

TRANSCRIPT

LEGISLATIVE COUNCIL ENVIRONMENT AND PLANNING COMMITTEE

Inquiry into the 2022 Flood Event in Victoria

Melbourne – Wednesday 25 October 2023

MEMBERS

Sonja Terpstra – Chair

David Ettershank – Deputy Chair

Ryan Batchelor

Melina Bath

Gaelle Broad

Wendy Lovell

Samantha Ratnam

Rikkie-Lee Tyrrell

Sheena Watt

PARTICIPATING MEMBERS

John Berger

Ann-Marie Hermans

Joe McCracken

Evan Mulholland

Rachel Payne

WITNESSES

Charmaine Quick, Managing Director,

Andrew Shields, River Operations Manager, and

Peter Clydesdale, Manager, Diversions, Groundwater and Streams, Goulburn–Murray Water.

The CHAIR: I declare open the committee's public hearing for the Inquiry into the 2022 Flood Event in Victoria. This public hearing is for the Environment and Planning Committee, an all-party committee of the Parliament looking into the October flood event. We will be providing a report to Parliament, which will include recommendations to the government. Please ensure that mobile phones have been switched to silent and that background noise is minimised.

I would like to begin this hearing by respectfully acknowledging the Aboriginal peoples, the traditional custodians of the various lands we are gathered on today, and paying my respect to their ancestors, elders and families. I particularly welcome any elders or community members who are here today to impart their knowledge of this issue to the committee. I welcome any members of the public in the gallery and remind those in the room to please be respectful of proceedings and to remain silent at all times.

For those of you that are giving evidence today, all evidence taken is protected by parliamentary privilege as provided by the *Constitution Act 1975* and provisions of the Legislative Council standing orders. Therefore the information you provide during the hearing is protected by law. You are protected against any action for what you say during this hearing, but if you go elsewhere and repeat the same things, those comments may not be protected by this privilege. Any deliberately false evidence or misleading of the committee may be considered a contempt of Parliament.

All evidence is being recorded. You will be provided with a proof version of the transcript following the hearing. Transcripts will ultimately be made public and posted on the committee's website.

I will just take the opportunity to introduce myself to you and for the committee members to also introduce themselves. My name is Sonja Terpstra. I am the Chair of the Environment and Planning Committee, and I am also a Member for North-Eastern Metropolitan Region.

Gaelle BROAD: Good afternoon. I am Gaelle Broad, Member for Northern Victoria.

Melina BATH: Hello. Melina Bath, Member for Eastern Victoria Region.

David ETTERS HANK: David Ettershank, Western Metropolitan Melbourne.

Ryan BATCHELOR: Ryan Batchelor, Southern Metropolitan Region.

Wendy LOVELL: Wendy Lovell, Northern Victoria Region.

Samantha RATNAM: Samantha Ratnam, Northern Metropolitan Region. My apologies in advance, I have to leave a bit early because of childcare duties. It is not a reflection at all on your evidence, and I hope I get to ask questions, but if not, I will put them on notice. Thank you.

The CHAIR: Great. Thank you.

Rikkie-Lee TYRRELL: And Rikkie-Lee Tyrrell, Member for Northern Victoria Region.

The CHAIR: My apologies, Rikkie. Look, thank you all very much for those introductions. Now we will hand over to you to make your opening remarks. I believe you have got 10 minutes to make those opening remarks – I will keep an eye on the time for you – and then after that we will hand over to members, who will no doubt have plenty of questions for you. Just before you commence giving your opening remarks, when you speak, could you also just remember to please state your name for the Hansard record – your name and the organisation you are appearing on behalf of. Thank you, and over to you.

Charmaine QUICK: Okay. Thank you for the opportunity to address the committee today. I would like to start by acknowledging the traditional owners of the land that we are on today, the Wurundjeri people, but I would also really like to acknowledge the significant impact this flood has had on traditional owners across the whole state of Victoria.

I am Charmaine Quick, the Managing Director of Goulburn–Murray Water. I have Andrew Shields, who is the Manager of River Operations, Goulburn–Murray Water; and Peter Clydesdale, the Manager of Diversions at Goulburn–Murray Water, who was also one of our emergency controllers in our emergency management team.

The October 2022 floods have had significant impacts on our communities. I have met with many residents over the past 12 months, both individually and at flood recovery events and meetings. Recovery is long and hard, and nearly 12 months on I recognise it is actually far from over. In Rochester, Shepparton and Mooroopna people are still displaced and working through the process of rebuilding their homes. Downstream at Eildon farmers are experiencing the impact of production and stock losses, as are the families behind Loch Garry and the levees of the lower Goulburn River. Across the region people are processing the trauma of the 2022 floods, and this is compounded by the fact that they are living downstream of full dams 12 months later. As recently as three weeks ago another small event was a triggering experience for many.

At Goulburn–Murray Water we live within the community that we serve. Our staff, who are among the people whose homes were flooded, are acutely aware of the toll of these floods. Having reviewed the transcripts from this inquiry's earlier hearings, we anticipate there will be a range of questions from the committee relating to how we operated. We look forward to answering any questions, and I will call on the detailed knowledge of both Andrew and Peter to assist with this.

Goulburn–Murray Water manages, stores and delivers through approximately 10,000 kilometres of channels and drains. We manage 23 water storages across northern Victoria. We deliver water to three groups of entitlement holders – that is, the urban water utilities, being Coliban Water, Goulburn Valley Water et cetera; private water holders, as in irrigators; and the environmental water holders. Our obligations as a storage manager are set out under part 6C of the *Water Act*. The Victorian *Water Act* states the primary role of Goulburn–Murray Water storages is to harvest and store customers' water entitlements. Goulburn–Murray Water can, where possible, provide flood mitigation. However, this is limited by our obligation around dam safety and protecting the reliability and quality of our water supplies. That means we are aiming to store as much water as possible. When we have information that a large rain event is likely and may lead to flooding, we can take steps to make room within our storages, but this is limited by the advance notice we have about weather events. To manage our water storages, we rely heavily on the BOM forecast, which usually gives us three to four days to make decisions on pre-releases. We are careful not to release water in anticipation of rainfall events that may not eventuate, as there are usually large uncertainties with forecasts.

Goulburn–Murray Water does not issue flood warnings. We provide information to the BOM about the operation of our storages so that they can prepare the flood warnings. This is to ensure consistency in information going out. The BOM has a complete view of the flood situation, including the rainfall forecasts and inflows from rivers and creeks downstream of our dams. In October 2022 Goulburn–Murray Water provided regular updates to the BOM and the SES about the status and forecast releases of our dams. Like the storages, the Loch Garry flood protection district on the lower Goulburn River has procedures that govern our operations and clarify what we do in ordinary and extraordinary events. We are clear in what information is provided to whom and when.

In the October event we established a 24-hour emergency management room and team to oversee our operations. The *Water Act* and the bulk entitlement are our legal framework for operating our dams and require us to provide flood mitigation where possible. All our dams naturally reduce inflows. With gated dams, we manage releases to avoid peak outflows coinciding with peaks in downstream tributaries. At Eildon, a gated storage, in October 2022 the inflows were sustained at over 100,000 megalitres, with a peak of 145,000 megalitres per day. We maintained an outflow of 38,000 megalitres a day. This is a 74 per cent reduction or mitigation. At Eppalock, which does not have gates, inflows peaked at 230,000 megalitres per day and outflows peaked at 103,000 megalitres per day, a 55 per cent reduction or mitigation. In both cases the outflows from the dams were much lower than the inflows, which is a demonstration of the dams' abilities to mitigate floods. They are not designed to eliminate floods.

DEECA, you heard this morning, is reviewing the operating arrangements for Lake Eildon and Lake Eppalock. We wholeheartedly welcome these reviews. It is important that the communities that rely on our dams understand the level of current flood mitigation and contribute to the discussion about the trade-offs between greater mitigation and long-term water security. Managing the storage of water requires long-term considerations for flood and drought.

If we take ourselves back to the millennium drought, we remember the devastating impact on our communities, on agricultural production and the environment. Eildon's and Eppalock's levels were less than 5 per cent. Cities like Bendigo and Shepparton were on stage 4 water restrictions, community facilities, like sports grounds, were dry and our irrigators' water allocations were at 29 per cent, with the Campaspe having zero per cent for multiple years. When the drought broke in the 2010–11 floods, it still took time for the storages to recover and water allocations to increase. The severe impact of this drought led to a range of reforms within the water sector. Fast-forward to now and we have full dams, and that puts our communities in a solid position to go into the recently declared El Niño. The water we are able to store now will be crucial when the next dry period arrives. Every percentage makes a difference – 4 per cent of Lake Eildon's storage is equivalent to one year's irrigation needs for the Shepparton irrigation area. This is why the review of changing our target filling levels is an important broad community conversation, and we look forward to the outcomes of the DEECA reviews on Eildon and Eppalock.

Over the past 12 months we have met with many residents, been out on farms and taken part in community conversations. We have participated in town halls and in reviews with the SES, councils and BOM, and we have heard, held our own events and listened to learn. We have heard that the impact of the flood was devastating and far reaching. We heard Goulburn–Murray Water needed to improve communications downstream of our dams. In response we have started regular communications with this community, including weekly radio updates, more information on our websites and more targeted meetings and newsletters. We also worked with the BOM to ensure that the Goulburn–Murray Water dam release rates on gated storages are included in the BOM-issued warnings. The flood event earlier this month saw this change in action, with flood warnings carrying the new additional information.

We heard that communities downstream of our dams are concerned about full dams and risk of another flood. In response we have provided detailed information about how floods unfold and how each storage was managed. This has been done both in person and through improved content on our website. We run interactive webinars, release podcasts, develop fact sheets and certainly participate in the DEECA reviews.

We heard that our operating rules for Loch Garry did not accommodate such a quick-rising flood. In response we have operating rules with relevant agencies and community representatives and have introduced a second operating scenario to accommodate a fast-rising river and ensure all the bars can be removed safely and efficiently. We are now convening a customer representative group to review the long-term options for the modernisation of Loch Garry operations and upgrade of the loch. We heard that there were also concerns that our channels and drains did not mitigate floodwaters. In response we have been developing community education material to highlight the limited role channels and drains provide in floods.

Any major event such as this is going to provide lessons and the chance to improve. We continue to welcome any opportunity to participate in reviews and identify better ways to do things. We commissioned our own post-incident recovery review using an external service provider, Resilient Services. We have contributed to DEECA's review of the operating arrangements for Lake Eildon and Lake Eppalock, and looking forward we will support our local government and CMAs in developing flood management plans.

I have handed out a one-pager to assist with questions. This might help us explain when we began releasing water from Eildon and Eppalock, what role they had in mitigation and the significance of this event compared to historical averages. Thank you. I would like to take questions.

The CHAIR: Great. Thanks so much for those opening remarks, Charmaine. Again I might just start with very simple, straightforward questions. I was listening quite carefully to your opening remarks, and they were very comprehensive; any questions I might have had I think you have probably answered. It was really good to get insights into how Loch Garry operates and, I guess, the frame of decisions that sit around that and how it operates, so thank you very much for that. Obviously we are going to be making recommendations to government. What would be your top three to us as a committee who is inquiring into these things – perhaps,

what sort of things government might need to do to look to improve things? What would be your top three things you could tell us that might sit on the top of the list for improvements, in terms of recommendations?

Charmaine QUICK: For me it is all about completing the DEECA review into Eildon and Eppalock – being the two main ones. I think that allows a really great opportunity to have that broad engagement across the whole catchment and the whole, I suppose, not just customer base but landholders and people who use the water so everybody can be actually involved in that decision – to either leave airspace or change filling curves, change what is in the *Water Act* and change what is in our bulk entitlements. For me that is a really important piece of work, and then that feeding into, I suppose, the councils' and the CMA's options around mitigation – so really looking at that: can we get more mitigation out of our dams?

I was listening to the earlier ones; there was a lot of conversation about flood maps and guides and stuff, and I think this committee was asking questions about, 'Are there things for farmers?', and there really is not. I suppose for me it is extending some of those flood guides and flood maps to include farmland so that people actually understand if it is a minor level or a moderate or a major or even higher and what that does actually look like on the ground. Somebody needs to then go and mark a tree or something to say, 'This is where.' They are the visual signs, but I do not see probably that happening as much. The main focus has really been on towns, so how can we provide that information, then, to our farming community? Then there is the effectiveness of prewarnings and events. There is confusion, I think. We have a list of 30 farmers downstream of Lake Eildon. Under our dam safety arrangements, we have their phone numbers and can ring them for a dam safety emergency, and we actually did use those numbers prior to the event and rang a number of farmers. We also have an opt-in service for anybody who opts in. But that is just them opting in and out. I think that then confuses people, given that the main level of warnings really needs to be consistent and coming from one voice. Getting some of our information – like we were able to do in the last flood about three weeks ago – how we can get information like the releases coming out of Eildon, which was what was requested from us, into the BOM line and the EMV app. So it is more of that on how we can actually get that information through warnings, but making sure it is consistent.

The CHAIR: Yes, that is a great answer and leads me on to the next thing. We have heard a lot about real-time information as well. You can look across a whole range of industries and platforms and you can see amazing advances in technology. Just yesterday I was out looking at new technology for cars, where they are actually going to implement it to stop motorcyclists and cyclists being hit, where a door opening can be overridden, for example, through sensors and the like. We clearly in Australia and more broadly have capacity to develop new technologies, and I guess platforms that allow people to get information in real time, so how useful do you think it would be for us to have access to real-time information both locally and perhaps more broadly that might feed into perhaps a warning system? I mean, some of these things do come through quite quickly, but for people locally, how useful would you think access to real-time information could be?

Charmaine QUICK: People who know me know I do like data, and I think there is more information that we can provide to our communities in real time. But I suppose with that information, then, has to go instruction. So it is one thing to provide a link or something to say, 'Well, here's the data,' but it is actually the contextual information that goes with it. If I just say that we are releasing a certain amount of water, well, what does that actually mean on the ground? So I think it is one thing, as I said, to put gauges in and that sort of thing, but it is the contextual information that comes from flood maps, community meetings, that understanding on the ground. When people say, 'What does a moderate flood level look like?', you want to be able to see it on either a tree or a park bench or something like that that is out there. I suppose it is a mixture of both. Andrew, do you have any comments on more real-time gauging?

Andrew SHIELDS: Well, yes, there is certainly information available for river levels across the network that is available on the DEECA website, and we have some information on the Goulburn–Murray Water website as well. What the best way is to get that information out to people is something that we would certainly be keen to explore.

The CHAIR: One of the things in the hearing when we were up at Echuca was a lot of people were talking about markers on a tree, for example, and they were saying, you know, 'It was higher than the 1974 floods' and that. I think a lot of people have in their frame of reference when they think about a flood – and some of the warnings talked about this too – that it might be slightly higher than the 74 flood. So people get a frame of reference that is like they compare it to what might have gone before. How useful do you think those

comparisons are? Could it potentially lead to people having a false sense of security about what might be coming, and then saying, 'Well, they said it was going to be a little bit bigger than the 74 flood,' but it was much bigger. How useful are those kinds of comparisons with perhaps what has gone on before?

Charmaine QUICK: I am probably not qualified to answer that. I am assuming people in Emergency Management Victoria have done research and studies on the psychology of why people do not take notice of early warnings, or when you do put warnings out, if you are too specific and then it goes over. All I can say is you have probably got to use lots of layers and lots of conversations.

The CHAIR: I guess my question was more around markers on trees and things like that. Obviously, too, waters can rise quite quickly, so there might be that false sense of security about what perhaps they might be expecting. Your point you made about the psychology of people – there has been a bit of discussion around this throughout the course of our inquiry in terms of: are people acting on warnings, how are they comprehending it and what does it mean to people? I guess it was more about what people are finding. That probably concludes the questions. Like I said, you did a really good opening statement, so a lot of the questions that I had you have answered. Thank you for that, and I will pass to Mr Ettershank for a question.

David ETTERS HANK: Thank you, Chair. As per the last session, I will defer mine, if I may, and let our colleagues from northern Victoria lead the charge.

The CHAIR: Just to be clear, Mr Ettershank, are you ceding your time to somebody, and how much of it? You are just going to make my life a lot easier.

David ETTERS HANK: I will reserve my right to come back, then, if that is all right.

The CHAIR: All right. Great, thank you. Awesome – just so we have clarity. Ms Lovell with a question, please.

Wendy LOVELL: Thanks. Hi, guys. I am going to start by going straight to where it all started, at the Eildon wall. The reports that we are getting from people in that upper catchment down through Whanregarwen, Molesworth et cetera are that they were being told that releases were going to stay at 12,000 megalitres, and then suddenly late at night they increased to 38,000 megalitres without warning. What can you do better to ensure that people are not being given that inaccurate information, going to bed and finding out halfway through the night that situations have changed?

Charmaine QUICK: I will actually also start I suppose even before that and talk about all of the work that was done both by Goulburn–Murray Water and the SES, being out in the public, talking about the fact that the dams were full. We were doing releases. The SES were always talking about being flood-prepared, so it is that sort of lens in there. On the day of 12 October we did actually make a courtesy call – it is not part of our flooding management plans – to the 30 nominated people in our descents to indicate to them that we were likely to have to increase but it would depend on the rain. Like all things, we were relying on forecasts, and if there was less rain we may not have had to release up to 38,000. But we were, I suppose, putting them on notice to say this could happen and to check the official sources in terms of EMV. I am also aware there was some commentary in the hearings that there was a local SES person who rang in to our site and got some misleading information, and that is why it is so important to make sure it all comes through an official source, because a person does not necessarily know all the things that are happening with all of the gauges and those sorts of things. So this is why it is so important to have one source of truth in terms of flood warnings and one authority, making sure that we all feed in, and we are happy to talk through how that all works.

Wendy LOVELL: When you say you rang 30 nominated people, is that a phone tree? Are they supposed to ring other people?

Charmaine QUICK: No, we actually personally spoke to 30.

Wendy LOVELL: You spoke to 30, but there would be more than 30 landholders that were affected on that section of the river.

Charmaine QUICK: As I said, that was a courtesy call. We have these numbers really for a dam safety emergency. It was really a courtesy call, and we stipulate in all of our letters and correspondence and also all of

the media that we put out: flood warnings have to be coming from the BOM and the EMV app; otherwise we do end up with miscommunication about flood warnings. But we did that as a courtesy call, and of course if we talk about the last event, we did make some other additional phone calls – the event three weeks ago. We were putting more information out on our social media feeds about even predicting what we thought, and we gave a range. Maybe this is, instead of being certain about warnings, saying we think it is going to be between our lower limit and an upper limit, so it does not give that sense of certainty.

Wendy LOVELL: I think that people feel that there was a lot more information available about the minor event three weeks ago than they had about a major event 12 months ago, and that is where the disappointment is. I mean, this was the most significant event on the Goulburn since 1974 – and actually before that, because it was larger than the 1974 event – so that leads me into my next question. This is the most significant event for Goulburn–Murray Water ever on this river, because the last flood, of 1974, which was comparable, was in the time of state rivers. So there is a lot for Goulburn–Murray Water to learn from this, and there is a lot for us to be able to collect in the way of data and management techniques that can be computerised. Of course we have not had the benefit of having all of that historical stuff, and a lot of the corporate knowledge from the state rivers days has died out in that 50 years. Are you disappointed that there has not been an all-agencies review, and do you think that there should be one to ensure that we do have an accurate recording of all of the data, of all of the emergency responses and how we can better manage it next time? Because there will be a next time.

Charmaine QUICK: There will be. I think you can do too many reviews as well. I suppose I did listen to the Inspector-General, who was here, and I think you can do too many reviews. So I suppose it is really what comes out of this inquiry. It is also about what comes out of reviews like the DEECA review on Eildon and Eppalock. I will just point to something that we did with the SES and BOM and the Murrindindi council and the Mitchell council. We did 6 hours, I think, and we ran through the whole event, from BOM forecasts, warnings, accountabilities on flood management plans and all those sorts of things. I think Tim Wiebusch talked about this. There were some actions that came out of that – not for us, it was all largely around some additional monitoring in different places – and I think that was a really good way of doing it. It was 6 hours, but it was also unpacking the rainfall that occurred, how the dams operated, how warnings operated and how the accountabilities are shared across all of the agencies. So when we talk about how we actually collectively work together to try and mitigate the impacts of floods, that was a fantastic forum to unpick at a community level all of the responsibilities and how this current event unfolded. You can always do more reviews as well, but that was I thought a very good process.

Wendy LOVELL: I am just wondering, though, listening to you answering that about all these different little reviews that are going on, normally when we have any disaster there is an all-agencies review and there is also a parliamentary review. So the fact that six months after the floods there was a parliamentary inquiry established does not cover for why there was not an all-agencies one. But I am wondering, listening to you talking about all these small reviews, whether the lack of an all-agencies review has actually led to an overabundance of smaller reviews.

Charmaine QUICK: I might leave that to, I suppose, other minds in terms of whether it is better to have a broader review than smaller reviews. I just go back to saying it was fantastic for us. We had the BOM in the room, we had mayors, we had the CEOs of the two councils, we had Tim, me and Andrew and we had the CMAs. So it was actually a chance for all of us to talk through how the events unfolded, and that is even a form of education as well about when the BOM issues warnings and how that actually happens. So I think there is still benefit in that local community stuff. I would hate to see a big review, then miss out on those small community conversations.

Wendy LOVELL: IGEM told us that it does have those. I do not think that it does. Can we just go to Loch Garry and the operations at Loch Garry. Of course I would be interested to hear from you the changes that have happened since, because I know there have been changes to the operation that have been initiated. We look back, and you would have heard me ask this this morning, at a 1925 agreement that said at 34 feet, 24 hours later we start to pull the bars and every so many centimetres that it rises – inches in those days, and we have converted that to 10.36 metres. What we know is that the gauges were moved at least three times in that time: it was at the wharf, then it was upstream of Daintons Bridge and now it is downstream of Daintons Bridge. We know that the draught through Daintons Bridge has altered that height, yet it still was being measured at 10.36. Why have there been no changes to that 1925 agreement given the difference? In fact I was reading the 1932 report this morning, which said that they had already identified so many different inches between the wharf and

Daintons Bridge in those days, and then again we had another move of the gauge. Why have there been no amendments to that agreement over all this time? It means that we were actually not pulling the bars at 34 feet; we were pulling them at 34 feet 4 inches or something. It was changed.

Charmaine QUICK: I cannot comment all the way back to the 1930s and why the reviews have been done. But I suppose you heard this morning: we pulled a committee together to review these operating rules. We committed to that community two reviews – well, three things: fix the levees. We had resounding support from our customer base, and this is a beneficiary-pays. I want to make it clear that Loch Garry is a beneficiary-pays flood mitigation scheme, so that is why Goulburn–Murray Water is involved. We have 116 customers who pay us about –

Peter CLYDESDALE: About \$238 – something like that; I would have to check.

Charmaine QUICK: \$230, \$280.

Wendy LOVELL: But who were ringing Goulburn–Murray Water the day before the flood, saying, ‘Pull it early. You’ve got to pull this before 24 hours.’

Charmaine QUICK: I think we always have to be careful – to suddenly change processes from just a couple of voices mid-incident. We have had these in place for a very long time. I will ask Peter to talk about them. We have operated them successfully.

Peter CLYDESDALE: Yes. So in 1993, again in 2011, 2012 and 2016, and they have held us in good stead, those current rules. I guess going into the 2022 event certainly the magnitude and the speed of the water showed us that we could not get all the bars out. From that, as Charmaine mentioned, in February this year we implemented the review of those operating rules. We had five what we call customers – ratepayers – from Loch Garry as well as three community representatives, and CMA and the shire were part of that committee. We met five times, and we designed a new set of rules which had two scenarios, one of which would allow us to deal with what happened in October 2022, when there is a major flood over 11 metres. I think Guy mentioned this morning – Guy Tierney from the CMA – that all the bars pretty much come out once the BOM has confirmed that we are going to hit 10.36. Below 11 metres we revert to our established operating rules, which as I have said, held us in good stead in the October event. We took those rules out to the Loch Garry flood committee, I think they called themselves – that was a group of 10 customers that represented the wider 116 customers – and we went through what we were proposing in terms of those changes. They were well accepted, and I think we have got a new set of rules that will avoid what happened in October.

Wendy LOVELL: Hopefully, because it is always a bone of contention, Loch Garry – every flood in the Shepparton area. Throughout the months since the floods Goulburn –Murray Water have consistently said that they do not play a role in flood mitigation. But the department told us this morning that there is a role that you play in flood mitigation, so can you just explain what your role is?

Charmaine QUICK: We can mitigate floods where possible. It is in the Act. I do not think we have ever said we do not play a role; we just say it is where possible. It is very clear in the Act, and our bulk entitlement document also outlines the filling curve. From my point of view, I cannot deviate from that – I would then be in breach of the Act – unless I am instructed to do that.

Wendy LOVELL: So does the Act need to be changed to allow emergency decisions?

Charmaine QUICK: If I refer you to this sheet and also my commentary, our dams already do mitigate floods. When we talked about Eildon, we had 145,000 megalitres a day – so that is figure 2 – coming in. That is the black solid line. I am sorry, you have got the A3 one; I have only got the A4 one.

The CHAIR: I am just letting you know that the clock has beaten us as well, so maybe if you just want to finish your answer up in just 30 seconds, that would be great.

Charmaine QUICK: I believe that our dams currently do mitigate floods where possible. I think the conversation is about how much mitigation is expected and balancing drought and floods, which is the DEECA review.

Wendy LOVELL: But if there is no airspace, there is no room for mitigation.

Charmaine QUICK: We will cover that maybe in another question.

The CHAIR: All right. Thank you. Thanks for that. Mr Batchelor with a question, please.

Ryan BATCHELOR: Do you want to cover that now?

Charmaine QUICK: Yes. I might actually hand to Andrew.

Andrew SHIELDS: Yes, we do have a couple of strategies that we can use under our flood operations policy to try and provide some level of flood mitigation, and one of those is prereleasing water based on rainfall forecasts. Charmaine mentioned that we can do that and under those circumstances we can try and create some more space in the dam ahead of the rain falling and then subsequent inflows that we might get. It is really based around what forecasts we have and the certainty around those forecasts. We deployed that through October 2022. We were releasing 12,000 megalitres a day to try and create some more airspace at Lake Eildon, and we did get the dam down to give us about 75,000 megalitres of space prior to the event, before the rain falling and those inflows started to eventuate. The other strategy we have is taking the storage above the full supply level. We call that surcharging. We can take the storage level above that full supply to temporarily store that water above the full supply level, again to try and buffer those inflows as much as we can. But that also comes as part of the process we need to investigate: what is the rainfall forecast coming up? Because we do not want there to be rain in five or six days time with a dam that is above the full supply level, because then we start to have dam safety risks and all of those considerations, dam safety being the first and foremost priority for managing these storages.

Ryan BATCHELOR: So it seems that the efforts that you are going to keep the water level at the right point are tricky because you are trying to figure out what is going to happen in the future. Is that safe to say?

Andrew SHIELDS: Absolutely. Like everybody, we see the rainfall forecasts that come through the bureau and other forecasting agencies. We then get some estimate of how much run-off we might get from that rain; you can imagine that if there is a large variation in that rainfall forecast you can have a lot of variation in how much run-off and inflow we get into those dams. Until we know how much rain we get, we do not really have a good picture of how much inflow into the storages we are going to get.

Ryan BATCHELOR: So if you had perfect information, you could probably make perfect decisions, but in the absence of that you have got to make judgements. Is that how your strategy plays out?

Andrew SHIELDS: That is right.

Ryan BATCHELOR: And you are using, as best you have got, historical levels, understanding what is coming in and what is going out, to figure out exactly what you have got to do. I imagine it is quite complex and – ‘nerve-racking’ is probably the wrong word, but there would be a fair amount of complexity in the decision-making.

Andrew SHIELDS: There certainly is. We look at these hydrographs that are on the sheets in front of us, and when we are managing these events we do not know what is coming. We look at the rivers upstream rising and we see the inflows into the dams rising, but we do not know at what point they are going to turn over and how much water we will be needing to manage. It really is a very difficult decision to make when we do not have that perfect knowledge of what is coming.

Ryan BATCHELOR: In your experience, are any two flooding events the same?

Andrew SHIELDS: No, they are very different. Would you like me to give you an example of that?

Ryan BATCHELOR: Yes.

Andrew SHIELDS: So in the event that we had three weeks ago in the mid-Goulburn catchment and the upper Goulburn catchment, most of the rain fell in the upper catchment and also in the catchment immediately downstream of Lake Eildon. But we did not get as much rain in the catchment around Seymour like we did in October 2022, where effectively the highest rainfall in the state was in that Eppalock–Seymour catchment area, where we saw those very large flows from those tributaries as a result of that rain coming straight into Seymour. We did not have that this time, but this time most of the rain was in that upper catchment.

Ryan BATCHELOR: Obviously there are, in these sorts of events – as Ms Lovell’s questioning gets to – people who have got views about stuff, and obviously they are informed by a lot of experience in the local area. How widespread, in terms of people giving you the benefit of local wisdom, do you get when dealing with these sorts of events? I am just trying to understand the range of perspectives that you might have being offered to you as you go about the task of making decisions that you need to make in everyone’s interest.

Charmaine QUICK: I think there are two types of decision. So you have got, I suppose, the call for airspace, which is a pre-event sort of decision. I just want to clarify – you can see a picture – we have gated and non-gated storages. So the non-gated storage, which is like Eppalock, we do not control. So what comes in goes out; I do not have anybody sitting there opening and closing gates. What we are talking about here are the gated structures. It is interesting; we have had lots of opinions on 88 per cent at Eildon, 90 per cent – a range of percentages. I suppose this is why that DECCA review is so important, because, as I was saying before, if I just give you some stats: 90 per cent of airspace in Eildon is 10 years worth of urban water supply for Shepparton, Tatura – that is sort of 10 years worth of water – and in terms of say the Shepparton irrigation district it is 2½ years of water if we had it at 90 per cent. So they are the trade-offs.

Ryan BATCHELOR: Sorry, so I understand this, you are having to make a judgement call as to how much airspace you leave and how much water is then available.

Charmaine QUICK: No. We have very clear rules that are in our bulk entitlements that say that in a dry scenario, if we can, we will have the dam full by 1 October. In a wet scenario we will attempt to have the dam full. Because the Act clearly does state that dam safety is first, then water reliability, water quality and flood mitigation where possible. I suppose most of the opinions we are hearing are really about that airspace that we leave beforehand as opposed to – I mean, Andrew might get a few sort of ‘Open the gates now, close the gates now.’

Wendy LOVELL: But that comparison to what it means for the Shepparton irrigation area is not fair because that is a small percentage of what that water is. You have got environment water, you have got other storages, you have got all the irrigation –

The CHAIR: Sorry, Ms Lovell, I think Mr Batchelor actually had the call. Thank you.

Ryan BATCHELOR: How much is changing in the way you are having to manage these things? Are you finding that the amount of water you are dealing with, the frequency of rainfall events – are patterns changing or are they staying the same?

Andrew SHIELDS: It is a really, really good question. Charmaine mentioned the millennium drought in her opening as a period of very low inflows at that time, but we have also seen a lot of wetter years. We saw 2010 and 2022, and 2016 was a relatively wet year. What we are finding is we seem to have more of those extreme-type ranges as opposed to – if you go back to the 1970s and 80s and 90s, the averages were a bit higher but we did not quite have the same lows. We seem to have the highs, but the average seems to be dropping.

Ryan BATCHELOR: We hear a lot about climate change causing more extreme weather events. Your practical reflection is that you do see that in your experience in the way that you have seen greater extremes of rainfall, for example.

Andrew SHIELDS: We have seen three events in the last 12 months. If we go back to three weeks ago, we had an event in early June this year where we had over 100 millimetres of rain, which did increase inflows into our dams quite a lot. Then we had the October event last year as well. So those extremes are happening.

Ryan BATCHELOR: And they are different to the sort of long-term trend you might have had in the three or four decades prior to that? Would that be so?

Andrew SHIELDS: I am not sure if they are the same level of extreme, but yes, certainly in recent memory they are very live, with the community and us trying to manage these events.

Ryan BATCHELOR: All right, Chair. I might come back to the rest of my time at the end.

The CHAIR: Great. Thanks so much. You have got 4 minutes and 11 seconds; I will just note that down. Dr Ratnam, with a question, please.

Samantha RATNAM: Certainly. Thank you, Chair. Thanks very much for the work you do and the evidence today. Just picking up on this theme of warnings, I think it has been touched on before, but in the evidence we have heard over the last couple of months we have been hearing consistently from a number of farmers claiming they were not warned before their paddocks were flooded when Goulburn–Murray Water released water from Eildon. The Murrindindi shire said they have repeatedly asked Goulburn–Murray Water to tell council, the SES and the local radio station when they are doing releases which might cause inundation. Do you all feel like you have been adequately warning people? Is there any room for improvement, and if so, what improvements are being carried out, based on that feedback?

Charmaine QUICK: As I mentioned in my opening statement, we have now included the release rates in the BOM and EMV, because that was what was really requested. I do think we will need to do some work over time. I do not think that is the end. You project yourself 10 years down the track, and will that flow rate mean anything to a new landholder, and those sorts of things? So we have implemented the improvements. I know Andrew does a radio stint very frequently, so we have certainly implemented that. In the event three weeks ago, we did some phone calls, but I was listening to Camille talk about down at Benjeroop, or something like that, where they had a more formal sort of arrangement. I do not like informal things where we just sort of make it –

Samantha RATNAM: Make it up, yes.

Charmaine QUICK: So if we are going to have those groups, then they need to be formalised, phone numbers need to be formal, and they have to be under one system – not just Goulburn–Murray Water doing something on its own; it has got to be really tied into the whole system.

Samantha RATNAM: Is that work being done at the moment, that systems review and systems improvement work, to think about how it could be different next time?

Charmaine QUICK: I am not sure. I have not heard. I mean, we have certainly input our bits in terms of our dam releases. I cannot really comment on the broader –

Samantha RATNAM: Broader system.

Charmaine QUICK: Yes.

Samantha RATNAM: Who do you think should hold that coordination work for those sort of system improvements? Who should we be asking if they have been doing the work? That is the question, isn't it? Because that has been one of the issues. There are a lot of people and important organisations responsible for the overall coordination and ensuring that people are warned and supported in those emergencies. In an ideal world, who should be the ones coordinating this work, do you think?

Andrew SHIELDS: Well, as far as the flood warnings go, the bureau issues those at the moment. I think, as Charmaine mentioned, they have got the full picture around what is happening – not just for the dams but also what is happening in all the tributaries downstream and how they move through the system – and then that information is shared with the SES, and then the SES have the option to disseminate that information, using whether it be text message services or other options that they have to sort of ping all the phones in a particular region. That might be the sort of path that we need to go down, to capture.

Samantha RATNAM: So it sounds like it is important, however, that the analyses you all have about those – the quantities being released, for example – are fed into that and they are communicated in a way, like you mentioned, that is meaningful to people, and that is constantly updated and there is a live process for the community to understand what you are actually saying, because you can put numbers on a chart and that might not mean anything –

Charmaine QUICK: It might mean something one or two years after an event, but it may not mean something in 10 years time or something like that.

Samantha RATNAM: Yes. So it seems clear from the last event that there are some improvements that could be made, and there are some good suggestions you have made. Are you part of a formal process that is looking at what is going to happen the next time to make sure that that data is fed into the BOM and that is then

sent to the SES? Have you got any confirmation that that is going to happen next time? Who holds responsibility for making sure that happens next time?

Andrew SHIELDS: Well, I am not sure if there is a formal process to work through that, but we have certainly been working with the bureau and the SES to have those conversations around ensuring that information is working through.

Samantha RATNAM: So you are providing that advice to them, and we can follow up with them and ask them whether they are going to take responsibility for making sure that is disseminated in a way that is meaningful as well?

Charmaine QUICK: Yes.

Samantha RATNAM: Excellent. I just have a couple of questions – it was brought up previously today – about dam levels and carryovers and very water complex water policy. Obviously there is the tension between ensuring that farmers have the access to the water they need and the environmental flows. We know that farmers have been supporters of carryover water in dry years; it helps them manage dry years. Do you think there are ways to manage carryover water which are not detrimental to farmers or the environment when it is dry? Because that seems to be another issue that we have to think about. We are talking about what happens in the wet years, and carryover has become a problem in the wet years because there is so much water, but it is a tool to manage particularly in the dry years. Have you all done any work on how you manage that and respond to both conditions?

Charmaine QUICK: No. But I would refer to a comment that I think Jesse made this morning, from the department, and it was almost ideal. I suppose before carryover there was a process – actually, maybe I will hand to Andrew, because he might know it better than I do.

Andrew SHIELDS: If water was not used by an entitlement holder at the end of the year, what would happen is that water, instead of being retained under their ownership, would go back into what we call the communal pool, and then it would be reallocated to everybody in the following year. As we learned through the drought, when water allocations were low, having access to some of the water you did not use the previous year would be beneficial, and we have certainly seen the benefits of that. I do not think anyone is disputing the benefits in dry years. I suppose the question in the wetter times is – especially in the last couple of years, because we have had autumn breaks when we have had rain and irrigation demand being low – would carryover be any different if that water had been used or additional water had been used? I think really the question is how much extra water would have been released from the dams if carryover was not there or if carryover rules were different, which is a policy decision around carryover rules.

Samantha RATNAM: I understand. It is not my area of policy expertise, but I do understand from some research that we have done that the concept of spillable accounts might be another way to be able to manage that so there is a clear articulation of what gets released first. Have you all got any views or done any work around that to advance that policy area?

Andrew SHIELDS: I think it is pretty clear, from my understanding about how those spillable water accounts work, as far as if you carry water over, it is at risk if the dam spills. So people are aware of that risk, and they use that in their planning for their water portfolios.

Samantha RATNAM: So it is something you all are aware of. It is kind of being factored in. Is it formally incorporated in your planning at the moment? Do you all have that?

Andrew SHIELDS: As far as how we manage the dam? Yes, whether it is carryover water or water in spillable accounts, it is all just water that needs to be passed under those arrangements.

Samantha RATNAM: Thank you. I think that is it for my questions. I am happy to cede my time, if I have much left, to Ms Lovell if she has any further questions.

The CHAIR: You have 6 minutes and 33 seconds, so are you happy to cede that time to Ms Lovell?

Samantha RATNAM: Yes, please.

The CHAIR: Well, before we move on, I will go to Ms Bath first and I will come back around. She is next on the list.

Melina BATH: Thank you. Thank you for being here today. We were at a hearing in Seymour, and I am sure you have read the transcripts. We heard from Derrick Meggitt, who is the director of Goulburn River Trout farm. At that hearing he explained the very significant flood mitigation measures that they implemented knowing the idea of what was coming, not necessarily the magnitude. He also said that there were some 38,000 megalitres, the deluge came overnight and no-one was warned – and they were his words. I am just wanting to understand what level of responsibility you hold for that, knowing that that really ripped asunder that particular organisation and that business?

Charmaine QUICK: I will refer to my previous answers. On 12 October we actually rang a number. I am not sure whether he is one of those in that –

Melina BATH: Would you have that knowledge? Would you be able to share that with us if he was contacted? You can take that on notice.

Andrew SHIELDS: We will take it on notice, but I believe the trout farm is on that.

Melina BATH: He was? Did you tell him that he was going to get a 38,000-megalitre deluge overnight?

Charmaine QUICK: No. We indicated that we may have to go above the minor flood level. I will get Andrew to talk in a bit more detail, but I will just introduce it. We explained that we were just under the minor flood level, and depending on rainfall, then we may need to go above that level, and we reminded everybody that the BOM and EMV – the app – are the two official sources of flood warnings.

Melina BATH: But you instruct the BOM.

Charmaine QUICK: Yes, we do instruct the BOM, so –

Melina BATH: So it is a cycle here.

Charmaine QUICK: No, no, no. I will get Andrew to talk through it, and this is where some of the graphs may come in handy.

Andrew SHIELDS: Once it became apparent that the dam was going to fill with the inflows that were received following the rain on 13 October, we were assessing how much water was coming in and what the likely releases may need to be, and those increases in releases started from about 9 pm on 13 October. When that became apparent, we called the Bureau of Meteorology and they included that in their next flood warning, so we were providing that information through to them so they could then pass that down through the –

Melina BATH: You must – I hope you understand the level of devastation that these people have felt.

Charmaine QUICK: Oh, absolutely, yes. I have been out with Ed; I met with Ed.

Melina BATH: You have met with Ed – great. That was going to be my next question. You have said, I think, that you met with a number of different farmers and landholders and agencies.

Charmaine QUICK: Yes.

Melina BATH: Can you provide a list of those people to our committee so that we are aware?

Charmaine QUICK: Yes.

Melina BATH: That would be really helpful.

Charmaine QUICK: And I can also recite – I can tell you now if you would like. I can almost remember –

Melina BATH: My time is limited, so I would be very happy –

Charmaine QUICK: Okay. I can remember all of them.

Melina BATH: Great. Fabulous.

Charmaine QUICK: When you are talking with devastated communities, you remember.

Melina BATH: Thank you. You said that you had a 6-hour review and that you went through the whole scenario. Can you please provide your notes, share your notes, from that 6-hour review? You said that you unpacked the whole event and you had various elements there.

Charmaine QUICK: I am not –

Andrew SHIELDS: Are you talking about the session that we had with the various –

Charmaine QUICK: Sorry, yes. I can provide the slide pack.

Melina BATH: You can take it on notice. That would be lovely, because we need to understand what bodies know, institutions know, and then how we can make recommendations to assist communities to survive better in the case of this.

Charmaine QUICK: Yes, we will provide that.

Melina BATH: The other thing is Jan Beer – I am sure you know of Jan – talked about the infill curve at Seymour, and she said:

... in conclusion, we hope that the parliamentary inquiry will recommend that Goulburn–Murray Water pays more attention to the legislation requiring it to implement strategies to mitigate flooding through the adoption of a more conservative infill curve.

I am not the expert. You are supposed to be the expert. Are you aware of that, and can you respond to Jan's comments? Is it ongoing work? What are you up to?

Charmaine QUICK: Yes. That is part of DEECA's review. That is part of the review that DEECA are undertaking. I think she means probably the filling curve.

Andrew SHIELDS: That is right, yes.

Melina BATH: Yes, filling curve; correct.

Charmaine QUICK: I think DEECA is looking at different curves and airspace in a range of – Andrew?

Andrew SHIELDS: That is right. Would you like me to explain a little bit about what we mean about the filling curve?

Melina BATH: Look, I think, just because my time is short – I am very interested in it, and I know the public are interested in it too – if you would, forgive me, hold and if I have got time at the end of my questions, then –

Andrew SHIELDS: Absolutely.

The CHAIR: You have got a minute and a half, if that helps.

Melina BATH: Thank you. So probably take it on notice. But also I think the important thing would be that that report might be out after our report is due, so any sort of information that you can provide along the way is helpful. So that is that one.

If I go to Loch Garry, you mentioned that there is a modernisation of Loch Garry. Gaelle and I have been out there and seen the rusty old bolts that are very, very, very old. Modernisation: do you have a cost estimate of that? And do you have a time frame estimate for that modernisation?

Charmaine QUICK: No. We have just commenced. The first priority was to complete the operating rules and also repair the levee banks. We are now just convening a new community group that will look at modernisation, that will look at even new flood maps for the area. There are a range of questions that have been raised around Loch Garry in terms of it benefiting more people than just the 116, so we are going to unpack all of that in that whole future services strategy, and as part of that we will look at the modernisation and costings.

But that is going to take a little bit of time, because we will be working, doing all the remodelling and those sorts of things.

Melina BATH: Thank you. And have you established those sets of rules yet?

Charmaine QUICK: Yes.

Melina BATH: Could you provide those too for the committee?

Charmaine QUICK: Yes.

The CHAIR: Sorry, Ms Bath, the clock has beaten you.

Melina BATH: That is fabulous, thank you. I have got more questions, but that is fine.

The CHAIR: Ms Tyrrell with a question, please.

Rikkie-Lee TYRRELL: Thank you, Chair. I have several questions. I would like to start with Mr Clydesdale, who was in charge of emergency management during the floods with Goulburn–Murray Water. You had an emergency hotline available at the time.

Peter CLYDESDALE: Into GMW? Correct, yes.

Rikkie-Lee TYRRELL: Yes. Sorry, it has been a long day. How many people were responsible for that hotline during the flood event?

Peter CLYDESDALE: That would have come directly to what we call the emergency management team, the EMT. They could have either come through the call centre and been transferred, or they could have rung that number directly.

Rikkie-Lee TYRRELL: Okay. But how many people were working on it at the time of the flood? How many people were answering phone calls?

Peter CLYDESDALE: We would have had our normal call centre in operation. That exists by hunt groups, so if one person does not open it, the phone goes looking for the next person. We also had up to eight, nine people in our emergency management team – so if the phone rings, the phone gets answered. We adopted the AIIMS methodology in setting up our emergency management team, so we had an operations person, a logistics person and so forth.

Charmaine QUICK: I would also like to clarify: we are talking about, I suppose, the Goulburn–Murray Water response. It is not the incident room that was set up in Shepparton; this was our own room, so this was separate to Shepparton.

Rikkie-Lee TYRRELL: Okay. What I am trying to find out is: if people were trying to make the calls to the emergency line, how many people were available to answer the phone and answer their calls? That is what I am trying to work out at the moment.

Peter CLYDESDALE: I can get a better understanding, on notice, regarding that. But our phone system is set up so that if someone calls in to GMW, that phone will be answered. We are 24/7. We have an emergency 24/7 number, and the phone if it is not answered goes to the next person, so it hunts. I can get you some logistics around that and how that works, on notice.

Rikkie-Lee TYRRELL: Thank you. I am assuming that you would not be able to tell me how many calls were received and documented during the flood event.

Peter CLYDESDALE: We can take that on notice. We would be able to get that data.

Rikkie-Lee TYRRELL: Thank you very much. I would like that, because we have heard in previous inquiries from many residents in the areas that they were trying and trying and trying to get through on the hotline, and they were unsuccessful. Their phone calls were not being answered. I am just trying to work out why. There were a few that did manage to get through, but unfortunately when they did get through they said

that what they communicated was not being heard and they were not being taken seriously. There was a massive lack of communication there, and I think that really needs to be addressed for future flood events, because we will get them. I will just go on to my next line of questioning now. How much public consultation do you undertake on a regular basis with stakeholders and community members?

Charmaine QUICK: Can you clarify: for what purpose are we doing this consultation?

Rikkie-Lee TYRRELL: When there is a community that are trying to voice their concerns about the way that the water is being managed and whatnot. If they have got a big concern, say, dam storages, how often are consultations undertaken prior to this event?

Charmaine QUICK: I suppose prior to this event we had no requests for that. The consultation in terms of flood management and mitigation really falls under councils and CMAs in that sort of arrangement. What we were doing prior to the event – Andrew can talk to the number of SES events that we went to as part of that broader emergency response agency; I know that Andrew and his team participated in a lot of the SES-run events. And I will be providing on notice all of the events we have done subsequent to the October floods: on how many committee meetings, town halls, all those sorts of things, that we have attended. But Andrew might talk about the pre-flood side of things.

Andrew SHIELDS: That is something that the SES really drive as far as community awareness and preparedness for potential events. We attend that with the SES to provide an update about what is happening with the dam, because as we know, it is also the catchment below the dams that can contribute to flooding in these systems as well.

Rikkie-Lee TYRRELL: Thank you. You mentioned that there were upgrades being done at Loch Garry, or you are working on upgrades. Previously you mentioned that.

Charmaine QUICK: We are just calling for community representatives for what we are calling, I suppose, the future services strategy. That will look at automation upgrades. It will also look at other elements that the community have been asking us in relationship to – as I said, new flood modelling; does the loch benefit more people than just 116 customers? There were a range of things that the community were asking us to look at, and modernisation was just one of them.

Rikkie-Lee TYRRELL: Is there a time frame on when that will be completed or undergone?

Charmaine QUICK: We are calling for the community group by the end of this month. So terms of reference are just being finalised; we are just making sure that we have got all of the elements in there. We will form that. To me it is going to be somewhere in the order of a 12-month piece of work.

Rikkie-Lee TYRRELL: Okay, thank you very much. You mentioned – I am sorry; I am all over the place here – that you had an opt-in option for farmers to be kept in the loop on what is happening. Just a query: does that come at a cost or is that free of charge for the farmer?

Andrew SHIELDS: I can answer that. A few years ago we established this opt-in service for operational changes at Lake Eildon. We were getting some feedback from landholders saying that the releases had changed very quickly without notice within our normal operating range. So what we did was send a letter out to those customers downstream to say, 'If you'd like to be notified of releases under normal operating conditions, let us know and we can put you on a text message list.' There was no cost.

Rikkie-Lee TYRRELL: No cost?

Andrew SHIELDS: No cost. But what we did clarify was that it was not a flood advice service, because we did not want it to get confused with flood messages being issued by the Bureau of Meteorology.

Rikkie-Lee TYRRELL: Okay, that is good. Earlier you said that you can mitigate floods where possible. What makes it possible and what makes it not possible?

Andrew SHIELDS: I will give this a go, but jump in if you need to. For us to be able to capture an event like October 2022, for example, at Eildon, we would have to make significant volumes of space in the dam to be able to do that, and that would then come at a cost of water security and supply into the future. For us to

provide full mitigation or flood elimination, that is where we would need those much larger volumes of airspace. So when it becomes 'where possible' it is: what can we do with the dam to try and minimise what those outflows are? That is when we can use those strategies that we have as far as pre-releasing water from the dam but also surcharging the gated dams that we manage as well. It is trying to create space where we are not putting at risk those water supply obligations.

Charmaine QUICK: But I will also keep jumping in and reminding everybody: they actually did perform a mitigation function this time around. Sorry, Rikkie, you do not have the handout available.

Rikkie-Lee TYRRELL: I am listening.

Charmaine QUICK: Certainly for Eildon we had – I am going to keep harping – 145,000 megalitres a day coming into that dam, and it was sustained over a long period of time at over 100,000 megalitres a day. We managed to just be able to mitigate that down to 38,000 megalitres. I know that that had devastating impacts on community – I understand that – but that is a form of mitigation, and the conversation now that needs to happen is: will there ever be enough? How much mitigation do we actually want, and what is the level of mitigation?

Gaelle BROAD: Warnings.

Charmaine QUICK: It is warnings.

Rikkie-Lee TYRRELL: That will lead on to my final question. You said earlier that it is in your policy during a dry season – so El Niño – to aim to keep the dams as full as possible, but then you also said that during a wet cycle, like La Niña, you also aim to keep them high. Why? Why during a wet season – when nobody is irrigating, nobody is using water to water ovals and whatnot, and when water is abundant – do we need to keep our dams so full during a wet cycle of several years?

Charmaine QUICK: I will also clarify, we actually had from the usage point of view – so people actually did irrigate after the event. I can give you the exact numbers, but it was about 800 gigalitres of water that was provided last season even though there was a flood. Water was still actually in demand over that period of time as well. Andrew?

Andrew SHIELDS: I might add as well that we do not know when the last rain event will be in any given year as well. The last one we saw was –

Ryan BATCHELOR: Damn rain uncertainty.

David ETTERS HANK: What is wrong with you?

Andrew SHIELDS: We did see the big event in October, and there was another one later in October as well. If you notice from the graphs as well – sorry, Ms Tyrrell, you do not have the handouts that have got some of the graphs here – there is another little pick-up in the outflows from the dam in late October, and that was an event that did not quite eventuate. If you remember from the Melbourne Cup weekend, there was a very large rain event forecast, and it missed the Goulburn catchment but it did impact on the Murray catchment. We never know when that last rain event is going to be, but we need to have the dam full for when that next dry spell commences, because if we do not start that next dry spell with the dam full, we will be asked, 'Well, wasn't the dam full that time?'

Rikkie-Lee TYRRELL: So was that 800 gigalitres specifically just for irrigation or was that conveyancing water, environmental water – everything? Was that the total take?

Charmaine QUICK: No, no. That was just what we supplied to the irrigation areas. I would have to get the exact number. Because people did actually irrigate and Peter can probably talk about the fact that – our irrigation network goes all the way to Boort. They were certainly in flood. But there were areas that actually did not get as much water and actually were wanting to irrigate within a couple of weeks and we were frantically trying to get our system up and running after the flood to be able to meet those demands of irrigators.

Rikkie-Lee TYRRELL: Okay. Thank you. I am happy to cede the remaining time to Ms Lovell. Thank you, Chair.

The CHAIR: You have 1 minute and 50 seconds, so I will add that to Ms Lovell's time when we come back around. I will go to a question from Mrs Broad, please.

Gaelle BROAD: Thank you very much for coming this afternoon. We really appreciate it. It is very challenging because, I guess, as we have been out to local communities Goulburn–Murray Water has been mentioned time and time again. There are a number of submissions that express different views. They say failing to implement appropriate flood mitigation strategies, failing to maintain structures including Loch Garry, failing to release water within a reasonable time frame and failing to notify impacted residents about planned water releases. There have been some submissions go so far as to blame poor management. I guess you have spoken to some of those works that you have been doing, Charmaine. But I guess 12 months on there are a lot of communities who are very anxious that history could repeat itself. What is your comment to those communities?

Charmaine QUICK: Yes. We have been talking to the communities. I mean, I have gone out and sat at Rochester. I turned up to the town hall at Rochester. I personally went out there and I have certainly been to the recovery meetings as well out there. You can probably tell, we live in the communities as well. I do live in Shepparton –

Wendy LOVELL: I can vouch for that.

Charmaine QUICK: Yes. Andrew does as well. So we are in those communities. We keep talking to them about providing them with the information, even just before the October event. Three weeks ago, I dialled into the emergency recovery meeting just to talk through this is what the BOM forecast looks like, this is the information we are getting. It is really about providing that information, and then really the DEECA review come November is really where the conversation starts, because that is when we will all know the five options that they are looking at. They are looking at gates – can they put gates in like Eildon; bigger outlet structures so that we can release more water; airspace, just leave airspace but what would that mean for entitlement holders and in particular Bendigo that does rely heavily and Coliban Water does rely heavily on that water supply. That piece of information will be really critical to have that community conversation, because it will be dealing in factual information, so I am really looking forward to publishing that and working with the community through that.

Gaelle BROAD: Do you know when that is going to be available?

Charmaine QUICK: I believe Mike said this morning it was November.

Gaelle BROAD: Okay. But you are not sure when? That is fine. I am interested in what your role has been in that review, because obviously you have a huge responsibility. Has DEECA met with you? Do you provide input? How has that worked?

Charmaine QUICK: Andrew.

Andrew SHIELDS: There have been representatives from Goulburn–Murray Water attending those sessions. It has really been around testing scenarios and us providing information they need for the consultant that DEECA have appointed to look at those options, so previous flood events, what inflow data we have, those kinds of inputs so they can test.

Gaelle BROAD: I had a response from the minister recently that talked about the advice they are getting is not that storages should be lowered to 90 per cent, but I guess the report has yet to come out. It is a huge catchment area; water storages do not seem to sort of match the catchment area. But what other mitigation strategies do you see working or could work?

Charmaine QUICK: Are you talking about specifically Eppalock here?

Gaelle BROAD: Yes, Eppalock and Eildon are certainly the ones that we are focused on.

Charmaine QUICK: Well, Eildon is a little bit different because it already has gates and stuff like that.

Gaelle BROAD: Yes. Eppalock is yet to have gates.

Charmaine QUICK: Eppalock is the one where DEECA are looking. I think they have probably covered off the main five options. I know at the town hall they had pictures of different configurations of the dam that would actually give increased storage levels, so I suppose they are looking how you can increase the storage levels. But if you increase storage levels, then there will be more flooding potentially. There will be private land upstream that may get flooded. So there are all those compromises. But I think the five options that I saw – and Andrew has probably been a little bit more involved – probably cover the main ones that need to be looked at.

Andrew SHIELDS: As far as mitigation, as far as the role that the storage has played, the DEECA reviews, for both Eildon and Eppalock, will cover off on most of those options.

Gaëlle BROAD: Okay, but you have made your recommendations as part of that review?

Andrew SHIELDS: Probably just bouncing ideas off what they are looking at as far as what those potential options might be.

Charmaine QUICK: It really relies on detailed hydraulic modelling, and I suppose that is why they have got the – we are feeding in the information, and we are probably as keen to see the outcomes as the community.

Gaëlle BROAD: Loch Garry was talked about. What is the amount of funding that you do receive in a year to maintain Loch Garry? I know a percentage is the local residents around the region, but –

Peter CLYDESDALE: Yes, it is between \$30,000 and \$40,000 a year from 116 ratepayers within that flood protection scheme.

Gaëlle BROAD: Okay. You mentioned the modernisation project and the time frame or the terms of reference. Is there a cost in mind for what is being allocated to that project?

Charmaine QUICK: No. Oh, to do the studies, yes, but not the cost of modernisation.

Gaëlle BROAD: Okay. Melina and I went, with Tim McCurdy as well, to visit the Loch Garry area. You could see that the bars had not been removed – or many; I guess there were only a few rows – but there did not seem to be an alert from Goulburn–Murray Water at the time when the bars could not be removed, and it put community safety at risk. Are you confident that the changes that are brought in now will ensure that that does not happen again?

Charmaine QUICK: Yes. We have had the CMA in that – everybody is involved – so yes.

Gaëlle BROAD: And just too for my understanding, do you have a direct role in the incident control centres?

Charmaine QUICK: No.

Gaëlle BROAD: No. I guess I was a little surprised when you were saying in your flood management plan you did not have to tell people about releases. Wow, that seems a huge risk. I mean, that is a huge volume of water that is coming out, and it is only now, since the floods, that the Bureau of Meteorology is being advised and it is going into that warning system.

Andrew SHIELDS: So our conversations – we advised the Bureau of Meteorology about what was happening at the dams, and we have always done that, to inform the flood warnings.

Gaëlle BROAD: Okay.

Charmaine QUICK: I think the clarity is what we heard from our community was the BOM come out and say ‘minor’, ‘major’, ‘minor’, ‘minor’ –

David ETTERS HANK: ‘Moderate’.

Charmaine QUICK: ‘Moderate’ – thank you; it has been a long day – ‘major’.

Gaëlle BROAD: Yes, and you were saying it could be above.

Charmaine QUICK: Well, they were saying, 'We want to know the volumes,' so I suppose that is the contextual stuff that we have now asked the BOM to include – not just say 'It's going to be moderate.' In the last one we said it was going to be between 17,000 and 20,000 megalitres per day coming out, and then the BOM would say whatever that was.

Andrew SHIELDS: In October last year when the flood warning went out, when we started increasing those releases, it just said it would go above the minor flood level. It did not have any of that contextual information.

Gaelle BROAD: I thought it was a good point you made earlier, Charmaine, about having a visual for where it is, because as we have gone to different towns it is the first thing the locals will point out – 'See that mark on the wall' or 'See that tree'.

Charmaine QUICK: I particularly like going into pubs, because you see the photos on the walls. Somehow in pubs you get that sense.

Gaelle BROAD: Yes. It is very important. I am interested too in the water storages themselves. As I met with people around Benjeroop their feeling was that over the years the storage has got higher and higher, and whether or not it is environmental water or different aspects, the water is not going out like it used to. What are your comments on that? I know you cannot for privacy reasons talk about who owns the water, but just in the storages – I guess I am thinking of Lake Eppalock, for example – what percentage is your everyday irrigators as opposed to urban water as opposed to environmental?

Andrew SHIELDS: We can probably talk about it in terms of entitlements and rough percentages. In the Goulburn system, water that is supplied from Eildon and Waranga basins, probably about 30 per cent of the entitlements are held by the environmental water holders.

Gaelle BROAD: 30 per cent?

Andrew SHIELDS: 30 per cent. Probably about the other 65 is irrigation and other water users, and about 5 per cent is held by urban water corporations for town supplies. In the Campaspe it is a little bit more weighted towards the environmental water holders. They own a bit more of the water. It is probably closer to 50 to 60 per cent of those entitlements, and the irrigators and the urban water corporations make up the rest.

Charmaine QUICK: But then Eppalock has that other component from the Coliban, so you might want to talk about that so you get a true tally.

Andrew SHIELDS: Eppalock is a unique storage. It is what we call a capacity-shared storage, so Goulburn–Murray Water has 82 per cent of the storage capacity and Coliban Water own the other 18 per cent. They use that water to supply Bendigo, so there is a bit of difference there. When I talk about the entitlements, that is water that is held within our share.

Gaelle BROAD: Forgive my ignorance, but does environmental water get used? Does it get taken out regularly? How does that work? It seems like quite a large percentage that is sitting in there.

Andrew SHIELDS: It is used at different times to irrigation water. Normally irrigation water might come out in spring if it has been dry and then over summer, and autumn is probably the other big time when irrigation water is used. Environmental water sometimes can be used in winter and then again in spring. They might do a couple of events in spring and then maybe drop out to lower flows through the summer months and again perhaps in autumn. So it just has a different timing of use, but certainly environmental water holders and managers deploy their water.

Charmaine QUICK: And we are happy to supply some records over the last few years of how much delivery the environmental water holder has used and irrigators.

Gaelle BROAD: Yes. Do you think that is contributing to less airspace in water storages now? Has it actually gone higher and higher in a way?

Andrew SHIELDS: Interestingly, in the last couple of weeks we had some space in Lake Eildon, and some of that was due to an environmental water delivery that occurred through September. So we actually released

water, and it did create some additional airspace. If we go back to the 2022 year, environmental water holders released water in June or July, around that time frame, and that created some more space at that time as well. If they deliver water in those times, it can create some space into those wetter times too.

Gaelle BROAD: I think I am right. I am happy to cede my time to you, Melina.

The CHAIR: Before we do that, I will just note you have got 1 minute left, Mrs Broad.

Gaelle BROAD: A huge amount of time! I am so generous.

The CHAIR: But before we move on, I am going to go back to Mr Ettershank. I know you passed, Mr Ettershank, so do you want to use up your 13 minutes and 30 seconds now?

David ETTERS HANK: Some of it I think, Chair. But let us see how we go, and then who knows what we can cede. Mr Shields, we were waiting with bated breath for filling curves 101. Would you like to go through that with us?

Andrew SHIELDS: Sure. It is in play at Lake Eildon, and it is basically filling targets that we work towards from May through to 1 October or 1 November. It is almost an interim supply level that we are trying to work to. We look at what information we have around potential inflows to the dam, and this curve is based on what inflows we would expect to get 95 years in 100. That means 95 years in 100 we expect to get more inflows and five years in 100 we expect to get less, so it is very much weighted towards inflows we expect to get in dry times. That is how those targets are developed. We use information from the Bureau of Meteorology to inform those. Each month the Bureau of Meteorology will come out with an update of what we call seasonal stream flow forecasts, and they will look at, 'Has it been wet? Has it been dry? What does the outlook look like?' We have found in drier times those inflows we expect to get will be a little bit lower, so the curve will move up. In wetter times then we will expect to get higher inflows under those scenarios, and so the points on that curve come down a little bit. What we found in October last year using that information was that the filling points for October came down quite a bit. But the way we work to those is that, when we are approaching those filling targets, that is the trigger for us to start potentially releasing more water, and if we do go above those filling targets, then we will continue to release water to bring the storage back down closer to those targets, without causing additional inundation downstream of the dam to achieve that.

David ETTERS HANK: Thank you for that. I guess over the hearings we have heard so many sort of, 'one in 100, one in 50, one in 75, one in 73, blah, blah, blah,' and there is a subplot there or a subtext there, which is: given climate change, how much is that really worth? I think Lismore had three one-in-100-year floods in, whatever it was, 14 weeks or 16 weeks or something. When you talk about, for example, in the context of the filling curve, 95 years in 100, does that actually mean anything anymore? To what degree has that as a tool been degraded by climate change? How do you see that going out into the future?

Andrew SHIELDS: As we get more information about inflows, we recalculate what the statistics are, and we find that the drier we usually get the lower some of those numbers can be. I think this is where the information that we get from the bureau is critical, because it does take into account all of the current climate indicators and what we have seen in recent times. Yes, I still think it is valuable; it is just making sure that we are using the most up-to-date and relevant information to inform those filling targets.

David ETTERS HANK: Okay. You talked before about this sort of hierarchy, which I think is imposed on you through the Act. At number one there is dam safety, and then as I understand it you have got roughly three values that sit below that, which are security and supply, water safety and quality and then flood mitigation.

Charmaine QUICK: Where possible, yes.

David ETTERS HANK: Where possible – and it seems to me you possibly have a sort of quintessential wicked problem, if you are familiar with that concept. I am curious, in looking at that second tier, those three not necessarily or in fact possibly counter productive elements, do you have a sort of cost–benefit or a harm/benefit equation or ratio that you would apply in decision-making around, particularly, I suppose, releases?

Charmaine QUICK: For us, we mitigate where possible, so that is how it currently operates. I will not go through the numbers again. I suppose that is where the DEECA reviews will then feed into the CMA, because the CMA and the councils have – you would have heard this morning about that whole flood mitigation where they are doing those risk assessments and trade-offs. Any of this work that happens, either at Eildon or Eppalock, will have to feed into the broader mitigation options and be compared more broadly as well with the cost-benefits and trade-offs – you know, properties protected, towns protected and all of those sorts of things. So that is really part of that DEECA work then feeding into the flood management plans, which you heard Murrindindi have got funding for, as well as Campaspe. They are updating their models. This parcel of work feeds into that.

David ETTERS HANK: I am probably reaching that time of the day where I am suffering some minor brain damage.

Charmaine QUICK: I might hand it to Andrew. He might be able to explain it better than me.

David ETTERS HANK: Yes. I mean, what DEECA is proposing – I can see some of it is just purely engineering and other bits perhaps a bit more – does that actually resolve that wicked problem? Will that actually provide you with some sort of almost mechanistic set of rules for how you make those decisions?

Andrew SHIELDS: I think that will be the detail that will need to come, whatever the outcome is from this study. If there is to be a flood mitigation component in Lake Eildon, we would need some rules and guidance about how we would utilise that – and when, because we have seen that we can have multiple events in a row – available capacity within the storage.

David ETTERS HANK: The cost-benefit rules actually do not exist currently in that. Am I understanding that correctly?

Andrew SHIELDS: I think when we are managing events, like we did in October 2022, we look, obviously, at dam safety. We need to manage the dam and the releases for that, but with the amount of flow that was coming into the dam we knew that the dam was going to fill. The water supply component was taken care of. It was just trying to manage the storage releases to try and minimise the outflows as much as we could from the dam, noting that we did need to release 38,000 megalitres a day, which is a very large flow.

Charmaine QUICK: Something Andrew has not touched on is the tributaries. If we just look at Eildon, it is only 23 per cent of the catchment. There is a whole stack of – Acheron, Rubicon, all of those – other tributaries that you would have heard about. We even backed off the flow, and Andrew can maybe explain that a little bit. It actually allowed the tributaries a bit more space to come in, knowing that we could then come in at the back. But Andrew is better to answer this.

Andrew SHIELDS: Probably one of the other strategies that we use to try and mitigate flooding is where possible, when we do see those inflows coming in from those tributaries downstream, where they peak we try to back Eildon off at that time, and we did that three weeks ago where we were releasing about 7000 megs a day before the event. On the day that it started raining, on the Tuesday, we reduced that flow back to 4500 megalitres a day to allow those tributary flows to come through. That is another option that we have, actually.

David ETTERS HANK: Thank you. Chair, I will cede the balance of my time to Ms Bath.

Melina BATH: Thank you very much indeed.

The CHAIR: Before you go on, I will just say that is 5 minutes and 30 seconds, so when we get around to you, Ms Bath, you will have 6 minutes and 30 seconds. But I will go to Ms Lovell first. Ms Lovell, with 8 minutes and 23 seconds on the clock. Thank you.

Wendy LOVELL: Thanks very much and thank you all for being here today. I know these things are not pleasant, and believe me, I have seen Andrew take the heat at many of the community meetings – the anger over water. My dad told me a story once. He grew up in India; his uncle was a superintendent of police in Karachi. When I first became an MP and I was dealing with the emotive issues of water – and I have gone from the drought to this – he told me a story of his uncle one night minding him and getting called out, because the

troops could not handle this meeting that they were at. It was an irrigators meeting. When they got there, the irrigators had actually gone at each other with machetes. It is much easier in the Bunbartha hall than it is in Karachi! Thank you all for being here. I want to ask about gauges, and we heard a lot of evidence, particularly in Seymour, about the need for more gauges to reliably understand the volumes of waters and to be able to accurately predict things. What is your view on the need for more gauges, and where do you think they should be located?

Charmaine QUICK: Once again I will hand over to Andrew. Probably for us it is more about upstream of our dams than downstream, because we are really passing that information on to the BOM, and then they are using it. I might hand back to Andrew.

Andrew SHIELDS: Yes, so from a managing the storage level perspective we have got a very good coverage of gauges upstream of our dams, particularly at Lake Eppalock, Lake Eildon and Cairn Curran Reservoir. All of the major tributaries have gauges, and we get that information in near real time. That helps to give us an indication of what is coming into the dams so it can help us forecast what those inflows might be. Downstream of the dams most of the tributaries do have gauges on them. But there are some gaps, and I understand from the conversations this morning there are discussions around a couple of extra gauges going in to help as part of the constraints project.

Wendy LOVELL: Do you have a list of locations where you think additional gauges should be located?

Andrew SHIELDS: Not that we sort of identify where there are significant gaps for us.

Wendy LOVELL: So you have not done that work?

Andrew SHIELDS: No. There are some, I suppose, operational rules that we work to at Goulburn–Murray Water. As far as releasing water from Eildon goes, our normal operating range from Eildon and taking into account those tributaries is sort of a proxy for our flow at Molesworth. There is no gauge at Molesworth, but we sort of look at what information we have from those gauges upstream of that location. But there is not a gauge at that point.

Wendy LOVELL: Okay. Some of the older irrigators are saying there used to be a lot of areas where water could run off – depressions et cetera – that have been excluded from the system, so there is no flood mitigation from them. Also of course we had the two lakes, Cooper and Greens, that you decommissioned, and they did not seem to be going to be used for any mitigation purposes until the very last moment last year. So what ability do you have for run-off areas and mitigation in the system? Is it true that many areas have been closed down, and what plans do you have for Cooper and Greens into the future?

Charmaine QUICK: I will need to just take these. On the first part, are you referring to the bits, as part of the connections or modernisation of the system, where levee banks and those sorts of things were removed? Is that what you are referring to?

Wendy LOVELL: The older irrigators were saying there used to be a lot of depression areas and stuff that would take run-off and would serve a purpose in mitigation. I guess it could be part of what has happened with the modernisation; I do not know.

Charmaine QUICK: I might get Peter to talk about our drainage network. Maybe they are talking about our drainage network. We do actually manage a drainage network, but it is not for flood mitigation. I might actually get Peter to talk little bit about that.

Peter CLYDESDALE: GMW drains are more designed for a rainfall event like 25 mil in 24 hours. They are not designed for the overland or riverine flooding that we saw in October. But once we get control back of our systems and water is back in normal operating levels, we can provide services to customers to allow them to pump into our network under certain conditions. We are always mindful that we do not want to create a situation or make for someone downstream a problem that did not exist prior to us allowing that pumping. I am not really sure the context around what used to exist in terms of depressions and so forth that would have allowed for run-off. I am not really across that.

Charmaine QUICK: Cooper is not managed by us; that is actually DEECA. As part of Greens Lake, when we did the analysis in terms of its removal from the irrigation network, it was considered in terms of flooding, and we did actually use it for flood mitigation, Peter, and we did actually open whatever we had to open. I do not know whether it was you –

Peter CLYDESDALE: During the October event – and Andrew was certainly engaged – there was water from Waranga Basin, which obviously comes from the Goulburn Weir ultimately, and we allowed water down the Waranga Western main channel, and we outfalled it into Greens Lake to take some of the heat off situations downstream. So it did provide us with a mitigation strategy.

Wendy LOVELL: So what are the plans for Greens going forward?

Peter CLYDESDALE: I can talk to that if you like. Part of our review – and we have not kicked it off; there have been other priorities – is the process of looking at a Greens Lake strategy going forward. There are competing interests, obviously, surrounding landowners around Greens Lake concerned about the levels and how full it does get and recreational users saying, ‘Let’s keep it full.’ So we will kick off a strategy and again, similar to the Loch Garry future service strategy, apply those same terms of reference, similar in terms of bringing the community together and other stakeholders – CMAs, shires et cetera – to have a discussion around how Greens Lake should be managed as part of that.

Wendy LOVELL: Why wasn’t that process done before you emptied it last year?

Peter CLYDESDALE: In terms of a future service strategy for Greens Lake?

Wendy LOVELL: Yes, in terms of a consultation with the community about the future.

Charmaine QUICK: I suppose the consultation was actually carried out. There was quite a detailed consultation process, and hence toilet blocks and various other things got built at Greens Lake. It was always acknowledged that it could be used for flooding again, and hence a lot of work was done in terms of the decommissioning of the pump station and there was a whole range of work there. I think for us it is now probably formalising those arrangements a little bit into our plans more than anything else. So it was always there. We always acknowledged it can be used for flooding. It is just formalising that a bit more and making sure that – we just have some landholders on the edge who are also concerned that the levels are too high. So we need to balance all those.

Wendy LOVELL: Most of the rest of my questions were around Eppalock.

The CHAIR: This is probably a good juncture, Ms Lovell, because the rest of your remaining ceded time has expired. So I will go to Ms Bath with a question now. You have got 6 minutes and 30 seconds, Ms Bath.

Melina BATH: Thank you very much, Chair. I appreciate that. Good people, Dave Christie is a fourth-generation farmer, and you may be well aware of Dave Christie. At our Rochester hearing, he said:

We lost a lot of cattle. We could not get them out, so – they drowned.

... A lot died of disease – mastitis and the rest of it.

... We are just shy of \$2 million that 2022 – flood –

... cost our business.

You have mentioned some of the things that you can improve on. I guess I just want you to reflect on what your biggest regret is from a Goulburn–Murray Water point of view.

Charmaine QUICK: I do not know. Regrets are a hard sort of thing. I think for me it is just about how we keep providing information that is meaningful to people. We cannot stop flooding. As I was saying before, we have now included flow rates coming into the BOM and the EMV app, but in 10 years time, are those flow

rates going to be relevant to the new people who have bought a property and who are now putting in cows? So for me, it is about how Goulburn–Murray Water, councils, CMA and SES continue to work collectively, work together to make sure that people understand that we cannot control the rain that falls out of the sky, and that there are elements that we can all do in this process, including us, and looking at can we have different filling curves, are there things that we can do differently with Eildon and Eppalock?

Peter CLYDESDALE: Member Bath, can I just mention we have reached out to Mr Christie and had a meeting with him and our operational staff. Charmaine asked us to do that through some of the feedback we had heard through the inquiry.

Melina BATH: Thank you, and that is part of this, isn't it – that interaction, and you taking up the voice of community and understanding where their position is. So thank you for that. I am going to go back to a question I asked the other catchments. In relation to the GMW channel modernisation program, if you could speak to that, I am interested to know about what modelling you have done in relation to impact on floods moving forward and an update on that channel program.

Charmaine QUICK: I might start with that.

Melina BATH: I did not mean it to be so hard.

Charmaine QUICK: No, no, no. I think as Guy touched on, the yellow, red, green – so that was all done. Because the CMAs are those who have the knowledge of flood modelling and all those sorts of things, that is where we went as part of that process. I am aware that that has all been rolled out; however, we probably will need to take some things on notice.

Peter CLYDESDALE: It certainly was mapped out in our Geocortex system, which is our mapping system, and it was that colour code that Guy spoke to. So the green was 'remove' – you could remove. But they identified – I guess the important part was the red that was identified. That was identified through the CMAs as 'do not remove' – it has a role in floods and mitigation and so forth going forward. And then there was the amber, which could be removed at landowner consent. That was written into all the agreements. So that was identified up-front and reviewed during the connections process.

Melina BATH: For the greens, it could be removed – as in the green light for 'go'. Does that still require landowner consent?

Peter CLYDESDALE: I think approval would have been negotiated with the landowner within their agreement, correct.

Melina BATH: And in relation to – some of these channels are very old, I am imagining.

Peter CLYDESDALE: Yes.

Melina BATH: And without going back in time too far, who is responsible for their upkeep if they are not – if they are red, if they are 'do not remove'?

Peter CLYDESDALE: So on the private property, the landowner would have been responsible for the upkeep of those.

Melina BATH: You might need to take it on notice, but have you got any sort of question around how many kilometres and the status of those?

Peter CLYDESDALE: No, we would need to take that on notice.

Melina BATH: Thank you, that is lovely. I appreciate that. I am going to go the favourite topic – the 2016 flood management strategy levees. You would not be surprised that we are going to ask you this one in relation to 17d, and the Crown land levees, and where someone, often council, and that is where – our concern is that there is a lot of impact on council or private owners to upkeep those. I am just interested in your take on that, and is this the best way to protect communities from flooding with that 17d in place?

Charmaine QUICK: I am not sure that I can fully comment, because we are not responsible for levees, except the Loch Garry levee is our –

Melina BATH: Is your only –

Charmaine QUICK: We do own –

Peter CLYDESDALE: We are responsible for 70 kilometres of levees within our GMID network, or Goulburn–Murray Water footprint, and they are all associated – Loch Garry is obviously associated – with the flood protection scheme, but the 61 other kilometres of levees are very much related to drainage schemes. They are supported by our drainage tariff in terms of keeping them maintained and the maintenance required.

Melina BATH: I know when Ms Broad – Gaelle – and I went out –

The CHAIR: Thirty seconds, Ms Bath.

Melina BATH: Thank you. Yes, I have got my clock on. We went out there and we stood on a brand new piece of levee that is at Loch Garry. I know some of the farmers around there said that at the time of the floods they actually heard like an explosion as if someone was blowing up the wall. Is that in Goulburn–Murray Water’s jurisdiction? How did that happen? Are you aware of anything and how that happened?

Peter CLYDESDALE: So yes, those levees that they are referring to – we heard the same comment, that it sounded like an explosion. We can only associate that with a channel blowing out and the magnitude and the force of the water.

The CHAIR: Sorry about that; that is the clock. It has beaten you, Ms Bath.

Melina BATH: Is that your jurisdiction?

Peter CLYDESDALE: The 9 kilometres that you would have visited –

The CHAIR: Sorry. Order. Thank you, the clock has expired. I will now go to Mr Batchelor for a question, please, with 4 minutes and 11 seconds on the clock.

Ryan BATCHELOR: I did not really have much else to get to, only to say it is clearly a challenging task managing competing interests and trade-offs. It seems that you do something in one area and it has an impact on a range of other different interests – I will not say competing interests but interests that are not always aligned. I imagine it is a very challenging task from time to time, particularly with the uncertainty of having to do it not knowing how much water will be falling out of the sky in the future. I appreciate your candour with the evidence you have given us today and trying to take us through both complexity and understandability, because they are both important to us. I just want to say thank you for the evidence today.

The CHAIR: Mr Batchelor, nothing further?

Ryan BATCHELOR: That is it from me.

The CHAIR: Okay, great. I just want to say thank you all very much for providing us with your evidence this afternoon and for coming in. I know it has been a big session. Your opening remarks and comments were very helpful, and we really appreciate you coming in and giving evidence before us today. I will just note that you will receive a copy of the transcript for review about a week before it is published on the committee’s website, so please do let us know if there are any issues with the transcripts that you receive. That will conclude our hearing for today.

Committee adjourned.