)** — Thank you, Dr Bailey, and welcome to this hearing.

**Dr BAILEY** — Thank you very much.

**The ACTING CHAIR** — If you would not mind, just for the transcript, going through your title and so on, and then we will go into some of the formalities.

**Dr BAILEY** — Certainly. I am Dr Mark Bailey. I am head of water resources at Goulburn-Murray Water. My background — I am a civil engineer with a PhD in catchment management hydrology and I look after the surface water and groundwater resources across the Goulburn-Murray Water region. I am delegated resource manager through Goulburn-Murray Water from the minister.

**The ACTING CHAIR** — Thank you. Thank you for coming in to talk to us about the inquiry into management, governance and use of environmental water. I know that you were sitting in the gallery so you probably know that all of the evidence being taken today is being recorded and that a copy of the transcript, the proofs, will be provided to you to check for accuracies prior to it becoming public. Also in terms of parliamentary privilege, anything that you say in the hearing is protected by parliamentary privilege. However, outside the hearing those comments or discussions are not protected by parliamentary privilege. You are going to give us a short presentation and then allow us to ask questions. Thank you.

**Dr BAILEY** — Yes. Thank you very much. I have got a short presentation.

### **Visual presentation.**

**Dr BAILEY** — The purpose of that is pretty much to provide an opening statement and a little bit about Goulburn-Murray Water just to establish the context of Goulburn-Murray Water operations, talk about the environmental water managers that we deal with, the areas that we operate within and just an overview of some of the GMW thoughts that have been presented within its submission.

Formally Goulburn-Murray Water is Goulburn-Murray Rural Water Corporation. We trade as Goulburn-Murray Water. We are a statutory corporation under the Water Act 1989 in Victoria. Goulburn-Murray Water itself manages about 70 per cent of Victoria's water resources and 50 per cent of the state's groundwater resources.

In the Goulburn-Murray irrigation district we have the largest irrigation delivery network in Australia. It is around about 6000 kilometres worth of channels and pipelines. Goulburn-Murray Water has been given source bulk entitlements for the northern Victorian systems. Bulk entitlements effectively are a license to operate as a water corporation and to take water. The source bulk entitlements give Goulburn-Murray Water the right to harvest water, which is capturing it behind the dams, and to deliver that water to entitlement holders within the Victorian systems. The other bulk entitlements are held by the likes of the urban water corporations or regional urban corporations, such as Goulburn Valley Water here in Shepparton, and the Victorian Environmental Water Holder, which has a mix of bulk and environmental entitlements. We also supply water to water shares and section 51 licences, or take-and-use licences.

Goulburn-Murray Water has also been delegated resource manager for the northern Victorian systems by the minister and also storage manager by the minister and their statutory functions under the Water Act.

In terms of our area of operation, as mentioned, we operate across northern Victoria, basically starting from the catchment to Lake Hume — or the Victorian share of the catchment to Lake Hume — and operate to Nyah on the Murray River and south to the great divide. In our role as resource manager we look after the Victorian Murray entitlements, which extend from the waters of Lake Hume down to the South Australian border. So we actually supply water to Lower Murray Water as the next water corporation heading downstream. The map just basically shows that we cover an area roughly the size of Tasmania. It is 68 000 square kilometres.

In terms of the services provided by Goulburn-Murray Water, the major services that we supply are towards irrigation customers — around 16 000 — in six irrigation areas across the Goulburn-Murray irrigation district, or GMID for short. Four of those systems are supplied from the Goulburn River, and two of the systems are supplied from the Murray River. Goulburn-Murray Water also operates three pumped districts, which are all supplied from the Murray River system. There are almost 20 000 take-and-use customers across the Goulburn-Murray Water area who take water directly from bores and also from rivers and streams. They are

termed 'diverters', if I slip into that use later on during the discussions. We also have drainage customers. They are predominately in the Goulburn Murray Irrigation District. They take water that has run off from land and entered into some drainage schemes that Goulburn Murray Water operates, and with community surface drainage.

A number of the other services are the Murray-Darling Basin Authority — Goulburn-Murray Water is the state constructing authority, and it operates Dartmouth Dam, Yarrawonga Weir, Torrumbarry Weir and Mildura Weir on the behalf of the Murray-Darling Basin Authority. We supply seven rural and urban water corporations across northern Victoria. We supply water for domestic and stock purposes. We have leases, licences and houseboats. Our houseboats are only on Lake Eildon. We also work with a couple of hydroelectricity providers and of course the environmental water managers, which only number three in total across northern Victoria but take up quite a large entitlement base.

In terms of those managers, they are the Commonwealth Environmental Water Office; the Murray-Darling Basin Authority, who administers the Living Murray entitlements; and the Victorian Environmental Water Holder. Local catchment management authorities act as local agents. So Goulburn-Murray Water operators negotiate directly with the catchment management authorities for actual deployment of water. The water is delivered from a mix of water shares. The commonwealth owns only water shares and not bulk and environmental entitlements.

The areas in which these predominately occur are in the Murray system. The operations on the Murray are coordinated with the Murray-Darling Basin Authority as the river operator for the Murray; predominately within the Goulburn River systems — so with water released from Lake Eildon; in the Campaspe system, with water released from Lake Eppalock; and in the Loddon system with water released from either Cairn Curran or Tullaroop Reservoir, depending on resource balancing, and usually downstream at Laanecoore Reservoir. That may flow only to the Waranga Western Channel, which is an irrigation delivery channel running across pretty much half of our area, or it may go down to the Murray, just depending on the objectives of the North Central Catchment Management Authority.

In terms of Goulburn-Murray Water's relationship with the environmental water managers, we have established some very good relationships with the managers over time, predominately as we have both been learning with the deployment of the water. It is a relatively new product in the portfolio of services that Goulburn-Murray Water provides. We feel that it has been working relatively well, but there are definitely opportunities for improvement, particularly with things such as increased communication, coming predominately from the water managers themselves indicating what the purpose and intended outcome of the deployment of water is; some more strategic and targeted engagement with particular groups who have an interest in how the water is being used, particularly those who may have some reservations about how the water is currently being used for the environment; and also some greater transparency in governance arrangements — so the water is being charged, for instance, which is something that has been raised with Goulburn-Murray Water in the past.

That pretty much concludes the opening phase. I imagine I have got a few questions to come now.

**Mr RIORDAN** — You get me first. I come from the part of the world where it rains half the time, it drips off the trees the rest of time and if it does not rain for two weeks, there is a drought, so this keeping of the water and spreading it around is all new to me.

**Dr BAILEY** — I am from the Western District myself originally.

**Mr RIORDAN** — Just a couple of things. We have heard a lot about environmental water and recreational water, and to my outside view they often get combined as they sort of get used for the same thing. But reading through some of it, there are tensions there as well. We say we can divert water from agriculture to the environment and then get a recreational benefit, but that is not always the case. Can you highlight or talk about what challenges exist in keeping recreational users happy and the environment happy?

**Dr BAILEY** — Yes, there are a few challenges that have emerged, most definitely. Most came to the fore during the dry period in 2015–16. Water storages had recovered after the millennium drought, starting in 2010 and continuing through 2011. So the storages were topped up. That enabled greater deployment of water because there was more plentiful water, but then in 2014–15 and 2015–16 conditions went dry again. So storages started to decline as water was used. One of the key things that occurred and was brought to

Goulburn-Murray Water's attention was the falling levels in Lake Eppalock, where recreational users were of the opinion that water should be retained in the lake to provide for recreational purposes such as water skiing and angling. Some similar comments started to emerge in regard to Lake Eildon as the water level was starting to fall. We were not getting the replenishing inflows, but the water was being drawn down to meet a combination of environmental and consumptive use. The consumptive could have been irrigation.

To me it was a recognition that while it was providing a benefit to the environment downstream, there was concern about what that meant for communities around the storages and the recreational benefits. So there was a bit of angst that emerged at that time about, 'If you're sending water downstream, you're not saving water for the local area here', yet in terms of what the dams had been constructed for, that was most definitely to provide water for consumptive purposes. In some cases that consumptive purpose has been transferred to the environment. The environment has been paying charges for that and has equal rights to it under the entitlement framework within Victoria. They had every right to call out that water. Goulburn-Murray Water, as the system operator, did not have a right to stop them calling it. So we were trying to explain how the entitlement framework within Victoria was working and what the purposes were of the environmental water but also referring to some of the customers around our area.

**Mr RIORDAN** — On the data that we received earlier, they spoke of 21 000 active customers. I think your presentation had 16 000, but then I see another 6600 drainage-only customers, so I assume that is where that comes in.

**Dr BAILEY** — Yes.

**Mr RIORDAN** — With the way environmental water will continue to evolve — and also farm consolidation, so there are possibly two big things at play there — do you have sort of a vision in your organisation of what sort of customer base you will be dealing with, say in the next 10 years? Do you envisage that number of people you will be dealing with declining rapidly, or just a slow decline?

**Dr BAILEY** — Goulburn-Murray Water is in the process of developing a strategic plan to cover the next 10 years — 10, 20, 30 years. It is dealing with a decline in water availability, climatically driven but also within its Goulburn Valley irrigation district. We are seeing the consolidation of farms. We are seeing the decline of some traditional industries. Quite a number of farmers have left the dairy industry for instance, and we are seeing water transferred — not necessarily towards the environment — but going downstream towards almonds in the Sunraysia region. So there is an expectation that Goulburn-Murray Water will be dealing with reduced entitlements and water use across the GMID. That is something we are certainly working towards with the strategic plan going forward.

**Mr RIORDAN** — Last question: with that possibility of transferring water out of regions and to other purposes, is there a prospect that organisations such as yours would have, say, oversight in terms of the types of industries that that water can go to, or is it a totally free market? I raise that question in the sense that we have seen that, particularly in Queensland, there are environmental groups and others who are very anti-water venues for certain types of industries because it is too intensive — such as rice or whatever. Are there issues like that emerging in Victoria where communities are saying, 'That's ultimately not good for our region'? Is that a possibility or not really?

**Dr BAILEY** — At the moment we certainly operate under effectively a free market. There is no ability for Goulburn-Murray Water for instance to say if a customer wants to trade water from a particular use to another particular use that that is unacceptable or should be prohibited. A lot of the trading that has been occurring has been going towards new plantations — almond plantations, for instance, which is quite a water-intensive crop, particularly compared to dairy farming for instance.

**Mr RIORDAN** — Do you guys say there could be ultimately a limit on how much land can be taken up with that type of agriculture, considering what is environmentally sustainable?

**Dr BAILEY** — In terms of Goulburn-Murray Water's ability to do that, no. It would be something where we would lobby other water corporations, such as Lower Murray Water in that area, but we would also be talking to councils, because it is obviously a source of development revenue for them, and to our fellow water authorities across pretty much the southern Murray-Darling Basin, really, because if there is a block on transactions occurring within Victoria, it is possible that the same development may occur in New South Wales

and we may actually see a time at which the capacity of a river — in this case the Murray — to support irrigation developments becomes constrained. That is probably where more of the development and constraint may occur going forward rather than a block of a particular type of trade, for instance.

**The ACTING CHAIR** — I just wanted to ask you a question about paragraph 1 of our terms of reference, which is:

... the assessment of the role of environmental water management in preventing or causing 'blackwater' events ...

In your submission you sort of explained that the blackwater is a natural occurrence, but would the management of environmental water have any effect on those events — make them worse or more often? What do you say to that assertion?

**Dr BAILEY** — My view and the view of Goulburn-Murray Water is that it really depends on how the environmental water is deployed. The blackwater events we have seen particularly in the last few years have come about following the inundation of areas that had not had water on them for a long time. They have occurred after some very significant rainfall events, which have induced flooding, and that has gone over bank, out of river channel and inundated areas, and then as it has washed back in, it has taken material in with it, by and large. Occasionally they can be just from a very heavy rainfall event over a short period of time.

In those cases, can environmental water help? Perhaps, depending on where it is within a system. If it is within a river, the likelihood of being able to release a parcel of environmental water to try and break up the oxygenated water is unlikely. It is unlikely to ever catch up, if you understand. It is flowing down the river, so it would have to release at very large rates to try and achieve the velocity needed to reach the hypoxic area.

**The ACTING CHAIR** — That would be to try to stop it happening as the natural occurrence —

**Dr BAILEY** — No, to try and break it up if it had occurred.

**The ACTING CHAIR** — Yes. Okay.

**Dr BAILEY** — The other alternative was trialled earlier this year around the Shepparton region, where there are a number of outfalls from the Goulburn-Murray channel system: we were able to deploy some environmental water into hypoxic areas, or low dissolved oxygen areas, which provide a little bit of refuge for some of the creatures that were in there. There were reports of Murray crays and some fish heading towards the edges of the bank, where there was a bit of fresher water there.

In the longer term I am not an expert on the impacts of environmental flows over land, but I understand that one of the justifications for calling for overland flows has been that it can reduce the amount of material that is deposited over time. We know with river regulation there has been a significant reduction of overbank flows through the creation of the dams and weir structures. That may help in the future, but then that is also taking the water onto private land, which generates other impacts as well. There is a compromise to be sought perhaps. That is not something Goulburn-Murray Water would be involved in, but —

**The ACTING CHAIR** — What do you mean by compromise?

**Dr BAILEY** — If there is some means of doing that, that may be a way going forward, but I think that would be a government decision and it would have to be done in consultation with the landholders who would be affected. The direction that I have received from the government is that there is no deliberate inundation of private land by environmental waters, or any other river operations for that matter, even if it was delivering water at large rates during periods of strong irrigation demand for instance.

**The ACTING CHAIR** — So that paragraph in the terms of reference is about whether it can prevent or cause blackwater events. Your view is that it does not cause blackwater events but that it can assist in breaking down the effects —

**Dr BAILEY** — There is the potential for the environmental water to help break it down, provided that the fresher water can actually reach the affected area in time or that there is another means of depositing water there quickly. So if it is near an irrigation area where we can actually discharge into a river, there is the potential to

use water that is already in the system to record it as an environmental water use being delivered into the river as a fresh inflow.

**The ACTING CHAIR** — That is a fairly widespread view?

**Dr BAILEY** — I believe so, yes.

**Mr O’SULLIVAN** — Thank you, Dr Bailey, for coming in and presenting to us today. Water is without doubt the most complicated policy area the government has to deal with. I have not had a lot to do with planning, so I am not quite sure what happens in that space, but I understand to a degree how complex water is and how difficult it is. Particularly I guess we are still operating in a relatively new environment in terms of the Murray-Darling Basin plan and its impacts right across the sector and right across the community of northern Victoria, where we have seen bits and pieces already in terms of those impacts.

I want to ask a series of questions to try and, as much as anything, get some of this information on the record so we can use it as part of the committee in terms of putting together the report and some of the recommendations that we will use. I would also like to ask you some questions to see what your opinion is in your capacity representing Goulburn-Murray Water and obviously from your expertise — if you could share with us some of your insights based on what you are seeing from dealing with customers and the impacts that they are facing as a result of the Murray-Darling Basin plan, which essentially has brought about this environmental water that we are still getting used to. There is no doubt we are trying to get the balance right, and I guess the jury is still out as to exactly where that will sit, but where I wanted to start was: in terms of the environmental water, what do you see success looking like in terms of the use of the environmental water within northern Victoria?

**Dr BAILEY** — I guess it can be measured in a number of different ways. One of the successes highlighted by the environmental water managers that we have dealt with in recent times is fish reproduction in the Goulburn River in particular — the presence of golden perch, and I cannot remember the other species off the top of my head, I am sorry. Attracting fish into areas where there has been a decline of fish numbers — that has been put on the record by researchers from the likes of the Arthur Rylah Institute. There have also been discussions anecdotally with local fishermen about seeing species returning into the Goulburn.

Last year there was a concerted effort between a number of different water holders and water managers to use the benefit of some species coming out of the Darling River system, attracting them upstream through the Murray and ultimately into the Goulburn, and that was viewed as a highly successful event. At other times it has been to manage vegetation and attract riparian vegetation back into areas which have declined over time and to provide habitats for various parts of the ecosystem within a river — so it might be attracting invertebrates, bugs or water bugs, for want of a better description, into rivers. So there are a number of different forms of success, in some cases it might be dealing with platypuses. I have heard of a number and seen a number of different successes that have been put forward.

**Mr O’SULLIVAN** — Thank you. It is good to have that on record. Conversely what have been the negative impacts? I am not asking this question in a negative way, but what have been the negative impacts of that amount of water going to the environment in terms of production and irrigation?

**Dr BAILEY** — In terms of the movement of water away from the irrigation areas?

**Mr O’SULLIVAN** — Yes.

**Dr BAILEY** — I think we have seen, over time, certainly a loss of water out of the Goulburn-Murray irrigation district. A lot of that occurred with the commonwealth water buybacks when that was first established for the environmental water holder for the commonwealth. A lot of that occurred at a time of financial stress, so a number of the irrigators who sold entitlements, whether they sold all or a proportion of them, were experiencing a severe downturn in their market. It was a period of quite significant drought as well, so they were looking to try and purchase water to stay solvent in their business. A lot of people sold water out there. We have seen a decline of water that has been actually held within the Goulburn-Murray irrigation district, and that is people basically selling water going towards the temporary trading market to try and maintain their business going forward that have been paying off debts. Obviously a large proportion of that water has gone towards the environment. At other times, some of the water that has gone through has been through water savings projects, such as the Connections Project at the moment. But with the loss of the water out of the GMID, it is putting

pressure on remaining irrigators in terms of the viability of the system into the future. As more and more water leaves, the fewer customers there are left to pay the bills for the maintenance of irrigation infrastructure, so there is a risk going forward that that will at some point perhaps become unviable.

**Mr O'SULLIVAN** — From your answer, there are a couple of different areas that I want to now go and explore. The first one is the water market, because obviously the environmental water plays its part in the water market. What have you seen in terms of the impacts on the water market by having that environmental water as a new player in that space?

**Dr BAILEY** — In terms of permanent entitlements?

**Mr O'SULLIVAN** — Both permanent and temporary.

**Dr BAILEY** — Perhaps if I look at the short-term trading markets, so the annual trade that occurs. A lot of people took the opportunity during the commonwealth buyback who were not using their water entitlements — sleepers as they are called. They were looking for the opportunity to exit the market and obtain a capital benefit from doing that.

**Mr O'SULLIVAN** — Is that a part of the unbundling process?

**Dr BAILEY** — No, that is separate to the unbundling process. At that time, that effectively removed some water that was just put on the market to raise revenue for a product. That has definitely had an impact on the market. There are fewer people actively participating. I might add that both the commonwealth and the Victorian water holders are not large participants in the market in comparison with the overall market scale. They have participated at times but at very small volumes.

**Mr O'SULLIVAN** — Does their involvement in the water market have a positive or a negative impact on other irrigators who are looking to purchase water or sell water in that market?

**Dr BAILEY** — I think at the scale at which they participate it is a relatively minor impact, if any. I think the fact that they actually do participate is viewed positively. I think there is a feeling that they should be participating more regularly from a number of irrigation customers.

**Mr O'SULLIVAN** — Could they manipulate the price or have a negative impact on price as a result of doing that?

**Dr BAILEY** — They could if they were to just go in without eyes open, I suspect, but having —

**Mr O'SULLIVAN** — It depends on whose eyes they are opening.

**Dr BAILEY** — Exactly. From their perspective, I know when they have traded they have usually gone through a third party. They have offered water through a water broker and used the services of the water broker to release water in relatively small parcels as opposed to trying to manipulate the market and drop prices, for instance, by putting a large amount of water into the market at any one particular time, or alternatively coming into the market to try and buy a large parcel of water at any one time.

During the millennium drought, when the sales were occurring, it is probable that it had an inadvertent impact on the market. From the people that I know, I suspect that it was unintentional, but it actually did have an impact where people suddenly saw there was the potential to raise revenue for their business and for their families but with a relatively good price.

**Mr O'SULLIVAN** — Conversely could the environmental water holder be accused of releasing water when prices are high and when irrigators need the water to sustain their crops and their plantings and so forth that without the water would die. Could the environmental water holder potentially have a negative impact in terms of driving the price up by being able to regulate how much water is in and out of that market at that time?

**Dr BAILEY** — There is a potential for that to occur, yes. But the volumes that I have seen to date that have been sold in the southern-connected basins — so particularly affecting the Goulburn-Murray Water area — have been very, very small relative to the overall trading market. We talk about hundreds of gigalitres of water or thousands of gigalitres of water being sold. Last year, or it may have even been the year before, the

commonwealth sold about 30 gigalitres of water in that market. The impact on that is probably negligible overall. There may have been a short-term impact on the market, and that was more a perception issue than a reality issue.

**Mr O'SULLIVAN** — And what volumes would the Victorian Environmental Water Holder be putting into that same market?

**Dr BAILEY** — I believe it has been of that order. I am sorry I cannot recall that off the top of my head, but I can provide —

**Mr O'SULLIVAN** — And that is not much.

**Dr BAILEY** — But again it has been a very small volume. Again there were calls at the time, or prior to the commonwealth environmental holders trading water, for more active participation. It was at a time of dry conditions. That would be a decision for the environmental water holders themselves. Goulburn-Murray Water would facilitate the trade, if it was to occur, through part of the services that we provide, but it is really a decision for the environmental water managers.

**Mr O'SULLIVAN** — I do not fully understand this myself, so I am using this as a learning exercise. I have got some knowledge, but I certainly do not have as much as you would have. Can you run us through exactly how the environmental water holder, in terms of the way they manage their water, how that fits in in terms of the fees and charges that they pay in comparison to irrigators, how that water is stored not only on an annual basis but beyond that through the carryover process and how they are impacted by the spill rules as well in terms of flooding arrangements?

**Dr BAILEY** — I was hoping you were not going to ask me to explain 'spillable water', because it is nearly impossible to do without a whiteboard, but I will give it a go. In the Murray, Goulburn and Campaspe river systems, which I showed you earlier, we have a product called 'spillable water accounts'. I might answer that part of the question first, if that is okay. That product enables a holder of entitlement, whether it is a water share or a bulk entitlement in the case of, say, the Victorian Environmental Water Holder, to carry over water against their entitlement. They can carry up to 100 per cent of their allocation against their entitlement, which is the actual water they have available to use from one year into the next. That is the same irrespective of whether they are an irrigator, a water authority or an environmental water holder in this context.

If they then receive allocations in the following year — the allocation against their entitlement is the next set of water that goes to them — that then takes them to holding more than 100 per cent of their entitlement, which is possible. If there is a risk that the storage that water is being held in will spill — that is, water will be released to maintain the dam at 100 per cent capacity — then that water is then quarantined until the risk of that spill occurring is less than 10 per cent in a given year. While that water is quarantined, should the dam actually spill — or in the case of the Murray, spill from the Victorian share of Lake Hume into the New South Wales share, which is termed an internal spill — the proportion of water that spills is deducted from the spillable water accounts, which include those held by the environmental water holders. They are exactly the same as they are for an irrigator holding water shares.

Last week Goulburn-Murray Water, as the delegated resource manager, announced that there had been an internal spill from the Victorian share of Lake Hume to the New South Wales share of about 70 gigalitres. That volume of 70 gigalitres was deducted across all of those. So in terms of how the spillable water works, it enables someone to carry over more than they are entitled to in their share by borrowing somebody else's airspace within a dam. So the water that they are holding in excess of their share is actually in somebody else's share who has used more, or whatever the process is. Ultimately if the dam spills enough, as we saw in the Murray system last year, all of that additional water is lost and they basically come back to having a full share.

**Mr O'SULLIVAN** — Once the water spills, like in that scenario, should that not then be converted to environmental water as it is then going down the river for environmental purposes?

**Dr BAILEY** — That has been an argument that has been put forward by a few different groups.

**Mr RIORDAN** — So at the moment it is considered magic extra water?

**Dr BAILEY** — It is considered a spill of water down the river.



**Mr RIORDAN** — But it is essentially a quantity of water over and above what the system is budgeted for, if you like?

**Dr BAILEY** — Effectively, yes. It provides environmental benefits as it goes down. The counter to that premise that has been put forward — that it should be deducted off the environmental water holder — is that it may be occurring at a period which is not suitable for some events or some ecological species, or it is not necessarily helping the environment at the time that it occurs. It comes back to a timing issue, remembering that the environment downstream of storages and in regulated systems in this context has now been very much changed by the impacts of regulation too. So one of the comments has been, ‘Well, if they’re getting a free kick of water going downstream’ — they, being the environmental water holders — ‘it’s actually providing a benefit to the environment’. That may have been the case before European settlement and the regulation of the rivers. There are pros and cons on both sides. At the moment Goulburn-Murray Water is dealing with the system that we have in place in that the water is lost. If it has come off spillable water accounts held by the environment, they are impacted the same as occurs with the water going downstream. There are arguments both ways I think, Mr O’Sullivan. Sorry, I realise I have not answered part of the question that was asked.

**Mr O’SULLIVAN** — I could keep going, but —

**The ACTING CHAIR** — I was going to ask a couple just in terms of recommendations. You made some comments in the overview, but I cannot see further expansion so much in the body about lessons and how we could maybe improve in terms of governance, transparency and communication. These are some of the things that we are interested in as part of recommendations. If things are not working properly, we should be looking at fixing them. So have you got some concrete ideas that you can suggest to us?

**Dr BAILEY** — I think what we have just discussed with the spillable water is one that has raised considerable concerns.

**The ACTING CHAIR** — Okay, so redefining it or —

**Dr BAILEY** — Potentially, yes. As I say, there are arguments on both sides. I think the key is to put that into the public arena. I do not know that it is necessarily being discussed enough and that there has been enough recognition of pros and cons from both sides of the argument going forward. I think it is worth doing that as we go forward.

**The ACTING CHAIR** — Okay, so that is more about explaining and sort of negotiating some of the rules, I guess, of how things work. So that is one area. And then maybe, does each organisation talk well enough with each other or do they not agree with each other?

**Dr BAILEY** — Sorry to interrupt. I think the key is that some of this is more put on the public record than between the organisations. We certainly heard calls from some of the irrigators in the Lower Murray Water area last year around the Sunraysia and Mildura region, where they were seeing water flowing past at very high levels. They were regarding that as spill water that they could have actually taken. And then they were saying, ‘But the environment is getting a free kick. Why hasn’t it come off the environment?’. I think it would be good for the environmental water holders, the water corporations and the governments to actually come out and explain, ‘This is how it’s operating. This is the reason why it is’, and perhaps invite comments about that. I think *Water for Victoria*, which is the currently strategy document, is offering those opportunities, but it needs to be explored a bit more.

One of the points that was raised in the Goulburn-Murray Water submission is that we would encourage some more discussion and open discussion between the environmental water managers about how they operate. There is a feeling that they put out media releases and put out some brochures — but perhaps going out and talking with the community and making themselves more available than perhaps they are at the moment to talk about those things and to appear at irrigator meetings, if that is necessary or if that is the way forward, to explain why they believe this is the right way and conversely provide the same opportunities for irrigators or other groups to speak to them as well.

**Mr O’SULLIVAN** — Dr Bailey, I want to go to one of the risks that we have got confronting us in terms of environmental water for the Goulburn-Murray irrigation district in terms of the 450 gigalitres of upwater that is

at risk of going down the river and potentially ending up in the ocean. What do you see would be the impact if that upwater was to actually be released and go down to South Australia and beyond?

**Dr BAILEY** — I think it would have a very significant impact — quite a deleterious impact — on the Goulburn-Murray irrigation district. In terms of the availability of that water, from what I understand looking at all the documentation available at present, there is no area that it has been defined from.

**Mr O'SULLIVAN** — So where does it come from?

**Dr BAILEY** — I suspect the vast majority of it would be sought from the Goulburn-Murray irrigation district. The Victorian entitlement framework provides very high reliability of the higher liability entitlements. In the Goulburn-Murray systems they are available about 96 years out of 100, or 97 years out of 100. If you were to compare them with the general security water in New South Wales, which has a much lower reliability, the best bang for buck would come from the 450 to be purchased out of Victoria. That is likely to perhaps sound the death knell for the Goulburn-Murray irrigation district going forward. It would be taking around about 40 to 50 per cent of current water out of the system as it is now. That is something that I think all of the industry across northern Victoria is very concerned about, as is Goulburn-Murray Water.

**Mr O'SULLIVAN** — What are the risks in place that would actually allow that 450 gigalitres of upwater to leave the district?

**Dr BAILEY** — It would really depend on how the individual entitlement holders view an offer that is put forward to them. Goulburn-Murray Water does not own the water shares that are available in northern Victoria. They are owned by individuals. If the individuals decide that it is an offer that is too good to ignore in terms of financial stability going forward, Goulburn-Murray Water is unable to prevent them from selling a product that they own.

**Mr O'SULLIVAN** — But technically it cannot happen at the moment?

**Dr BAILEY** — In terms of?

**Mr O'SULLIVAN** — The upwater leaving the district at the moment.

**Dr BAILEY** — No, because we have not seen the outcomes of the 2750 yet in terms of the social and economic impacts. My understanding is that 2750 was the plan Victoria signed up for. The additional 450 is something that, if it is shown not to have a deleterious effect, Goulburn-Murray Water would be of the view that quite a significant impact is likely if that 450 gigalitres is taken from the GMID.

**Mr O'SULLIVAN** — It would be devastating.

**Mr RIORDAN** — Just on that, Dr Bailey, you talked about that the best bang for buck was to take the water from this district because it was more predictable, more reliable. Is that sort of, in a way, penalising those that manage their water best at the expense of others, particularly in New South Wales and other areas? Is there a perverse sort of system happening there where those that are managing water for agriculture and the environment, those communities, potentially are being penalised at the expense of others that really still need to do a lot more work and the hard yards?

**Dr BAILEY** — It is a difficult one to answer, I think.

**Mr RIORDAN** — Without sending cannons across the Murray on that question.

**Dr BAILEY** — I was worried where that might go. I think Victoria has long been established as having a very stable water entitlement framework, and it offers very good security for the products that we have here, with the likes of dairy being able to have ongoing farming, and with horticulture it is definitely the same case. There is a lot more opportunistic farming in New South Wales, is my understanding — things such as rice and cropping, which can change from year to year and can be rotated around, where there is a far more structured framework here.

**Mr RIORDAN** — And value-adding too, I guess.

**Dr BAILEY** — And value-adding as well, of course. So if the water was to be taken away from an area where we have built up a framework, it would have more of an impact here, yes. So I think it is almost, as you say, a perverse outcome. It is that Victoria has established a very reliable framework, particularly in northern Victoria, and it may be penalised for having provided that for its irrigators over many years now.

**Mr RIORDAN** — Just to follow on — sort of mixing the two inquiries that we are having, the other being with local government — you spoke of the obvious, which is that fewer irrigators means less people to carry the cost burden. We heard earlier today from the Shepparton City Council that, for example, abandoned channels act as levees, which has a double benefit to the community, and now they are not being picked up. In your strategic plan that you identified earlier, does your organisation look at many of these other sorts of costs that environmental water policy or others will be having on the lived communities in the area? We can take the water out — that is one thing — but then if we take that economic flow out, we know we are going to reduce our communities, our small schools and sports clubs. Is that whole socio-economic driver looked at in your assessment and your strategic plan about what that means and, ultimately I guess, who picks up the tab? Obviously communities like this cannot survive without levee banks and so on.

**Dr BAILEY** — Certainly the strategic plan is looking for establishing a bright future for the GMID in particular. It is the main service that Goulburn-Murray Water provides in terms of its business; it accounts for about 70 per cent of the actual revenue generator for Goulburn-Murray Water. So it is looking to encourage people to maintain their position within the GMID and to stay here and to be seen as a development centre and to encourage more people here. So a regional development opportunity exists. So we do take into account the fact that there are additional benefits from the existence of the irrigation networks across northern Victoria, so yes, we would definitely want to maintain our presence here, definitely.

In terms of some of the infrastructure, it has been raised that the channels themselves do act as levees from time to time. Interestingly we do not design them to be levees; it is more or less a secondary benefit that occurs from time to time. We know —

**Mr RIORDAN** — It rapidly becomes a primary benefit at certain times.

**Dr BAILEY** — At certain times it is. It would not be one that GMW would probably accede to, I guess, but recognising that they do have impacts. We are aware that the decommissioning of some channels has been cause for concern in the Rochester area, with the flooding that occurred in the Rochester township in 2011. Subsequent flood management plans that have been developed have looked at the impact of decommissioned channels from the former Campaspe irrigation district and how they could be used as a levee benefit for Rochester. So there are those sorts of impacts that come through. We know that even in the environmental sense, some of the channel systems provide small ecosystems, whether it is for frogs or remnant vegetation at areas. That has to be taken into account, as well as the productive use of the land.

**The ACTING CHAIR** — Thank you very much for coming in today.

**Dr BAILEY** — Thank you.

**Witness withdrew.**