

REPORT ON PROCEEDINGS BEFORE

**PORTFOLIO COMMITTEE NO. 7 - PLANNING AND
ENVIRONMENT**

**RATIONALE FOR, AND IMPACTS OF, NEW DAMS AND OTHER
WATER INFRASTRUCTURE IN NSW**

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At Jubilee Room, Parliament House, Sydney, on Thursday 29 October 2020

The Committee met at 08:45.

PRESENT

Ms Cate Faehrmann (Chair)

The Hon. Mark Buttigieg

The Hon. Ben Franklin

The Hon. Mark Pearson (Deputy Chair)

PRESENT VIA VIDEOCONFERENCE

The Hon. Catherine Cusack

The Hon. Shayne Mallard

The Hon. Penny Sharpe

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The CHAIR: Welcome to the first of five hearings for the Portfolio Committee No. 7 inquiry into the rationale for, and impacts of, new dams and other water infrastructure in New South Wales. Before I commence, I acknowledge the Gadigal people, who are the traditional custodians of this land. I also pay my respects to the Elders of the Eora nation past, present and emerging, and extend that respect to other First Nations people present. Today we will hear from government witnesses from WaterNSW and the Department of Planning, Industry and Environment followed by water policy and management specialists and Indigenous stakeholders. We will conclude the day by hearing from water and fisheries researchers.

Before we commence, I will make some brief comments about the procedures for today's hearings. Today's hearing is being broadcast live via the Parliament's website. A transcript of today's hearing will be placed on the Committee's website when it becomes available. Parliament House is also now open to the public. All visitors, including witnesses, are reminded that they must have their temperature checked and register their attendance in the building via the Service NSW app.

All witnesses have a right to procedural fairness according to the procedural fairness resolution adopted by the House in 2018. I remind everybody here today that Committee hearings are not intended to provide a forum for people to make adverse reflections about others under the protection of parliamentary privilege. I therefore request that witnesses focus on the issues raised by the inquiry terms of reference and avoid naming individuals unnecessarily. There may be some questions that a witness could only answer if they had more time or with certain documents to hand. In those circumstances witnesses are advised that they can take a question on notice and provide an answer within 21 days.

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ANDREW GEORGE, Acting Chief Executive Officer, WaterNSW, affirmed and examined

JIM BENTLEY, Chief Executive Officer (Deputy Secretary), Department of Planning, Industry and Environment, sworn and examined

ANISSA LEVY, Chief Executive Officer, Water Infrastructure NSW, Department of Planning, Industry and Environment, affirmed and examined

The CHAIR: Would anyone like to make a short opening statement?

Mr BENTLEY: If I could say a few words and Mr George would like to say a few words—really briefly because I think we have given a fairly comprehensive submission. I just wanted to draw attention to some points that were made in other submissions that may be helpful for the Committee. First of all I should say, Andrew George is here in his capacity as Acting CEO of WaterNSW and Ms Levy, who works within the Department of Planning, Industry and Environment [DPIE] Water, is the new CEO of Water Infrastructure NSW, which means we are bringing all of that experience from environment and infrastructure into the department which will be invaluable to us as we move forward.

I have three points from submissions as I was looking through them. I think there is some misunderstanding in some of the submissions as to what we mean by early works and we would be happy to answer any questions around those, but to be clear we are not starting construction of any of these significant projects in advance of all the normal impact assessments having been carried out. So there are some early works, and just by way of example, Dungowan Pipeline is a project that needs doing whether or not a dam gets built, so it makes sense to do that early because we have got to do it anyway. That is an example of what we mean by early works. There is some concern, understandably, in some of the submissions about rushing ahead and starting construction before we have received approval, and that is certainly not the case.

A second point I wanted to make is that, again, there is some concern expressed about fast tracking, and fast tracking is the overlapping of approvals stages. It is not the avoidance of those stages. We are still carrying out the assessments that would ordinarily be carried out. It is just a matter of decision made to fast track by overlapping some of these things. The third thing: A few points were made about funding and cost and impact on water price, and I am sure the Committee is aware, but just to be clear, a significant portion of funding has been guaranteed by the Commonwealth through their budget by way of a grant. So although the cost of these projects is significant we should bear in mind that the Commonwealth has committed to several hundred million dollars of grant funding towards those three dam projects. So those are the only statements I wish to make, Chair. I will hand to Mr George if that is okay.

Mr GEORGE: WaterNSW is the State's bulk water supplier and system operator. We operate the State's water assets including more than 40 dams and over 300 weirs and regulators for all customers, including farmers, local communities, industries and the environment. We do so in a manner that is consistent with the policy directions of the New South Wales Government, in particular the Department of Planning, Industry and Environment Water, and the relevant water sharing plans for each valley. That is, WaterNSW does not set policy or the water management rules.

We acknowledge the impact of a changing and increasingly variable climate, and as the system operator we see directly the impacts of unreliable supply but also the confidence that comes from more secure water supply options when delivered to regional New South Wales. Despite these challenges, a lack of water security can be mitigated through a combination of operational, asset and policy responses. Although infrastructure delivery is coordinated across multiple New South Wales government agencies, we plan and deliver infrastructure through two main avenues. Generally, as a State-owned price-regulated monopoly, WaterNSW funds our ordinary infrastructure planning and delivery through the Independent Pricing and Regulatory Tribunal [IPART] determined customer charges. However, from time to time WaterNSW also supports the New South Wales Government infrastructure priorities by investigating, planning and, on occasion, delivering capital works on behalf of government.

In the case of the projects under review by this Committee, with the only exception being the Menindee Lakes water savings project, WaterNSW has either been directed under the State Owned Corporations [SOC] Act or directly funded by the New South Wales Government to progress investigations and planning for these projects. However, by reference to our submission—and in the case of the three dams—it is important to note, as Dr Bentley mentioned in his statement, that the planning for these projects has been a long time in the making having evolved out of work by Infrastructure NSW and the 2014 State Infrastructure Strategy, which soon led to State and Federally funded feasibility studies being initiated. Notwithstanding the projects current accelerated time lines, these projects must still pass through and meet all of the usual planning and government approval requirements,

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including all applicable legislative and statutory instruments, such as the water sharing plans. At present, WaterNSW, government and our government partners are in the process of investigating the projects and preparing to start early enabling works, as Dr Bentley mentioned, that are not directly associated with the main dam construction.

Finally, to inform our specific and tailored community engagement strategies and plans, throughout August and September this year we undertook a qualitative sentiment survey of over 800 people in the Lachlan and Peel River communities. On a positive note, I can report that early indications are that the projects do, in fact, have strong community support, with, for example, the Wyangala wall raising having an 84 per cent positive local community sentiment and the new Dungowan Dam, an 88 per cent positive local community sentiment. When specifically asked about the projects, 82 per cent of respondents supported Dungowan and 78 per cent of respondents supported Wyangala. I thank the Committee for the opportunity to discuss these projects and the work WaterNSW is doing on behalf of the New South Wales Government and communities of regional New South Wales.

The CHAIR: Mr George, you mentioned the infrastructure strategy. Let's keep to Wyangala to begin with. Which infrastructure strategy was that?

Mr GEORGE: Following the 2014 State Infrastructure Strategy developed by Infrastructure NSW, WaterNSW was funded by the Government to commence feasibility studies associated with improving water security in the Lachlan Valley.

The CHAIR: Has that feasibility study been completed?

Mr GEORGE: Yes, it was completed some years ago. That feasibility study is available on the WaterNSW website.

The CHAIR: What is the WaterNSW *20 Year Infrastructure Options Study*, completed in 2018?

Mr GEORGE: Quite separately, and as a utility like any other utility—Sydney Water or Hunter Water—we engage in levels of service discussions with our customers to identify the gaps between the services that we are able to provide and that they might desire. That consultation is a process that we need to undertake in forming our IPART pricing submissions for future periods. If we are to invest in assets to improve whatever it may be—water security, reliability, flow utilisation—that needs to be customer informed and those conversations need to be informed by relevant studies. I refer to our submission, where we do make a point of outlining the context of that strategy, the reason it was done and the purpose it was used for. It is important to note that it was not an infrastructure plan and it was not a funding strategy.

The CHAIR: It has been identified in a feasibility study; has it been identified in an options study, in terms of alternatives to raising the Wyangala Dam wall?

Mr GEORGE: The specific studies WaterNSW was funded to do by the New South Wales Government were looking at investment options to improve water security for the Lachlan Valley. Our *20 Year Infrastructure Options Study* referred to those earlier pieces of work that were funded by the New South Wales Government.

The CHAIR: Yes, the options study, which was completed in 2018, stated that it was not an adequate process to decide the Wyangala Dam expansion and instead stated that further investigation was needed, I think. Basically it states that the options identified in the strategy will need to be studied in more detail and will require major business case review before investment decisions can be made. Has that happened?

Mr GEORGE: That is what we are currently doing. That is the work that is now subject of our SOC Act direction.

The CHAIR: But investment decisions have happened before the business case?

Mr GEORGE: No, those investment decisions will be made once the business case is completed next year.

The CHAIR: What funding has been contributed to Wyangala Dam so far?

Mr GEORGE: Under our SOC Act direction, which I refer the Committee to, it is stated in that direction that WaterNSW is, to the extent it is able to, debt fund the work to undertake a final business case and the investigations and environmental impact statements to inform that decision.

The CHAIR: How much does it look like Wyangala Dam will cost?

Mr GEORGE: It is too early to answer that question, Chair. That work is still ongoing. We are still undertaking the design work; we are still undertaking the investigations. We are yet to engage with the

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construction market, which will contribute constructability input. That information will not be known until closer to the business case being finalised next year.

The CHAIR: There has been a public figure stated, though, is that correct?

Mr GEORGE: That is correct.

The CHAIR: How much is that?

Mr GEORGE: It is \$650 million.

The CHAIR: Have there been discussions internally about \$650 million in fact being far from what a dam and associated infrastructure and compulsory acquisition will actually cost?

Mr GEORGE: Of course, we are in a process at the moment to undertake those detailed studies and investigations.

The CHAIR: Have there been discussions that \$650 million is far from what the dam will actually cost?

Mr GEORGE: Those discussions are ongoing, absolutely.

The CHAIR: So there are discussions. Why was the loan not approved for Wyangala Dam? I understand that the Government tried to secure a loan for Wyangala Dam, is that correct?

Mr GEORGE: I will have to refer to Dr Bentley on these matters.

Mr BENTLEY: I have no knowledge of applying for a loan. We have a commitment from the Commonwealth, as I said before, for shared funding when the projects proceed through the later phases. WaterNSW, under the direction the Government provided to it, is debt-funding the business cases for all three dam projects—Wyangala, Dungowan and Mole River—but commitments have been announced in the Commonwealth budget for grant funding for a portion of those works. Chair, there may be some confusion, because at one point there was discussion about whether that was grant funding or loan funding from the Commonwealth. That may be where the "loan" question came into play. It is good news that that is now confirmed as grant funding, not loan funding.

The CHAIR: Just to get a sense of what this dam is and what it will do, it is raising the dam wall by 10 metres?

Mr BENTLEY: Yes.

The CHAIR: How many additional gigalitres will be held in Wyangala Dam as a result?

Mr GEORGE: It will add an extra 50 per cent or thereabouts to the storage capacity of Wyangala Dam, so an extra 650 gigalitres.

The CHAIR: Just to get a sense of what is before this Committee now, we have had a number of submissions that have used the figure of 770 gigalitres more to be held in storage from the Dungowan, Mole River, Wyangala and, I think, Macquarie River re-regulating storages in that as well. Is that the correct amount?

Mr BENTLEY: I have not added them up that way. Mr George, what is the Dungowan—

Ms LEVY: Dungowan is 22.5 gigalitres, and there is still options work being done on Mole River with a range of options for circa 100 gigalitres-plus. I do not know about the Macquarie re-reg figures.

Mr BENTLEY: It does not sound like it is a million miles away if it is 650 gigalitres for Wyangala and in the 20s for Dungowan.

The CHAIR: That is a lot of water to potentially take out of the system. As everybody says, new dams do not mean more water into the system—

Mr BENTLEY: No.

The CHAIR: —and new dams will not make it rain.

Mr BENTLEY: Correct.

The CHAIR: How does WaterNSW propose to continue to meet the Murray-Darling Basin commitments with an additional 770 gigalitres captured, if you like, by these storages?

Mr BENTLEY: We will still operate within the cap. The cap is a long-term average. What the additional storage will do—particularly in the Lachlan, where it is often the case that irrigators do not have confidence to take all of the water that may be available to them, because they are concerned that if they plant now they may

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not be able to irrigate later, as it were. By having more held storage there is the ability for there to be greater certainty in more years. It does not increase the amount of water that can be taken; it just provides greater certainty for a greater number of years for the same amount of water take.

The cap is still the cap and that does not change. It is certainty about this year and next year, as it were: certainty for a number of years as opposed to a greater overall amount of water. What it does do, particularly if you look at Dungowan, is significantly increase the ability of Dungowan to have town water—I think we are talking about seven gigalitres there for Dungowan is the additional capacity that could be available for town water. As they take a lot less than their licence, then Tamworth could have access to significantly more water as Tamworth grows. But again, the cap does not get exceeded.

The CHAIR: We could ask the same questions for almost every project, but I will stick to Wyangala to begin with. What is the stated purpose for raising the dam wall in this instance?

Mr GEORGE: I think perhaps the best reference, Chair, is to refer to the Minister's covering letter to our SOC Act direction where the reasons for undertaking this work are referred to.

The CHAIR: Do you mean the statement of reasons tabled in the Legislative Assembly or the direction to the board of WaterNSW?

Mr GEORGE: Correct.

The CHAIR: The direction to the board of WaterNSW, which was tabled in the Legislative Assembly on, I think, 13 May.

Mr GEORGE: That sounds about right.

The CHAIR: It states that you have to submit your final business case by July 2021. It does not state the reasons for it in here, though. Do you have the purpose for who the end users are and the purpose of raising the dam wall by 10 metres? I understand that this Committee will meet with landholders affected. You will compulsorily acquire land. Many downstream users are obviously very concerned about their flood plains and wetlands no longer receiving water. People are concerned about this extraordinarily expensive project—who is going to pay for it in the end, how expensive this water is going to be per gigalitre. There is lots of concern. I am just trying to get what the purpose is of the dam wall-raising and who the end users are going to be.

Ms LEVY: The purpose is on a number of levels. It is about improving drought security, flood management and water reliability. Those benefits are to benefit a number of water uses and community members, and the business case is working through the quantification of those benefits across each of those broad objectives as we are developing the business case.

Mr BENTLEY: Just to refer you as well, Chair, back to what I said at the beginning when it comes to what the cost of this is going to be to the water user—a good chunk of the cost of these projects is being provided by grant from the Commonwealth. Yes, they are expensive projects because these are big, long-term, security-providing infrastructure projects, but a good chunk of funding to the tune of several hundred millions of dollars is being provided by the Commonwealth as grant. So, not all of the cost of this is relevant to the equation of price, as it were. As we complete further impact studies and business cases we will also complete the work around funding strategies and financing strategies and so on. It is early in the piece to be giving details on those things, but the significant thing is that we do have that grant funding.

Ms LEVY: And \$567 million is the figure.

The CHAIR: Have any of you been in a room with the National Party water Minister Melinda Pavey when she has said that if anyone present—if building dams is not their priority they should vacate the room immediately?

Mr BENTLEY: That is not quite what she said. I was chairing the meeting that I think you are referring to. She was making a statement to officials along the lines of—and if you look at what we have been implementing through this drought with water recycling schemes, stormwater harvesting schemes and leakage work from Sydney Water and Hunter Water and so on, in the context of the wide range of things that we are looking at, dams are one of those options that we need to be looking at. And so, that statement was made in that wider context of—we have got to look at the full range of options. Yes, I was present for the meeting that I believe you are referring to.

The CHAIR: So, the Minister also said, "We need to look at all options. So, therefore, for Wyangala could you please explore all options and come back to be with all of the alternatives, including water recycling, irrigation efficiencies and dams." Is that what you mean?

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Mr BENTLEY: No. I am saying she made a general statement. It was not particular to a particular project. It was a general statement, which I think was quite reasonable. I have heard her say—and I have said in several conferences myself—that we have to look at the full water cycle. That is sometimes investing in security and it is sometimes investing in efficiency. She was simply saying as a general statement that we need to look at dams, as well as other things. In the case of all options—your question you referred to before about Wyangala and the other options—the Lachlan Regional Water Strategy has many, many options written in it.

And so, there is no suggestion because Wyangala Dam goes ahead that you do not also take ahead other options in that Lachlan Regional Water Strategy. That was put on public exhibition, I believe I am right in saying, during October. And so, our team have been engaging with community members and other stakeholders around the very long list of options in the regional water strategies. All of the regional water strategies have very long lists of options that cover much more than bulk infrastructure in terms of the options that we are consulting with communities on. Several of those regional water strategies are on public exhibition as we speak and the remainder will be on public exhibition during the first half of next year.

The CHAIR: Okay. I am not telling anybody anything they do not know, in fact, because this is an article from the National Party's own website, I understand, from 10 October last year, "Water Minister Cracks The Whip On Bureaucrats":

Melinda Pavey has told public servants that if building dams was not their priority then they should "vacate the room immediately".

And then, she said:

"If you're not interested in building dams and water infrastructure then I suggest you vacate this room immediately," ...

Did anybody vacate the room?

Mr BENTLEY: No.

The CHAIR: Has anybody left the department in relation to the dams instruction?

Mr BENTLEY: Did you say "left the department"?

The CHAIR: Yes. Senior bureaucrats as a result of that—

Mr BENTLEY: Not to my knowledge. Certainly anyone who has left has never said to me that that would be any particular reason why they were leaving.

The CHAIR: It certainly looks like these are all systems go even though there is an "approvals process", because there is already, as we understand—along the Wyangala Dam, the Wyangala Reflections Holiday Park is already being relocated. People have been approached—

Mr BENTLEY: No. That is not the case.

The CHAIR: It is in the process?

Mr BENTLEY: It was one of the considerations for early works but we have decided that that does not need to be addressed at the moment. In my opening remarks I did mention that there has been some confusion about that and it is understandable confusion.

The CHAIR: Were they told that they were going to move at some stage? Was that the confusion?

Mr BENTLEY: We were considering whether that was an appropriate set of early works. In the case of Dungowan it is the pipeline that I talked about, which has to be done whether the dam is changed or not. In the case of Wyangala it is their water treatment plant. Do you want to talk to that, Ms Levy?

Ms LEVY: Yes. So, there is a small piece of work around an upgrade to a water treatment plant that will provide improvements for both Wyangala Waters Reflections Holiday Park and general community members by way of an upgrade. That work is proposed to proceed before the end of this year—certainly, in terms of awarding a contract for that work, before the end of this year. We consider that to be "no regrets" work. It is work that will benefit the communities regardless of a dam or not. Similarly for the Dungowan pipeline, it is the first stage of the pipeline work, which is only the section that we would consider again to be "no regrets" work. It is the section that connects from the town to the point at which the Chaffey pipeline connects in. That is the piece of the pipeline that is aged and requires upgrade. So, that is the piece of work there.

There is consideration being given to the relocation of the Wyangala Waters holiday park but there is further work to be done before final decisions are taken on that. It certainly is not something that we are continuing to plan to do this year. We will continue to do further work to identify that. There is a master plan for the Wyangala Waters Reflections Holiday Park for an upgrade to the park. If they were going to do that master plan we would consider it inappropriate that they upgraded their holiday park in a location that has the potential to be impacted

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by a dam. If that master plan were to proceed it would make sense for it to proceed in a new location as opposed to a location that, if the Government proceeds with a decision to build the dam, would be impacted. So, we are deferring the decision on that work until further work on the business case has been done to identify the impact that the inundation area would have, based on updated modelling work that is being undertaken and also providing other inputs into the business case.

The CHAIR: Thank you. I am just going back to the level of support or otherwise within the department, particularly amongst senior bureaucrats. Let us go back to the Wyangala Dam wall-raising. You suggested, Mr Bentley, that the senior public servants—there was not any disgruntlement and people did not leave as a result of that. I do understand that several senior public servants did speak out against the rationale for raising Wyangala Dam wall with the Minister. Are you aware of that?

Mr BENTLEY: Are you talking about in that meeting?

The CHAIR: I understand it was a very early briefing for the Minister.

Mr BENTLEY: Not in that meeting that you are referring to.

The CHAIR: I do understand that there have been people that have left. Rachel Connell, I understand, was very upset about the Wyangala Dam wall-raising. Are you aware of that position moving over to a different position outside of the department?

Mr BENTLEY: I do not want to talk about whatever Rachel Connell may have said to me about her reasons for leaving. But I can say to you is that she gave me very positive reasons for leaving and she has moved over to a position in the Commonwealth Government. She did not express to me anything about her reasons for leaving that were in any way related to any of the projects we have been talking about.

The CHAIR: Okay. Let us go to the Government, Mr Franklin, and also can I just say to Mr Mallard and Ms Cusack just text me if you wish to ask questions.

The Hon. BEN FRANKLIN: Thank you all for being here today to talk about these incredibly exciting projects that are going to be critical for the long-term water security and infrastructure of New South Wales. Can I start, Mr Bentley, with some comments you made about the draft regional water strategies particularly for the Gwydir, Macquarie and Lachlan? Can you start by speaking to how climate modelling in those water strategies have impacted on water security and, holistically, the need for additional storage in regional New South Wales?

Mr BENTLEY: Sorry, could you repeat the question?

The Hon. BEN FRANKLIN: Obviously, the Government has released draft water strategies, as you discussed, for the Gwydir, Macquarie and Lachlan. How has climate modelling in those strategies impacted on water security because this is obviously a fundamental focus of this Committee under the terms of reference and so forth? I am wondering if you can make the link between that and the need for additional water storage?

Mr BENTLEY: Certainly. The way the regional water strategies work is I think in some regards groundbreaking. In the past we have looked at 130 years worth of climate data that has been on record. What has happened in the regional water strategies work is we have gone back through paleo climate work to thousands of years of data and also in state of the art climate modelling, which has been reviewed very positively by the Chief Scientist's office. We are projecting forward into the future and for each of the valleys, we are able to show what the forecast of changing climate scenario is. That is being built directly into the considerations in those regional water strategies.

If we are to have periods where there is increased rainfall and periods where there is less rainfall, it is not a ridiculous assertion from that to say that being able to store more water when it rains so you have more security for when it does not, has some benefit. So that climate modelling that you refer to has been very useful in being able to pull together those list of options but I would stress that those options are in front of the public as it is on exhibition now and we are taking feedback on them as we speak.

The Hon. BEN FRANKLIN: The Chair mentioned environmental flows being an important component in terms of this issue and preserving our river systems and ecosystems that depend on them. Can you speak—and these questions are open to any of the three of you—to how dams are utilised to manage environmental flows? There is a lot of contention made in this space about the fact that dams must have a negative impact on managing river systems. But could you speak to the alternate side and any views you have about how they could have a positive impact?

Mr BENTLEY: I might just make a general comment and then ask Mr George to talk about how WaterNSW actually do that. Held environmental water is held under licence in the same way as any other form of licensed water. If the water is not available because there is not stored water to use then obviously the licence

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holder, whether it is the State or the Commonwealth Government, is unable to use the held environmental water because it is not there. So as with any other general or high security licence holder, the environmental water holders require us to have water available for them to use. So there is a contribution that storing water has to our ability to provide environmental water but I might refer to Mr George.

The Hon. BEN FRANKLIN: Thanks, Mr Bentley.

Mr GEORGE: Thank you. Further to Dr Bentley's comments, quite simply there are two categories of environmental water. Planned environmental water is rules-based water and it is baked into the water sharing plans. It must be protected under the basin plan so irrespective of the size of infrastructure, that water is for the environment and must be provided. As the operator we must comply with those rules. By way of example, we have had some terrific rain over the Central West over the last week, as you may be aware.

The Hon. BEN FRANKLIN: I have much welcomed it.

Mr GEORGE: It is indeed very welcome. Under that planned environmental water use, we are today releasing 7,000 megalitres of water down the system according to those rules. We work very closely with both of our environmental water holders, as Dr Bentley referred to, the held environmental water. We work closely with them to target releases to meet their environmental plans and objectives and outcomes. So to the extent that there is improved water security or reliability in the system for all licence holders and the environmental water holder also benefits from that increased security and reliability that comes with their licensed water, recognising that that planned environmental water is protected.

The Hon. BEN FRANKLIN: Can I go to a specific issue in terms of the new re-regulating weir at Gin Gin and ask with regard to fish health and river health more generally, how will that weir assist with fish migration and river health?

Mr GEORGE: Thank you for the question, it is a good one. There is an existing barrier to fish passage, the existing Gin Gin Weir which is over 100 years old. It is structurally deficient, it was impacted severely by floods many years ago. The new structure that is being proposed is a structure that includes fish passage, it includes a lot of the latest science and thinking around improving river health as well as meeting objectives for greater flexibility in operating the river. Things like LayFlat gates to enable fish passage downstream. LayFlat gates have been demonstrated to enable the safe passage of fish through structures. The actual fishway itself enables fish passage upstream and my understanding is—and I am happy to come back with more detail—that we will be opening up over 100 kilometres of river that has been a barrier to fish passage for over 100 years. We are thinking about the development of this infrastructure in the way we go about developing infrastructure a lot different to the way we did the 1960s and 1970s. The environmental outcomes are at the forefront of our mind and that project is a terrific example of how we are meeting all of the competing interests.

The Hon. BEN FRANKLIN: You spoke briefly at the beginning of your answer about the current state of the weir and its deleterious nature. Could you speak a little more to that? Why does it need very significant work if not replacing?

Mr GEORGE: As it stands it is a fixed crest weir so it is unable to pass any flows. It was damaged by floods many years ago, I do not have the exact date, which puts it in a structurally deleterious state so we would need to do work anyway on that structure to make it safe before any further damage occurs—so we have to replace it. In replacing that structure, that is why we are proposing the project we are, so that as part of the project to build a new structure—a gated structure—we will be decommissioning the old structure so that there is no further barrier to fish in that section of the river.

The Hon. BEN FRANKLIN: How many fixed crested weirs do we have in the New South Wales section of the Murray-Darling basin?

Mr GEORGE: My understanding is that there are something like more than 2,500 barriers to fish passage in the New South Wales section of—

The Hon. BEN FRANKLIN: And they do not have working fishways?

Mr GEORGE: No, that is correct—not all of them. They are the barriers to fish passage. From memory, roughly 160 barriers on the main rivers, the regulated rivers, and approximately 77 of those are owned and operated by WaterNSW. So we have done some work with, under a ministerial task force that was established a number of years ago, Fisheries NSW to develop a Statewide strategy for improving fish passage around the State, by either removing these barriers to fish passage or in fact building fishways themselves to open up the river network.

The Hon. BEN FRANKLIN: How many of them are gated structures that can regulate the flows?

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Mr GEORGE: I do not have that number.

The Hon. BEN FRANKLIN: Can you take that on notice?

Mr GEORGE: I can certainly take that on notice.

The Hon. BEN FRANKLIN: That would be great. Are New South Wales authorities building similar weirs as the Gin Gin at Wilcannia on the Darling River and in the Toorale National Park on the Warrego River?

Mr GEORGE: I can certainly talk to another project that is underway, subject to the terms of reference of this Committee—the Far West weirs strategy. That is a feasibility study underway to look at replacing or removing the fixed crested weirs—the barriers to fish passage that exist up and down the Barwon-Darling and the lower Darling River, which are very similar to the Macquarie re-regulating structure. The concept there is that those structures would be replaced with gated structures with fish ways to improve the river health, enable WaterNSW as the river operator to manage low-flow events rather than having these weir pools having to fill up first before water can then travel further downstream, and open up the entire river to fish passage, which was an identified priority in the ministerial task force that we participated in. There are a large number of structures in that section of the river, you are correct.

The Hon. BEN FRANKLIN: How will they be operated? Can you speak to that in more depth?

Mr GEORGE: The actual operating principles and rules are still to be determined as part of the feasibility study.

The Hon. BEN FRANKLIN: The business case, yes.

Mr GEORGE: But it is consistent with the active management principles that are now in place for that part of the system.

The Hon. BEN FRANKLIN: Will the new weir in the Toorale National Park be operated by WaterNSW?

Mr GEORGE: It is too early to answer that question.

The Hon. BEN FRANKLIN: Could you say whether it could be used to maintain connectivity between new weirs at Toorale and the Warrego River?

Mr GEORGE: I would have to take that on notice.

The Hon. BEN FRANKLIN: It might have been Mr Bentley who raised the issue of public consultation. I noticed the media release that came through this morning too, entitled "Governments' regional dam projects backed by local communities". This is on the Wyangala and Dungowan dam projects in particular. I was obviously interested and heartened at that. Could you or somebody speak to how much community consultation WaterNSW has undertaken? What are the structures that you have done? Because, obviously, consultation and community engagement is critical. What either objective or even potentially subjective responses have you had in terms of what people are saying on the ground?

Mr BENTLEY: I am going to ask Mr George to speak to what WaterNSW has been doing. The consultation data referred to there has come from WaterNSW's work. I will just say that, in addition to that, my team are currently consulting on the regional water strategy for the Lachlan. We are gathering data from that engagement exercise as we speak. That has that long list of options that we referred to earlier.

The Hon. BEN FRANKLIN: Will that be released publicly?

Mr BENTLEY: Yes.

The Hon. BEN FRANKLIN: When will that be?

Mr BENTLEY: I would have to take on notice the exact dates around that, but we are in the exhibition phase at the moment on those particular strategies. Mr George will speak to the detailed consultation that we have been doing.

Mr GEORGE: Sure. Our approach to date has been direct consultation with individuals and organisations. To give you some statistics and perhaps paint the picture, for the Wyangala project we have held 10 community events so far. To date we have 11 registered Aboriginal parties, who we have been engaging with intensively and continue to engage with. We have held 59 individual stakeholder briefings and 83 face-to-face landholder meetings. We have had 269 local businesses register their interest in participating in the project and 11 of those have been engaged directly so far. Similarly for the Dungowan project six community events have been held so far. We have had 14 registered Aboriginal parties, nine stakeholder briefings, 96 face-to-face

CORRECTED

landholder meetings and 211 local businesses have registered their interest to participate in that project with 10 being directly engaged to date. On the Mole River project, which is obviously slightly different because we are proceeding with the final business case only at this stage, 41 Aboriginal parties have registered for that project. Four stakeholder briefings and two face-to-face landholder meetings have occurred to date. We are engaging with at least eight local businesses to be involved in the project.

The Hon. BEN FRANKLIN: What are your plans on consultation into the future?

Mr GEORGE: Continued consultation. The information I presented in my opening statement this morning to get that stakeholder sentiment feedback and input was to inform our stakeholder engagement strategy and plans, so consultation is only going to ramp up further. Obviously we have been somewhat restricted due to the COVID-19 restrictions we have had on us the last few months. But as these projects proceed that engagement will ramp up further, particularly as more work is undertaken on our investigations and studies and particularly with the EIS. The more information we have available to both inform the studies and seek feedback from the community, in particular from the Aboriginal parties, the better. It is an opportunity for anyone listening who has not been engaged in the project and is looking to be engaged. The more, the merrier. We ask everybody who is interested to please register their interest on our website and get in contact.

The Hon. BEN FRANKLIN: What would that website address be, Mr George?

Mr GEORGE: It is waterNSW.com.au.

The Hon. BEN FRANKLIN: There you go. Mr Bentley, could I move back to something that you said in your opening statement about concerns raised in a number of the submissions on early works? There was an assumption that that meant that all of the appropriate processes were not being observed. Could you put on the record at the beginning of this inquiry what the appropriate processes are that are in fact being observed even under the caveats that you raised?

Mr BENTLEY: I am very happy to do so, but I think Ms Levy is probably better placed than I.

The Hon. BEN FRANKLIN: Sure.

Ms LEVY: For the main works construction and the critical State significant infrastructure projects—the three dams are listed under that as is the weir project—they will have to go through the full EIS approvals process. They have already been issued the Secretary's environmental assessment requirements [SEARs]. Those are listed on the Department of Planning, Industry and Environment's website for the process that has to be followed in the preparation of the EIS. Those full SEARs will have to be adhered to and the normal EIS approval process will pertain to those projects. For the early works projects, they are potentially being excised from the scope of works that are listed under the Water Supply (Critical Needs) Act. Then they would be subject to a review of environmental factors approvals process for those separate environmental approvals processes for the early works packages separate to the full EIS, which would be for the main construction works. In parallel to that there is the business case development and the Government investment decision that would be taken by the Government at some point next year.

Mr BENTLEY: I add that one of the reasons that the Secretary and I took the decision to form Water Infrastructure NSW within the department is so that we have this kind of oversight of all of those processes. Someone of Ms Levy's experience in all of that is invaluable to us in ensuring that we have all of these assessments done right, in the right time, in the right order, in the right way and so on. I think that demonstrates our commitment to ensuring that we carry out these processes properly.

The Hon. BEN FRANKLIN: To pick up the comment about the business case, the Chair mentioned some figures that had been suggested or floated around in the media and so on. To me it would seem that the financial impost and costs and so forth can really only be ascertained once the final business case has been, well, finalised. Could you speak to that a little?

Ms LEVY: Absolutely. There are a number of factors that go into that: the main works construction costs, which need to be informed by input from the construction sector, as well as the completion of final designs. That work has not proceeded yet. The estimates that were talked about were based on very preliminary—the roughest level of estimates that you would have at that point in time. Work is being done now to ascertain what the scope of the works would be and what that final design for that would be, getting construction sector input into developing those costs. We also have to look at what the environmental impacts are, what the costs of mitigating or avoiding those environmental impacts are and what costs may be associated with biodiversity offsets requirements. The cost of land acquisition is informed by modelling work that identifies potential inundation areas. All of this work is still proceeding. There is still modelling work being done. There is still design and scope work being done. All of these factors play into the costs that form part of the business case as well as the benefit

CORRECTED

side of the equation. They would have to be worked through before the Government can take that investment decision.

The Hon. BEN FRANKLIN: One final question from me: Why are dams important? This is the nub of the whole thing, right? What happens if there are no dams?

Mr BENTLEY: If there are no dams and you have higher rainfall periods and lower rainfall periods, you will have periods where, or the presence of dams means you can maintain the connectivity of the system for longer, because you can manage the held environmental water and so on. With dams you are able to provide confidence to people to be able to take water when it is available because they can see that they are likely to have it available later on as well. You are able to give more security to towns and you are able to maintain the connectivity of the system for longer.

The CHAIR: Thankfully we do have a lot of dams in New South Wales.

The Hon. PENNY SHARPE: I want to confirm a couple of things. The package for these dam projects is being notionally about \$1 billion I understand. You have indicated that the grants from the Commonwealth are around \$537 million. Is that correct?

Ms LEVY: I am just checking that figure, Ms Sharpe. It was \$567 million, is the contribution from the—

The Hon. PENNY SHARPE: It was \$567, thank you. The balance of the \$1 billion indicated in your submission is coming from the State. Is that correct?

Ms LEVY: That is yet to be determined. That has to go through the final business case, and the decision about the source of funding is yet to be taken.

The Hon. PENNY SHARPE: It is not allocated yet. The only money that has been allocated from the State is this early planning money. Is that correct?

Ms LEVY: At the direction of the Minister, WaterNSW has been directed to fund the early works, pre-construction and business case development phase of the three dam projects.

Mr BENTLEY: And that is \$245 million, so it is not an insignificant amount.

The Hon. PENNY SHARPE: That is right, and that is being done by debt. Is that correct?

Mr BENTLEY: Through WaterNSW, yes.

The Hon. PENNY SHARPE: Which goes to my next questions. You have been at pains to say in your submission and today that you are doing this under the direction given by the Minister in relation to all these projects. Presumably WaterNSW works on its own plans. Can you tell me what the divergence is in relation to what New South Wales would be doing, rather than what it is being directed to do by the Minister?

Mr BENTLEY: I might speak to that initially and then if Mr George wants to add anything he can do so. Of the three water State-owned corporations that we have, WaterNSW's situation is somewhat different to the other two, in that Sydney Water and Hunter Water, if you like the way I think of it is they manage their own closed system, where they own the assets within their system and they bill their customers for just about all of the repayment of any debt they have for providing those assets. WaterNSW's system is quite different, because clearly they are not operating in a closed system where they own it all, they do not own the river system and so on and so forth. And also, as the State's river operator and dam operator, there are often investments that the Government requires WaterNSW to undertake that on a pure SOC model, as it were, there would not be a simple cost recovery model, and therefore WaterNSW requires a direction from Government to proceed with that work. It does not imply that WaterNSW does not agree with what Government is trying to do, WaterNSW needs that direction to be able to access funding for things which would not fall naturally within their, sort of commercial remit as a SOC, as it were.

The Hon. PENNY SHARPE: Is that the case for all of the directions that you have received?

Mr GEORGE: In relation to these three dam projects?

The Hon. PENNY SHARPE: All five, all the others? You have a mixture. You have had directions on three. Is that correct?

Mr GEORGE: We have received a direction in relation to the three dams, correct. The other projects we have received, we are undertaking via funding agreements, not a direction.

CORRECTED

The Hon. PENNY SHARPE: Can you explain to me the difference? Why are some funded? Is that because it falls outside the IPART and the cost recovery of fines?

Mr GEORGE: Funding agreements, yes. They are not regulated by IPART. If you will that is the department entering into a funding agreement with WaterNSW as a SOC to undertake services for a fee.

The Hon. PENNY SHARPE: How does that fit with your own internal planning around the priority for water infrastructure projects?

Mr GEORGE: Quite simply the primary objective of WaterNSW is to maintain our existing assets to ensure we are delivering on the levels of service for our customers meeting their future needs. There is often times when we need to replace assets, or build new assets and there is a conversation that occurs when, if you like, the gap between the service need and what is required to be replaced is obviously something that the Government might show an interest in stepping in to investigate further because of the significant cost of that infrastructure. Spending a couple of million dollars on replacing an asset may not be a controversial activity as part of WaterNSW asset management planning process. Investing a couple of billion dollars, however, is obviously quite a different proposition and requires the support of multiple governments, particularly for working on the Murray River Basin.

The Hon. PENNY SHARPE: Given the priority that has been given by this Government to these projects, are there other projects that you believe that are not going to be done—I am sure you have got capacity constraints, this is a very ambitious program on the timing that has been given—are there other projects for replacement upkeep of your current assets that are going to have to fall down the list of priority?

Mr GEORGE: No. Our current asset plans are before IPART as part of our regulated pricing submissions. That proposal is put forward in full knowledge of the debt funding arrangements that we have in place to fund this work we are doing for the dams under our SOC Act direction. All of that has been contemplated within our financial plan that is currently before IPART.

The Hon. PENNY SHARPE: I ask you specifically about the Wilcannia Weir project. There has been quite a lot of work done. What is the current status of that?

Mr GEORGE: Thank you for the question. That planning is still underway. We went back into the field in October to recommence our studies and investigations around the environmental studies, the cultural heritage impact studies and further engagement with the local community. We are on track to complete that work, again by early to mid next year with that business case, the work starting, rather.

The Hon. PENNY SHARPE: Stage one has been completed. That is right? You are talking about stage two?

Mr GEORGE: Sorry, you may have to remind me what stage one and stage two are that you are referring to.

The Hon. PENNY SHARPE: I am just looking at the website. There is a media release from July 2019 from Ms Pavey. It basically says that the Government is pleased that stage one has been completed. It then says, this is July last year, that WaterNSW is now commencing stage two, being design and environmental assessment.

Mr GEORGE: That is correct.

The Hon. PENNY SHARPE: Has stage two been completed?

Mr GEORGE: No, we are in the middle of completing stage two.

The Hon. PENNY SHARPE: What is the time frame for completion of stage two?

Mr GEORGE: I should take that on notice to confirm, but I believe it is the middle of next year.

The Hon. PENNY SHARPE: First of all, is the funding there for the actual construction of the project, and what is the time frame for final completion?

Mr GEORGE: I have to take that on notice.

The Hon. PENNY SHARPE: I have a question for you, Ms Levy. I am trying to understand the interaction between the Commonwealth environmental impacts on projects and how that will be overseen. I am particularly interested in the Macquarie projects, the Macquarie Marshes and Ramsar. I am also interested in the wetlands management and who, other than the water Minister in New South Wales—whether there is oversight concurrence or other approvals that are required from the environment Minister when looking at those projects.

CORRECTED

Ms LEVY: Thank you, Ms Sharpe. Under the environmental assessment process, the project is listed as a controlled action under the Environment Protection and Biodiversity Conservation [EPBC] Act due to those matters that you talked about for Macquarie re-reg—the Ramsar wetlands being impacted.

The Hon. PENNY SHARPE: It is also for Mole River, too, is it not?

Ms LEVY: That is right. So all of the projects are actually listed as controlled actions—all of the three dams and Macquarie re-reg projects—which means that they will be assessed under the bilateral agreement between the New South Wales and Commonwealth governments for a single approvals process where those works are done in parallel by the Commonwealth and the State. Obviously both need to provide approvals, but it is one set of information provided through to the Commonwealth and the State approvals processes for approvals. But we need to get both EPBC approval and EIS approval through the State Government.

The Hon. PENNY SHARPE: Sure. So what is the role of the New South Wales environment Minister in relation to that?

Ms LEVY: I believe that the New South Wales environment Minister provides input into the SEARS—the Environment department, I should say, provides input into the assessment of the project. I do not believe he has concurrence, but I might take that on notice, Ms Sharpe. I do not think there is any concurrence activity there.

The Hon. PENNY SHARPE: If you could. I am particularly interested in the New South Wales wetlands policy and what sort of level of oversight and sign-off is required. Given the Ramsar and very important status of the Macquarie Marshes, I am very keen to understand what sort of environmental oversight there is in protection of that.

Ms LEVY: Mr George may be able to answer that, but if not we will take it on notice.

Mr GEORGE: Yes, we will take it on notice.

The Hon. MARK BUTTIGIEG: Any of you are free to address my question. There were some smaller infrastructure projects that you touched on before which I think the Minister refers to as "pre-construction works", and that you have now described as "no regrets works". Can anybody clarify or confirm that none of those currently underway are not directly linked to the dam wall construction at either Wyangala or Dungowan?

Ms LEVY: Those works are not underway. There are no pre-construction works underway at the moment.

The Hon. MARK BUTTIGIEG: Okay, but are those pre-construction works in any way directly related to the works on the dams themselves?

Ms LEVY: The water treatment facility at Wyangala would not be considered a fundamental requirement of the dam and is of benefit to the community regardless. Similarly, the pipeline extension work is replacement of an existing aged asset, so we do consider that to be no regrets works. As I said earlier, the Wyangala Waters relocation—there is a planned master plan for an upgrade to the park and the impact of the dam would result in potential inundation of that park, so the relocation is connected to the dam works but we are ensuring that we understand what those impacts would be before any works are undertaken. In ensuring we do that, it would be a terrible outcome if an upgrade to the park were to occur in an existing location and then the dam were to proceed and we would have to relocate an upgraded park. Those factors are both being played into consideration as we consider the works for the relocation of Wyangala Waters.

The Hon. MARK BUTTIGIEG: Okay, and these no regrets works, are they fully funded within the global budget allocation for these dam projects or are they externally funded from outside those budget allocations?

Ms LEVY: The component that would be considered early works is funded out of WaterNSW's funding of \$287 million—

Mr BENTLEY: It is 245.

Ms LEVY: That is with the two parts to it.

Mr BENTLEY: Yes, it is being funded out of the same package under the direction that WaterNSW received.

The Hon. MARK BUTTIGIEG: So within that budget allocation for those dam projects.

Mr BENTLEY: Yes.

The Hon. MARK BUTTIGIEG: What was that global amount for the no regret works?

CORRECTED

Mr BENTLEY: Those early works is 245 and the business case is for those projects. I think we have a breakdown of the early works.

The Hon. MARK BUTTIGIEG: Do you have a breakdown between the no regrets and the business case?

Mr BENTLEY: I might ask my colleagues to look that up. We will confirm that before we conclude, if that is okay.

The Hon. MARK BUTTIGIEG: In regard to the new dam walls that are being built or heightened—you have touched on this already—how will the capture and hold of that water be treated under the Murray-Darling Basin Plan?

Mr BENTLEY: Well, it has to fall within the cap. We cannot exceed the cap. We will not be exceeding the cap.

The Hon. MARK BUTTIGIEG: The implication is that they will be diverting more water than currently and therefore will need to be accounted for under the Murray-Darling Basin Plan and the model of sustainable diversion limits [SDLs] that are in place. Who is going to lose access to that water as a result of the works?

Mr BENTLEY: We will not be taking any more water. We will be storing water at times when there is more rainfall so that there is water available for people when there is less rainfall.

The Hon. MARK BUTTIGIEG: But no diversions?

Mr BENTLEY: There is no exceedance of that cap so the SDLs do not change. We have to look at the water sharing plan rules and make sure that they are all in conformity, but the fundamental point is that we do not exceed the cap. We cannot exceed the cap.

The Hon. MARK BUTTIGIEG: My understanding is that these assets that you will be building will need to be depreciated over a 200-year period and approximately \$2.5 million per year will need to be recovered from the Tamworth and surrounding community and approximately \$3 million per year from the Lachlan customer base. Are those figures accurate?

Mr BENTLEY: I have not heard the 200-year depreciation period. That does not mean it is not accurate. What I can say is that we have not completed the work of understanding because that gets done as we get further down the business case. We have not completed the funding plan and the repayment plan that goes with that, and WaterNSW's prices to its rural customers are regulated and set by IPART, not by WaterNSW and not by the Government, so there will be an independent process for determining what prices that WaterNSW can charge to its customers. So, I cannot answer your question as to what additional money will be paid by whom. What I can say is, as I said before, there is more than \$500 million of grant funding coming into these projects and as we complete the business case we will do a funding review and ensure we understand the financing plan.

The Hon. MARK BUTTIGIEG: So I take from that answer that there has not been a discussion, dialogue or consultation with customers, towns and irrigators as to how much they will need to pay for this water delivery as a result of that inevitable depreciation which is going to happen.

Mr BENTLEY: I think that is correct. Mr George?

Mr GEORGE: Yes, that is correct.

Mr BENTLEY: On the basis that it is too early.

The Hon. MARK BUTTIGIEG: On the earlier points of the interaction between the Minister and the department, I imagine how these things would normally operate would be that the subject matter expertise within the department would make an assessment about what is required given impending drought conditions or rainfall or whatever and then you go to the Minister, make representations and say, "X, y, z needs to be done". It sounds very much like the Minister said this is going to happen and then you have given her a range of projects which may facilitate what appears to be political will. Would that be a fair assessment?

Mr BENTLEY: It is not the assessment I would put on it. What I would point to is what Mr George said before that following the State Infrastructure Strategy that Infrastructure NSW put in place, WaterNSW undertook a number of studies going back as far as 2014. So there have been years of studies into these projects and valleys, and I think the WaterNSW submission draws attention to a number of those.

CORRECTED

The Hon. MARK BUTTIGIEG: Would it be fair to say that those things were kind of on the rack and ready to go in terms of forward planning but the Minister has given it impetus to bring forward as a result of the conversation going on in the community post-drought?

Mr BENTLEY: It would be fair to say that the Minister supports these projects, but that is based on the data that she has available to her from years of analysis that has been carried out by WaterNSW. When the Water Supply Critical Needs Act passed through Parliament it was agreed to include these three projects under schedule 3 as critical State significant infrastructure projects. Parliament decided to include those things under schedule 3 is my understanding.

The Hon. MARK BUTTIGIEG: I think some of the data in one of the submissions might have touched on this, but I just want to tease it out a bit. In retrospect, had those higher dam levels for the projects that we are considering in the terms of reference been in existence over that past drought period, would it have forestalled any of the deleterious effects of the drought that we had had those things been in place 10 years ago, for example?

Mr GEORGE: I think logically that that stands to reason. In this recent drought we have had to implement a number of emergency drought supply measures to extend surface water supplies. In 2016 we had significant flooding, particularly in the Lachlan Valley. There was over \$500 million worth of economic damage to the agricultural sector alone. If that additional water was available to avoid the economic impacts of flooding the towns of Forbes and Condobolin downstream, that water would have been available for supply to not only the towns and the critical human needs that relied on surface water supplies but also the environment.

The Hon. MARK BUTTIGIEG: Can I just ask a quick follow-up question?

The CHAIR: We have got three minutes left and the Hon. Mark Pearson has not asked any questions yet.

The Hon. MARK PEARSON: If after all of the consultation in relation to the potential environmental impact and impact on cultural values—considering the aggressive determination of this Minister for these projects to go ahead—you come to the conclusion that one or two or all of them cannot go ahead, what is plan B?

Mr BENTLEY: As I said before, some of the regional water strategies have 50 options within the longlist. It is not about doing these and not doing anything else. There is a whole range of potential solutions—

The Hon. MARK PEARSON: Yes, but my question is: What would be the case if, after the consultation, you come to the conclusion it is better not to go ahead with this project. For example, the Wyangala Dam raising-the-wall project: Let us say the conclusion is, "We should not go ahead with this because of (a), (b) and (c) reasons". With the Minister's determination she has very clearly stated, what do you think will be plan B?

Mr BENTLEY: Maybe I will ask Ms Levy to speak to this, because it is not as if I will come to a conclusion as to whether something should go ahead or not; that is not the role that I fulfil. But maybe Ms Levy can speak to—

Ms LEVY: The role of making those decisions is two-part. There is an environmental approval, which is a matter for the Secretary of the Department of Planning, Industry and Environment, the planning Minister and the Commonwealth Government, in terms of the EPBC approval. That would take into account the environmental impacts as part of that approvals process. Then there is a decision by the New South Wales Government, in terms of an investment decision if it believes that the business case stacks up and that the investment in delivering these dam projects represents good value for money and a good expenditure of the New South Wales Government's funding. Both of those decisions will not be taken by any of the people here at this table; they will be taken by others.

The CHAIR: I might just jump in with a question just as we finish. Mr George, you mentioned that if this dam infrastructure was in place during the drought then those towns would not have run out of water. I found the statement of reasons that the Minister tabled in the Legislative Assembly. She does state that the main reason for these projects is town water security. What we did see, though, during those drought years was a hell of a lot of water from dams being sent downstream. For example, some submissions state what happened with Lake Keepit, or Keepit Dam, which I understand was at 98 per cent capacity in November 2016. Are you aware of what happened to the water in that dam? All of that water, for example, was not there when the town needed it. You are new in this position are you not, Mr George?

Mr GEORGE: I am.

The CHAIR: What was your position beforehand?

Mr GEORGE: I was an executive of WaterNSW.

CORRECTED

The CHAIR: You are aware of the 36—it was at 98 per cent capacity in November 2016 but down to 36 per cent capacity in January 2018. Where did that water go?

Mr GEORGE: I am trying to recall the circumstances, Chair. They do not come to mind easily, but I do recall that we explained the reason for where that water went. It is my recollection that it was nothing out of the ordinary or mischievous, in that sense. It was that it is a function of the rules under the plan—the water that was allocated and the water that was required to keep the river running to supply that water.

The CHAIR: It was not there for town security, in the end—similarly for Chaffey Dam.

Mr GEORGE: This is the wicked problem that we are facing in New South Wales: the security and reliability of our supply systems to meet the critical needs of the regional population.

The CHAIR: But in those instances the irrigators downstream—largely in the Namoi—got that water, even though the towns were at risk of running out of water in those dams.

Mr GEORGE: I refer you to the Infrastructure NSW State Infrastructure Strategy in 2014 and the update in 2018. These catchments are well known to have low levels of water security and reliability. The intensity of this drought of record that we have just seen, which we are still feeling the impacts of, has just highlighted and reinforced just how exposed some of these systems are. That is why the department is in the process of completing more regional water strategies to bring to the fore the solutions that the Government proposes to address that challenge.

The CHAIR: Just one final question in relation to the 2014 infrastructure strategy, which you mentioned at the beginning in relation to Wyangala Dam: It does not mention raising Wyangala Dam wall in that strategy, does it? I have got it in front of me.

Mr GEORGE: No, it does not. It refers to the Lachlan Valley having one of the lowest levels of water security, which precipitated the priority to investigate water security options to address that challenge.

The CHAIR: It does not list it as a possible solution, though. Other solutions are here but not that.

Mr GEORGE: I am not suggesting that that strategy does; however, the work that came after the State Infrastructure Strategy did.

The CHAIR: Thank you. We are out of time. Thank you very much for making yourselves available for today's hearing.

Mr BENTLEY: Could I just answer a question to save it being on notice?

The CHAIR: Yes, that is fine.

Mr BENTLEY: You asked about the feedback from community on the Lachlan regional water strategies. Those final strategies are due to be made public in March. They will include a summary of what we heard from the community. If you wanted to see what kind of thing we are talking about, we did a "what did we hear" document when we did the water sharing plans—that kind of analysis.

The CHAIR: Thank you very much.

(The witnesses withdrew.)

CORRECTED

MARYANNE SLATTERY, Director, Slattery & Johnson, before the Committee via videoconference, affirmed and examined

The CHAIR: Welcome, Ms Slattery. Would you care to make an opening statement for Committee members? Just so you know, a couple of Committee members are also on Webex today: the Hon. Penny Sharpe and the Hon. Shayne Mallard. The other members of the Committee are present in the Jubilee Room at Parliament House.

Ms SLATTERY: Sure. I am speaking mostly in relation to the Wyangala Dam expansion. We are acting for a group of landholders and irrigators in the Lachlan that are very concerned about Wyangala. I have also done quite a lot of research on the Menindee project as well. Basically the project has not gone through any due process and just does not stack up on any merits at all. Hydrologically, environmentally, economically [audio malfunction].

The CHAIR: Ms Slattery, I might just jump in. I wonder if you could turn your video off, actually, because you are breaking up and your connection is not fantastic.

Ms SLATTERY: Can you hear that?

The CHAIR: Yes, that is better. Your video is off. Let us see how that goes in terms of connectivity. If you just wanted to resume your statement—we missed a bit of that.

Ms SLATTERY: Sorry. We are acting on behalf of a group of landholders and irrigators in the Lachlan Valley, who are very concerned about the expansion of the Wyangala Dam project. I have also done quite a lot of research on the Menindee Lakes project and the lower Darling-Baaka. Basically the Government has not been able to justify the rationale for Wyangala expansion and it just does not stack up on any grounds economically, environmentally or from a hydrological perspective. Really, it is tearing up the basin plan. It would completely undo the objectives of the basin plan, not just in [inaudible] but particularly in terms of words as a whole. The project has been scheduled to be fast-tracked, but you really have to question whether that is simply a way to bypass any sort of due process or scrutiny.

The CHAIR: Just so you are assured, that came across without any connectivity issues with the video switched off. We heard you clearly. I might kick off with some questions, Ms Slattery. I was hoping you could expand a little bit on the cost recovery side of things with this dam. Firstly, I am not sure if you heard the previous session, but we have had WaterNSW government representatives suggesting that the \$650 million firstly is what seemed to be a very rough figure. Secondly, no questions were asked; we ran out of time. I understand that there is a principle for water storages, which is "user pays". Could you expand on that and what your thoughts are in terms of who will actually have to pay for the water, for Wyangala particularly?

Ms SLATTERY: Yes. I am not getting everything you are saying because the internet is cutting in and out a little bit. I hope you are hearing what I am saying. I think you are asking about the cost recovery in relation to the \$650 million budgeted cost for Wyangala.

The CHAIR: Yes.

Ms SLATTERY: Under the National Water Initiative pricing principles all governments have agreed to pass on the costs of any infrastructure to the end users. Based on those principles the cost should be passed on to essentially general security water users in the Lachlan. I am not sure if the Government has announced that, but that is certainly the guidelines that they have signed up to.

The CHAIR: Thank you. Yes, we can hear you clearly. Hopefully you can hear this. Your submission stated quite clearly the cost of this water compared to the average cost of a megalitre for general security licence holders in the Lachlan. Would you care to expand on this? You are obviously suggesting that this is an extraordinarily expensive project for what it is going to deliver.

Ms SLATTERY: Yes. It just does not make any sense. A 650 gigalitre proposed extra capacity yielding a 21 gigalitre amount of extra water based on a long-term average—before you get to the cost, that is just an extraordinarily poor rate of return. At the moment the proposed cost is \$650 million; that is more than \$30 million a gigalitre. The Murray-Darling Basin Authority [MDBA] has confirmed that the proponent of the dam will have to go and purchase an equivalent amount to offset, to be within the sustainable diversion limit. That purchase could be achieved for roughly \$1 million a gigalitre. It just does not stack up—the water yield versus capacity. And then, when you put a cost on that it just does not stack up at all.

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The CHAIR: Could you expand or explain a little bit more for Committee members? When I hear a new dam wall-raising project, 650 gigalitres, I think, "That's a lot of water." What is the 21 gigalitre long-term yield compared to the extra water that the dam will hold? How does that work? Explain it for us non-watery folk.

Ms SLATTERY: Sure. All of the water in the basin is very variable and that variability increases as you move from south to north. The Lachlan is a very variable catchment. It is a boom or bust sort of catchment, so it often does not get very much water. Then when it does get rain you end up with these massive flood events that go all the way out to the lower Lachlan flood plains. They are critically important for—you will have hundreds of kilometres of area that is flooded and that is the thing that brings all of our big waterbird breeding events. The lower Lachlan is one of the five biggest important waterbird sites in the basin. You will get millions of birds breeding there when it does rain. But you are not going to get that water every year; you get probably around a one or two in 10 year event. The proposed dam is meant to capture that water that otherwise would be flooding the lower Lachlan wetlands, so it is only going to fill rarely. Even for a two in 10 year event it does not make sense that you would only yield 21 gigalitres out of a 650 gigalitre expansion. The modelling shows that the dam is rarely going to fill or reach that capacity. So, 21 gigalitres from a 650 gigalitre capacity—you are looking at a one in 30 year type of event.

The CHAIR: Yes. You also state in your submission that you wrote to the DPIE in July 2020 and asked for a copy of their hydrological modelling. You got the reply from the DPIE program delivery director for dams that:

This work is currently being developed and will inform the final business case. It is not yet available ...

Do you find it extraordinary that hydrological modelling at this stage has not been done, even though the dam has essentially been promoted as the thing that is going to fix water security in the region?

Ms SLATTERY: I find it extraordinary. It is poor governance that we have had these big announcements, both State and federally, that we are going to invest \$650 million into one valley and there is no concept design. We have put in a freedom of information [FOI] request to the Regional Investment Corporation [RIC] that confirms there is no concept design for the dam. There is no feasibility study. There is no business case that they are willing to make available and the modelling has not been finalised. Nearly \$650 million is an extraordinary investment into the Lachlan Valley and it looks as though it has been done on the back of an envelope. And even these back of an envelope calculations do not stack up.

The CHAIR: You mentioned a freedom of information request to the Regional Investment Corporation. Did that freedom of information request reveal anything in relation to how the—I asked the Government members before about the loan basically as in how is it being funded. Was the Regional Investment Corporation asked for funding? Was there anything there in relation to this project?

Ms SLATTERY: It is quite clear that there was an ongoing conversation between the New South Wales Government—First of all the arrangement initially was that the Commonwealth would fund half of the dam expansion and half of their investment would be through a loan through the Regional Investment Corporation and half would be through a grant. It was clear that the New South Wales Government was having a lot of trouble justifying the loan. It had an eligibility rating by the RIC of one out of six. They said there was a 5 per cent chance that the loan would be eligible so the dam does not even stack up from the Commonwealth Government's perspective even after the various Commonwealth Ministers have been saying that funding has been made available and it will go ahead.

WaterNSW and the Department of Planning, Industry and Environment have spent several months negotiating with RIC about the loan. The freedom of information document said the New South Wales Government did not want the loan on their balance sheet and they wanted the loan to be with WaterNSW instead. The funding guidelines for RIC state that the loan must be with another government so they were having some legal problems making the loan available to WaterNSW. Ultimately, the loan just did not stack up and the Commonwealth Government instead chose to gift all of their contribution. So we have got a \$325 million gift from the Commonwealth to the New South Wales Government because it could not pass the eligibility criteria for a loan. I just go back to what good that investment could do on a tangible, economically feasible project in the Lachlan—that should not be ignored.

The CHAIR: The information you have just informed the Committee about is based on some FOI documents you have. Would you be willing to table those for the Committee's information?

Ms SLATTERY: Of course.

The CHAIR: Thank you. I might just go to a question around climate change. The WaterNSW submission suggests that research is progressing in terms of climate change impacts on water availability for dams. Their submission says:

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This research is progressing but is yet to result in conclusive findings as accurate predictions for the east coast of Australia for water security purposes are not yet available.

Are accurate predictions for the east coast of Australia for water security purposes available, in your view?

Ms SLATTERY: It is always going to be a prediction, isn't it? There is no certainty with predictions so it does seem to be a bit of a strange excuse. The regional water strategies have been prepared and have been available. They have been finalised with the department for quite some time—that is my understanding. The Lachlan Regional Water Strategy has been released and that has predictions for climate change which are very alarming. They show while Wyangala Dam does not fill very often and is not full very often at the moment, that will be worse in the long term. So they really make the case against the dam expansion.

The CHAIR: So that is in the Lachlan Regional Water Strategy?

Ms SLATTERY: Yes.

The CHAIR: Okay. We will definitely ask more about that further. I want to ask your views on the statement of reasons that the water Minister tabled in the Legislative Assembly in May this year in relation to these projects. You are obviously aware of the passing of the Water Supply (Critical Needs) Bill and the need for these projects was largely around town water security. What are your views on that?

Ms SLATTERY: I think that building dams is a very expensive, permanent, destructive option. It is very last century. Certainly we could be looking at policy options, for example, around town water security. How we allocate water and the priority of allocating water? It is also quite disingenuous to be talking about town water security when in the Lachlan Valley, for example, a really major consumer of water is goldmining. You really have to look at the goldmines in that valley and their water needs and their claims for expansion. It seems to be code to be talking about town water supply and industry when it is really about water for mining.

The CHAIR: I understand in terms of goldmines that, for example, Cadia Hill Gold Mine will be doubling its capacity and therefore, I assume, its water intake. Also Regis is proposing a new mine. Cadia, for example, where does Cadia get its water from at the moment do you know?

Ms SLATTERY: My understanding is it is a mixture. It gets water from everywhere it can basically. It sources water from general security licences, from groundwater, it accesses some of Orange's town water re-use, so it gets it from wherever it can. It is quite difficult to get water up to Cadia and the expansion of Cadia is going to make that more difficult again. You have to look at all of the water solutions in the context of what it means for goldmining.

The CHAIR: Thank you. The Government reps were suggesting in the last session that these dam projects—let us take specifically the ones that were the subject of the statement of reasons in the Legislative Assembly, which is Wyangala, Dungowan and Myall River, that they have been the subject of quite a few options, papers, research, particularly in terms of alternatives for water there. There was a 2014 strategy and then the 2018 strategy. What is your view in terms of what Infrastructure NSW has explored in the area and whether these projects come out from that process?

Ms SLATTERY: WaterNSW prepared the 20-year options strategy. They were quite clear in the 2014 document that it was not a feasibility study or an infrastructure study. It was just literally a list of options. When we have put in freedom of information requests seeking a feasibility study from several Commonwealth agencies, we just keep getting pointed back to the 20-year options study, which in itself says that it is not a feasibility study and that further work needs to be done scoping out projects and options, particularly in terms of consultation and prioritisation from stakeholders' perspective from that consultation. None of that work has been done. We have just fast forwarded into "Wyangala Dam expansion is what we are going to do". Even in the regional water strategy, which has just been released, it just takes the Wyangala dam expansion as a given and talks about other infrastructure options without even questioning the expansion, so it certainly has not been justified publicly at all.

The CHAIR: We did ask about the sustainable diversion limits with the Murray-Darling Basin Plan and I think were assured that they would be met. Do you think that there needs to be—firstly, what are your thoughts around that? I know you have addressed it a little bit. Would there need to be some changes to water resource plans or water sharing plans as a result of these dams, particularly Wyangala?

Ms SLATTERY: Yes. I think that the MDBA submission was very good and clear. One aspect is the sustainable diversion limit, which is basically the amount of water that we can take for consumptive use. Sorry, let me go to your first question. Yes, there will need to be a change to the water resource plans and the water sharing plans. If you go to the fundamentals of the basin plan, the basin plan set had a look at environmental and sustainable levels of take, so how much water we need to keep the environment healthy at the level that we are

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prepared to live with it. Then that informs the sustainable diversion limit. The SDLs were based on all the water in the system, not just the water that we have licensed to irrigators.

All of that water that without the dam expansion work would be flooding the lower Lachlan wetlands is part of the environmentally sustainable level of take and therefore the sustainable diversion limits. MDBA itself has said that, if you have a dam expansion like Wyangala, you will have to offset to compensate for all that extra water that is not going to contribute to the environmentally sustainable level of take. They are basically saying that you sort of have to rob Peter to pay Paul. If you capture this extra water in the dam, you have to compensate with an equivalent amount of water that you can put out onto the flood plain. MDBA itself is basically saying that you cannot expand the dam and be consistent with the basin plan.

The Hon. BEN FRANKLIN: Could I start by going to pages 3 and 4 of your submission, particularly noting figure 1? You say that figure 1 shows that the dam has not often been full since it was constructed, but just looking at the graph it seems to have been full 17 times. Am I misreading that?

Ms SLATTERY: No, but you can see that in this century there have been long periods where it has not been full.

The Hon. BEN FRANKLIN: Sure. But it just says that it has not often been full. It does seem to me that it has. It seems to me that by increasing the storage and raising the wall by 10 metres—would that not increase the capacity during those 17 times that it was full, for example?

Ms SLATTERY: Of course it would increase the capacity. I mean, that is intent. The point is though that, even by the Government's own modelling, you are only going to get a tiny 21 gigalitre yield out of a 650 gigalitre capacity. The model, for example, has a margin of error of 54 gigalitres. The increase in the dam capacity is less than half of the total error in the model.

The Hon. BEN FRANKLIN: Well, we will see. Obviously we do not know what the weather holds. If only we did, then we would be very happy people. Could I go to a media release that was put out this morning about consultation? I will come to who you are representing shortly. It said and we heard evidence from WaterNSW this morning that there had been significant community consultation about these projects, particularly the Wyangala dam, and that 84 per cent of people felt that there would be a positive impact on residents and local businesses. Is that in line with what you are hearing on the ground?

Ms SLATTERY: No, it is not in line with what I am hearing on the ground.

The Hon. BEN FRANKLIN: You disagree with that assessment.

Ms SLATTERY: What I have been hearing is that there has been a dire lack of consultation. That includes the people that are going to be impacted both through the inundation and in the lower Lachlan.

The Hon. BEN FRANKLIN: We had this morning about a quite substantial consultation process that had occurred from WaterNSW. Did you hear their evidence this morning?

Ms SLATTERY: No, I did not, sorry.

The Hon. BEN FRANKLIN: Are you aware of all the consultation that they have done? It just seemed to me to be, having sat on a number of these committees, actually quite substantial.

Ms SLATTERY: Well, what are they going to consult about if they have not released a business case? They have not released a feasibility study; they have not released the hydrological modelling. What is that consultation about? What consultation have they done with traditional owners, for example?

The Hon. BEN FRANKLIN: Well, actually, they said they had done quite a lot of consultation with Aboriginal and Indigenous organisations, which is good. In terms of business case I guess you are right to say that there is not a business case, but we had also heard evidence that a detailed business case is obviously currently being prepared. It is a little bit of being damned if you do, damned if you don't. If you do not start consulting until after the business case is prepared, then people will say it is too late. But if you start consulting before, they say that there is not a business case yet. I would have thought this is exactly the right format. You consult when the idea is floated and the decision is made that this is something that is going to be looked at. Then the process starts and then you continue to consult. You consult pre-business case and you consult once a business case has been finalised. Does that seem reasonable?

Ms SLATTERY: I would challenge making this decision to go ahead and expand the dam by 10 metres without a business case. That is \$650 million of taxpayer money that we have announced that we are going to spend on this project with no business case. You quibble about consultation. Where is the consultation about the priorities of spending \$650 million in the Lachlan Valley and what that could be spent on? But we have already

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announced that there is going to be a dam expansion. Talk to the people who are going to be inundated by this dam. Ask them about a consultation. All the people—

The Hon. BEN FRANKLIN: Yes. That is why I think it is great that the consultation process has started, that the business case consultations are continuing and that all of the appropriate environmental protocols are being observed, as we heard in evidence this morning. Those people who are concerned will obviously be able to continue to engage in that process. Can we move on to a remark that you made before about the value of the water in the dam being basically the cost versus the volume. I guess to me that just, with respect, appears to be a little bit simplistic. I would have thought that, when you think about what the value of the project is to the Lachlan Valley, it should also include things like the provision of long-term drought security, flood protection, the economic impetus that comes both during the construction and from extra activity, for example agricultural activity, that is made possible as a result of it. How would you respond to that?

Ms SLATTERY: You would think those things would be factored into the market price of water as it stands. If we take that argument, then are you going to say that all of those factors are going to have a 30-fold impact on the price of water? I find that incredulous. But until we see the business case, we do not know. Coming back to the yield, 21 gegalitres in the long-term average from a 650 gegalitre capacity is not going to give any security for agriculture. You also have to look at the cost of things like the value of tourism, for example, and the value of our waterbirds. We are really wiping out one of the largest waterbird sites in the basin. It is very difficult to talk about what the economic value is when the Government is not prepared to make a business case public.

The Hon. BEN FRANKLIN: Well, with the greatest amount of respect, that is not the case. The business case is currently being finalised and prepared. To say that we have not made it public is just not true, because obviously it is currently being prepared.

Ms SLATTERY: That has not been made—

The Hon. BEN FRANKLIN: I move on to a comment you made in your opening statement, that you are here representing landholders and irrigators in the Lachlan. Can I ask who they are?

Ms SLATTERY: It is a group called the Lachlan Valley Floodplains and Wetlands Group, mainly based in the lower Lachlan.

The Hon. BEN FRANKLIN: How many people are in that organisation?

Ms SLATTERY: I could not tell you the number of members that they have.

The Hon. BEN FRANKLIN: Just give me a rough guess. Is it 20, 200, 2,000?

Ms SLATTERY: Oh no, it would be less than 100.

The Hon. BEN FRANKLIN: Less than 50?

Ms SLATTERY: Probably, yes.

The Hon. BEN FRANKLIN: Less than 20?

Ms SLATTERY: I could not tell you, I am sorry.

The Hon. BEN FRANKLIN: If my understanding is right, you have represented groups in the past on water policy in the southern basin. Is that right?

Ms SLATTERY: Yes, and the northern basin.

The Hon. BEN FRANKLIN: Are you a registered lobbyist?

Ms SLATTERY: No.

The Hon. BEN FRANKLIN: I am trying to get my head around how you are here. You basically engage with community, with organisations, with members of Parliament about these water issues, yes?

Ms SLATTERY: Yes. I have worked with the Murray-Darling Basin Authority for more than a decade, was a senior water researcher with the Australia Institute. I have a strong interest in water matters in the basin.

The Hon. BEN FRANKLIN: You provide advice to politicians about issues around water?

Ms SLATTERY: Sometimes, yes.

The Hon. BEN FRANKLIN: Did you provide any advice about the terms of reference for this inquiry to any politician?

Ms SLATTERY: Yes.

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The Hon. BEN FRANKLIN: Who, and what did you advise? Would you like me to rephrase the question?

Ms SLATTERY: No, I am just trying to recall. Can I just take that on notice?

The Hon. BEN FRANKLIN: No. I do not think it is an unreasonable question to ask who you spoke to, which politicians you spoke to about the terms of reference of this inquiry. It is a pretty clear question, Ms Slattery. And you are on oath, remember.

Ms SLATTERY: Yes. I reviewed the terms of reference—I am really having trouble remembering, actually. I did review the terms of reference before—

The Hon. MARK BUTTIGIEG: Point of order—

Ms SLATTERY: The best that I can recall, I reviewed the terms of reference.

The CHAIR: A point of order has been taken.

The Hon. MARK BUTTIGIEG: The witness is clearly having trouble recollecting who she might have spoken to or consulted with, and has a right to take these things on notice for that very reason. I ask that you uphold that right.

The CHAIR: Thank you. A point of order has been taken. I agree with the point of order.

The Hon. BEN FRANKLIN: You cannot remember the person you spoke to, Ms Slattery?

Ms SLATTERY: I would like to take that on notice please.

The Hon. BEN FRANKLIN: Is the answer no, you cannot remember the person you spoke to?

The Hon. PENNY SHARPE: Come on. I think that if the witness, sorry Chair—I take a point of order. It is clear Ms Slattery has asked to take it on notice. I think that she should be allowed to do so.

The Hon. BEN FRANKLIN: No problem. Ms Slattery, could you also provide, when you take this question on notice what conversations you had with members of Parliament and which ones?

The CHAIR: Order! I do not think, in terms of asking a witness what conversations they have had with various members of Parliament is a question that should be asked of witnesses.

The Hon. BEN FRANKLIN: I was about to narrow it down to the specific terms of reference of this inquiry. My question was going to—

The Hon. SHAYNE MALLARD: To the point of order: Mr Shoebridge does that in other committees, might I add.

The CHAIR: That is other committees, thank you, Mr Mallard.

The Hon. BEN FRANKLIN: My question was going to be, if you could provide us on notice what conversations you had about the terms of reference with members of Parliament and which ones before they were released publicly, that would be gratefully appreciated.

The CHAIR: Order! In relation to that, I think that Government members have conversations with Ministers' offices and I think I have conversations with pretty much everybody on this Committee just for the Committee's sake in relation to those terms of reference, as well as a number of stakeholders who are presenting over the next couple of days. I think it is something that I have done for pretty much every single inquiry that I have had input in terms of reference. Stakeholders are consulted as are other members. Keep going.

The Hon. BEN FRANKLIN: Then why was it so difficult for her to say you then, Chair?

The CHAIR: I am not saying—keep going.

The Hon. BEN FRANKLIN: You just said that. That is what you just said.

The CHAIR: No, I did not. I said that was my statement in terms of—

The Hon. BEN FRANKLIN: You said you spoke to her.

The CHAIR: No, I said stakeholders.

The Hon. BEN FRANKLIN: Well, that was the implication.

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The Hon. CATHERINE CUSACK: If you can assist the Committee on this matter, Chair, it would be helpful. If you had information to assist the Committee on this, that would really help all of us, because we are all members of the Committee entitled to that information.

The Hon. PENNY SHARPE: Sorry, Chair? I think this is a fairly straightforward matter, which is that the witness has been asked questions. She said that she will take them on notice. The conversation that is now happening between members about who they may or may not speak to actually has significant implications around privilege and the way in which we do our work. I think that it would be better to take the issue on notice and wait for the witness to come back. The other issues are a matter for individual members but they cannot be forced to or pushed into making declarations about who they may or may not speak to in the course of their work.

The Hon. BEN FRANKLIN: No problem. I am happy to move on, Chair. Final questions from me, who is the president of the Lachlan Floodplains and Wetlands Group?

Ms SLATTERY: The Chair is Gordon Fuller.

The Hon. BEN FRANKLIN: Gordon?

Ms SLATTERY: Turner.

The Hon. BEN FRANKLIN: Are you employed by them?

Ms SLATTERY: I am on a retainer with them, yes.

The Hon. BEN FRANKLIN: What is the nature of that contract?

Ms SLATTERY: In what sense?

The Hon. BEN FRANKLIN: Are you paid for a successful outcome? Is it you are just providing advice? Is it an ongoing thing? Is it just for one month? You can take these on notice if you like.

Ms SLATTERY: Yes, sure.

The Hon. BEN FRANKLIN: No problem.

The Hon. MARK BUTTIGIEG: Ms Slattery, I would like to tease out this Murray-Darling Basin Plan and how that operates in a bit more detail, because the evidence we heard this morning was that it is all okay because the "caps" will not be exceeded, and the implication therefore is that there would be no water diverted resulting in downstream users suffering. Could you just throw some light on if you do not agree with that statement why that is the case? In other words what they are saying is that because there is going to be extra water captured that there will be no diversions and no deleterious effect on users. Can you give us your view on that? Because I am not quite clear on how those diversions and sustainable diversion limits work.

Ms SLATTERY: Sure. The MDBA submission was very clear on this. They raised three points. One was the extra, if the water capture exceeds the sustainable diversion limit, then there has to be offset somewhere else. My understanding is that in the Lachlan Valley there are sustainable diversion limits I could not tell you by how much, so the extra water capture would not exceed the sustainable diversion limit. That will not be the case in other valleys. That is the first point, and this is the MDBA advice, I do not agree with it but it is MDBA advice. The second point is that the cap is not just, depends on the reliability of water. You have a general security licence and you get a yield on that of 8 per cent and you capture more water and the yield of that general security goes up to 90 per cent, then that has an impact on the sustainable diversion limit as well. So that their advice is the additional reliability will have to be offset from somewhere else.

The third point they make is that there is no net reduction in planned environmental water and that is a requirement of the Water Act and the basin plan. Planned environmental water is all of the water in New South Wales that is not being captured under the SDL or not being captured for consumptive use. So all of that water that goes to flood the lower Lachlan wetlands and flood plains is planned environmental water, and under the Water Act if that is reduced—and it will be by capturing it in a dam—it has to be offset elsewhere. My reading of the MDBA submission is that, basically, you cannot increase the dam and capture that extra water and be consistent with the Water Act and the basin plan

The Hon. MARK BUTTIGIEG: Okay. So in other words, the Murray-Darling Basin Authority's view is that these augmenting works—the heightening of the walls—will not allow compliance with that plan. It is physically impossible.

Ms SLATTERY: Yes. That is my reading of its submission and I totally agree with it. It is really tearing out the basin plan if you go ahead with these expansions.

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The Hon. MARK BUTTIGIEG: We heard this morning about longitudinal modelling over very long periods of time and how it has fed into the general view that while we may have extended periods of drought where rainfall is obviously limited or non-existent, the implication was that over the long period the average rainfall stays the same and it is just that it is more sporadic. Therefore, if we increase dam infrastructure by heightening walls and whatnot we will capture that more sporadic rainfall and it will see us through the dry times. You seem to have a contradicting view of that or at least a view that says that it will not be enough to compensate. Do those studies suggest that average rainfall over a long period is going to stay the same? Or is it declining and therefore that would seem to undermine the view that we heard this morning?

Ms SLATTERY: Just in terms of my views, these are not my views. These are studies the department itself has put out. The regional watering strategy shows that the estimated inflows are going to be substantially lower and the current dam is going to fill less frequently than it does. Conceptually, we are predicted to have more variabilities and more droughts and higher rainfall, but by the department's own modelling we are only going to have a 21 gegalitre, on average, improvement for a 650 gegalitre expansion. That is extraordinary—extraordinarily bad, I would have thought—and that alone would seem to not justify the expansion, but, again, we just do not know because the modelling has not been released and the business plan has not been released, so it is still all hypotheticals until we can see that.

The Hon. MARK BUTTIGIEG: So in theory, the average rainfall must be anticipated to go up if we are getting albeit a lower amount—21 gegalitres is the figure you keep using. What you are saying is that it just does not justify the cost and all of the other deleterious effects that go along with it because you are getting such a small yield.

Ms SLATTERY: Yes, it does not justify the cost and do not forget about the environmental destruction that this is going to cause. You are wiping out your bird breeding in the Lachlan and not to also forget about the impacts on groundwater. So you will be impacting on other water users downstream and groundwater is a very important source of water for the valley. If you are not getting the flooding then you are not going to get the groundwater recharge either.

The CHAIR: The groundwater recharge is another way to store water, essentially.

Ms SLATTERY: Yes.

The Hon. PENNY SHARPE: Essentially you are saying that the cost of Wyangala will be around \$39 million per gegalitre, whereas the cost of provision of water currently is about \$1.2 million per gegalitre.

Ms SLATTERY: Yes.

The Hon. PENNY SHARPE: Can you give us some idea of the time horizon? There is obviously the issue where the Government has made assets around dams go out from 100 to 200 years and, I assume, having a significant impact on a cost-benefit analysis. Can you comment on that?

Ms SLATTERY: No, I am sorry. I did not even know what the life expectancy of the dam was.

The Hon. PENNY SHARPE: You spoke before about the other options that are not dam related—around town water supplies and those kind of things—and you talked about allocation priority. Can you take the Committee through the current allocation priority and where you see there being problems with that?

Ms SLATTERY: If you have got water in a dam and then your government makes decisions about how they are going to allocate that water, towns have the highest water priority, then high security water users and then general security water users. So there are obviously decisions there about how many months or years supply you set aside for towns before you start allocating to irrigation, and the comparison between the amount of water for towns versus the amount for irrigation—town water use is much smaller. So it would be quite easy to get an increased security for towns by simply changing your allocation priorities and setting aside x number of years. If it is one year or two years you set aside three years to four years' worth of water supply before you start allocating to other water users. So an allocation policy would be a very simple way to improve water security for towns.

The Hon. PENNY SHARPE: You also made some comments about mining and the gold mining interest in and around this area. Are these storage requirements and the increase that they will get required for the mines to go ahead or can they still operate without them?

Ms SLATTERY: I am not an expert in mining but my understanding is that they definitely need a permanent source of water. They are having trouble sourcing water. They have been very resourceful in accessing all water sources that they can but it is definitely a problem for the mines to get access to the water that they need.

The Hon. PENNY SHARPE: In your submission you talk about the fact that as of, I think, June or July this year the loans were not approved and the Regional Investment Corporation was indicating that it was a 5 per

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cent chance that they would be approved. Just to be clear, is it your evidence that that is why the Commonwealth went from it being a loan to a grant because the grants were never going to be able to be approved given the risks associated with them?

Ms SLATTERY: [Audio malfunction]. All I can comment is that the RIC was having a great deal of difficulty in approving the loan. It did not meet their criteria. They were trying for several months to approve the loan, and despite that the Commonwealth Ministers had announced the projects and the funding commitment and the loans. Matt Canavan spoke at length in Senate estimates about the Commonwealth providing loans for Wyangala and Dungowan, but the bureaucracy was not able to justify them—that is evident from the documents from the FOI—and then the Government has shifted to make it all a grant. There was some evidence in questioning in Senate estimates last week about that, which I have not loaded up yet, but certainly what we do know is that the bureaucracy was having trouble justifying a loan and now the Commonwealth has said that it will just be all a grant.

The Hon. PENNY SHARPE: I have got on more quick question, which is about wetlands. I asked this of the Government members this morning and they were not able to provide an answer. Obviously there is significant impact on wetlands, and there are very significant wetlands through here—Booiligal and others. The New South Wales Wetlands Policy, which I have to say I am not very familiar with—I am interested to know: In the assessment of all these projects, what role are you aware of the New South Wales environment Minister having in terms of overseeing the impact on wetlands as a result of these proposed changes?

Ms SLATTERY: I think you will have other people who will be better qualified to answer that than I. I have just lost my train of thought, sorry.

The Hon. PENNY SHARPE: That is okay. We know under the EPBC Act that that there is a Commonwealth trigger in relation to oversight of whether they are Ramsar-listed or not, or just general wetlands, but I am interested in—I may well ask other witnesses today—who in the New South Wales architecture actually has some environmental oversight around wetlands specifically?

Ms SLATTERY: That sits within the Department of Planning, Industry and Environment—DPIE Water, the NSW Environment, Energy and Science Group. But with the environmental impact assessment, my understanding is that the initial assessment is only going to be for the area that is inundated and not the area that is going to be affected—the lower Lachlan area with all the environmental assets. That is not part of the initial environmental impact assessment.

The CHAIR: This will probably be the last question for this session. Ms Slattery, I just wanted to get a sense of the cumulative impact of these various storages—water infrastructure—that are the subject of this inquiry, Firstly, just a question in terms of how they are assessed: I assume there is no way currently that there can be a cumulative impact assessment in terms of the total impact on the Basin as a whole? Are you aware of anything like that being able to happen?

Ms SLATTERY: I am not aware of that being part of the process at all. Given that something as simple as the environmental impact assessment is only going to consider the immediate area that is being inundated and not consider downstream impacts it seems highly unlikely that there is a consideration for a cumulative impact. I would think that the basin plan itself was an attempt to have a cumulative impact of what is happening with regards to water and the environment in the Basin.

I would say that when we talk about valleys we talk about hydrological connectivity; another way to look at that is ecological connectivity. We have got five major waterbird breeding sites in the Basin: Narran Lakes, Gwydir Valley, Macquarie Marshes, the lower Lachlan and the lower Murrumbidgee. Those three northern valleys are in dire straits in terms of being able to support waterbirds. You will have other witnesses, I am sure, who can speak to that better than I can, but you have got three already that are in very big trouble. You take away the Lachlan—you will with this expansion—and that only leaves the lower Murrumbidgee, and the lower Murrumbidgee and the Lachlan join up in these events. It is a death knell for our waterbirds. It is going to be quite devastating. In that sense, I think not only are you not meeting the environmental targets under the basin plan for the Lachlan but you are really jeopardising them for the whole basin, I think.

The CHAIR: That is the end of our official time, Ms Slattery. Thank you so much for appearing as a witness at this hearing. The Committee has resolved that answers to questions taken on notice be returned within 21 days. The secretariat will contact you in relation to the questions you have taken on notice today.

(The witness withdrew.)

(Short adjournment)

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RENE WOODS, Chair and Nari Nari Delegate, Murray Lower Darling Rivers Indigenous Nations, before the Committee via teleconference, affirmed and examined

FRED HOOPER, Chairperson, Northern Basin Aboriginal Nations, before the Committee via videoconference, affirmed and examined

The CHAIR: I welcome our next witnesses. Would either of you care to make a short opening statement?

Mr RENE WOODS: Yes, I would. Thank you for the opportunity to speak to the inquiry today. Murray Lower Darling Rivers Indigenous Nations [MLDRIN] has a number of key points, as we raised in our submission, that we feel are going to be hugely impacted by the building of these infrastructures and increasing these infrastructures' capacities over the next little while. I will outline a couple of them and then I will finalise with a few closing remarks. Our biggest concern with the building of new dams and infrastructure is the cultural and heritage impact, both tangible and intangible—that is, the reeds and weeds and river weeds and cumbungi that is in our wetlands, as well as the fish, plants and animals that are across our landscape and the impact on it, and also our songlines from the top of the system to the bottom of the systems.

Our second major concern is the impact of construction and inundation. Increasing these areas of inundation upstream of dam walls and infrastructure going in across landscapes—that water has to go somewhere else. It goes to areas where it has probably never been impacted on in the past, which then creates an impact to culture and heritage and new areas of infrastructure and land that may not have been impacted on in the past. That is a huge concern. Thirdly, the impact downstream—government agencies have not really taken on board our concerns about the impact from dam walls and infrastructure points in the landscape right through to the bottom end of the system where rivers may interconnect with other river systems, such as our lovely Lachlan and the Murrumbidgee and other systems, where they fill into some significant wetlands. What is the impact to that entire system going to be with these infrastructures and dams going in?

That has not been taken into consideration, which leads me to our fourth—a very significant one is the lack of respect for communication and consultation. As you can see in our document provided WaterNSW did not even list First Nations people as users of the river on their Facebook site until MLDRIN made them aware that we were missing on their list. That was only a month ago. WaterNSW's consultation to date has been far from best practice and it has also been quite inadequate for the whole entire river system and the nations that these dams and infrastructure are going to impact. The last point before I wrap up is the impact of the water resource planning and objectives. First Nations people have been working with the New South Wales Government in regards to objectives for water resource planning and water sharing plans, but also now with the regional water strategies.

How do we make sure those proposed activities in the regional water strategies are best placed and are some of the best proposals, rather than dam walls being increased and infrastructure going up? Why do we not look at existing infrastructure, or the lack of, and how we better utilise the current infrastructure we have got by upgrades? We know the Lachlan is one of the valleys in the system that has very poor infrastructure along its systems. Just in closing, MLDRIN is deeply concerned that the proposed project will pose a significant new threat to the river systems that are already critically stressed. Related cultural values, as well as sites, artefacts and locations of cultural heritage significance, are also highly likely to be impacted.

Given poor First Nations consultation to date, significant improvements to engagement with affected First Nations groups need to improve asap. Scientists, government agencies and other stakeholders persistently raise concerns and doubts over whether proposed projects will achieve the intended water security. Will we actually save the amount of water proposed under these infrastructures? This is observed most acutely in relation to Menindee Lakes Water Saving Project, with even the New South Wales water Minister recently questioning whether the project will achieve the desired outcome on time. Thank you for the opportunity to raise those in an opening statement. I look forward to any questioning over the next hour. Thank you.

The CHAIR: Thanks so much, Mr Woods. I will go to Mr Hooper now, who is on Webex. Would you like to also make a short opening statement?

Mr HOOPER: Yes, I have a very short opening statement. Again, thank you for the opportunity to appear before the Committee and express our views and our concerns with regards to the projects that are relevant in Menindee over the next few years. [Audio malfunction].

The CHAIR: Mr Hooper, I am sorry to interrupt. I have just had the Committee secretariat suggest to me that if you have a phone we may actually call you, because it is very tricky. We cannot catch everything you are saying.

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Mr HOOPER: That is fine. Do you want the number?

The CHAIR: I think he has got the number. If you would like to hang up from this, we are calling you now. If you could, please stop the video entirely, Mr Hooper. Sorry about this, everybody. That might be a little bit clearer if you would like to test that, Mr Hooper.

Mr HOOPER: Hello?

The CHAIR: That is better. I am just looking at Hansard. We probably need to start from the beginning of the opening statement, please. Fire away, Mr Hooper.

Mr HOOPER: Again, thank you for allowing us to appear before the Committee and to express our views from a Northern Basin Aboriginal Nations perspective. One of the biggest concerns is law, the comparison between First Nations law and common law, and the disregard for First Nations law in any of the projects that are being put forward potentially in relation to water law, where our law is quite different to First Nations law. I would like to bring the Committee's attention to the Mabo decision. The Mabo decision said that if our law is recognised by your common law, then our law sits outside of the common law as well. In saying that, we believe that the building of infrastructure impacts on our law and deeply impacts on our cultural law as well. The other issue that we have is that we have so many committees and so many decisions made by the Government. Our expressions and our suggestions are not taken very strongly and in most cases are overridden. A lot of these projects are built in the best interests of the whole community and certain community members are not considered as well.

Thank you in terms of letting us appear today. I think I will leave it there in terms of an opening statement. It comes down to law and there have been a couple of High Court cases that clearly say that First Nations are their own first nations, in particular the recent decision that was handed down by the High Court in regards to *Love v Commonwealth of Australia*, where the High Court said that Mr Love is a citizen of his own nation—so, his own country. I believe that First Nations law and First Nations governance should be taken into consideration when planning these major projects and rolling these major projects out as well. The final thing I would like to say is that if these projects go ahead it is very important that the Government look at their own Aboriginal Procurement Policy and work with First Nations in the northern basin to implement that procurement policy across these projects as well. Thank you.

The Hon. MARK PEARSON: Just one question to tease out a little bit more detail: In what way do you think these proposed projects would have an impact on First Peoples' lore?

Mr HOOPER: Certainly by holding back water and by not allowing that water to run through the system you are impacting on our continental law that says we only take as much as we need and we let the rest flow to the nations below us and also that the rivers should be running at a particular level throughout the system. If it drops below that system, what we are saying is that no water should be taken out of the rivers for other purposes as well.

The Hon. MARK PEARSON: How is that law scribed or communicated?

Mr HOOPER: We are an oral group of nations. We do not write things down so it is through stories and telling it to other people. In some cases it is like war. If you stop that water going down, the mob below you come up with their spears and boomerangs and they have a go at you. Certainly through law which is imposing the lores and you soon find out you are not operating within the continental law.

Mr HOOPER: Thank you.

The CHAIR: Thank you both. I just wanted to turn to the MLDRIN submission. Thanks so much Mr Woods for putting this comprehensive submission together. When I say MLDRIN, I mean Murray Lower Darling Rivers Indigenous Nations. It addresses a number of the projects before us. I thought it would be good to focus on the Menindee Lakes Water Saving Project which I understand you both can comment on. This morning we heard quite a bit in relation to Wyangala Dam wall raising, a little bit in relation to Dungowan. Would you care to comment about the situation in Menindee and the Darling River and how that has impacted on First Nations peoples along the river? Would you both like to comment on that, starting with Mr Woods?

Mr RENE WOODS: I will make a couple of comments on the project. The Baaka River for the Barkindji, not that I am talking on behalf of them here, but that is their river. They are Baaka people, they are river people out there. When their river system is sick, their people are sick. The proposed project out there is going to have a huge impact on culture and heritage out there. We are not talking about artefacts that can be removed, there are potential impacts on burial sites and other crucial cultural and heritage impacts for the Barkindji people out there. I do not have the right to talk on their behalf but the proposed project is untested, it is not ready to go, it is not shovel-ready. The lack of consultation alone and the way the consultation has been, you have only got to talk to anyone out there along that Darling system, they are the forgotten cousins in water management.

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Whether you are an irrigator, a First Nations person or who you are along that whole system, water management in New South Wales has let the Darling River people down and now this proposed project is the last kick in the guts in regards to the operations and the new rules—just infrastructure alone. That human element of impact it is going to bring to the Barkindji people—no one should have to go through that. There are other ways that we can fix the Baaka or the Darling River together through looking at management upstream. People forget that what happens upstream impacts downstream where First Nations law and the way we have done business for over 65,000 years here in this country. Take enough to use and produce your outcome and send the rest downstream. That cultural responsibility of water that comes onto country and then flows downstream to our neighbours, we need to bring that into water management in New South Wales and take the blinkers off because that is the constraint and that is what is killing our river system. We do not need these projects.

The CHAIR: Thank you. Mr Hooper, did you wish to comment on the question in relation to the impact of Menindee Lakes and what has happened with the Darling River in terms of First Nations people? It is okay if you do not.

Mr HOOPER: I cannot comment specifically on the Menindee Lakes because it is not within the Northern Basin Aboriginal Nations area. Certainly parts of the Barwon-Darling I can comment on. It is totally evident in regards to the fish kills that happened in the Darling River in the last couple of years and the total mismanagement of the system by government. It was evident in the review of the Barwon-Darling water sharing plan that decisions made by government impacted severely downstream of certain areas within the Barwon-Darling system and the Namoi system as well. That is evident in terms of the inquiry so we probably need to look at better ways of managing water. We certainly think increasing dam numbers and dam storage is probably not the best way to do that unless they are willing to use the water that is saved or collected with in those dam systems for environmental purposes and not give licences out to further irrigation to extract water from the system as well.

We would encourage the Government to certainly look at that. I know these projects are said to be in the best interests of the nation or the State but certainly some of these projects affect our cultural values. Certainly the Barwon-Darling and the Namoi, I was only out at Wee Waa the other day—I grew up there in the 1960s and 1970s and the Namoi River at Wee Waa never went dry. Yet I drove across the bridge there the other day and it was bone dry. You could walk the probably length of the Namoi—

The CHAIR: Even after the rains that have fallen this year.

Mr HOOPER: Yes. Even after the rains that have fallen this year, it is still dry.

The CHAIR: What about the Mole River Dam, Mr Hooper? Have you looked at that? I understand it is in your area.

Mr HOOPER: Yes.

The CHAIR: What do you know about that that you can tell the Committee? We have not really explored that today yet.

Mr HOOPER: The only thing I know about the Mole River Dam is that they are doing a business case to determine whether to go ahead with the construction of the dam or not. Certainly the First Nations people in that area have concern about the dam being constructed and more water is being held back within the system. Also we have not talked about construction of new dams and the impact on fish that need to get upstream to spawn and so on. But certainly my discussions with the people in the border rivers, they are certainly not in favour of the construction of the dam because they say if that water is held back, it is going to impact on their livelihoods. When I say livelihoods, I mean their social connection to the rivers. If that water is not running, they are not going down to the rivers and taking their kids down and telling them the stories and so on.

The CHAIR: Talk to members a little bit more about that cultural connection in relation to rivers and water. Both of you can talk about this and why it is such an important connection. Could you tell us a little bit more on that?

Mr HOOPER: Do you want to start, Rene, or do you want me to start?

Mr RENE WOODS: You can start, I will finish it.

The CHAIR: Okay, great.

Mr HOOPER: Water is life. For First Nations people rivers are the veins that run through our Mother Earth. Our Mother Earth gives us life and it takes life away. Also the importance to what we call the Mundagudda, which is our Rainbow Serpent, and the Rainbow Serpent's connection to the river as well. Socially, it is where we tell our kids the stories. It is where we pass on information, our culture and our history. It is a place where we gather. For example, when families are living in the cities, towns and regional centres, they do not have that

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connection as much as—the people that are living in country towns as well. When we bring our kids home, we take our kids home to our country. It is important for us to sit by the river and tell those stories. It sustains us as well—the fish that we catch out of the river, the mussels that are not there anymore. That social fabric that is built around rivers for First Nations people is being dwindled away because there is no water there in those areas and those special places where we can go and tell stories and hand down our traditions to our children.

Mr RENE WOODS: Our river ways and our wetlands were our supermarkets and still are today. The rivers were our highways. Where today we might jump on and head up the M1 or whatever now, the old Lachlan was our highway. It was the way we did business. We would meet at the end of the Lachlan and do business with the Yita on the other side of the Lachlan. To the western side, Nari people would talk Muthi Muthi people of the Great Cumbung Swamp. These are hugely important river ways. Water is the same identity. It used to flow and have the freedom to flow where it used to. Our people just followed that water path, moving from wetland to wetland, following the seasons. They knew when there was not enough fish left in that wetland. They would move on.

Some of the stuff today that has—as Fred touched on earlier, we are very much verbal in handing down and transferring our information intangible, but if you look at some of the recent water resource plans that New South Wales have proposed under the basin plan, some of those objectives start to talk about the old ways but in a new context. The regional water strategies that the Government is working on now in the Lachlan and Macquarie and Gwydir—same stuff. There is so much good information there. We have learned to adapt. We would not have been around for 65,000 years if we had not been able to adapt. We are starting to put it in Government-speak and white man's terms—just enough information to get us in at the table and allow water management to listen to us but not give it all away. That is still our law and customs there that people need to respect.

We understand that we need to give enough to be able to have our seat at the table and hopefully get a parcel of water to deliver on the country and have these outcomes. Those objectives in some of those water resource plans are some of the best information. My fear is that we are going to impact on those by building this infrastructure. As First Nations people, that is not what we want. We do not want to see infrastructure cruising along the river way eye and we have got to get our boat out and go around the weir or around the lock. That is not what water was intended to do across the landscape. I understand in modern times we need to make sure we utilise our water to the best potential, but our voice—First Nations people's voice—in water management needs to improve in New South Wales. I think there have been steps along the way, but we are still well off being a key component in water management in New South Wales.

The CHAIR: Thank you. Really then, when we are looking at environmental flows, there are cultural flows as well that should be considered. Are cultural flows environmental flows? How does that work within our water management framework in terms of what we are dealing with today?

Mr HOOPER: The common law framework does not allow for First Nations people to evolve. The common law water process puts us back to BC: before Captain Cook came here in 1770 and then the First Fleet in 1788. What it tends to do is it says, "Your culture is not an evolving culture." For example, we are just having some consultations and we are talking about flood plain harvesting and licensing in the northern basin. A few years ago they went out and they had done some surveys and—the law tends to put us into the categories of stones and bones. It does not look at the tangible and intangible values that we have on the ecosystems and on the river systems as well. If you are blocking that system, then you are actually impacting on our international rights as well. The difference between environmental flows—environmental flows is just a term. It is a term that is given by non-First Nations people to a bit of water that is running down the river that is held back in a dam that is controlled by the Commonwealth, the environmental water holder or a State authority.

A cultural flow in the definitions of The Echuca Declaration allows us to use water for economic purposes as well. The current legislation restricts First Nations people from using any of the water that is available to us for different purposes—only for cultural purpose. It does not allow for us to have economics or develop economics for our communities as well. The difference between environmental flow and cultural flow is purely economics. A cultural flow allows us to use that water for economic purposes whereas an environmental flow is only for the environment and we understand that. We look at the First Nations or Aboriginal environmental outcomes, which are quite different. We do not have control over that water. We do not have control over the environmental water that comes down. All that we are required to do is report on the benefits in regard to that environmental water, but a cultural flow is something we can send down the river for a social gathering, a cultural purpose or even an economic purpose as well. We should have the ability to be able to choose what we use that water for in a cultural flow.

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The Hon. BEN FRANKLIN: Mr Hooper, to pick up on the comments that you just made, does either of your organisations, Northern Basin Aboriginal Nations [NBAN] or MLDRIN, own any water at all? I am just trying to get my head around—

Mr RENE WOODS: Currently across the basin in New South Wales we actually own less than 1 per cent of water itself. MLDRIN does not own a water allocation, but a couple of our First Nations members and corporations do hold water entitlements. I believe there is one of our nation groups on the Murrumbidgee, Nari Nari Tribal Council, which owns property down towards the Lower Bidgee in the Murrumbidgee systems that has about 1,900 megalitres of water. We do not have water, which means that our seat at the table is hindered by that ownership of water and we are not seen as a true player. I do not know about NBAN, but Fred can talk to that.

Mr HOOPER: No, NBAN do not currently own any water at all in the northern basin, but I would like to bring the Committee's attention to a report that was done by Dr Lana Hartwig and Dr Sue Jackson. Aboriginal organisations in New South Wales only hold 0.2 per cent of the available water in New South Wales. It has actually dropped. Water ownership has dropped in terms of Aboriginal water holdings in New South Wales. We are not aware of anyone owning a cultural licence in New South Wales, but we are aware that on the Lachlan the Ngemba people work with the environmental water advisory groups and there is a 10 megalitre licence I think that has been allocated to a certain part of the Upper Lachlan. But no, currently we do not own any water. It has been nearly 2½ to three years now since the announcement by the Federal Minister of the \$40 million water buyback.

The Hon. BEN FRANKLIN: That was going to be my next question, Mr Hooper. In fact I would be really interested in both of your views about what should happen with that \$40 million, which is obviously to be used for cultural purposes. I am particularly interested in if you think it should be used across State boundaries or if there is a role for the New South Wales Aboriginal land councils to be involved. I would be really interested in any deep thoughts that both of you have on this issue.

The CHAIR: We will start with Mr Hooper.

Mr HOOPER: Look, certainly the announcement was that they were going to put that money with the Indigenous Land and Sea Corporation. NBAN put up a proposal to the Department of Agriculture in the early stages of the announcement abdicating that we would like to establish a trust to hold that money to purchase the water, but also to grow the investment as well through either philanthropic or State allocation of water or State allocation of funds to that trust to purchase water for First Nations people. We had negotiations with the Department of Agriculture. Currently, I think the decision is with the Minister's office in Canberra and we are certainly looking at establishing a mainline base and trust for that \$40 million to be held in and then we are working with them to work out the mechanisms of that as well.

Also in New South Wales there are other areas that we can look at as well under a New South Wales Aboriginal water strategy. I know that previously there was a New South Wales water fund or a trust that was managed by the Cabinet. That was folded and certain money went back to New South Wales in regards to that. Certainly, we would be looking at those funds being held in a trust purely because there is scope there for that trust to be grown and more benefits can come out of that trust as well. In relation to the New South Wales land councils, I think they have got enough on their plate with land. They got a \$680 million trust fund, yet our people are still living in substandard housing in New South Wales that are owned by land councils. To take on a water portfolio with the New South Wales land council we believe would endanger us First Nations in the northern basin in regards to owning and holding water. For example, the land councils are established for Aboriginal people, where the cultural authority around water and land and culture comes from the First Nations people.

For example, there could be a person who comes from Western Australia in New South Wales, could be the chairperson of an Aboriginal land council, that could be making a decision around a nation's cultural requirements or obligations that might not be consistent with that First Nation's obligation as well. There is some disparity and some things around land councils that probably will need to be looked at in terms of their cultural authority. I know that they say that they have cultural authority, but it goes back to the Elders of that area that make those decisions as well. Certainly, we are part of the New South Wales Aboriginal Water Coalition, that the land council is a member of and so is the Native Title Service [NTS] and NBAN and MLDRIN. So there are joint decisions that we will need to make at that level as well.

The Hon. BEN FRANKLIN: Thanks, Mr Hooper. Mr Woods, did you want to add anything?

Mr RENE WOODS: Yes, I will add that MLDRIN's position on it is that we have proposed a trust model with independent and also MLDRIN directors to sit on that as part of a trust going forward, a trust that would be open to all First Nations groups across the southern basin, so not just member delegates of MLDRIN in

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the southern basin, potentially local Aboriginal land councils could apply and other Aboriginal corporations. Look, at the end of the day that money is sitting there. It is not being moved. Minister Pitt has a brief on his desk at the moment. Hopefully in the next few weeks we get movement on it and we get to see that money rolled out in New South Wales and change the way First Nations ownership of water is in New South Wales.

The Hon. BEN FRANKLIN: Thanks, Mr Woods, that is very helpful.

The Hon. CATHERINE CUSACK: Thank you for your submission. Recently the case strategy you gave for the Macquarie River re-regulated storage project, I am very demoralised by that case study, which clearly shows that there was not appropriate consultation by the Government at all, foolishly. Secondly, can I assure you every member of this Committee wants to see Indigenous owners consulted appropriately and until we can work out that process we are always going to be at risk of something like that Rio Tinto disaster that occurred in Western Australia, which nobody here wants to see. My questions are very much about what does a good model of consultation look like? Can I begin by saying, is there an example that you are aware where consultation was conducted well, and what were the attributes of that process that made it a good one?

The CHAIR: I just want to check you both heard that okay. We will go to Mr Woods first.

Mr RENE WOODS: Thank you. There have been a couple of examples of good engagement by the New South Wales Government. One was the water resource planning engagement done nation by nation. The only downside was the department at the time went through consultants. MLDRIN felt that if that was done by officers and staff within the agency there would have been much more of a relationship built with the First Nations groups that the consultant engaged with. Now we look to implement those water resource plans once accredited under the basin plan, the staff from the department have to virtually start a new relationship, if you understand. But that was a really good—do not get me wrong—example of engagement nation by nation. They also engaged with the land council and NTS Corps, native title bodies as well. But that gives the opportunity to the entire nation to come along. Yeah, the timing of it might not have been the greatest. There were some timing pressures. We can learn from that and learn from our timelines of working with First Nations people.

The other good practice is a set of guidelines that MLDRIN and NBAN fully support and that is the Akwe' Kon Guidelines for engagement with First Nations people. It is an international document that clearly outlines the way proponents should engage with First Nations groups, in particular around building big infrastructure and what are some of the good outlines of governance during that process, which allows First Nations people to participate with free, prior and informed consent, but also knowing that during that process there is an avenue for rebuttal and to go to a third party and say that we are not really on board here but we need to tweak something and there is a third party that we can bring in and have that buffer between the government agency and the First Nations people so that it is not all one-way traffic from the government department or the proponent who is building the infrastructure. They are really good guidelines and I would suggest for the Committee to have a look at them. I mentioned them to WaterNSW at a conference last week or the week before. Whether they have taken them on board yet, I am not sure, but MLDRIN fully supports the Akwe' Kon guidelines in regards to infrastructure building and engagement with First Nations people. Thank you.

The Hon. CATHERINE CUSACK: Can we find the name of the consultant that did that good work and access their report in some way?

Mr RENE WOODS: Through the water resource planning consultation?

The Hon. CATHERINE CUSACK: Yes, it was the consultant that did a good job.

Mr RENE WOODS: There was a young guy, Adam Brunton from Eurah. He and Dave Miller were a team. Dave Miller was a previous DPI water planner from the Kempsey office for a number of years. He is now a consultant. Those two are really good engagement specialists with First Nations people. Adam brought the First Nations expertise and Dave Miller brought the water background with 30-odd years of water management practice inside DPI Water.

The CHAIR: Mr Hooper, did you have something to contribute on the best model of consultation?

Mr HOOPER: The best model of consultation is consistency. What we are finding in New South Wales is that there is an inconsistency in consultation with First Nations people. For example, they did a really good job with the water resource plan consultation where they went out to nations and sat down. In particular nations they actually looked at dual copyright on the information that was in that, which was the First Nations' request. Then we go to another form of consultation such as the flood plain harvesting consultation. They put a whole heap of pressure on First Nations people in terms of, you know, you have just got to turn up to a workshop and so on. Then you are looking at the regional water strategy consultation where NBAN has a contract with the Government. We have a projects and policies officer to go out and talk to First Nations people, yet they engaged a

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non-Aboriginal consultancy group to go out and conduct half-day workshops with First Nations people across the border rivers—just the inconsistencies in the consultation processes.

We need to get a consistent consultation process in place for the State and follow it. One of the best consultations that we undertook was with the Murray-Darling Basin Authority in regards to the Murray-Darling Basin Plan, where we went out into the community, we spent a day there and we spoke to people. They came in and they did submissions on the draft Murray-Darling Basin Plan which resulted in over 400 submissions being put to the Murray-Darling Basin Plan. You cannot do that in a half-day workshop. There are inconsistencies in the way that they are consulting with First Nations people across the northern basin in New South Wales—I cannot talk for the southern basin.

We need some consistency in the way that we consult with First Nations people, and the Akwé: Kon guidelines gives that consistency. Our experience with the State in the past is that it is obviously not following those guidelines and there is a lack of communication within the department with people that are obviously rolling out these consultations for the different plans in New South Wales—water resource plans, flood plain harvesting, and regional water strategies. It gets very confusing for First Nations people if you have got three weeks in a row where they have got workshops for these three different things. We would rather bundle them together and say "We have got three things being rolled out now. Let's consult on those three things and let's do proper engagement with our First Nations people."

The Hon. PENNY SHARPE: Thank you, Mr Hooper and Mr Woods. That was very important information you just gave us around the way to consult. I do find it extraordinary that you get asked to consult about water on three different occasions and then these projects get announced. That is not the way to do it. Obviously after Juukan Gorge there have been words from government at both a State and Federal level to make sure that atrocities like that do not happen again. You reference this in your submission where you say that there is some work happening. Is that through the Australian Heritage Council?

The CHAIR: Mr Hooper and Mr Woods, did you hear the question?

Mr HOOPER: I did not get the whole question, sorry.

The Hon. PENNY SHARPE: Sorry, I will just do it shorter quickly.

The CHAIR: Just before you do Penny, can I just check if it is a sound issue. Is there a way to turn the video up?

Mr HOOPER: Madam Chair, we are getting you very clear, but I am not getting the other Committee members.

The CHAIR: You are very close to me, Fred. The phone is right near me. Let's see how we go Penny.

The Hon. PENNY SHARPE: I will speak up, too, which might help. After Juukan Gorge there have been commitments made by New South Wales and the Federal Government through the Federal Government around improving protection of First Nations' heritage. You reference that in your submission. Are you able to tell us where you understand that is up to?

Mr RENE WOODS: My understanding is that there has been a commitment to work together. But how can New South Wales make a commitment to work together when we do not even have current culture and heritage legislation? How can we worry about what is happening in Western Australia? Do not get me wrong, it was poorly done and it should not have happened, but we do not have a current culture and heritage legislation that fully protects our culture and heritage in New South Wales. I really feel we need it, as New South Wales, to look after our own backyard first and get culture and heritage legislation up that is strong enough that if something like raising the dam wall impacts on culture and heritage, whoever it is gets held to account. If someone runs over or goes through some burials and desecrates the burials, there needs to be tough enough legislation.

A referral there for that is that this happened, everyone jumped on board, but in New South Wales currently there are a number of activities that happen every day like this but it does not make the limelight. It gets swept aside. Compliance within DPIE do not have the capacity to take these people to court and they get a warning letter. We do not have a culture and heritage legislation in New South Wales and until we do, I do not feel that we have strong enough protection of our cultural values in New South Wales.

Mr HOOPER: Currently in New South Wales our culture and heritage is protected under the National Parks and Wildlife Act 1974. Once we identify an object or a site that is heritage it is automatically then transferred to the Crown. In New South Wales it is the Crown in the right of New South Wales. All of a sudden, what we are doing under culture and heritage and under the national parks Act is we are giving our culture and heritage to somebody else—that is what it says. As soon as you fill out a form to identify a site in New South Wales you

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automatically relinquish the ownership of that site as a First Nation within New South Wales and it goes to the Crown. Then what happens is that if you want to move it—if I want to pick it up and I want to move it, even though it is my culture and heritage I then have to apply to move that rock or that stone or whatever from where it is placed. That is what is wrong with the New South Wales cultural and heritage Act or culture and heritage coming under the National Parks and Wildlife Act.

I go back to what Mabo said: What the Crown owns, we own half of. That is not being taken into consideration in terms of our culture and heritage. Our tangible and intangible values are not taken into consideration with culture and heritage as well. The way that the proposed legislation is—again, I come back to the fact a person from Western Australia can be sitting on a local culture and heritage committee making decisions about my culture and my heritage, and whether I can pick up that rock or move that rock again. Again, it is a total disregard of our law, and the common law is taking over our law and saying a person from Western Australia can go onto Muruwari country—which is my nation—and that person can tell me what to do with my heritage and my culture.

From our perspective, we told NSW National Parks and Wildlife a couple of years ago that we will not have our sites recorded on the Aboriginal Heritage Information Management System register, because as soon as that happens we forfeit the ownership of those artefacts. We want our own register that we can control and we can give permission in regards to any moving or anything like that. New South Wales has to look seriously at culture and heritage. What is culture and heritage, and how do we incorporate our tangible and intangible values into culture and heritage as well? Because we are the environment; we have always been a part of the environment, and our culture and our heritage blends in with everything else within the environment.

The CHAIR: Thank you, Mr Hooper. Clearly we could have a lot more time for this session—because we are officially out of time—but I just wanted to say to the Opposition members, Ms Sharpe and Mr Buttigieg, that they can throw one more quick question if they have a burning question. I am sorry for the time.

The Hon. PENNY SHARPE: I do have a burning question, which goes directly to the Wyangala Dam wall-raising project. I know that your organisation wrote to WaterNSW at the end of August requesting significant clarification on how the recommendations of its own heritage report into the impact of the dam raising are going to go to work, particularly given it recommends that there needs to be further investigation around cultural sites and artefacts. Have you got a response yet from WaterNSW?

Mr RENE WOODS: I did receive a response stating that the project officer for Wyangala would be in contact with me. I think it was the acting CEO who sent the letter to me. I was on a webinar last week with WaterNSW to say that someone would ring me after that webinar; I am still waiting. I just got an email earlier today to ask can I talk Monday at 12 o'clock to follow-up. I have been chasing them, not just in regards to the culture and heritage report but the inadequate engagement as well. Their own report is a shambles. They had an archaeologist out there with very limited First Nations people involvement, and the archaeologist was telling WaterNSW how important these sites were for Wiradjuri people up around the dam wall. That is not their role and responsibility; that is our role as First Nations people to be saying that type of stuff to WaterNSW.

The CHAIR: Thank you very much to both of you, Mr Woods and Mr Hooper. As I said, I think we could have had a lot more time for this session. Thank you so much for your evidence. I think all members found that extremely valuable. I do not think either of you took any questions on notice. Thank you again for the work you do as well.

Mr HOOPER: Thank you, Madam Chair, and thank you Committee members. I am looking forward to the report in 2021.

Mr RENE WOODS: Thank you for the opportunity this afternoon. When you are down in the lower Lachlan, please sing out and I would love to chat to you around the Great Cumbung. Thank you.

The CHAIR: Absolutely. Thank you.

(The witnesses withdrew.)

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RAY WOODS, Wiradjuri Council of Elders and Buyaan Trust, before the Committee via videoconference, affirmed and examined

HUGH McLEAN, Secretary, Lachlan Floodplain & Wetlands Group, before the Committee via videoconference, affirmed and examined

The CHAIR: Do either or both of you wish to make a short opening statement?

Mr RAY WOODS: Yes, I do. The problem we seem to have is the consultation process—or the so-called consultation process—that has taken place. We had [inaudible] of these consultations and who they involve. For years we have seen that Government hold these consultations at certain times of the day in certain areas without considering the whole list of people who are along this river, along the Lachlan River. The consultations are usually held [inaudible] for government-funded Aboriginal organisations that [inaudible], which is then not allowing the traditional owners of the traditional [inaudible]. There seems to be the understanding by government that [inaudible]. We have a big issue with that consultation process and how it worked out. As traditional Wiradjuri people we are known as the [inaudible], which is the river people. Those rivers are the Wambool or the Macquarie; the Kalari or the Lachlan; the Murrumbidjeri or the Murrumbidgee; and the Millewa and [inaudible], which is the Murray around Albury and [inaudible].

These rivers have been looked after by our people for thousands of years and that connection to that area is instilled in us, in our identity and in who we are as Wiradjuri people. Some of the issues I have with these consultations these people who have been consulted and given some of these approvals to this process and program of extension of this dam are not even from Wiradjuri country and are speaking on our behalf. I find that very disrespectful. I find it lazy by the government, not going out and consulting the right people. I do not know if that is deliberately lazy or just lazy. They are some of the issues I have. Our people [inaudible]. It gives us our identity and who we are as Wiradjuri people. This area, these rivers—we have evidence of our people being on them for thousands of years; we say from the beginning of time. That is how we talk about—

The CHAIR: Is that Siri trying to participate? Siri has not been sworn in, I am afraid, so is not a legitimate witness today.

Mr RAY WOODS: I am really sorry about that. Our occupancy on this country is [inaudible] thousands of years. One of the things I do is take our young men out on this country. These lower Lachlan flood plain areas where these grazers [inaudible] have always been supportive of us being able to take these boys out on camps on their land and on their country [inaudible]. They understand that [inaudible] and that is an important part of their identity and their responsibility going into the future. I do this on an annual basis. [Inaudible] during the year so these boys get the chance to see this country when it is flooded and they also get to see it when it is a bit barren. There is a bit of water down there at the moment, which is good to see. So, these are the things that I feel very passionate about. In the long run, how am I supposed to stand up to my boys if in future, down the track, my boys look back and say, "Uncle, you never done anything to stop this process. Look at our country. It has been destroyed?"

I feel very passionate about standing up for our people and our young people for the future and making sure that this unique ecosystem and environment in the lower Lachlan is looked after for the generations in front. If we do not, they are going to inherit a barren country that is not worth anything. I want to know when the Australian Government and the State Government are going to start adhering to the UN declaration that they signed upon. Was that just a tokenistic thing to say that we are looking after our Indigenous people on country and allowing them their say and time healing their country? Or was it true and they are going to start doing that? Thank you for your time.

The CHAIR: Thanks so much, Mr Woods. That was a great opening statement. Mr McLean?

Mr McLEAN: I am representing the Lachlan Floodplain and Wetlands Group [inaudible] as a landholder, farmer and grazier in the Lachlan flood plain area. A quick history of the Lachlan Floodplain and Wetlands Group—we had a Lower Lachlan Landcare meeting on 24 June 2020. There were about 30 people who attended that meeting and the issue of the Wyangala Dam enlargement was raised. The community members at the meeting unanimously decided that action needed to be taken and this process needed to be halted. From that meeting we formed the Lachlan Floodplain and Wetlands Group, which consists of nine members at the moment, including local Indigenous representation. Mr Ray Woods is one of those. We have a member from the Lachlan environmental group the Lake Cowal Foundation and remote landholders in the lower Lachlan area, including myself. Those landholders are [inaudible] and grazing operations.

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The goal of the organisation is to halt the process of the enlargement of the Wyangala Dam until due process has been properly completed. We would like to see a business case, the hydrological modelling and the environmental impact statements completed and made public before any further work is undertaken on this project. My final statement would be that our group is not opposed to development within the Lachlan Valley. Quite the opposite; we want to see sustainable development and ethical use of public funds to increase production. When I say "increase production" that is increasing the productivity of water that is currently available [inaudible]. This project is simply a redistribution of a natural resource away from environments and existing farm enterprises to be put into storage and to be redistributed to extractive industry. That is the fundamental issue with this whole project and I do not think it is ethical. I hope this Committee is willing to take those points on board and escalate them, if possible. Thank you.

The CHAIR: Thanks so much, Mr McLean. I might just kick off with a few questions. Talk to us a little bit about the lower Lachlan flood plains and wetlands area. How often does a big flood come through that area?

Mr McLEAN: I will attempt to answer that and I will answer it in three parts. Historically—when I say "historically" I mean pre-Wyangala Dam construction, which was constructed in the 1930s—large flood events were coming through this region in the vicinity of between every two to five years [inaudible]. Well, three things: large [inaudible], large depth of water and large duration. Post the second enlargement of Wyangala Dam, which took place in 1972, those events have probably been reduced down to about one in between seven and 10 years, which is where we are at the moment. [Inaudible]. Our feeling is that with an enlargement of the Wyangala Dam and this is where [inaudible] at his property. In our example we believe that those large flood events will probably be reduced somewhere between one in 10 to 15 years.

The CHAIR: Thank you. We have just heard from members that the sound quality is a little bit tricky. I just want to check with the two of you what you are speaking into in terms of a speaker. Is it just your laptop or something else?

Mr McLEAN: I think it is into the laptop. We can actually move.

The CHAIR: Sorry, I missed that. What did you say?

Mr McLEAN: I was speaking into a laptop. We could attempt to move closer to it.

The CHAIR: I think it is also because there is an echo in the room that you are talking in as well. It might help with both of them if they do just hold the laptop closer to them. We will try that. I can see you are quite close to the microphone anyway.

Mr McLEAN: If I stop talking into this laptop, there is another one which is connected to the web cam [inaudible].

The CHAIR: Maybe they could move closer to that one. Yes, why do not you try and move closer to what is actually the screen that we can see you on. Sorry to other members and members of the public who have dialled into this while we just sort this out. We dialled the previous witnesses in on the phone and it is remarkable how much easier that is.

The Hon. MARK PEARSON: It is nice to see you though.

The CHAIR: Yes, it is nice to see you both.

Mr McLEAN: Is that better?

The CHAIR: Would you just mind answering another question? So you are saying one in 10 to a one in 15 years flood event, you just started talking. Is that now or is that with the potential dam wall raised at Wyangala?

Mr McLEAN: The one in 10— Is that better?

The CHAIR: I think it is, yes.

Mr McLEAN: Do you want me to go back and answer the question from the start again?

The CHAIR: No. We heard enough.

Mr McLEAN: So with the enlarged dam, it would go from a one in seven to 10, to one in 10 to 15.

The CHAIR: What does that mean for the area? We will get both perspectives potentially. Mr McLean, potentially from a productivity, graziers, irrigators perspective as well, and Mr Woods, from a cultural and environmental perspective if you wanted to answer that question too. What does that mean a one in 15 year, one in 10 year flood compared to what you get now?

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Mr RAY WOODS: I have just been over the Lachlan Valley about a week ago. I flew over the area. It just means that a lot of these areas, these lakes and swamps that get filled up out of the Lachlan for breeding, for bird breeding and frogs and things like that, they are so unique that some of them are [inaudible] swamps, some of the red gums are coming out of the Lachlan. What happens is the red gums need a drink every three years I think it is, basically they definitely need a drink. The box is probably around five or six years or something—seven years. So these areas will not give water so these box trees around these lakes will end up dying off. So just the habitat there, just not only for the wetlands and frogs and that, but the other animals that utilise that water when it is there and utilise that timber that is around the lakes, will vanish and there will just be a barren area [inaudible]. It will just destroy everything.

Going out there at the moment, it is just beautiful to see the country coming to life with the water that is down there. It is just a magnificent sight, the green life now at some of these lakes. [Inaudible] the next time on one or two of these different areas because you have an area, and they are separate from each other, and there might be another of these lakes where the nutrients are suitable for them to survive. That is also suitable for these nesting processes where these birds need to raise a chick. They need over 100 days or it might be more, to actually hatch and give a young bird a safe [inaudible]. So around these areas it keeps them safe from predators, vultures and things like that too. We have got a unique and a very fragile ecosystem down the centre of the Lachlan and it will just absolutely destroy it if we do not maintain the water supply there.

Mr McLEAN: I will try to answer this quickly because I could talk on this for two and a half hours if you want me to but I would do it as quickly as possibly can. I will go on two levels. One as a production level. For myself, I am a dry land lamb producer. When we do not have flood events, I produce about five kilometres of lamb year in year out approximately. When we get large flood events, it is not on our entire place—let us say over 1,000 hectares—on that 1,000 hectares where we get inundation in large flood events, it will triple my production over a two year period. So I effectively go from five kilograms a hectare to 15 kilograms a hectare for two years.

[Inaudible] so over two years that is an extra 10 kilograms of lamb per hectare. A kilogram of lamb to me is worth about \$7 so currently one in seven or one in 10 year events are like cream on the crop products. That is our little bit of extra income that will help us. It will help us put money back in the area, educate the kids. You do not guarantee it will happen all the time but there are moments when it will happen. That is from a production point of view. I will probably elaborate a little bit more on what that means but I actually mentioned these two papers in my Lachlan [inaudible] wetlands groups. So that is two papers [inaudible] 2005 and [inaudible] 2016.

These large flood events take place in the Lower Lachlan every three years. You need volume of water, you need depth of water and you need days of water. So from their research, in those two papers, they have very specifically said that for these bird breeding events to take place on a large scale across the environment in the Lower Lachlan area, you need approximately 100 days of water at 2,500 megalitres per day [inaudible] or 500 gigalitres of water. Now what that allows to happen is it allows birds to come into the area, it allows birds to feed, put bodyweight on, find a mate, breed, build a nest, lay an egg, hatch an egg, raise the young and allow them to fly away. They have got to do all that in 100 days.

But the whole process will take more than that. They will need 100 days plus. Most of these birds, and I will use the ibis as a good example, they have a life expectancy of about 15 years. As I said earlier, a completely unregulated Lachlan system without any dams, you would get these bird breeding events about one in five years. So that would give one bird three opportunities in its life to breed and replace itself. Construction of the 1972 [inaudible] at Wyangala Dam has brought that back to about one in seven or one in 10, effectively that will give that bird two opportunities in its life to breed and replace the population. Extend the dam again puts it out to one in 10, one in 15 years, that gives that bird one opportunity in its life to breed and replace that population. Now if that is not potential environmental decimation, I do not know what is. I am just going to put a little bit of context around that 100 days of flow and two and a half thousand megalitres. I will put that in a little bit of context if you do not mind.

The CHAIR: Yes, it is important. That is fine.

Mr McLEAN: We have just recently had what is called a translucent flood event in Lachlan. There were reasonable rainfall events in the upper Lachlan in August and September this year, which triggered under the Lachlan Water Sharing Plan a translucent event. A translucent event means that water that would run into Wyangala Dam has to pass straight through that dam into the river system and there are no barricades in the system. All weirs are effectively open. What that does is it limits those small- to mid-level flood events. We had a reasonably good translucent event. Then with deep pipe water under the—so the Lachlan authorities that own the environmental water that is being purchased or own and manage the environmental water that is being purchased by the State, including over the last ten years, through the management of the Lachlan Environmental Water Advisory Group, put some of that held environmental water on the back of that translucent flow to extend

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the flow—rather than that flow stopping. It would flow to 90 overnight. They gave it tails. The flood rose, got to the beat and fell.

Now under that event, which was a reasonably good one, we got two and half thousand megalitres a day at Booligal for seven days. That is a long way short of 100 days. What you would probably find throughout your hearing is that people will try to tell you that you can build this dam and then manage flood events to produce these environmental outcomes. You cannot do it under Lachlan Water Sharing Plan, which is a very robust and extremely good document. WaterNSW can not allow water to go down that system and have it flood out of the system. The Lachlan [inaudible] cannot create these events. It is absolutely impossible. Do not let anyone try and tell you we can manage these flood events, because it is impossible. Nature has to make this happen.

The Hon. MARK PEARSON: Why can't it? Why can't the dam system provide the same environmental requirements?

Mr McLEAN: Because, as I said, under Lachlan Water Sharing Plan, you cannot release water of out of storage that breaches the banks of the river and potentially floods somewhere. It is illegal. It cannot happen.

The CHAIR: To expand on that, they have discussed flood mitigation being one of the, if you like, purposes or reasons that there is a discussion in terms of water security for towns—town water security but flood mitigation is also mentioned. It looks like WaterNSW is trying to stop the flood as such, but you are saying they are an essential part of the lower Lachlan and how cultural, environmental and social—

Mr RAY WOODS: I see in the draft strategy plan there that they keep talking about quality water for these communities. Now all these communities are all on bores. The quality of water that they [inaudible] in those communities—when those aquifers drop to a certain point, that water will not be much good for anyone. To restock these aquifers, we need that flood plain and floodwater to come down. To put these communities on bores and say [inaudible] the way I look at it, they are saying that quality of water—the other thing about that flooding, because all river systems that go in it—the Belubula and other tributaries that come in after the event—when they have a lot of rain up there, they are then flowing into the river as well as that spillage over the dam. That is what gives us that [inaudible] flood in our systems. They say Government cannot boom it back when they have built the wall. They cannot do that.

Mr McLEAN: What Ray is saying there is that the flood mitigation is a little bit controversial in terms of spending initially what was \$650 million—I think it is now nearly \$1 billion—on constructing this dam. To spend that amount of money on flood mitigation in a valley where potentially you have only really got three towns that might suffer consequences of major flooding, Cowra, Forbes and maybe Condobolin—they are not big populations. There have got to be a lot cheaper ways of mitigating floods in those three areas. So we are very sceptical about the justifications for the dam. Secondly, town water supply is completely, like Ray said, actually now being [inaudible] I am not sure about Cowra—they are all on bores. They have no reliance on the river systems there day in and day out. This is a really pertinent point, because those kind of events are actually what recharges these aquifers of the Lachlan system.

As I said, those towns' water supply is underpinned by those aquifers but, secondly, industry—and when I say industry I mean irrigation—is underpinned by it. Most major irrigation enterprises in the Lachlan Valley have access not only to the river but to their main source and more reliable sources from the aquifer and bore water. You take 650 gegalitres out of every single potential major flood event from now on by ensuring a portion of that goes into aquifer recharge. You are actually potentially reducing the amount and taking a lot of your water from industry and towns or taking away water out of potentially getting back into the aquifer.

The Hon. BEN FRANKLIN: Can we move from floods to drought first? I guess I wanted to start by talking about connectivity and the importance of connectivity through the entire system. Obviously one of the results of climate change is going to be a change in flood inundation frequency, as we have talked about. My first question is how we actually maintain connectivity throughout the system in longer droughts from top to bottom without improving the sort of infrastructure in the way that we are talking about.

Mr McLEAN: Very simple. This is the only decent water infrastructure actually being researched in Australia at the moment and that is [inaudible]

The Hon. BEN FRANKLIN: Sorry, say that again. Water re-use, did you say? You just cut out at that critical moment.

Mr McLEAN: Water use efficiency. There are systems that can be put in place throughout the system. You can upgrade and re-use. You cannot create structures. You cannot create irrigation—you can structure in one particular [inaudible] irrigation and improve the efficiency of water delivery and administration in that system. What that allows is—that actually frees up more water. It allows the system and allows WaterNSW to use that

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limited resource that they have to run [inaudible] As I said earlier, Lachlan Floodplain and Wetlands Group are absolutely for development and investment in infrastructure in the entire system. Building one big dam to store 650 gigalitres of water potentially [inaudible]. To have that sitting there and being able to evaporate is very questionable as to whether you are going to get that extra water to continue that connectivity in those extended droughts and manage the water that is in the system to the best of your ability and achieve that goal.

The Hon. BEN FRANKLIN: I get that. The evidence that we had this morning though was that we obviously need a range of different strategies across the whole system and infrastructure is one. I am thinking about down your end, potentially, of the system, what happens if in a drought, for example, to the economic impact in the region when there is no water in the dam to actually run the river?

Mr McLEAN: On an economic basis?

The Hon. BEN FRANKLIN: Yes.

Mr McLEAN: The water in the river, in terms of economic production, is insignificant. We have all, I cannot say all, the majority of landholders in the Lower Lachlan over the last 10 years [inaudible] but also scarcity and increasing value of water are putting in a great deal of water use efficiency programs so that we can maintain stock and domestic water supply. And we have done it through the millennium drought [inaudible] short, sharp little drought we had in the last three years. For much of the water in our system, effectively the river system could stop, and it did stop in 2009. Prior to events driven by rainfall, localised rainfall to grow pasture, to grow animals, to create flash flooding, that happens without running, you could have the river running, but not pasture in the paddock. It does not change economic output more than when the river runs dry and there is no green feed, there is no grass [inaudible]. So you do not have any economic production. The other side of that is irrigation production. Yes, irrigation production will reduce because you do not have that supply of water from the river. But like I said earlier, they are underpinned by that aquifer and irrigation production will continue because that aquifer provides that backup water and you can continue with that core of your business in irrigation.

The Hon. BEN FRANKLIN: So would you suggest that you should cut the river off earlier to save water?

Mr McLEAN: No, I did not say that. We were putting the position where that happened, and that was going to happen, there was no way of stopping that management of that water. So that was in 2009. That drought started in 2000. There was probably four or five years in questionable, not questionable but we were learning how to manage water for that initial period. In the future the water sharing plan is robust enough to continue the water supply through the way that the system inflows increasingly difficult droughts, the water sharing plan allows for that. You build this dam, you blow that water sharing plan to pieces and have to start again. That is again one of the big tragedies of doing this dam. It will destroy what is a very good management tool.

The Hon. BEN FRANKLIN: I move to a different issue. Today there was a media release put out about community and stakeholder sentiment about the new dams in Dungowan and Wyangala, obviously, which is what we are focusing on at the moment. It basically says that 84 per cent of people feel it will have a positive impact on residents and local businesses. This morning WaterNSW discussed this in some depth. I was wondering what is your take on those sorts of results?

Mr RAY WOODS: This comes right back to where, I suppose with people knowing about what is going to happen with the dam projects. This to me, first of all, I only found out about it off this second hand information. What seems to be in issue is these things do not get put out public enough, they are not advertised in local papers and so forth. A lot of our people do not have, and I am speaking of the Indigenous [inaudible], they know people do not have technology with computers and they surely do not go online or on websites to see what sort of projects they are initiating and stuff like that. So, look, I think one of the things, a lot of these surveys and things that they do involve surveys and stuff too, so I know they do not read too much into what [inaudible] because, as I said earlier, I do not think everyone knows [inaudible] meaningful consultation. I do not think there has been any meaningful consultation.

The Hon. BEN FRANKLIN: Mr Woods, my colleague Ms Cusack raised this issue as well with some of the Indigenous representatives in the last session. I agree that there obviously needs to be a lot more work done in this area. I was just thinking about the comments you made then about a lot of your mob maybe do not go on to computers or do not respond to surveys and so on. I guess a lot of it would be done through what best consultation practice perhaps could be, is done through oral consultation and actually going out and talking to Indigenous people properly. How do you think that form of consultation can be best translated into the planning process? Can you talk to us more about what needs to be done to seriously improve the consultation process with Indigenous peoples?

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Mr RAY WOODS: I think one of the main things is, as we spoke about, and you spoke about in the question, our people do not have the technology. Not only do they not have the technology to find out about these things, also our people are pretty, have always been pretty humble people and quiet sort of people. That has been probably one of the issues that our people have had with dealing with Government over the years because they have been quiet and sat back, is that decisions have been made. We have seen that policy has been put forward to our people over and over the last 150 years, 200 years. To answer your question, it basically has to be put out in local papers. A lot of our people are still in contact with the local papers. Once it starts getting around local papers and things like that, in those communities, the word of mouth, other people and stuff like that. I know that is a tough one, but I think most of these, it still comes back to that thing where it seems to be like a tin box for a lot of government organisations to go out there and find an Aboriginal organisation, so-called Aboriginal organisation are ready to say yes to whatever projects that they are putting forward, whatever the conversation might be.

The thing is, a lot of the traditional-owned people do not get consulted. That is because, as I said at the start, our government organisations are funding these Aboriginal organisations and they seem to have the voice all the time. A lot of these organisations are set up, and it does not take much for an organisation to get set up and say that they are representing an area, but they put a name to themselves, any Aboriginal name for themselves, then be incorporated. And all of a sudden they are the organisation that government go to see. A lot of the people own and traditionally run their country [inaudible]. I put to government and other organisations like this that to have someone else speak on behalf of our country is, another Aboriginal person, you may as well just have a non-Indigenous person speak on behalf of that mob. That is the way we feel. And that is what we keep banging our heads against the wall, we do not get the voice coming from our people, traditionally, it is always the [inaudible].

The Hon. BEN FRANKLIN: Mr Woods, I am trying to find a way to make some recommendations here that are really going to be helpful and effective. In terms of previous processes you have been through, previous projects or consultation periods for the last 20 years, are there any actual projects or individuals which you can point to and say, "You know what? That was where consultation was actually pretty good and worked." so that we have some best practice examples?

Mr RAY WOODS: Can I take that question on notice?

The Hon. BEN FRANKLIN: Yes, absolutely.

Mr McLEAN: Was that a WaterNSW survey that said there was 85 per cent community support for the enlargement of Wyangala Dam in Lachlan Valley? Was that the statement?

The Hon. BEN FRANKLIN: Can I just have one quick follow-up question with Mr Woods and then I will come straight back to you, if that is okay, Mr Mclean?

The CHAIR: There is ten seconds left, Ben.

The Hon. BEN FRANKLIN: Sorry. Mr Woods, in terms of the points you just made about not talking to a range of others, would you include the two that we have just heard from previously—MLDRIN and NBAN—in that or are they organisations that have credibility in this space?

Mr RAY WOODS: The Lachlan system is an entity of its own. It does not flow into the MLDRIN system. That is why I cannot understand why these people have an input in it. It is its own entity. What people do not seem to understand is that it is such a fragile environment and ecosystem that when it gets down it floods out and that is it. Very rarely has bits of that trickled into the Murrumbidgee and into that Murray-Darling Basin Plan. That is why I cannot understand why these sorts of people are always having their say on a system that is totally its own entity. I cannot understand that.

The CHAIR: Mr McLean, were you about to ask a question about that survey?

Mr McLEAN: Yes. I assume the statement was that 85 per cent of surveyed respondents to a WaterNSW survey said—

The Hon. BEN FRANKLIN: I will read it to you, if you like, Mr McLean. It says:

An analysis of community and stakeholder sentiment towards the two major projects indicated that overall people feel that the new Wyangala Dam Wall Raising Project will have a positive impact on residents and local businesses.

And 84 per cent of people agree with that. That was the evidence that WaterNSW gave this morning.

Mr McLEAN: That is a disgrace and a joke. I am absolutely appalled. I started my introduction today— we had a Landcare meeting only three months ago. No-one in the room—there were only a few people who even knew this process was happening—100 per cent of landholders in that room were opposed.

CORRECTED

The Hon. BEN FRANKLIN: Apparently it says that—

The CHAIR: Let him finish, please.

Mr McLEAN: Beg your pardon?

The Hon. BEN FRANKLIN: It says that 850 community members were surveyed on this.

Mr McLEAN: There has been no community consultation in this region at all. This comes down to the crux of what this whole project is about. If you frame that question of "Are you in support of this piece of government-funded infrastructure?" I could point to \$2 billion worth of government infrastructure. If you went to 100 or 850 industry participants—by that I mean mining and irrigation industry people—they would say, "Oh yeah, we want this", and I will tell you why.

I am going to go back to the original costings of it, which was \$650 million because that is the figure that is in my head. That \$650 million investment will yield, from the best that we can gather without a hydrological model of the State being released, about 21,000 megalitres per year to industry—additional megalitres per year. You equate that out, that water will only go to general security irrigators. They are going to get an extra 21,000 megalitres of water per year, which is not a lot of water, but if you do the figures on that, that is \$30,000 per megalitre. This is a government-funded redistribution of a natural resource from the environment to a group of extractive water users at no cost to that group of people. That is \$30,000 per megalitre the Government is spending to improve the productivity of one small part of our system.

A megalitre of water on the open market today in Lachlan Valley is \$1,200. The State Government and the Federal Government of Australia are going to spend \$30,000 a megalitre to produce that water for a very small group of people. You go and interview those people, you are going to get a very positive response. If you put that question out there and ask people, "Do you want the Government to spend \$30,000 per megalitre on a specific industry? Are you in support or are you not?" you would not get 85 per cent support. That survey is a farce.

Mr RAY WOODS: Where did they survey these people? That is the issue.

The Hon. PENNY SHARPE: Regarding that discussion about people being asked and consulted, do you think people are aware that under the funding arrangements for these that the funding for the infrastructure will be clawed back from them?

Mr McLEAN: We do not know the answer to that because there have been no business cases. That is a very significant and poignant question. Water users potentially could be in the future [inaudible]. I do not know the answer.

The Hon. PENNY SHARPE: Yes, sure. To be fair, the Government said that they have got some grants from the Commonwealth and it is unclear what the funding arrangements in New South Wales are, but my understanding of the way in which these things operate is that it will be required to go through a process. The process is user-pays at the end. I am very interested in the costs and you just mentioned it then—\$1,200 per megalitre at the moment and it will go up to \$31,000 a megalitre if you take in the costs of the project. How much is high security water currently costed at?

Mr McLEAN: I cannot answer that of the top of my head. I can give you an estimate. I think it is about \$2,000 per megalitre.

The Hon. PENNY SHARPE: My point is that it is significantly cheaper than \$31,000.

Mr McLEAN: Significantly. Very significantly.

The Hon. PENNY SHARPE: Your submission talks about the water infrastructure technologies, and I am not a farmer—I live in the Inner West of Sydney, so my apologies for what seemingly may be a stupid question—but I am very interested in your references to other water management technologies and particularly the Total Channel Control being considered for efficiencies. Can you explain to us what that is and how it has worked in Coleambally?

Mr McLEAN: Yes, it is an amazing piece of infrastructure. I will go back a step. Old school irrigation is basically: You have people driving around in vehicles and opening doors to let the water go down onto the next farm and it is very time consuming. There is the ability to make mistakes. You could let too much water down at the wrong time or not enough. So the Total Channel Control system is a fully automated system where users can effectively order their water from the phone and it will adjust all channels from their farm gate instantaneously and automatically all the way to the point of supply. There is low margin for error. There is a low margin for overflowing channels, break out [inaudible] so losing [inaudible] amount of water and having to recharge that head. It is an extremely efficient way of managing water.

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My understanding is that Jemalong Irrigation has had no infrastructure upgrades and it is a very old system. Coleambally Irrigation and Murrumbidgee Irrigation, which is based around Griffith, are using this technology. They are bigger than Jemalong but, potentially, I would much prefer to see \$50 million in that region and potentially improve water use efficiency. Those gains can be used by the farmer or increase the water board area of the system. I do not know if this is a possibility, but if you take that Total Channel Control system a step further and potentially, with the telemetry that is available, you could model an entire Lachlan system using that technology—weirs open instantaneously. You could gain efficiencies in the system using that technology.

The Hon. PENNY SHARPE: You do not have to answer this: Do you have any sense of the cost of that compared to the dam?

Mr McLEAN: No I do not. I cannot answer that question. I know that these options have been looked at in the past and I cannot say which one has a better cost-benefit analysis. We do not know the cost-benefit analysis of the Wyangala construction, so no one can [inaudible].

The Hon. PENNY SHARPE: That is okay. I will go back to the Government and ask it. I was just very interested. My final two questions are about the technology. That technology relies entirely on good metering and essentially "no meter, no pump". I assume that is the case, because as we know there are large swathes of New South Wales where there is not good measuring at all and so that type of technology—not in your neck of the woods, but further north—would be problematic.

Mr McLEAN: Yes. Metering on the Lachlan—on the Lachlan, as I said, the water sharing plan is well regulated. The metering works and should work. It is a good point, actually. There is a negotiating process that all water users [inaudible]. This is another area where I think potentially this [inaudible] could be used to operate that waterhole to fully [inaudible] control those, meaning that there is [inaudible] times that the [inaudible]. That is here now. Actually, the Hay Shire Council on its bases actually ran a pilot project in this region using current [inaudible] technology. [Inaudible] put into better measuring, which would again—similar to that total channel control—would allow WaterNSW to better manage the water resource, so that instantaneous real-time feedback of where water has been. [Inaudible] will allow them to manage their water resource more effectively and more efficiently.

The Hon. PENNY SHARPE: My last question is a straightforward one about the total channel control. I am interested in whether it also deals with evaporation in the channels.

Mr McLEAN: No, you are using open earthen channels, but that is where you do get efficiencies, because you do not have overruns of water, overflowed channels that allow more seepage and water evaporation. You only have water in the channels [inaudible].

Mr RAY WOODS: And a chance to put on [inaudible].

Mr McLEAN: Yes.

The Hon. PENNY SHARPE: Thank you very much. That was very helpful.

The Hon. MARK BUTTIGIEG: Just very quickly, in the last couple of hours of evidence I think the main theme to come out is a lack of—this is a very complex subject, obviously, and it is something that needs to be looked at holistically. That is the big message that has come out for me. Intuitively the public—and I think understandably so, because it kind of visualised these dams getting bigger and therefore catching more water so that we can save it up for when the bad times come to distribute it. But then once you start to hear evidence like the things you have stated just now, whereby you have also got to consider ground water, efficiency savings, the fact that the cost for the gain—all those sorts of things, it seems to me, are not really coming out in the public discussion. I guess my question is—and this touches on what Mr Franklin was raising before—would one of the outcomes of a recommendation of this Committee be a more structured consultation process, where subject-matter experts such as yourselves are engendered into the consultation process so that the average person actually gets to hear all this detail? That is clearly part of the deficiency in the process, it seems to me. Would that be a fair comment?

Mr McLEAN: Do you want to have a go at that, Mr Woods?

Mr RAY WOODS: Yeah, for sure. [Inaudible]

Mr McLEAN: [Inaudible] this one, but I will probably get the pronunciation wrong: yindyamarra?

Mr RAY WOODS: "Yindyamarra" is a word of ours, a Wiradjuri word. That word is all around respect. Respect is one of the outcomes of yindyamarra. We Wiradjuri people use it as a holistic way of living. It is all about respect, courtesy, integrity, the whole lot. It is a way that we are taught as kids, as babies by our mothers. It is about [inaudible] and how we look after things and how we treat each other and the land. It was all about how

CORRECTED

good we are. One of those main things that comes from yindyamarra is to go slow. "Go slow" does not mean, "Oh yeah, we're just sitting back". It is just about taking in everything that is around us, understanding it and understanding [inaudible] and not acting on impulse about how we deal with things. That is one of the main key things that our people held dear for thousands of years. [Inaudible] It is to take in everything and understand why [inaudible]. It is about understanding the country and taking everything in—listening to what the country is telling you. [Inaudible] That is who they are; that is their identity of being a Wiradjuri man, a young man or young boy [inaudible]. That is a part of their life, that responsibility of understanding and listening and taking in those things. Sorry, Mr McLean, I—

Mr McLEAN: No, you said exactly what I would say. I said it at the beginning: Our group would like to be at the table. We would like to be there for that process, that slow process. Let us slow it down. Let us still spend the money—maybe not spend as much, or you can spend some, and get [inaudible] better outcomes. But do not do this because it is going to grab some news headlines and potentially get a few more votes. Just slow the process down and make it work for everyone—the entire community of the Lachlan Valley. I think it can work, and we want to be there. We want to be in that process.

The CHAIR: Thank you so much, Mr McLean and Mr Woods. That is something really good to finish on. Thank you so much for your contribution and for attending this hearing. I think you may have taken one question on notice. The Committee has resolved that answers to questions taken on notice be returned within 21 days. The secretariat will contact you in relation to the questions you have taken on notice. Also, Mr Woods, the secretariat will contact you in relation to some of the Wiradjuri language that you have said during this hearing just to confirm the spelling of that for Hansard, if that is okay?

Mr RAY WOODS: Yes.

The CHAIR: Excellent. Thank you so much.

(The witnesses withdrew.)

(Luncheon adjournment)

CORRECTED

BEV SMILES, President, Inland Rivers Network, affirmed and examined

SARAH MOLES, Secretary, Australian Floodplain Association, before the Committee via videoconference, affirmed and examined

TERRY KORN, Immediate Former President, Australian Floodplain Association, before the Committee via videoconference, sworn and examined

GARRY HALL, President, Macquarie Marshes Environmental Landholders Association, before the Committee via videoconference, sworn and examined

The CHAIR: I assume a number of you will want to make a short opening statement. I will go straight to Ms Smiles now.

Ms SMILES: Thank you for the invitation to present to this very important inquiry into new dam proposals in inland New South Wales. Inland Rivers Network [IRN] does not support new large dams and weirs capturing additional natural flows in inland New South Wales. Our western flowing rivers are already irreparably damaged. Their health is poor and declining and any additional significant impacts will not be able to be offset or mitigated. We have outlined the key issues with the proposals and a set of recommendations in our submission before you. The existing storages are currently filling with the recent regional rainfall. Wyangala Dam is now at 63.2 per cent. Dungowan Dam is at 97.4 per cent. Chaffey Dam is at 30 per cent and rising. The town water security is no longer a critical need. If these inflows are better managed than the last major fills in 2016 then the people of New South Wales will not find themselves under so much threat.

There is no need to rush and fast-track these dam proposals. The key unknowns are the final geotechnical assessment, final design and the feasibility studies. The development of the business case is the rational next key step. The business cases must be publicly available documents because public funding is being invested in these projects. The beneficiaries and the return on investment is still very opaque. These projects do not need to be designated critical State development infrastructure so that they are fast-tracked through the assessment and approvals process. We need to know a lot more about their feasibility and justification. Severe drought is no longer a pressing issue; poor management of water supply is and this needs to be addressed before any new major investment. The current justification that new dams are a National Party election promise is not a good enough reason to throw public money into projects that will kill our inland river systems.

IRN is very concerned about the lack of transparency around the New South Wales funding source for the projects. We know that \$30 million of the proposed Macquarie River re-regulating weir is coming from the Snowy Hydro Legacy Fund. We presume that New South Wales' commitments for the other projects is also coming from this funding source. This is \$12 million for the Mole River business case, \$242 million towards the new Dungowan Dam and pipeline, and \$325 million towards raising the Wyangala Dam wall. There is no transparency around the decision-making processes and management of the Snowy Hydro Legacy Fund. This money was designated for regional infrastructure projects, but new dams are not the best use of this funding and the people of New South Wales have not been asked. We need transparency around how this money was approved to be spent on dams. New climate modelling released through the draft regional water strategies indicates that this investment is likely to lead to stranded assets. IRN trusts that this inquiry will investigate the important issue of funding sources, business cases and the viability of the projects. Thank you.

Mr KORN: I would like to reiterate all of the points Ms Smiles made and I will expand on a couple of those in my introduction, but we have only got a couple of minutes, so I want to keep that short. The Australian Floodplain Association represents a diverse group of people throughout the northern and southern basins. Mostly it consists of flood plain graziers, but it has 15 groups of different sorts, including six councils. We are seen as a peak body by both the Federal Government and the State Government when water issues are brought to the table. We are the only alternate agricultural voice in this debate other than the irrigators, so that is why they seek our view on matters. I might say that I spent some time reading the different submissions, or scanning the different submissions, last night and yesterday. Many of them point to the issues raised by Ms Smiles a moment ago.

The thing that we are concerned about primarily, on top of all of those things that Ms Smiles identified, are the connectivity issues associated with [inaudible] back to these dams and the proposals. We think that is a major issue which will underpin and potentially undermine much of the good work that has been done so far with the basin plan implementation. The thing that I am really sad about with these proposals is that I have been involved in the water debate since 1979, when I moved to Dubbo. I have seen many things happen in the water debate, most of which have been bad. I can only see that happening as a result of these proposals, as well, if they go forward in their current forms. So I have got extreme disappointment about what is happening with this process

CORRECTED

and that we have to spend time and energy and money—all of us—addressing a political knee-jerk reaction, primarily from the National Party, proposing that these dams be fast-tracked.

I would prefer us to be more strategic in our approach and slow things down and, as Bev Smiles mentioned, the thing I would like to see as an outcome of this inquiry, is that it recommend and implement a slowing down of the process so that we can give proper and you consideration to the many issues that I have read in all or most of the submissions over the last 24 hours or so. The thing I am really fearful of is the cumulative impact of these particular proposals, relative to what has already happened. Our river systems are incessantly undergoing death by a thousand cuts and this is just another couple of cuts in that process. I sincerely hope that this review process will help us redress this proposal so that we can have some pause in the process and we end up with something that is really strategic, meaningful and worthwhile.

The CHAIR: Thank you so much, Mr Korn. We will go to Mr Hall now.

Mr HALL: Can you hear me?

The CHAIR: Yes we can. Are you there, Mr Hall?

Mr HALL: What about now, can you hear me?

The CHAIR: We can hear you. It is cutting in and out.

Mr HALL: Thank you for the opportunity—

The CHAIR: Mr Hall, I am going to have to interrupt you. You are cutting in and out to the point we cannot make out what you are saying. We will call you so if you could disconnect from this Webex meeting and the Secretariat will give you a call. This is definitely a lesson in dialling people in from all around the State, isn't it? It has its challenges while it is also good to allow people to participate, it certainly has its challenges as well.

Mr KORN: I hope Telstra is listening so they can improve the telecommunications.

The CHAIR: Yes.

Mr KORN: One thing I forgot to mention in my statement if I could—

The CHAIR: Very quickly, Mr Korn.

Mr KORN: There is a potential conflict of interest in a sense that I have been invited to sit on the external review committee of the regional water strategies. I want to assure the Committee that whatever I say in this Committee is what I would say around the table of that external review committee should I end up being on it. Thank you.

The CHAIR: Thank you very much, Mr Korn. I think if everybody started declaring their conflict of interest in this Committee in terms of all the various committees they are on, we might be some time. But thank you for declaring that. We have Mr Hall on the phone now. Mr Hall would you like to try again and start with your opening statement?

Mr HALL: Yes, just checking that you can hear me loud and clear?

The CHAIR: Much better, thank you.

Mr HALL: Thank you for the opportunity to give evidence today. I apologise and I would have liked to have been there in person but the travel conditions mean that I am operating on a poor Internet service as previously mentioned. Firstly, I would like to invite the Committee to come and see the Macquarie Marshes at the moment. There is a small area of the Ramsar listed wetland that is particularly healthy from the recent downstream tributary flows. My input today will be solely focused on a re-regulating structure at Gin Gin Weir in the Macquarie. I do not have a lot of knowledge on the other dams, but having lived in the Macquarie Valley for 50 years and, all that time living in the Macquarie Marshes, I think that as chair of the Macquarie Marshes Environmental Landholders Association, we have an inbuilt knowledge of how the river operates.

The irrigation industry is part of the community. They are not representative of the whole community. So when we talk about river efficiencies and improvement in water infrastructure, I am at a loss to see how more dams create more water. The dams that are currently in place in the Macquarie—Windamere and Burrendong—are strategically located in a place to capture the water, Windamere being too far up the catchment. But we definitely do not need any more. In my submission, I detail our community's concerns for the health of the Ramsar listed Macquarie Marshes connectivity to the Barwon-Darling and also within our membership, and personally myself, I have an unregulated irrigation licence.

CORRECTED

Where the proposed re-regulating structure is, there are no inflow streams downstream of that structure. It would be able to capture the downstream tributary flows in the Macquarie. Our concern is that WaterNSW—being the operator—cannot be trusted. We have not seen the historic use of tributary flows to fill water orders and any structures in stream will negatively impact the community where I live, be it marsh grazing, flood plain grazing, connectivity to the Barwon-Darling and the unregulated irrigation industry.

The CHAIR: Thank you so much, Mr Hall. We will get straight into questions and Ms Smiles I will go to you firstly. In relation to certain dams that we have heard about today from WaterNSW, say Keepit and Chaffey, they had a fair bit of water in them back in 2016. Firstly, the reason for these dams, let's just say Dungowan, is largely related to town water security, according to the Minister. How is adding to the capacity of Dungowan Dam going to improve water security in Tamworth because I think in 2016 the dams were pretty much full anyway?

Ms SMILES: Thanks for that question. There was actually \$46 million spent on increasing the size of the Chaffey Dam, which is the key water supply for Tamworth. So there was an additional 38.5 billion litres or gigalitres increase in that dam so it now holds 100 gigalitres and that cost \$46 million. The promise to the people of Tamworth was that investment would give security for Tamworth's water supply. That enlargement of that dam was completed in time to capture the good rainfall that happened in 2016, so that dam was full. The way the water was allocated out to users, it was virtually emptied over a two-year period. By the time the most recent very intense drought in 2018 was really cutting in, Chaffey Dam was down to about 12 per cent. So Tamworth's town water supply was not secured by that investment of \$46 million.

What we are now talking about is investing \$484 million for a larger dam on the Dungowan Creek above Tamworth to provide an additional 22.5 gigalitres of water or about six to seven gigalitres in an average annual yield. That catchment already had an enlarged dam with a promise to give Tamworth town water security. The ratepayers of Tamworth have had to kick in to pay towards that. Two years later they were back on really low water restrictions because their secure water supply had been allocated out to other users.

The whole business of how these water storages are being managed and how the water is being handed out is the key underlying issue with water management in New South Wales. Proposing to spend another \$484 million in that catchment for something that is much smaller does not really give anyone any confidence that it will improve Tamworth's water supply because no-one knows how that water is going to be managed. No-one actually knows who is going to own the infrastructure. Currently the dam that is there now on Dungowan Creek is owned by Tamworth city. There are a whole lot of questions. There are whole lot of questions around whether Tamworth ratepayers then have to pay for the additional maintenance and running of this new dam. There has been water promised to downstream irrigators out of that new dam as well. They are a bit concerned that the new dam will cut off one of the tributary inflows that they have access to.

There is a real question around good investment of public money for an outcome that was promised in 2016 with previous spending. Going down the road of ongoing supply measures rather than really looking at demand management is one of the key problems that we have. To give the Government a bit of credit, the regional water strategies that are out—we have got four out for comment at the moment on the Lachlan, Macquarie, Gwydir, and Border rivers—are really looking at a range of options, including demand management and changing the process of water management in New South Wales. But these dam announcements are in these strategies as prior commitments, so this is sort of like, "This is a done deal, so ignore all of that, but we are going to give you a whole heap of other options to think about." That is a great concern that the community has in the whole water management process at the moment and the panic that went on at the end of last year.

The Hon. MARK PEARSON: Has there been any light shed on where the water was distributed if not to the town of Tamworth? Did it go to the largest poultry meat industry company in Australia, Baiada, which has a lot of investment in the Tamworth area?

Ms SMILES: Actually, part of the town water supply goes to that processing plant. That is one of the uses of Tamworth's water license for town water supply. If you just look at the license that Tamworth city has from the Chaffey Dam, it is sort of a small volume of water compared to what the dam holds. The allocation was under a previous drought of record. It went to the irrigation industry. A lot of it went to general security licence holders. The way our dams are managed at the moment is that it is run over a two-year modelling period and, whatever is allocated out, the industry generally uses the lot. Then everyone prays for rain at the end of two years. But where that fell over last year was that they forgot the town water supply with the expectation that the dams were going to refill every two years.

The Hon. MARK PEARSON: A quick question to everybody—if we were now still in drought, would your positions still be the same on this issue?

CORRECTED

Ms SMILES: Definitely—because of the impact that these structures in the middle of the rivers have on the health of the river itself. They are not the magic pudding. This business that you can have a really large growing population sitting on a river the size of the Peel River, which is a very small river in the scheme of things, and the water use can keep growing in the town and the water use can keep growing with industry use and everyone can keep using more water—the water is just not there. If we do not have a healthy river system, the business of water that is polluted, contaminated and in poor health is not only just something that impacts on all of the wildlife and all of the ecosystems depending on the river. It actually costs us a lot of money to have to deal with unhealthy water in the river system for our town water supply anyway. It is in everyone's interest to look after the health of our river systems.

The CHAIR: As we throw to the other panellists, could you use your response to that question by addressing the particular projects that I know you have expertise in. That would help us in terms of time. I am going to throw to Ms Moles. In terms of where you live with the Australian Floodplains Association around the Border river, I understand Mole River is one that you have particularly looked into.

Ms MOLES: That is correct. Although for the record I actually do not live in New South Wales, but I have a particular interest in all things Northern Murray-Darling Basin and the Murray-Darling Basin more broadly. The reason we have such a disastrous situation with the health and availability of water in the Murray-Darling Basin is we built too many dams. It has been well recognised overseas that dams have terrible impacts on river health and it is money well spent to take some of them out. The four dams we are talking about would be taking and capturing an additional 770 gigalitres from a system that is already very much over allocated. The solution to the problem is not more of the same. It is not building more dams when we can do water use efficiency.

If we really need to have more water storages, then there are options in some locations to build those storages off-stream where they do not cause anywhere near the ecological and environmental damage that in-stream structures do. We really must start taking very seriously the demand management strategies and irrigation efficiency measures so that we can reduce the demands that we are making on our rivers because they are absolutely essential. If we do not do that, then we are going to see the sorts of events that we have seen on the Darling River and the Barwon-Darling start happening in other parts, including major tributaries of the Barwon-Darling system. We have to lift our game. We cannot afford to use old ways to solve old problems. We need new thinking and it has to be much more ecologically attuned.

The CHAIR: Mr Hall, did you want to talk about that in relation to the Macquarie re-regulator?

Mr HALL: Yes, I do. If we were still in drought—much of the marshes is still drought affected and has not started to recover yet, so maybe the question could be rephrased. But our opinion would be exactly the same. Burrendong would have crashed if we had not had the inflows that we have seen this year. Things would be a real mess. There would be evacuations of major cities along the Macquarie. The abattoir would be closed, the zoo would be closed, the three mines at Cobar would be closed, Mudgee people would be under threat because large volumes of water would have been moved across to Burrendong in bulk water transfers to try to delay the inevitable of Dubbo running out of water. But, in all of that putting a re-regulator structure at mid valley would not make any more water. It would just capture more water when the water arrived, which is providing a service to downstream users, as our community is.

The CHAIR: Mr Korn, did you wish to contribute as well?

Mr KORN: Yes, I do. I would support the previous speakers. Some outlying issues about why we are in the situation is we all know it is over allocated, it is still over allocated even though we have recovered a bit over 2,000 gigalitres of water under the basin plan and the process of the preceding plan. In New South Wales there has been a culture development that is slowly changing now, thank God, that the Act has not been observed in the priority water allocations. It clearly states that critical water needs, towns, stock and domestic first, then there is the environment, and last comes water for irrigation. History shows us that has been turned on its head primarily by government policy and practice. It is slowly turning around, but it has only happened as a result of pressure from groups such as ours and as a result of the *Four Corners* program. The other thing that Ms Smiles alluded to was about how the water is allocated by the water agencies and whether it is a debit or credit system where New South Wales has a policy in some valleys of betting on what rainfall is going to occur and they make their allocations based on that within their models.

The Gwydir Valley, I understand, is different. They have a debit system of management which is much more practical and realistic, where you allocate the water on water that you have actually got in the system rather than what might fall in the system later on. That is the thing that needs to be improved. We need to be smarter with our water. There is going to be less water with climate change scenarios so we really have to be smarter about how we use our water and there has to be a rationalisation within the irrigation industry and there have to

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be fewer irrigators or the irrigators that are there now have to operate with less water and in a much more efficient manner. All of us would like it if that could happen because that would underpin community health and structure in regions, but I fear that probably will not be possible. Would our position change if the drought had continued? No, it would not.

The Hon. BEN FRANKLIN: Ms Smiles, I would like to gently and respectfully push back on a couple of things that you said. I would like to talk first about your contention that because severe drought, or implied suggestion that because severe drought is no longer an issue the government does not need to be looking at producing and developing infrastructure. To me, I would have thought, that is exactly the time that we should be developing infrastructure to ensure that supply for towns is there and ready to go when there is not a drought. I questioned that and wonder why you are suggesting that?

Ms SMILES: What I am saying is because we are not in the imminent position of major inland cities having to be evacuated it gives us a bit more time to look at what the best solutions actually are and to learn the lessons of why we ended up in those dire circumstances in the first place. What I am saying is that we have a bit more breathing space now to look at what all the options are. The regional water strategies are doing that, with the one problem, that they are saying the dams are a done deal. Do not worry about that, we are doing that anyway, which is then cutting the rug from under the viability of a lot of the other options. The money that is being invested in these projects that we still do not really know anything about the viability.

All I am saying is that we do not need to rush as much. We had the critical needs bill. We have them in the Department of Planning as critical State infrastructure. Those things cut a lot of corners in the planning and approvals process and what we are saying is, well, let us back off a little bit, do we need these to be fast-tracked under what was set up at the end of last year when everyone was in a blind panic. Let us go back now while we have a little breathing space and look at whether these projects are the best solution in the long term so that everybody in the river system—the downstream people, the upstream people and the ecology—all get a fair go.

The Hon. BEN FRANKLIN: I would respectfully suggest that now is actually the time to increase potentially the supply. You talked about the importance of supply and demand and I totally agree with you, that is obviously a focus of the Government as well. When you look at a town like Tamworth that wants to increase to 100,000 people by 2040, building the infrastructure now is, in fact, the responsible and right thing to do for Government.

The Hon. MARK PEARSON: Is there a question?

The Hon. BEN FRANKLIN: You also mentioned that the people of New South Wales had not been asked, again respectfully I would ask for your comments on the fact that this was a policy taken to the election and the Government was returned, does that not imply that the people were asked?

Ms SMILES: Well, not particularly. It depends what electorate you live in, I suppose. The problem being we are really not clear where the promised money is coming from and what process was undertaken to actually grant that money to these projects when we still have not seen the business cases.

The Hon. BEN FRANKLIN: What an election campaign is about is putting up policies and asking for a mandate to implement those policies, and that is exactly what happened there. Obviously the business case is being developed now and will be open for the public to look at, and so forth. And that is the appropriate thing to do.

The CHAIR: Order! Is there a question for the witness?

The Hon. BEN FRANKLIN: Indeed, there is. What I would suggest and I would ask for your comment on is we are going to be back in drought again potentially within four or five years due to climate change. These projects can take five years to deliver, it takes some time. Is not now the right time to actually look at building this infrastructure?

Ms SMILES: I do not agree with that. If the current infrastructure we have was managed better we would not have found ourselves with the problem we had at the end of last year. Just building more storages does not make more water, it just takes water off someone else in the system. If you are going to keep managing the new structures in the same way as you have managed the existing structures up until the end of last year all we will have at the beginning of the next drought is more big empty dams. You are not actually solving the problem.

The CHAIR: Can I check with other panel members if they have any comments?

The Hon. BEN FRANKLIN: Of course, you are in charge.

The CHAIR: Would anyone like to comment or shall we keep going with questions? We will keep going.

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The Hon. BEN FRANKLIN: Can I broaden this discussion to one about connectivity. Obviously there has been a lot of discussion about the need for river connectivity. I guess I would be interested in what the word "connectivity" means and how important it is for river health?

Mr KORN: If I can answer that on behalf of the Australian Floodplain Association. Connectivity for us is about having a system that is connected from top to bottom in a respectful way for each management reach of the river so that water sharing plan areas outreach the river have sufficient water allocated to the community and the environment for the next downstream section and henceforth so that the people in the bottom sections of the rivers have their due and socially just share of water. That has not happened, particularly in the Barwon-Darling, and if we progressed with Wyangala Dam it would not happen in the Lachlan, because history shows exactly what happens is that priority is given to general security extractors upstream and the people downstream lose. So connectivity is all important. There has to be sufficient water kept aside for the environment and communities through the whole system and the water sharing plans have to talk to each other. And that has been a great thrust of ours in negotiating with New South Wales in the water sharing plan process, water resource plan process and with the Murray-Darling Basin. We have addressed that point strongly. That is what it means to us, looking after the downstream communities as much as you look after the upstream communities.

The Hon. BEN FRANKLIN: But I am not sure how that can be achieved without having significant infrastructure up and down the system, like dams and weirs.

Mr KORN: You do not need the infrastructure to do it, you just need to change your management system and you need to proportion the water justly, I mean socially, environmentally, culturally and economically justly. That has not happened. You do not need another dam to do that. You can do that by changing your management system with your water. Now that might mean that some irrigators have to take a cut. Do you know in this whole process in the Murray-Darling Basin Plan process not one irrigator has lost one litre of water from their water access licence? You might say, "Oh, the irrigation industry has given up 2,000 megalitres." Well, they have not given up anything. That money has been bought or it has been acquired through efficiency programs. In fact some irrigators benefited from those, of course, as part of those programs. In some of them they are allowed to take 50 per cent of the gains and the other 50 per cent went to the environment.

The problem with this thing is that irrigators have no ownership of what is called environmental water. I call it community water because the community pays for it and it benefits the whole community, including irrigators. They have got no ownership of this because they have not made any contribution, they have not had to sacrifice any water from their water access licences in this whole process.

The CHAIR: Thank you, Mr Korn. I think I heard Mr Hall also wanting to respond to this.

Mr HALL: Yes. The question of connectivity and a very simplistic approach to build more dams to increase water security, but water security for who? Is it the major regional cities at the expense of the downstream users? If that is the conversation we are having, well what are we going to do with the Barwon-Darling, the irrigators in the Barwon-Darling? Because if there are more instream structures, that will directly be coming off their entitlement. There appears to be no appetite for compensation. So until the discussions about compensation for the environment or for the communities that are impacted by the rivers drying up—the local community here in Brewarrina, as soon as the river stops flowing the crime rate goes up. The health of that community suffers greatly when there is no fresh water running into their weir pool. This is a major social problem that building more dams is not the solution. Currently in the Macquarie we have had four major droughts bigger than the drought that is used to underpin the resources assessment. The drought of record in the Macquarie catchment is 1937, and there has been four bigger droughts. We are on a hiding to nothing as far as water allocation goes. But building more dams is not the solution.

The Hon. BEN FRANKLIN: Mr Hall, can I stay with you for a second and ask on a more specific issue about the impact of erosion banks on private land in the Macquarie Marshes and what you think the impact of that is to the connectivity between the Macquarie and Barwon-Darling systems?

Mr HALL: Yes. Minimal impact. The marshes are drying out constantly and there are erosion control structures on private land within the marshes. The impact of those structures is not affecting flows to the Barwon-Darling. The marshes are continuing to decline and those erosion structures, if those were not in place there would not be a healthy marsh left. Those structures are put in place to manage changes in river management. Areas that were wet a lot of the time with an occasional dry period, now are dry a lot of the time with an occasional wet period. So when that water arrives the difficulties in managing erosion are so much greater than they were pre-dam.

The Hon. BEN FRANKLIN: The infrastructure is acceptable but other infrastructure like weirs and dams not so much, is that the argument?

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Mr HALL: No. That is not right at all. It is at what cost to the community are major water storages while we still ignore using the wrong policy settings in those existing major water storages.

The Hon. PENNY SHARPE: I have some questions for Mr Hall, specifically about the Macquarie River re-regulating storage project. We had evidence this morning from WaterNSW and I wanted to ask you about some of that evidence, if that is okay.

Mr HALL: Yes.

The Hon. PENNY SHARPE: Did you hear them this morning?

Mr HALL: No.

The Hon. PENNY SHARPE: That does not matter, that is fine. In the submissions we have received from WaterNSW they talk about this re-regulating storage project arising out of a WaterNSW infrastructure option study undertaken in 2018. Were you and your organisation involved or have any input into that prior to 2018?

Mr HALL: We were, yes, that is correct.

The Hon. PENNY SHARPE: My understanding is that, and from their own submission, they say that the re-regulated storage project was one of the options that was considered. Were there other options that you think are more appropriate than where they have landed with this project?

Mr HALL: Yes. Increasing supply, full levels of Burrendong Dam; piping the effluent creeks. There was a series of options. It was quite difficult during the process. When WaterNSW presented this option to us they included all the two tributary flows. It was only once this proposal, the re-regulating structure at Gin Gin, had got over the line that, after constant questioning by members of our association, WaterNSW decided to separate the tributary flows from actual irrigation rejection.

The Hon. PENNY SHARPE: Could you explain to me why that is significant and what that means in terms of assessment of the project?

Mr HALL: The volumes of water are totally different. The volumes from irrigation rejection are quite small, have been in the past few years with low availability. But that water is currently providing an environmental service, so it is going down the river and if it is not reallocated to another user it arrives in the Macquarie Marshes or is extracted by an unreged irrigator or connected to the Barwon-Darling. So there is a service being provided by that water that is irrigation rejection. The difference is that a tributary flow is nutrient rich, laden with silt, it comes down the river and spreads out of the Macquarie Marshes and then is filtered and provides clean, high-quality water to the Barwon-Darling. The Gin Gin Weir would be in a location to capture the tributary flows. That is my concern. Some of that water is already being used to fill existing water orders whereas the irrigation rejection—WaterNSW finally separated the two numbers. We do not have to model this, we have already got historical usage—flow data in Macquarie has longevity—so we have already got the flow history and we could very easily separate those two items.

The Hon. PENNY SHARPE: Your submission makes the point that you challenge the information provided by WaterNSW. Do you want to expand on your concerns about that? I know that you are not alleging that they are deliberately telling you the wrong thing, but can you just outline to the Committee what your concerns are about the way in which you resolve these questions with WaterNSW?

Mr HALL: It is really easy. WaterNSW has got to explain to us the current river operations of the use of tributary flows to fill existing water orders. We are constantly being told that there will not be any increase in take from the tributaries, but we do not know—we have got no numbers—what is currently being used, so we have no benchmark to start on. I explained specifically in my submission that the last structure built in the Macquarie was Windamere Dam and it was put too far up the hill, so down this end of the river we had a pretty bad taste with the last build in this valley and we are particularly nervous about the proposal as the next build.

The Hon. PENNY SHARPE: I notice that the business case, as we have been told, is due at the end of this year, whether it is this month or next month, and you have some serious questions about how the issues to do with the health of the marshes are going to be treated within that. What input and/or feedback have you had from WaterNSW about the way in which that will be dealt with, or are they just saying it will be dealt with in the EIS process when that occurs?

Mr HALL: No, I had to fight tooth and nail to get the marshes included in the environmental assessment. Up until I challenged WaterNSW they were doing an assessment to the marshes, not including the marshes, so that got me off-guard and I started asking a few more questions: What about a socioeconomic study on beef producers, my community that grow cattle within the Macquarie Marshes? What about an impact study on the unregulated irrigators in the lower Macquarie? That will all be impacted by this structure. It is very easy to show

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the benefits, and I have seen the benefits in WaterNSW documentation about increase in reliability, extractive uses and the environment's reliability, but that is all coming at a cost for downstream river communities.

The Hon. PENNY SHARPE: I notice again that the WaterNSW submission indicated that they put out the SEARs about what needs to be addressed in the EIS. Some were received in March and there were supplementary SEARs received in July 2020. Are you or any of the other panellists able to shed some light in relation to the changes in the SEARs, whether they were improved or watered down? Would anyone like to comment about that? I would like to hear from anyone who has some insight into that.

Mr HALL: Sorry, I am not up to speed with that.

Ms SMILES: My understanding is that those updated SEARs came out of the referral to the Federal legislation process, so WaterNSW put in referrals to the EPBC Act in May and some responses came out of that in June. It was really the fact that the community engaged in that process and identified in that Federal process that the Macquarie Marshes had not been recognised by WaterNSW, and in the Lachlan the important wetlands and bird breeding sites—and Australia has signed international treaties for migratory birds, so not only the Federal Government but the State Government has responsibilities to look after those sites under those treaties—so my understanding is that then there was a bit of updating of some of those requirements after that process.

The Hon. PENNY SHARPE: I have one more follow-up question which goes to the issue of the wetlands. I have asked the Government and WaterNSW and no-one has been able to answer this yet. New South Wales has the NSW Wetlands Policy and, as you have rightly identified with Ramsar-listed sites, of which the Macquarie Marshes is one, there are a number of obligations that flow from being listed and being part of the treaties. Are you able to tell me what oversight the New South Wales environment Minister and that part of the department has in relation to these projects and the assessment of impact on migratory birds and other bird species, or is it all being decided under the Commonwealth Act, under the EPBC Act?

Ms SMILES: My understanding is that there has been a bit of input from other agencies into the requirements through the Department of Planning at the New South Wales level. I am not sure about at the Federal level, although I know that the Commonwealth Environmental Water Holder is watching these projects very closely because of the possible impacts on their water holdings and the change in the management of the system and the water sharing plans, the water resource plans and all the other processes that we have in place, but the New South Wales Minister for the environment is the person responsible for the management of Ramsar sites, and I do believe the wetlands with the migratory bird agreements, so we have part of the agency that he manages, those staff are engaging as much as they can, but that is where the concern is with these projects now being designated as critical State infrastructure, that a lot of that part of the process is likely to be sidelined and fast-tracked.

Mr KORN: I would like to comment on that as well, please. In my past life I used to be a senior executive bureaucrat in both agriculture and the Conservation Department of New South Wales, so I can assure you that the agencies who have an association with this, their staff will be working hot behind the scenes on the issue. In particular, Matt Kean's group would be trying to negate the impact on the Ramsar site. It is a national agreement and the Commonwealth Government—I think Bev Smiles mentioned the Commonwealth Environmental Water Holder. I know they would be actively involved. It is a Federal or Commonwealth obligation under the Ramsar agreement, so they would all be working on it. But quite frankly, in my time in water management since 1979 I have seen the Ramsar sites decrease in value. They have lost a lot of their qualities and values through inappropriate water management. The structures of these and our dams, in particular the Lachlan, would exacerbate greatly or threaten greatly those wonderful wetlands in the lower Lachlan.

The CHAIR: Thank you very much, Mr Korn. We are actually one minute past the time that we were supposed to finish this session, so I am very sorry, but we have to leave it there. I know that there were potentially other issues and not all of you got to say everything you wanted to say, I am sure, but thank you. I do not think there was anything taken on notice by this group, but if there was anything, the Committee has resolved that answers to questions taken on notice be returned within 21 days and you will be contacted in relation to that.

(The witnesses withdrew.)

(Short adjournment)

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MARTIN MALLEN-COOPER, Adjunct Research Professor, Institute for Land, Water and Society, Charles Sturt University; Director, OzFish Unlimited, affirmed and examined

LEE BAUMGARTNER, Professor of Fisheries and River Management, Institute for Land, Water and Society, Charles Sturt University, affirmed and examined

The CHAIR: Would both or either of you like to make a short opening statement?

Dr BAUMGARTNER: I will be rather brief but I believe Martin has got some slides that he would like to share. We are here today to present the science and talk to the science, and we are happy to answer any questions there are on the science around the impacts of dams and weirs. We are here as fish ecologists and we are here basically because fish are doing it tough and fish are now at 10 per cent of what they were pre-European levels across most of the Murray-Darling Basin. A lot of that has been because of the impacts of river development on them and so we are really here about trying to see good outcomes from these programs.

We have a really good knowledge and the science is really strong, and with the permission of the chair we would like to present an evidence pack that we have done here. Out of session we will provide a summary of that—just as two pages—just to show that the science is quite strong on what the impacts of dams and weirs are. But there are also mitigation options and there is really good science on what can be mitigated. There is also really good science on what cannot be mitigated and hopefully today we can share some of those insights with the Committee. Thanks for having us.

The CHAIR: Thank you so much. We will always say yes to an evidence pack. Thank you for preparing that. I believe we are all set up for a slideshow by Dr Martin Mallen-Cooper and the members on Webex can see this as well.

Dr MALLEN-COOPER: As Lee said, we are here as independent scientists to help the inquiry, and please ask any questions at all about these projects that relate to fish science and river ecology. A point of disclosure: Both Lee and I work on a number of projects overseas and in Australia. In Australia I am presently engaged by Public Works Advisory to work on Wilcannia weir. That is paid by WaterNSW. I am also engaged by Jacobs to work on Western Weirs project paid by WaterNSW and Lee is also advising on that. For those projects we will restrict our answers to public domain information.

The CHAIR: Dr Mallen-Cooper, what is the length of the presentation?

Dr MALLEN-COOPER: It is six slides. It is about two minutes.

The CHAIR: Okay, great.

The Hon. MARK BUTTIGIEG: That will be the shortest one we have ever had.

The Hon. BEN FRANKLIN: Forty-seven slides later.

Dr MALLEN-COOPER: It was 40 last night. I put a lot of detail in that submission and Lee has also put a significant amount of detail in the submission. There is an underlying concept for all of these projects that is quite important and that has not been discussed. We have talked about flood-plains and volumes of water and gicalitres of water. There is just this concept. I have a couple of videos to show what I mean and how we can mitigate projects or how we should proceed. That concept is flowing water versus still-water and it reveals risks and opportunities. This slide is a profile of the Darling River from Mungindi down to Lock 10. Each of those horizontal bars are weirs and the blue angled bars are flowing water between the weir-pools. I am going to show you a video of what a weir-pool looks like and a flowing water habitat between the weir-pools.

Video played.

This is Wilcannia weir-pool at 1,500 megalitres per day. That is a video but really you can barely tell the water is flowing. It looks like a still body of water. That is very important because we talk about flow and volumes. That is a still body of water at 1,500 megalitres per day. If we go upstream of that weir-pool, this is the same flow—1,500 megalitres per day. Actually the same day. You will see it is very obviously a flowing river. That is a very specific type of habitat. Same flow—just upstream of the weir-pool.

This slide is a diagram of that and you see the two weir-pools and flowing water between them. That flowing water is where you find very specific animals like River Mussels. If you go find the weir-pools you will find them in flowing water. They are in Aboriginal middens for 15,000 years, so they are a significant part of Aboriginal culture. Murray cod and all fish are part of Aboriginal culture. You can catch Murray cod in a range of places but their nursery habitats—their young fish—are in that flowing water. So if you raise the weir-pool and drown that flowing water out, you reduce that habitat.

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If we think of alternatives to weirs—because if we raise the weir we lose that habitat—well, we have already heard today talk of off-stream storage. That is proven in Australia. We can use off-stream storage—irrigators use it all the time—but what we can also do is cover that storage with panels to reduce evaporation. I have seen that in submissions and that has also been discussed today. One aspect of that is that those panels are manufactured in Australia, so if we head down that path we are investing in Australian manufacturing. If you want to be more innovative, you could cover it with solar panels. These have already been discussed but it becomes very important when we start to talk about weirs and dams.

This slide is on the Western Weirs project and is about water security. That is that same profile and really that project is still being sorted out. If you look at the website, there is a range of options—nothing has been bedded down. So there is a spectrum of options and potentially it could be about raised weirs and it could be about more weirs, and if that was the case, you may have at one end—this is not actually a real scenario—but if you had more weirs you obviously eliminate flowing water. I note that is not a real scenario. In this case you lose the flowing water and lose that nursery habitat.

At the other end of the spectrum, off-stream storage, potentially less weirs, and if you have more baseflow then, in fact, we build a resilient ecosystem. We talk about ecosystems and the environment but what has become incredibly obvious in 2018 and 2019 is that people are part of that ecosystem and part of that environment and they desperately want that healthy river. So that is just an ecological concept I wanted to clarify from my submission because it is sometimes not clear. We tend to think that more water must mean more fish. No, it is how you deliver that water. Okay, that is all I have got.

The CHAIR: Thank you both so much. It is good to be able to discuss fish because I do not think that has really come up today in terms of dams, so this will be a very fish-focused session which is excellent. I was up in Menindee a couple of months ago and heard about the potential impact on Murray cod and golden perch as a result of the Menindee Lakes water savings project, which essentially has drained Lake Menindee. Dr Baumgartner, would you like to comment on what that means for the overall survival of Murray cod as a species and golden perch?

Dr BAUMGARTNER: Yes, sure. It is a very unique part of the Murray-Darling Basin—this Lower Darling section. We saw what happens when you get it wrong in 2018—three million dead fish, no flowing water habitat and a town that cannot drink the water that is there. It can go bad when you do not get it right. The thing that we find about the fish communities down there is that they are not just connected to the Darling, they are also connected to the Murray and they need that connectivity down to the Murray and back to survive.

A lot of the work we have done recently and published recently—this is pretty cool, if you like this sort of stuff—we tracked the chemistry of fish. Fish take up the chemistry in their ear bones and we can trace where fish have been over their life based on the chemistry of their bones. We have shown that for Murray cod they pretty much stay in the Darling most of their life, but for fish like golden perch and silver perch, some of them are coming from the Murray up into the Darling and some of them are going from the Darling into the Murray. So it is really well connected down that section. The solutions that you need for the Menindee project need to be more than just thinking about one species and one site, it has to be an integrated suite of solutions over the landscape, and it has to consider the Murray and the Upper Darling. The Menindee project needs more than just thinking about Menindee as a single site, it needs thinking about the Baaka, or the Darling, as a connected system. The way that water is managed across that landscape has to be fully integrated into that project.

The CHAIR: What is happening generally in terms of the Murray cod—all those fish that died did so in a weir. What has happened since then? There has been the relocation of those fish, but overall would you care to comment on how it is looking for the Murray cod?

Dr BAUMGARTNER: There was a panel that convened recently to renew the Native Fish Recovery Strategy, which was recently released by the MDBA. The conclusion of all the fish scientists who sat on that was that Murray cod are now worse off than they were prior to this drought, and probably prior to the first time that the MDBA drafted the fish strategy in 2003. So things have not actually got better, they have got a lot worse. It remains to be seen how effective the translocation of the fish from one site to another was. Some of the fish were translocated to hatcheries to be bred and reintroduced. That sort of stuff is a bandaid on a sore really. You are treating the symptom, you are not treating the cause. You have to go back and find out why those fish died in the weir-pool in the first place and try and address that problem, otherwise we are not really—I can only say that it is just a bandaid, and we are slowly treating things rather than making them better.

Dr MALLEN-COOPER: When we look at Menindee, we need to look at the whole northern basin. We need to look at all the diversions and capture across all of the dams. We tend to focus on Menindee and the management of the stated Weir 32 weir-pool. It is obvious that there are inflows into the dams that were captured—that is just part of the system and how it works—but what do we do next time? How do we manage it

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differently next time? I do not think that anyone anticipated the extent of those fish kills that occurred, but we have got a very good handle on it now. We know the conditions. It will be zero-to-low flows and it will be hot weather. We know what is going to happen. So what do we do next time? Having a bit of water in reserve should be part of that solution.

Dr BAUMGARTNER: In reserve and also considering that the climate is getting hotter and drier, and has consistently since 1960. That was presented in the Vertessy report—things are a lot hotter and drier than they were then, so you might have to do more with less water into the future.

The CHAIR: I think that there could potentially be some people who would think that at this point, native fish are the last thing that we have time to worry about. There is irrigation, there is industry, town water and people needing to rely on this. Firstly, can the native fish be saved, or is it too late and just a nice pie in the sky idea for us to be thinking about? Why is it important to save them? What would you say that we need to do differently? There are five projects that this Committee is examining, what should be done differently so that native fish can be part of our future? There are a lot of questions there, sorry about that.

Dr BAUMGARTNER: Why should we save fish? Fish are important culturally. Aboriginal communities everywhere in the Murray-Darling have a cultural link to fish. It goes back in their storylines and narratives, as we heard earlier today. They are really important. There are really strong recreational and social benefits. And even through this COVID period, when people have got stressed they have gone fishing. It has been good for their mental health. It also supports a \$1 billion recreational fishing industry. Parts of the Lower Darling and around Menindee used to be some of the best Murray cod fishing in the Murray-Darling Basin. People would travel hundreds of kilometres to go fishing there, but they cannot do that anymore. The third reason fish are important is because of biodiversity. There are so many species of fish found in the Murray-Darling Basin that are not found anywhere else in the world. If that is not a good enough reason to save something then nothing else is.

Dr MALLEEN-COOPER: I often get asked this question, and I think that it is up to the community. We know that fish have declined. What is the balance of the impacts? We want agriculture, we want water and we know that there will be droughts, so what is that balance? I travelled from Wentworth to Mungindi in the drought in March 2018 and it was very obvious to me, and every single person on the river said it, that the threshold had been reached and crossed. They said that the health of the river was unacceptable. There was not a single person that thought the compromise for the State was acceptable. That is not entirely the responsibility of the present Government. Decades of decisions from decades of governments have led to this, and this is the pointy end. So 2018-19 was the first test of all those decisions. The question is: What do we do now? This is where we have got to. New South Wales has prospered through those dams and agriculture, and we knew that there would be impacts, but obviously right now, having seen them, it has crossed a threshold for the community, and that is important. It is not just an esoteric concept about biodiversity, everyone out there wants a healthy river.

Dr BAUMGARTNER: To answer the question of is it too late—well, while there are fish in the river it is not too late.

Dr MALLEEN-COOPER: That is right.

Dr BAUMGARTNER: Some fish can produce 10,000 or a couple of hundred thousand eggs, so they can rebound really quickly. They are extremely resilient. But what it needs is a package of works and significant investment to create an environment that allows them to bounce back.

The Hon. MARK PEARSON: Is the presence of fish—like frogs are a measure of the environment with regard to what is happening with our air—a measure of something more profound, and even the health of the land as well as the water?

Dr BAUMGARTNER: Like the canary in the coalmine analogy?

Dr MALLEEN-COOPER: Yes, it is in.

Dr BAUMGARTNER: That is what happened in Menindee a few years ago. The canary sent us a pretty strong message, that things need to get better. I cannot say that strongly enough.

Dr MALLEEN-COOPER: I think that all impacts in the landscape end up in the river. Nutrients end up in the river, so therefore you get more blue-green algae et cetera, absolutely. So those things in the river are indicators of the entire catchment and of the system. But coming back to the question of where fish are at, it was devastating to see those dead fish at Menindee—and it was devastating for me to see the declines of fish over 35 years—but given the science of the last 20 years, recovery of fish is entirely achievable. It is just about the decisions we make now. Dr Baumgartner and I could bring in many scientists to say the same thing. The knowledge is there right now. This is just a choice that we make as a community.

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The CHAIR: This week I was speaking to somebody who was talking to me about Lake Keepit, who said that when the water went down to almost 0 per cent there were just a few little pools. They spoke about the heartbreaking scene there of massive Murray cod and potentially catfish dying in those pools. One of the submissions that we received today from Macquarie Marshes Environmental Landholders Association talked about the same thing happening to tortoises in the Gin Gin Weir. What we saw during that awful event with the Murray cod out at Menindee, which went all across the world, has been mirrored in many places around New South Wales. Is it largely as a result of where the final water in the weirs accumulates? Could either of you comment on the impact of those storages and whether that could have been prevented in any way?

Dr MALLEN-COOPER: I put in my submission a paper recently published with Brenton Zampatti. In that paper, we examined flows that came into those dams in 2018-19 and then flows that were released. I think that it is incredibly telling that in August 2018, the northern basin dams were 34 per cent full and there was zero flow at Bourke. Over the next 14 months 30 per cent of the dams were sold or used for environmental water: 900,000 megalitres, 80 per cent used for irrigation—zero passes Bourke. In August 2018 dams were at 34 per cent, but the Government and WaterNSW chose to use that water. That is actually what they have always done and what past governments have done. That is how the dams are run. You need to forecast what rainfall you might get. The Bureau of Meteorology suggested it was going to be a dry summer, but they need to make a risk-based decision, which they did based on past experience. At the end it did not work. They started to run out of water. That is a risk-based decision in 14 months. But that is not water security. That is water management. If you start with 34 per cent, you could potentially manage that 34 per cent differently.

Dr BAUMGARTNER: It cuts at the heart of what we saw at Menindee in 2018. The reason that we saw what we did was the river stopped flowing and there just simply was not enough—you need water to disperse a blue-green algal event, which was the cause of that. While we saw the fish die in Menindee, upstream from Menindee there was a large part of the Darling which was bone dry. You are not going to see a fish kill in a part of the river that is bone dry. Those fish are already gone. That in itself was not talked about much. In 1991 there was an uproar because there was an 1,100 kilometre blue-green algal bloom in the Darling. That really highlighted how much pressure was on the Darling at the time. If you move forward almost 30 years, the Darling did not go green. It went dry. That cuts into some of the problems we have got with water management.

The Hon. BEN FRANKLIN: In terms of two things that you have raised, I will start with the excellent idea of putting solar panels on dams. I love that. I actually launched the one in Lismore and think it is fantastic. But there has been some question about the water quality and what it does to water quality because the sunlight cannot get through to the water. I was wondering if you would like to comment on that.

Dr MALLEN-COOPER: Yes, actually I have heard this a few times. In fact, one of the positive aspects—certainly if we are thinking about off-stream storage for some of those western towns—is light not hitting the water, because then you do not get blue-green algae. Blue-green algae needs light, heat, et cetera. So if you block the light, you get less blue-green algae. Generally water quality is good. I have not heard any negative views on water quality.

The CHAIR: My question is on the off-stream water storages. You are here obviously arguing for the fish and healthy rivers, but you are not suggesting that we do not store water anywhere. Could you explain in a bit of detail what the off-stream water storages are and how we can do these better in New South Wales?

Dr MALLEN-COOPER: We are still managing water with those weirs in the Barwon-Darling and the dams as we were in 1960. When we are in a drought and we get incredibly low—the river is down to a trickle—everyone wants that last bit of water. Towns need it; fish need it. We are all competing for this water when it is incredibly low. The question becomes: Who gets it? Critical human needs or environment? That is not the question. The question is how we do this smarter. The way we do it smarter is you have off-stream storage for towns. When the river is up, the off-stream storage is filled as per an irrigator. When the river is up high, you are not getting so much competition, but when the river is down low, you do not want anyone taking water. Maybe even stock and domestic should be off-stream storage. In other words, the low flows are gold for the river. That keeps the river alive. That would have kept the river alive in the last drought.

We need to recast and reframe how we do these low flows and right now—other alternatives may be off stream storage, bore water or aquifer recharge. There are other alternatives. These are being discussed and, in fact, I think the website for WaterNSW is talking about a range of options for Western Weirs. They are being discussed. The objective is water security and, having been out there in the drought, I am 100 per cent with it. I want high water security. I want high water quality as well. Storing the water in the river is not the place to do it. It is exposed to light and heat and gets blue-green algae. There is another reason not to store it in the river. It loses a lot to evaporation. There is a public document on Wilcannia Weir, as an example. The weir needs to store

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5,000 megalitres to provide 500 for the town. That is evaporative losses because you are losing two metres a year. So with a three-metre high weir, you lose two metres.

The Hon. MARK BUTTIGIEG: So a 90 per cent loss.

Dr MALLEEN-COOPER: It can be 75 per cent, but up to 90 per cent. It is huge. This is how we have managed water in the past. I want to see this water infrastructure. I want to see water security, but from our perspective higher weirs are not good for the environment. It is also a very wasteful way to store water.

The CHAIR: Can we just go very quickly to the Western Weirs project and fish? Western Weirs is again one that I think was touted as being something for all of those towns that were very close to running out of water. Firstly, what is the impact on the river system and fish, if you like? Do you think there are other ways of achieving the objective in terms of providing those towns with greater water security?

Dr BAUMGARTNER: I would say one of the concerns from the fish perspective about Western Weirs is if you look at—there is an analogous sort of area in the Murray-Darling. If you look at the lower Murray downstream of Renmark, from Renmark downstream it basically goes weir, pool, weir; weir, pool, weir; weir, pool, weir. There is no flowing habitat at all. The science is telling us that that habitat is awful. There has not been any recruitment of Murray cod or silver perch for 20 years. Most of the golden perch in that part of the system have come from the Darling, surprisingly. They actually drift downstream as eggs and larvae. One thing we really want to avoid with Western Weirs is replicating that situation because, as Martin pointed out, the flowing water habitat is critical in the Darling and needs to be preserved. Putting together the business case for Western Weirs, fewer is going to be better for that system. Combined with a series of other options, it is going to be—you do not want to replicate. We already know it is not working. It is not going to work if we do it again up in the Darling. We have to do it better.

Dr MALLEEN-COOPER: I would probably add a couple of specific things. If we just think about the Barwon-Darling in delivering flows in a drought—what do you do? You are in a drought. You are running out of water. Hopefully, a new vision might be off-stream storage that is covered to prevent evaporation. That is one way to do it. Number two is that we can actually release water to provide those towns. What is not well known is that there was an environmental flow in 2018 from the Macquarie Marshes. That goes down to the marshes. It also fills up the town water supply for Brewarrina. We tend to compartmentalise these objectives. We think, "That is the environment; we do not touch that. That is town water supply; we do not touch that." Actually there are multiple benefits to be had if we flip that around. Let us provide town water supply for Wilcannia and along the way we are to get environmental benefits. That is a discussion and I think that will happen post-basin-plan world. I think we will start to have those discussions. At the moment it is quite polarised. I think there are multiple benefits along that line.

The other one is that we deal with the water sharing plans separately. Each has a valley. That is a cultural and historical thing. The dam was built to deliver water to downstream irrigation, so we developed the water stream plan around each valley. The water upstream in the dam that falls on the dams—there is no requirement for any of that water to pass the Barwon-Darling, but the Barwon-Darling gets 99 per cent of its water from tributaries. We need to think at a more sophisticated level. How do we link this as an entire system? How do we provide some transparency in droughts so some of that rainfall actually passes through to the Barwon-Darling, providing environment benefits and maybe some town water supply? But there are some historical and cultural things around that. Each time the water sharing plan gets reviewed, it is not reviewed with, say, targets for inter-system flow. We need to think a bit more creatively about it and understand the cultural and historical perspective of these as well. I see a vision, if we do this, of a very vibrant Barwon-Darling River. It is doable. It is doable with the water that we have got now. I think it is doable even with the basin plan water as it stands, but we certainly need to be way smarter in droughts.

The Hon. BEN FRANKLIN: Dr Baumgartner, could I start with you. You mentioned a package of measures in your evidence about increasing fish numbers. I am just wondering if you can expand on that in as much detail as you would like to.

Dr BAUMGARTNER: Yes, it is part of the evidence pack that we submitted. There are so many things that impact fish that happen at a dam or a weir. We have heard a lot today about fishways. They only mitigate one thing, but there seems to be some sort of discussion that if we build a fishway then everything will be okay. That will be okay for moving fish from A to B, but why are fish getting from A to B? You also need to look after habitat for fish. I remember we have talked about how the big dams can cause thermal pollution, where cold water is being released in the middle of summer. You have to mitigate that. You also need to facilitate the downstream movement of fish. Someone mentioned earlier that some of these fish are moving upstream to spawn. You move these fish upstream to spawn and then the eggs and the larvae float downstream.

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We know that if we use these undershot top lifting weirs where the water goes underneath, that can kill 95 per cent of the fish. On one hand you can provide this avenue for fish to spawn, but then you take it away just by the way that they interact with the infrastructure. It needs to be a holistic package of works that look after the fish. Water is what connects it all, so you absolutely need that water in the rivers to connect it all. If you are connecting fish from A to B, you are connecting them to spawning habitat, you are creating a safe pathway for the fish to go downstream and you are doing that at the whole-of-landscape level then that is how you do it. If you do not have the water, you run the risk of some of that not working. Fishways need water to work. Fish habitat needs to be underwater to be of benefit to fish and so water needs to be part of the mix of the solutions.

Dr MALLEN-COOPER: I will just add to that. There is a lot of discussion around complementary measures. These are measures in addition to flow. Just to clarify this point—and Dr Baumgartner has published on this topic—these complementary measures that he is talking about are in addition to flow. The basin plan is about flow. Early on in the basin plan, there was acknowledgement that flow alone could not recover the river biodiversity. These non-flow-based complementary measures are in addition to flow, and they are needed as well.

Dr BAUMGARTNER: Some of the data is now showing us that things like extraction of water and diverting water—we know that in a single diversion up to 12,000 fish a day can be taken out of the river. Those fish cannot get back to the river. It is as simple as putting a screen on. It would be bad if you did all of this other work to get the fish to spawn and then just diverted them out of the system when a screen is a simple solution. All of those sorts of things add up and create much better outcomes. That science has really matured in the past 20 years.

The Hon. BEN FRANKLIN: Great. Can I pick up the fishways issue? I totally hear the fairly intuitive point about the fact that you need water for these things to work. Do they actually have a good success rate in New South Wales, in your opinion?

Dr BAUMGARTNER: Yes. It all comes down to the robustness of the design.

The Hon. BEN FRANKLIN: They seem to be very expensive. Why is that? I guess what I am getting to is, are there cheaper and better ways that we can design these things? You are the experts.

Dr BAUMGARTNER: You only need a fishway where you have a barrier. If you remove the barrier, you do not need a fishway at all. If you can come up with some sort of solution that does not need weirs on main channels then you do not need to invest in a fishway. The first option is you can just remove the barrier. That cuts back to off-river storages and minimising evaporation. If you cannot remove the barrier and it has to be there, then you build the fish ladder as it is. You have to look at what causes the cost to go up. It is usually design life. We want these fishways to last for 80 years. You have to build them in a robust engineering way to make them last 80 years.

Dr MALLEN-COOPER: If I could add, Dr Baumgartner and I were involved in a project funded by WaterNSW called the Strategic Fishway Implementation Program that was solely aimed at reducing cost. I absolutely agree that I would like them to be very, very cheap because we would have more of them. They are in proportion to water infrastructure. That is just what water infrastructure costs. What we did in that program was look at all of the reasons for cost. Dr Baumgartner just raised one then about design life. What we in fact found was that how you build them, how you package them, if you have a group of half-a-dozen together, if you do them in the dry, what risk is associated with construction, how much you prefabricated offsite and minimising time on site—these were actually the big elements. Dr Baumgartner and I are thinking about hydraulics and fish but the bigger costs are actually around what you prefabricate offsite. The answer is yes, they can be cheaper. They can be significantly cheaper, and they will be.

The Hon. BEN FRANKLIN: Can I move to private land. There are probably more than 10,000 barriers to fish movement on private land in the Murray-Darling Basin. What options are there for private landholders? What can they do to improve fish access in waterways on their properties? What can we do in terms of recommendations to make what they do easier?

Dr MALLEN-COOPER: That is a really good question.

Dr BAUMGARTNER: It is a good question.

The Hon. BEN FRANKLIN: Thank you very much.

Dr BAUMGARTNER: The private landholder is responsible for maintaining that in a way that gets outcomes for fish. If they own a barrier, the Government can always subsidise the operations of the weir and invest and make it better. We have also been working a lot with private landholders to make use of some of their private storages as fish refuges. There are many now across the landscape that are harbouring threatened species

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on their farms and using them as refuges so that if things go bad in the river, they have what they call insurance populations—insurance in case the wild population goes bad.

Dr MALLEN-COOPER: We tend to interrupt each other.

The Hon. BEN FRANKLIN: It is obviously a symbiotic relationship.

Dr MALLEN-COOPER: It is, actually. We have complementary skills. Much of my career is around fishway design, over 35 years. I have worked with many private landholders in that situation. Universally, they are quite small and cheap barriers. They are usually small, easy structures to deal with. We can help them by giving them design advice and that is often my role. I might do that through government or as a private individual. But generally they are quite small structures, and easy to deal with. We tend to think of fishways as big and costly infrastructure, which is usually government infrastructure, but often the private ones are much smaller and cheaper.

Dr BAUMGARTNER: But there are a lot of them. There are a lot of private storages across the landscape, particularly across the northern basin. Most irrigation farmers up there have ring tanks that they pump water into and store, so there is already water stored in the landscape. It is about how you keep that water there and stop it from evaporating. If you read through the business case for some of the dams—I was reading through the WaterNSW report the other day and there was acknowledgement that in off-river storages there can be high evaporation. That is where the report stopped. How can we deal with high evaporation? It would be a logical next step to say that if that water is not evaporating and soaks into the landscape, you might get better outcomes. If you can minimise that evaporation and keep that water there, you get more water in the river. It just slows the go. Little efficiencies like that can actually bring big outcomes for main river channels, but it is not part of the decision-making mix at the moment.

Dr MALLEN-COOPER: No, that is right. Actually, I really like this question of how we help these private individuals. We tend to see the narrative in the media as being quite polarised between the irrigators and environmentalists. But in the field, my experience dealing with individual farmers and irrigators is that they all want fish in the river. They all want a healthy river and they will ask me, "What can I do to help here?"

Dr BAUMGARTNER: Exactly.

Dr MALLEN-COOPER: All I see is common ground. In the field, that is all I see. All of the community want the same things.

The Hon. BEN FRANKLIN: Excellent. Both of you have worked extensively in Asia on fishways and dams and so on. Have you found similar issues there and here? If so, what learnings have you found overseas that can be potentially applied to what we are doing and what our challenges are here?

Dr BAUMGARTNER: It does not matter which country you go to in the world. Whenever you build a structure to regulate the water the problems are the same, particularly for fish. They are so dependent on that connectivity in the water for their survival. We turned up in South-East Asia expecting a whole host of different issues but finding out that they are just the same issues in a different context. I guess where we have probably approached it a little differently over there is that the communities are a lot more involved in management.

The Hon. BEN FRANKLIN: I was going to ask how you build that relationship.

Dr BAUMGARTNER: It is a lot less top-down, for want of a better word. We built a fish ladder for a village in Laos and later this year we will be handing over that fishway to the village to manage that structure going forward. We did not impose a design upon them. We sat down with them before we even started pouring concrete and we said, "What do you guys want? Have the fish declined since this has gone in and it has not made it better?" We co-designed the project. From the start, they were involved in every single step. This was not a big surprise at the end that that said, "This is what we are going to do." They knew exactly what we were going to do because we involved them in every step of the process. I would say that the big difference over there is that they want to be included in the decision-making process. They are actively included and at the end they want to take some ownership of the solution. That is probably a big difference for me. It is a culture that I have noticed working in South-East Asia.

Dr MALLEN-COOPER: Yes.

Dr BAUMGARTNER: But, that said, I think basin communities would relish that opportunity. Wherever we go in the basin—and Dr Mallen-Cooper and I have travelled extensively over our careers—communities are longing for that. They want to be involved at the start and they want to be involved at every step of decision-making because, essentially, they are the ones who live on the river and they are the ones who derive benefit from it. So involving the community more, from the very start, from when it is an idea right through.

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Dr MALLEN-COOPER: Yes, so even in these different countries like Laos, Cambodia and Myanmar, it is interesting. It is always from the bottom up, is it not?

Dr BAUMGARTNER: Yes.

Dr MALLEN-COOPER: There is a recognition from the top that you start with engagement. That is your starting point and you deal with the people in the field first. That is a lovely way to work, actually.

The Hon. BEN FRANKLIN: Yes, thank you.

Dr BAUMGARTNER: I guess the other thing we have noticed, if I can add to it, is that from working in the Murray-Darling Basin, the fish are 10 per cent of what they were 300 years ago. Now in South-East Asia that is about to happen and we can see it about to happen, and so we are kind of at the end of 80 years of decision-making which has led to this to come to this point. They are at the start of that process so we are trying to influence it at the start, not at the end, which is why I guess when I started my career some of the problems we are seeing now are decisions that were made in, like, the forties and fifties. We are still dealing with those issues today.

Dr MALLEN-COOPER: Yes.

Dr BAUMGARTNER: So getting it right from the start is really important.

The Hon. BEN FRANKLIN: I think before the end of time, my colleague the Hon. Catherine Cusack might have a question.

The Hon. CATHERINE CUSACK: I guess my question is related to off-river storage as well. Are you basically saying to us the more upriver storage we can have, the better? Secondly, how do you go about identifying suitable sites? I am guessing that you cannot just construct one of these forms of infrastructure anywhere. Are you aware of suitable sites along the river at the moment?

Dr BAUMGARTNER: I would say that there is a lot of off-river storage already but it is inefficiently managed and there is high evaporation from that off-river storage. If you can minimise that evaporation you might do away with the need for more barriers on the main stem of rivers. I guess that would be a good outcome for all. You have got more efficient use on-farm. You have less barriers to connectivity in the river, you are going to get better outcomes and probably more flow down the river as well.

Dr MALLEN-COOPER: Yes. If you want to add off the-stream storage to the towns it would need a feasibility study, it would need an engineering study to look at soil types, et cetera, stability and flood levels. Yeah, that needs a significant amount of investment to work that out.

Dr BAUMGARTNER: We have heard several times today that it is the management and the efficiency of water that probably needs a bit more work and we probably strong advocate for that because you could actually save some water with which you already have and use it better.

The CHAIR: Thank you. We will now go to questions from the Opposition, the Hon. Mark Buttigieg.

The Hon. MARK BUTTIGIEG: The Hon. Penny Sharpe, I have got just a few. Are you okay? Have you got a lot?

The Hon. PENNY SHARPE: Yes. You go.

The Hon. MARK BUTTIGIEG: I am just interested in your comments to the Chair's comment in relation to the fish. I think intuitively there would be a perception that, look, at the end of the day would be nice to have the fish but we need water for us first. In terms of that, just elaborating on that point of how important each is, is there a broader ecosystem issue with those fish going, if they were to go? Like, what is their part in the broader ecosystem? I know it was touched on before with the whole-of-use land thing, but is there an ecosystem in the river that they are a critical part of?

Dr MALLEN-COOPER: Yes, actually. As a matter of fact I mentioned River Mussels as well. But all of the animals in the river are interconnected and provide food for each other and it is quite a robust ecosystem. You see other river systems that become degraded, they get less and less robust and they get less species diversity and, yes, it is a functioning ecosystem that requires a diverse range of fish.

The Hon. MARK BUTTIGIEG: So in terms of that point you are making about off-stream storage as a solution, is there a point here where you often come up against this sort of reality when we are talking about the environment and progress and economic growth it is just inevitable that if you are going to have a growing population, more economic growth, more development, more irrigation, more production and less rainfall that

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you will have to make decisions about trade-offs about who gets what rather than this idea—and this is not a rhetorical question—

Dr MALLEN-COOPER: No, no. It is good.

The Hon. MARK BUTTIGIEG: —or is there a possibility that with technology and the right management you can actually solve these problems because let us say, for example, Australia were to head for a population of, I do not know but let us call it 50 million in 20 years, and that is inevitably going to place more and more pressure on these diminishing resources and we do not address climate change, obviously, there will be a problem, right? Is there a mathematical limit to how you can balance everything is what I guess I am asking? Has it been done, to Mr Smiles' point? Has anyone managed to do this in overseas jurisdictions? That would be interesting.

Dr BAUMGARTNER: It is a good point. I guess if I was to channel the people of Menindee, and I do not pretend to speak on behalf of them, and if we were to say, "Let's let three million fish die, but at least there is water in the weir-pool." That is no consolation to them because the water was undrinkable and they still had to ship water in anyway. So it was not a good outcome for anyone seeing dead fish.

The Hon. MARK BUTTIGIEG: Yes.

Dr BAUMGARTNER: It was bad. The people in the Macquarie Valley last year mobilised to teams of hundreds of people to go in and rescue fish from weir-pools that were drying. I am sure they would have loved to have spent the weekends with their families doing fun things, but they did not; they were down on the river rescuing fish that were on their last legs.

The Hon. MARK BUTTIGIEG: Is that a function of people having that experience up-front and personal because of their closeness to the river? What about the perspective of, say, an irrigator?

Dr BAUMGARTNER: Well, it cuts at the same thing. A lot of those people are irrigators and they could not irrigate because there was no water in the river. So, you are connected to the river because you live on the river. It does not matter if you are a fisherman or an irrigator or someone who likes skiing or kayaking or doing anything. A healthy river—I have read it a few times lately—is an economic and environmental engine. It actually drives economies. It drives goodwill among communities. It drives morale. I would hate to say to my daughters, "We have a chance to fix things but we decided, oh, we will just let the fish die and do the best we can." We are at a tipping point now where we could make some decisions and look at what we are doing now: Is that the best we can do, or can we do better? Can we think outside the box and rethink what we have done in the past? Can a bit of innovation here and a bit of left field thinking and involving communities in decisions—we could end up somewhere very different in 20 or 30 years time.

The Hon. MARK BUTTIGIEG: I suppose that segues into my last question. In terms of consultation with people like yourselves to date, what is that then like? Have you been co-opted into this discussion—prior to this, I guess?

Dr MALLEN-COOPER: In general? Is it about basin management generally?

The Hon. MARK BUTTIGIEG: Well, no—about these projects and the effect they have on fisheries and fish and that sort of thing.

Dr MALLEN-COOPER: We have had various involvements and various workshops, yes—many workshops, actually, yes.

Dr BAUMGARTNER: I would say our entire careers we have tried to—

Dr MALLEN-COOPER: Yes, that is right.

Dr BAUMGARTNER: I mean, we are here today because we care about the rivers and we like to present the science and do the best we can. We are in and out of projects as consultants and we are publishing actively and we are trying to get the message out there. We are talking to communities, so, yes.

The Hon. MARK BUTTIGIEG: So the Government has been listening then to subject matter experts like yourselves?

Dr MALLEN-COOPER: I would say so. Whether they have taken that advice on board is another issue but certainly they are listening. I would like to just take up that point that I have heard before: We need to have water for people, water for industry, so why have biodiversity? I reiterate: It is a choice for the community to make and what they want in terms of the river and what is also interesting is I have noticed you can ask people who have never seen the Darling River, "Would you like the Darling River to have no fish in it? Would you like

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to know there are 30-kilogram Murray cod in it?" Even never having visited it, people actually value parts of this State that they never see. That is really important.

The other huge thing I feel—and over my 35 years working in this area I just feel it more and more strongly—is in the Federal Water Act and the New South Wales Water Management Act right up-front we need to acknowledge Aboriginal cultural values. In that journey I took in 2018 I saw all these thousands and thousands of mussels literally over a thousand kilometres. We are not looking after Aboriginal cultural values and we can choose to look after them. We can choose right now with the water available, with no new infrastructure, we can do it. And that is the responsibility under the legislation and I think it is our personal responsibility. In terms of values we need to ask the community and the Aboriginal community have a big stake in that.

The Hon. PENNY SHARPE: I found the evidence you provided today to be extremely refreshing and actually very hopeful after a lot of negative evidence today. I just want to thank you for providing some hope that we are able to be innovative enough if we think about this enough and take a bit more care and attention we can make massive strides forward. So I just want to thank you up-front for that. I am feeling quite inspired by what you have told us today. And I suppose that gets to my question, which is that you are obviously very experienced consultants. You have had some input into the development and the thinking of the Government as they are rolling out these five projects and doing all of that input. From your perspective, what can this Committee recommend that would give a bit more teeth to the kind of advice that you are giving and encourage the Government to look more closely at what you are saying? We accept that they are dealing with fishways and everyone is very happy about that but I am very interested in the tweaks that you talked about. How can we ensure that they are given enough weight and that they are part of the process, not an add-on that if we get lucky someone thinks about somewhere along the process.

Dr MALLEN-COOPER: What a good question.

Dr BAUMGARTNER: I do not think anything we have presented is anything new, by the way. And a lot of the documents I read, some of these ideas have been around for a while. It is just that they have not been actioned and they have not been put into planning. Sometimes we just default to historical ways of thinking because "that's how we've always done it". Whereas moving forward maybe "that's how we've always done it" is not good enough and we need to do it a bit better. I guess I will make that point there but I will throw to Dr Mallen-Cooper because he is probably going to say something a bit more profound.

Dr MALLEN-COOPER: No, nothing more profound. I agree. In the last 20 years I see so many scientists making so many strides. I am absolutely convinced we have the knowledge now to turn the Barwon-Darling around. And it is a choice. So if this Committee meets in 30 years' time and the Darling is worse, well, you know you have made a choice and the community has made that choice. I really feel quite strongly about that. The knowledge is out there. We can do that. We heard a lot about Aboriginal engagement, some of it good and some of it not so good. I feel that needs to be at a far, far greater level. We need to have their values and their objectives right up-front.

It is a difference in culture. It is different in terms of engagement. It takes a longer time to have a depth of understanding and we need to work incredibly hard to make sure we get that understanding—understand their values, understand that at Wilcannia Aboriginal people say this river used to have this base flow in it. They are 100 per cent accurate. When I went back to historical droughts from the Federation drought there were these long periods of base flows. So they know what the river was like. We need to listen very, very carefully to them. So that has been a big message from today.

But I think the science is out there. I think in terms of these projects, infrastructure projects get momentum and the dam projects in particular have a significant amount of momentum. We certainly need to evaluate those. I put in my submission for the inquiry that I think there is a very obvious limit here, which is the Sustainable Diversion Limit. So therefore WaterNSW reiterated they are not going to take any more water from the environment. If the new dams do not take any water from the environment, the only way they can provide water is to take water from irrigation from one year and give it to irrigation the next year. That is how the dams must work.

Dr BAUMGARTNER: And I guess if there is one thing that this Committee may be able to recommend as part of this process—it is a common thread we have heard through today—it is do not rush it. Do not rush such a big, expensive decision.

The Hon. MARK BUTTIGIEG: That is the common thread.

Dr BAUMGARTNER: Take your time, make considered decisions, involve the scientists, involve the communities and let's do it properly. Let's get it right from the start. Let's not create a problem that needs to be fixed in 40 years' time. Let's take our time now.

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Dr MALLEN-COOPER: I would just reiterate that. In my days working with the public servants, they feel a bit rushed by the time frame. As I said, even in the last drought we had at the beginning of this period of zero flows at Bourke we had 34 per cent in the dams. If we had that situation again I suspect the Government will make different decisions because they have a new risk profile. So I would agree 100 per cent, Dr Baumgartner. I would say do not rush it. There are a lot of good experts out there we need to engage. There is probably not a reason to rush it.

The Hon. PENNY SHARPE: Sorry, this is a negative question but it worries me greatly. The Murray-Darling Basin Plan was supposed to address all of the issues that we have been talking about. Billions of dollars have been spent and all evidence points to the river being in worse health than it was at the beginning, after all of that expenditure. I am interested in your reflection on why that is the case. How do we avoid a similar thing happening with the investment of this money across the State in water infrastructure?

Dr MALLEN-COOPER: Good question. Look, that basin plan and its implementation—

The Hon. PENNY SHARPE: No pressure.

Dr MALLEN-COOPER: No, no pressure at all. I do not think we can solve all the woes of the basin plan and water management. It is an incredibly complex area so I am not across all of that water policy and implementation of the basin plan. If you ask me about fish ecology and river ecology I am sure I will give a reasonable answer and there are lots of reasons—

The Hon. PENNY SHARPE: Even if you just want to take it from the point of fish.

Dr MALLEN-COOPER: Well, fish.

Dr BAUMGARTNER: I would not be so pessimistic in that for the first time in history we have got some water that is allocated for the environment which is used for the environment. And that water has been used and generated some very good outcomes for the environment when it is used properly. We have had talks today when we have heard people talking—we are talking about allocating water for cultural purposes. If that is all the basin plan delivers that is still a tremendous outcome. But the basin plan is not fully implemented yet either. There is still a way to go. Just going down that pathway and starting a discussion, there are some positives. It is not all negative.

We are in a bad place because we got hit with some pretty bad successive droughts. What that told us is that we need to get much better at managing water when there is not much of it around. We have to get much better at how we allocate water when there is not much of it around. So if there is one thing that we could do better going forward with implementation of the basin plan and if we are expecting bigger and longer droughts going forward it is solving that issue. There is more than enough expertise in the basin to solve that issue. It just takes us getting around the table and having the discussions that make sure that when things get tough we make sure people are looked after as much as they can, the environment is looked after as much as they can and that we protect the cultural values. You cannot view it as a static system. It is not the same every year. Things change every year and you have to be adaptive, you have to be agile and you have to be prepared to change.

The Hon. MARK PEARSON: I'll have what he's having.

The Hon. PENNY SHARPE: Thank you.

The CHAIR: There was one thing WaterNSW said this morning that potentially what you said this afternoon may contradict. This morning WaterNSW claimed that the reregulating weir that will replace the Gin Gin Weir will be good for native fish, that it will have a low flow gate and it will unlock 100 kilometres of riverway that has been blocking fish passage. What are your views about that statement?

Dr BAUMGARTNER: Dr Mallen-Cooper and I have had some very good discussions about this. The Gin Gin Weir cuts at the heart of what we are talking about. We are thinking solutions at one site to benefit a small bit of reach. If we were to zoom out and look at the Macquarie Valley as a whole—what role does that structure in the management of water and environmental assets and cultural assets across the valley and then integrate that into an integrated plan—you might end up somewhere different. And so, yes, there is a fishway being built on Gin Gin and it is having the LayFlat gates and things like that. They are still very site-based. Those fish will move through there and go and do something. Those fish might want to do that at the whole-of-catchment scale. Those fish might go upstream and then be confronted with thermal pollution from Burrendong. We saw last week that there is a thermal curtain on Burrendong Dam which failed last week and the water went from 22 degrees to 12 degrees right in the middle of fish spawning season so. And so, what is the point of passing fish upstream into a toxic environment? You have to think at the catchment scale and solutions have to be implemented at the catchment scale.

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The CHAIR: Dr Mallen-Cooper, last word?

Dr MALLEN-COOPER: Last word, yes. Proposed Gin Gin is re-regulating capturing either rain rejections or potentially tributary flows, that is still to be defined. They are extremely valuable environmental flows, so I have written about that in my submission. The new weir would have a fishway which would provide a fish passage. However, a simpler solution is removal of the old weir and then you have fish passage.

The CHAIR: That was a very informative session. I believe there are lots of lovely quotes in there on various things for the final report and hopefully some good recommendations as well. Thank you again for your time. Thank you for the years of work you have put into science and fishery science. It is much appreciated not only by the Committee but also many in government and in the broader community here and in South-East Asia, so thank you so much for your work. That is the end of our session today. I do not think you took any questions on notice but Committee members may also have some supplementary questions they can feed through to you. Thanks to everybody who tuned in.

(The witnesses withdrew.)

The Committee adjourned at 16:33.