REPORT ON PROCEEDINGS BEFORE

PORTFOLIO COMMITTEE NO. 7 - PLANNING AND ENVIRONMENT

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

CORRECTED

At Parliament House, Macquarie Room, Sydney, on Friday 4 December 2020

The Committee met at 9:30.

PRESENT

Ms Cate Faehrmann (Chair)

The Hon. Mark Buttigieg
The Hon. Catherine Cusack
The Hon. Trevor Khan
The Hon. Mark Pearson (Deputy Chair)
The Hon. Peter Primrose
The Hon. Penny Sharpe

PRESENT VIA VIDEOCONFERENCE

The Hon. Shayne Mallard

The CHAIR: Good morning and welcome to the fourth of five hearings of 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 of the Eora nation and pay my respects to elders past, present and emerging. I thank them for their custodianship of the land, and for looking after the land that this Parliament has sat of for many years. Today we will be hearing landholders impacted by the various water infrastructure projects and representatives from the CSIRO. We will also hear from the Minister for Water, Property and Housing, Melinda Pavey, MP, in addition to representatives from WaterNSW and the Department of Planning, Industry and Environment.

Before we commence I will make some brief comments about the procedures for today's hearing. 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. Under the COVID-safe plan, Parliament House is now open to the public and 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 everyone 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's terms of reference and avoid naming individuals unnecessarily. There may be some questions that a witness could only answer if they had more time. Written answers to questions taken on notice must be returned within 21 days. I welcome our first witnesses.

MICHAEL DRUM, Executive Officer, Macquarie River Food and Fibre, sworn and examined

TONY QUIGLEY, Chairman, Macquarie River Food and Fibre, before the Committee via videoconference, sworn and examined

ROWAN CLEAVER, Member, Macquarie Effluent Creeks Association, before the Committee via videoconference, sworn and examined

The CHAIR: I welcome our first witnesses. Would anyone like to make a short opening statement? Mr Quigley, we will start with you.

Mr QUIGLEY: Thank you for the opportunity to appear at this inquiry. We think that as irrigators in the Macquarie Valley that we would like some input into this decision. I am chairman of Macquarie River Food and Fibre, which represents over 600 irrigators in the Macquarie Valley and many of the associated businesses that rely on those irrigators for part of their income, so ancillary services. Our interest in the inquiry is the replacement we are at Gin Gin. All of the other matters that the Committee is looking at are outside our valley so we are happy to comment only on those things that we have an understanding of and that is that Gin Gin Weir replacement.

We are here very much to support this project as there are four main things that it will do to enhance both the environment and the economic and sustainability of all of the water users within the Macquarie Valley. We need to be clear that this proposed structure is replacing an existing 117-year-old weir which is both no longer fit for purpose and near the end of its life. The proposed new weir—re-regulating weir—will allow much more efficient distribution of all water within the Macquarie Valley, not only for irrigators but for towns and the environment as well.

It will also increase the level of service to those irrigators and industrial water users, including mines, down the bottom end of the valley that had up to a 14 day water order period. So it is very difficult for them to schedule irrigation or industrial water use without even having the forecast that runs that far in terms of what their crop water use might be. Another major benefit of this new weir would be to remove a major impediment to fish migration between the upper and lower Macquarie. The existing Gin Gin Weir has been long criticised for being a very poor passageway for fish. In fact, fish virtually cannot move above and below this concrete structure.

There is no facility for fish to move, even in a flood, because of velocities and there is no ability to build a fishway on this existing weir because it is simply a lump of cement. It was built prior to reinforced concrete being invented and there is no engineer anywhere who is prepared to build off it because they do not understand the strength and weaknesses of the foundations. So what is proposed to replace this 117-year-old weir is a modern, fit for purpose, re-regulating weir that will increase the reliability to all water users whether they are towns—Nygen and Cobar particularly—irrigators or the environment.

The Macquarie is about the only river in New South Wales in the Murray-Darling Basin that has not got a re-regulating weir somewhere down its length. Having said that, it is one of the longest rivers from its storage to its confluence of the Barwon-Darling in the basin as well. We have two issues here: no regulating structure and a very long river with a large lead time for water levels. For many of those reasons, we believe that this is a good and very timely project given the drought that we have just come through and is of benefit to all of the water users in Macquarie Valley generally, including the town of Dubbo.

Mr CLEAVER: I represent the lower end of the system. It is predominantly stock and domestic. There are four to five medium-sized irrigators. They rely very heavily on the system. Just to explain to you some of the problems that happened at peak irrigation and peak needs—there is a 14-day lag time at Warren and that exacerbates to 16 days as we go down the river system. It gets progressively worse. It would possibly be an engineer's nightmare to try and get water to Nyngan, the marshes, irrigators and the creek system. The distance is quite amazing. At [audio malfunction] sort of predominantly or most Decembers we have what we call a "hole" in the river. Everybody feels the effects. We have stock getting bogged in creeks and we saw the Girilambone Mine cease operation in November 2019. I understand that was the peak of the drought.

But you would think a re-regulatory weir would have to take the bucks out of the system, so it could be a stopgap situation. Guys I represent do make the fact there is not a lot of stock and domestic mentioned in all the reports and notes, so they were quite keen to see stock and domestic be protected and did not want the rules changed to impact on them. Possibly the creeks feel they get a bit of a tough go compared to the rest of the system. They are just really concerned that that stock and domestic and the towns, Nyngan and Cobar, will be affected, which I am sure they will not. I am sure it is a good thing. Thank you.

The CHAIR: How much additional water will the Macquarie River re-regulating weir potentially store or hold? It is an upgrade. I assume it will take more water.

Mr QUIGLEY: It is a different style of weir. The current weir pool at Gin Gin, which my irrigation property pumps out of, stores between about 1,500 to 2,000 megalitres of water at best level. The new weir will hold effectively, for most of the time, the same amount of water because the level will remain the same. The only time it will hold any more water than that—there is an additional 4,000 megalitres of storage above that standard level. That will only be when there are rejected irrigation waters that are caught to be used later on, you know, within a few days generally. So it acts as a buffer, as Mr Cleaver said, against those peaks and troughs that come down the system for various reasons. The additional water stored at any time is a maximum of 4,000 megalitres capacity on top of the 2,000 that is already in the current weir pool.

The CHAIR: I understand that the rejected irrigation water—and we have heard this from other witnesses—does play a critical role in the river health and wetland health, particularly downstream in terms of the Macquarie Marshes. Would that be a correct thing to say?

Mr QUIGLEY: No, Chair. That is an incorrect statement. The marshes have the largest share of the water in the Macquarie. In fact, under our water-sharing plan they are guaranteed at least 82 per cent of total flows in the Macquarie. The way the system has worked in the last few years, the irrigators have been taking even less water than that largely because of the lack of inflows and also the over-recovery of water within the Macquarie by the Murray-Darling Basin Authority and others. So the marshes are well treated with water. They have as much water now as pre-Burrendong. The water that we are talking about here—the end-of-system flows—is quite small amounts of water at any time. This weir has not got the capacity to store that water anyway. As I said, it has got a buffer capacity of about 4,000 megalitres.

Something like a tributary flow or other issues that may come down the river are much bigger than that. We are talking 20,000 and 30,000 megalitres so it has not even got the ability to store any of the water even if it was allowed to. But the water-sharing plan in the Macquarie already allocates the water to all of the different uses. That has been a bipartisan-supported plan since the original one in 1986.

Mr CLEAVER: A lot of those tributary flows used to find their ways down the creek and provided that continues—that has actually ceased. It seems to be stored—some of that water can be stored or, if it is stored, it ends up in the marshes. We are saying that the creeks may be get benefit because those rainfall events that fall below the Burrendong Dam could be directed to those creeks that are in need.

The CHAIR: Mr Cleaver, what impact do you think increasing the storage by potentially 4,000 megalitres will have on cattle-grazing industry downstream?

Mr CLEAVER: The people I represent are predominantly sheep and cattle. If it is, as reported, that the weir has no room for changes, I see it as being a good thing. The biggest problem with the creeks is—I go back to that whole delivery. We have these summer periods and all the creeks might dry for three or four weeks. This is because of the distance from Burrendong Dam. Obviously, as we get further down towards the bottom end, the timing and delivery gets extremely hard. So I guess if we have got something halfway and we have got water there even if we call emergencies, something has a drip, which it does, and we will be able to access that water.

The Hon. CATHERINE CUSACK: Can I just clarify, is that water for stock that you are referring to when the creeks are dry?

Mr CLEAVER: Predominately I represent five creeks. Three are regulated out of Warren. The other two receive water when there is abundance, so not a lot but in flood times—that is the Girilambone copper mine, the Cobar town and four to five irrigators. It has always been called stock and domestic and that is what we like to obviously look after.

The Hon. TREVOR KHAN: I have got some questions, but I think members are asking reasonable questions at the moment.

The Hon. CATHERINE CUSACK: Chair, having been on that side of the equation, I suggest in relation to the Hon. Shayne Mallard that he will probably let us know if he has any questions.

The CHAIR: Okay, great. I have got questions. We will go to the Opposition.

The Hon. PENNY SHARPE: Can I just confirm that the current storage of the weir is 1,500 to 2,000 megalitres but that the change to the weir will raise it to 4,000 megalitres. Is that accurate?

Mr DRUM: That is the plan, yes.

The Hon. PENNY SHARPE: The expectation is that the water that is ordered and not used will go into it. What other water will be captured by the weir?

Mr DRUM: Our understanding is nothing. Tributary flows will flow through the weir.

The Hon. PENNY SHARPE: There is no additional water diverted from those—

The CHAIR: Mr Drum, I ask you to put the microphone closer to you.

Mr DRUM: No, there is no other water storage that will occur as a part of the weir. Tributary flows will flow through the weir, and when the weir is not—

The Hon. PENNY SHARPE: As they currently do?

Mr DRUM: Well—

The Hon. PENNY SHARPE: What changes?

Mr DRUM: The issue with the weir now is it is a permanent concrete structure. It is more of a dam than the proposed weir.

The Hon. PENNY SHARPE: It allows water to flow through, but I am just trying to understand. This is almost a doubling, almost three-time lifting of the capacity to hold water.

Mr DRUM: Temporarily.

The Hon. PENNY SHARPE: For how long?

Mr DRUM: At the moment, WaterNSW is saying 14 days.

The CHAIR: You are saying holding water temporarily for 14 days; is that when the water is available to be held?

Mr DRUM: Primarily, yes.

The CHAIR: In other words, every time there is additional water through our tributary flows the weir will hold that additional water for up to 14 days.

Mr DRUM: No, I think you need to talk to WaterNSW to get the right answer for that. But my understanding—

The CHAIR: Yes, we are doing that.

Mr DRUM: My understanding is no. The weir is there to regulate flows in the very rare circumstance that they need to hold water for more efficient river operations.

The Hon. PENNY SHARPE: When you say rare, how rare do you mean? How often?

Mr DRUM: WaterNSW is talking once every two or three years.

The Hon. PENNY SHARPE: It is a lot of infrastructure for once every two or three years.

Mr DRUM: Possibly.

The Hon. PENNY SHARPE: Can I just clarify—I am just trying to check, because I am not sure that I understand this correctly. Currently it holds between 1,500 and 2,000 megalitres. Is it an additional 4,000 megalitres on top of that, or is it to go to 4,000 megalitres?

Mr DRUM: No, and I think that is the main thing that needs to be clarified. It is not additional infrastructure.

The Hon. PENNY SHARPE: No, it is replacement infrastructure. I get that.

Mr DRUM: That is exactly right. Whatever infrastructure is there that has a capacity to hold water basically will be—

The Hon. TREVOR KHAN: Decommissioned.

Mr DRUM: Decommissioned.

The Hon. PENNY SHARPE: Yes. I do not think there is much disagreement that that needs to happen. I think that is fine.

Mr DRUM: That is right, exactly. The 1,500 goes away and then the 4,000 megalitres comes into place.

The Hon. PENNY SHARPE: Right. I think that is very important, because I think there has been some confusion about that. I am pleased about that. You know the marshes and the way that it operates better than most, because you are there. I think Mr Cleaver talked about the 82 per cent—that is just the normal flow that occurs. Do you believe that there will be any impact on the marshes as a result of the weir?

Mr DRUM: I think Mr Quigley is the best person to respond to that.

Mr QUIGLEY: No, the water sharing plan in the Macquarie, as per all of the rivers—the Macquarie-Cudgegong water sharing plan is the rule book about how the water flows within the Macquarie [inaudible]. That is still the supreme document in terms of the way this water flow with continue, with or without this weir. The rule book cannot change. This structure will allow the conservation of some of the water that would have flowed out of the end of the system because of cancelled irrigation orders to be stored and used—actually much more quickly, I think, than Mr Drum indicated. In a normal flow of events, we would expect that water to be used within the next week.

If a series of thunderstorms come through, like happened a few days ago, and the irrigators cannot take the water because they are busy pumping water off their fields that have flooded because of that three- or four-inch thunderstorm, they will cancel their order with WaterNSW and then that water will be released to irrigators further down a few days later to go on those fields once they have dried up, or for those fields that did not get under a thunderstorm. It is a very transient amount of water. For that reason, it will make no difference to the marsh flows. The marsh allocation, the environmental water allowance, the held environmental water and the vast majority of the tributary flows will still go to the marshes as it does now. There is no change to the rule book.

Mr CLEAVER: I agree that the water sharing plan is the book that we go by. Provided there is no change, or there is an increase to stock [inaudible] the creeks or its environment component get affected, which I can see they will not, I see it as being a very good thing.

The Hon. MARK PEARSON: Mr Quigley, you say "when things are normal", or how things normally occur, but the reason the Committee is looking at water is because it is no longer normal. We cannot predict what is going to happen. It has been quite a dire situation in terms of water. How can you assure us that the marshes will receive 82 per cent of the water flow when we are facing a very abnormal climate?

Mr QUIGLEY: I cannot do anything to help you with the climate, I am afraid. But the rule book—

The Hon. PENNY SHARPE: Oh, go on!

The Hon. MARK PEARSON: You cannot say it is normal, though.

Mr QUIGLEY: No. We have just been through the biggest drought on record, and I acknowledge that. The issue is, though, if we would have been more prudent with the water that we had available in the years leading up to that drought—Burrendong spilled through to 17 January 2017. If we would have been more efficient with the way we distributed that water—in other words, if we would have run a bit like a town on water restrictions and were very careful with what we did with all that water—we may have had another six months of supply for Nyngan, Cobar, Dubbo and Warren than we had, if this re-regulating storage had have been in place during those three years leading up to and during this drought.

The point I am trying to make is the irrigators have gone, to a large extent, to increase their efficiency. What we are trying to do here with this re-regulating storage is improve the efficiency of delivery of the water to all of the water users in the Macquarie, and the savings are banked by everyone. There is less water released out of Burrendong to do the same job. That is the efficiency we are after with this. That will help the marshes, the same as it will help the towns and the irrigators. It is an efficiency measure we are after, and no other reason.

Mr DRUM: Just to add to that, the 82 per cent—or whatever the number is—is fixed. If it is 82 per cent of one megalitre, the environment still gets that. If it is 82 per cent of 1,000 megalitres, the environment still gets that. That is the water sharing plan. They are the rules that prescribe how much the environment gets of how much water there is available—how much or how little. This proposed infrastructure does not change the proportions of who gets what.

The CHAIR: In that water sharing plan, what is the drought of record that is currently referred to with that, or which it has been modelled off?

The Hon. TREVOR KHAN: We have been through that in another inquiry, let me tell you. This issue has been under—

The CHAIR: Thank you, Mr Khan. I am questioning the witnesses.

Mr DRUM: I am going to go to Mr Quigley on that.

Mr QUIGLEY: From my recollection of the water sharing plan, there is no drought of record included in it.

The Hon. MARK PEARSON: Sorry, there is no what?

Mr QUIGLEY: It is simply a rule book that is adaptive to the situation at the time. It does not prescribe what the minimum or maximum flows are going to be. It is a set of rules that allow the operator and Department of Planning, Industry and Environment [DPIE] Water—the allocator of water—it sets the rule book by which, under all circumstances, they allocate water for various users. It does not assume a drought of record of any type, in my understanding.

Mr CLEAVER: Can I pass a comment that the creeks dried totally for the first time in 60 years in November 2019. I would like to pass the other comment that there are things of environmental values on the creeks—we always talk about Macquarie Marshes, and I understand that they are iconic, which is fine. But there are things upon all those creeks, whether they be the water rat colony on the Duck Creek, the perch that is in the Bogan or the floodplain on the Crooked Creek, that are all things of value that need their share. We sometimes forget, because we are not part of the two big players, being Macquarie Marshes and irrigators. I would just like everyone to realise that there are things of value in our neck of the woods.

The Hon. MARK PEARSON: We have heard considerable evidence that actually this is an opportunity to rethink this whole idea of dams and weirs and increasing them etc.—the whole notion of storing water in that way. There has been evidence suggesting that maybe it is actually better—and it reflects the witnesses evidence that has just been given about the health of the river—to take the water and store it away from the creek or the river, not in it, and that gives an assurance for the health of the river as a consequence. What are your thoughts about that evidence?

The CHAIR: Mr Drum?

Mr DRUM: If I am honest with you, I do not think anybody in this room is qualified to talk about that. The best people to talk about that is WaterNSW and the operator of the river. My opinion would be that if they said that the best way to operate the river was to store the water in a dam, great. If they said it was to store it mid-system, great. I do not think anybody in this room would be able to pass judgement on a comment like that and not qualify it.

The CHAIR: Will a larger re-regulating weir mean that more water will be needed from the tributaries? I understand water orders from Burrendong Dam are allocated from tributary flows. Is that correct?

Mr DRUM: No. Tributary flows—Tony, if I am right—will flow through this structure. The tributary flows do not contribute to allocated water to irrigators.

The CHAIR: Okay, so the larger weir will not mean that more water will be used from the tributaries?

Mr DRUM: No.

The CHAIR: Mr Quigley?

Mr DRUM: Just to be clear, I will go back to Tony's previous comment. There is no additional water for any one particular user as a result of the infrastructure. The water sharing plans are the rule book as to who gets water and how much. This piece of infrastructure is really only trying to make more efficient river operations and how water is used in that scheme. It does not mean that high-security users get more water or the irrigators get more water, it is just trying to manage the water that is available as part of the water sharing plan and make a more efficient use of it.

The CHAIR: Thank you very much. I am afraid we have to leave it there. If there are any further questions, I am sure members can put in supplementary questions to witnesses. Thank you very much for appearing today. Thank you for making it in here, too, Mr Drum.

Mr DRUM: No problem.

The CHAIR: Thank you, Mr Quigley and Mr Cleaver.

Mr QUIGLEY: Thank you.

Mr CLEAVER: Thank you.

(The witnesses withdrew.)

PHILLIP SPARK, Individual, before the Committee via videoconference, affirmed and examined

The CHAIR: Welcome to this hearing, Mr Spark. Do you have an opening statement?

Mr SPARK: I do. Thank you for the invitation to appear before you today. I appreciate the opportunity to share my concerns about the proposed Dungowan Dam and Mole River Dam. I will try to be brief. You have my detailed submission to the inquiry. My background is a second-generation farmer and irrigator on the Peel River for 30 years and an ecological consultant for 23 years. The new dams proposed are both very costly projects that ignore the science that clearly states that no more water extraction can occur from inland rivers. It is a well-known fact that the Murray-Darling Basin Plan is struggling to find more water to improve the health of inland rivers and wetlands.

Dams alter river flows, stream structure and water quality that affects all aquatic life irreversibly. Dams create novel and artificial aquatic environments that often benefit feral plants and animals at the expense of native species. My quick literature review of the impact of dams found over 40 scientific papers containing very good reasons why no new dams should be built. The proposed dams ignore those facts and assume that we can increase water extraction for the growth of towns and the irrigation industry.

In my opinion, both projects are a terrible waste of money. In the case of Dungowan Dam, that money would be much better spent on improving water management, innovative water efficiencies and re-use and recycling of water to improve water security for Tamworth. All of those would be of direct benefit and be guaranteed to deliver improved security. The fast track approach to get Dungowan Dam built gives very little confidence that it was thought through properly. What business would rush into a multimillion dollar development without a business case to justify the cost?

The decision to build the dam ignored the fact that the dam had failed to pass prior economic feasibility studies when Chaffey Dam was built and, again, before Chaffey Dam was upgraded. It is the classic case of putting the cart before the horse. Claiming to have shovels in the ground by October 2020 before the economic evaluation and environmental assessments are completed is foolish. Dungowan Dam would be a very expensive dam to construct for the small amount of water stored of 22,500 megalitres. It will be among the most expensive dams ever built in Australia at $21.3 million per gigalitre. For example, the cost to construct the Chaffey Dam upgrade was $1,139 per megalitre as compared to $21,511 per megalitre to construct Dungowan Dam. That costing would also be optimistic as the real cost is likely to blow out, as they all do.

It is widely known that the cost of Dungowan Dam cannot be justified. There is no guarantee that it will solve Tamworth's water security problem. As recently as June 2019, the Deputy Prime Minister was calling for other options to solve the water security problem for Tamworth, saying the dam was not economically feasible. Niall Blair dismissed it in October 2018, saying the cost would be substantially more than anticipated and would be cost prohibitive. Tamworth Regional Council also doubts that it will deliver the required water security and are very concerned about the cost, but they feel captured by the need to be supportive of local National Party members' initiative.

No-one knows who is going to pay for the cost or who will own the infrastructure and be responsible for maintaining it. Without knowing how that costs will be recovered, it is impossible to evaluate other options for Tamworth to get improved water security. Tamworth's ratepayers are justifiably concerned about what benefit they are to get, as are the landholders along the pipeline who do not know if they would have access to the water or what it would cost. With regards to Mole River Dam, I think it is a shocking waste of money to spend $24 million on a final business case for building a new dam. The first feasibility study found it unviable. If it were viable, that does not justify the fact that it would destroy the aquatic ecosystem of one of the last unregulated inland catchments.

Extreme weather events have doubled in the last 20 years. Predictions are that extremes are to become worse and more frequent. Dams will not make it rain any more. All they can do is regulate stream flows more to extract more water out of an already over-allocated river system. Rather than spending $400-plus million on Dungowan Dam, I recommend that Tamworth water security be improved by smarter use of the existing water resource. Doing that would provide better resilience in a changing climate than any new dam. I ask the parliamentary inquiry to reject Mole River Dam completely and to call for a halt to Dungowan Dam until alternative water efficiency options are fully investigated.

The CHAIR: Thank you very much, Mr Spark, firstly for that evidence and secondly for the detailed submission you provided to this inquiry including all the relevant media clippings. You mentioned the feasibility study for the Mole River Dam found it "unfeasible", in your words. Which study was that?

Mr SPARK: From Jacobs.

The CHAIR: When was that undertaken?

Mr SPARK: I am not sure, to tell you the truth, but it was the Jacobs report.

The CHAIR: Do you know the reasons why it found that dam not a feasible thing to pursue?

Mr SPARK: It looked at the options that it was asked to and concluded it was not feasible. I can send you the link to that.

The CHAIR: Could you provide that to the Committee on notice? We may have that but thank you very much. You specifically outlined those costs of the proposed new Dungowan Dam compared to the Chaffey Dam upgrade. Why do you think this is going ahead? You certainly provided some compelling reasons in the first place for Dungowan Dam not to go ahead, not least of which is cost. Why do you think it is being pursued?

Mr SPARK: Why is it still being pursued? It is political and it is now a case of political saving face to proceed. We are aware that within the Tamworth city council and their affiliations with the National Party, they are reluctant to be coming out strongly against the proposal for that reason too. I think while we have the present Government it is sort of saving face to proceed regardless.

The Hon. MARK PEARSON: When you say saving face, what actually do you mean—saving face to whom?

Mr SPARK: It is their own—

The Hon. TREVOR KHAN: This really does get into the area of speculation.

The Hon. MARK PEARSON: I am asking a question. We can all speculate.

Mr SPARK: Sorry. I am having trouble hearing you.

The Hon. TREVOR KHAN: I will take a point of order. This is an inquiry into these various dam proposals. I accept that, and I accept that Mr Spark is entitled to a different view than others may have. But it is not an inquiry into essentially what somebody believes may be the motivation for councillors on Tamworth Regional Council to be making decisions. I think that is really a longbow and actually adversely reflects on people who do not themselves have the opportunity of responding.

The CHAIR: This inquiry is looking at the rationale and justification for these.

The Hon. TREVOR KHAN: I absolutely accept that.

The CHAIR: To ask witnesses what they believe is the rationale—

The Hon. TREVOR KHAN: To the point of order: Tamworth Regional Council, of whom you have got one sitting in the back who might actually be able to make some comment, is not the decider and not the funder of this. What you are inviting is adverse reflection on people who cannot respond and I think that is unfair.

The Hon. MARK PEARSON: To the point of order: I am not asking for anybody to reflect on any other person.

The Hon. TREVOR KHAN: You precisely are.

The Hon. MARK PEARSON: The witness has stated "saving face". I am asking if the witness is stating "saving face", we need to know who he thinks they are saving face to or for.

The CHAIR: I remind the witness not to use this as an opportunity to adversely reflect on others. The witness does not need to answer the question if he does not wish to, but if the member could rephrase the question.

The Hon. MARK PEARSON: I will rephrase the question, just because the answer to the question is to help our deliberations. In your evidence and a lot of other evidence, it is the case that there is various serious opposition to the proposal for these dams and without business cases et cetera. So the argument has been why is this being pushed so assertively? What would be that motivation? We are trying to understand what that would be. From your comment, I am wondering if you can enlighten us as to what you think that might be.

Mr SPARK: WaterNSW have been instructed to commence and have no other option. They have been just instructed to make this dam happen, and they are not looking at any other option. That, to me, is why it is going forward.

The CHAIR: You also say in your submission that Dungowan Dam had an economic feasibility study done years ago which found it to be too expensive for the small amount of water storage. Which study was that one?

Mr SPARK: I do not actually have a copy of that. We have been trying to get the copies of those, but it is general knowledge.

The CHAIR: The Committee can try to get documents such as this. Just to be clear, you have not seen it yourself. It is understood that there was an economic feasibility study.

The Hon. TREVOR KHAN: It may not have been called that, but he is quite right.

Mr SPARK: That is correct.

The Hon. TREVOR KHAN: It was done.

The Hon. MARK PEARSON: I think Niall Blair relied on that.

The Hon. TREVOR KHAN: I am not going to go into that, but it is either going to exist in the context of whether Tamworth Regional Council is going to be able to deliver it or WaterNSW.

The Hon. PENNY SHARPE: You mention in your submission that essentially Dungowan Dam and the Mole River Dam is part of the lowland Darling River aquatic ecological community that is listed as endangered in the Fisheries Management Act. Could you explain to us what that means and what that is supposed to trigger in relation to protections? I will get you to do that first and then I will go to the next question, which I think I know the answer to.

Mr SPARK: It is the same as any other threatened species consideration or endangered ecological communities consideration. Where it occurs, any development that might impact that endangered ecological community has to be dealt with according to the guidelines laid out in the Biodiversity Conservation Act. I suppose it is another tick a box of what development applications are required to do, and they have to identify how they are going to minimise the impact—first of all, how they avoid the impact and then minimise the impact and then mitigate what impact there is. So it is just the due process.

The Hon. PENNY SHARPE: The consideration of those issues has not been turned off. You expect that it will be part of the business case and/or EIS for each of these.

Mr SPARK: Yes, I do. Yes.

The Hon. PENNY SHARPE: So the fact that they have been declared State-significant infrastructure does not mean that those issues will not have to be addressed, leaving aside your significant concerns about the way they will be addressed.

Mr SPARK: Yes. My understanding of the process with State-significant developments is that they still have to be considered.

The Hon. PENNY SHARPE: Can I just confirm with you, in your submission—do you know whether the contracts have been signed for the pipeline construction? They were due to be signed in October.

Mr SPARK: Yes, they were. I really do not know, sorry.

The Hon. PENNY SHARPE: That is okay. That is alright. We have got plenty of other people we can ask.

The Hon. TREVOR KHAN: This afternoon might answer that.

The Hon. PENNY SHARPE: Yes, I think it will.

The CHAIR: I will just jump in with a question. Previously, Mr Spark, you mentioned that the Mole River was one of the last unregulated rivers in that area. I just wondered if you could explain to Committee members what is the importance of retaining an unregulated river?

Mr SPARK: Yes. Look, it is really, really important. It is an example of what all the rivers looked like before regulation. They are very different. The stream structure is very different. The formation of holes and rapids and ripples is very different in those streams and it is all to do with the unregulated flows. They maintain all that natural structure, which creates habitat for so many of the aquatic species. In a regulated river, such as the Peel River here, you lose a lot of that habitat structure that a lot of species require, so it becomes simplified. Not only does it become simplified, but it also becomes more suitable to feral species such as feral fish like carp and gambusia, and also weeds. You do not get the cleaning of the streams that maintain the vegetation. You get

build-up of willows. So, it totally changes both the riparian zone and the stream structure. They are really valuable to maintain because—

The Hon. PENNY SHARPE: I have got two more questions. Thank you for that. In your submission, you talk about there not being an adequate study of the other options for securing Tamworth's water supply. What studies have been done that you are aware of?

Mr SPARK: Well, I have only just recently become aware that Tamworth city council has investigated the water recycling. We are trying to get a copy of that report right now.

The Hon. PENNY SHARPE: It is alright. We have got Councillor Rodda next, so I will ask him that. That is fine.

The Hon. TREVOR KHAN: Hunter Water did the study.

The CHAIR: We should call you in as a witness, Mr Khan.

The Hon. TREVOR KHAN: I take a particular interest in this.

The Hon. PENNY SHARPE: Look, I have got one more question. I was actually quite concerned in your submission where you talk about the changes to the tributaries inflows into the Peel and Namoi and the impact that that could actually have on towns like Walgett. That is the first that I have become aware of that impact. Could you just outline to the Committee what your concerns are there?

Mr SPARK: Well, with the Dungowan Dam, it is going to hold more water, so that is going to mean less water going down right through to Walgett. It not only affects the stream directly below the dam but all the interconnected streams all the way right down to the Murray-Darling Basin. It may not be a big impact but it certainly is an impact that needs to be considered.

The Hon. PENNY SHARPE: Yes. Walgett has been a town that has had to have water carting, so it is already a problem.

The Hon. TREVOR KHAN: I am not here to have a confrontation with anyone. I think what is useful is if the witness gives some explanation of what the Peel system contains—what the major creeks and rivers that flow into the Peel system are. Perhaps he can give some indication as to their relative importance. I am particularly thinking in terms of—obviously there is the Peel itself, but there is also Dungowan Creek, which goes through the dam, and the other tributaries later on, including the Cockburn River.

The CHAIR: Mr Spark, would you care to expand on that?

Mr SPARK: I am having difficulty hearing you. Can someone turn up the volume?

The Hon. TREVOR KHAN: We will do our best. How is that?

Mr SPARK: Sorry, can you say that again?

The Hon. TREVOR KHAN: What I am interested in is you explaining what the Peel River system is—the tributaries that flow into the Peel River and their relative importance.

Mr SPARK: Right, okay. So, the Peel River includes the catchment of the Cockburn River—

The Hon. TREVOR KHAN: Can I just stop you there? The Cockburn flows in essentially just above Tamworth itself. It is not caught by either Chaffey Dam or the Dungowan Dam proposal. Is that right?

Mr SPARK: That is correct, yes. It remains unregulated. Then there is the Peel River itself, which goes all the way up to the top of Hanging Rock in Nundle and through Chaffey Dam. They are the three main catchments of the Peel. There are other streams that come in. We have got Scotts Creek below Tamworth or at Tamworth. It includes a few very large catchments, of which Dungowan and the Peel are regulated.

The Hon. TREVOR KHAN: Sure. So, what we saw in the relatively recent heavy downpours was that essentially there was not a lot of flow that came down the Peel. I was actually in Sydney, so I did not see it, but there was almost flooding in and below Tamworth because of the flows coming in principally through the Cockburn and perhaps some also being added in through Goonoo Goonoo Creek. Is that not right?

Mr SPARK: That is very right, yes. That is what created the ongoing problem. The drought had broken elsewhere, where there had been reasonable flows come down through those other catchments, but the head of the Peel had next to no heavy rainfall, so there was no runoff. That went on for quite a long while—that it just was not getting the rainfall. So, yes. It has been very patchy. Some catchments have had the relief and others have not.

The Hon. TREVOR KHAN: Sure. So, what we have got at the moment is a dam—and my wife would tell me this, rather than me knowing. We have got a dam on Chaffey which has, even after the break in the season, something in the order of 30 to 33 per cent of capacity at the moment. Apart from the irrigators—principally lucerne growers—between there and Tamworth and below, those irrigators and the town of 50,000 essentially has still got real issues with regards to ongoing water supply. Would you not agree?

Mr SPARK: Yes. Certainly, that is the case. It has only been in the last month or so that there have been any real flows coming out of the head of the Peel to put water in Chaffey. Prior to that, it was just very low flows.

The Hon. TREVOR KHAN: In terms of the lucerne growers on the Peel, do you know what percentage of their general security water licence allocations they are getting at the present time?

Mr SPARK: Zero.

The Hon. TREVOR KHAN: Zero?

Mr SPARK: Yes. So, this is their second year of zero. I am well aware of that because we have a family farm just below Chaffey Dam that my son runs.

The Hon. TREVOR KHAN: I had a feeling about that. Alright. Look, I do not want to hog the space. I will just withdraw.

The CHAIR: We have heard one or two witnesses, Mr Spark, discussing the potential impact of Dungowan, particularly on platypus populations. Do you have anything to contribute in that regard? There have been some reports in the local media in relation to platypus populations. As an ecologist, what are the platypus populations in the area and will this dam have any impact, do you think?

Mr SPARK: Look, the last two years have knocked the population around quite a lot, as it has affected lots of species. Talking to people up that Dungowan valley, they have noticed that the platypus have declined and disappeared. That really, really prolonged dry period dried up a lot of the normally permanent waterholes, which was a really big issue for species like platypus that had nowhere to go. As far as the dam's impact on that, it may actually maintain flows that would not otherwise be there, but if it will ever be released for those reasons, the stream below the existing Dungowan Dam is pretty degraded by all of those years of regulation. Species like the platypus have still been pretty secure up there but this extreme that we have experienced that the past two years has caused a big decline of not only platypus but all the fish involved.

The CHAIR: I have one last question regarding managed flows, so environmental flows from Dungowan Dam, with the populations of platypus in mind in relation to the environmental objectives of those environmental flows?

Mr SPARK: Yes. Look, if that was an environmental objective that water was to be released, yes. It could be of benefit. We are seeing this more and more where the really unprecedented extremes—it sort of comes down to requiring manipulation to be able to maintain populations of all things.

The CHAIR: Yes, okay. Thank you very much, Mr Spark. We have reached the end of our allocated time for this session. Thank you for your work and for appearing today. Mr Spark took one question on notice, which the secretariat will get back to him about.

Mr SPARK: Thank you.

(The witness withdrew.)

MARK RODDA, Individual, affirmed and examined

The CHAIR: Councillor Rodda, do you have an opening statement for members?

Mr RODDA: I do. Thank you for the opportunity to speak at this inquiry. Four years ago in 2016, the augmentation of Tamworth's main storage supply dam, Chaffey Dam, from 60 to 200 gigalitres was completed. Luckily, later that year, the dam filled to its capacity. On 23 September 2019, Tamworth, Kootingal and Moonbi communities were put on level 5 emergency restrictions for almost a year. The impact on our community's businesses, farmers and residents has been profound. In January 2020 the Chaffey Dam's level was 12.9 per cent. Over the 2017 to 2019 water years, more than 34 per cent of Chaffey Dam was drained down the Peel River into the Namoi River as end of system close, or environmental water. Interestingly, as soon as it entered the Namoi River it was no longer an environmental flow.

Another The Nationals party water Minister removed the drought of record in 2014, which I believe was a big mistake. Our Peel Valley region suffers the most expensive raw water charges in the State and many of the residents are convinced it could be fixed with a postage stamp pricing regime. Sadly, the Government opposes this water pricing fix, which brings me to the proposed new Dungowan Dam. I believe this notion was hatched in the minds of panicked Government politicians stunned at the unfolding disaster not only in Tamworth but elsewhere. The image of a large inland city in a First World nation about to run out of water if rains did not come was looking likely. There are many in our region who do not believe that a new $484 million 22.5 gigalitre dam will secure Tamworth's longer term water future any more than the 2016 augmentation of Chaffey Dam did. There are two components to this proposal: a new pipeline and the dam. A new pipeline is vital to our communities, even if the other tiers of government abandoned the dam.

Some of the unanswered questions related to the proposal are: the business case and EIS; impacts on an already struggling environment, fish, platypus, flora and fauna, ownership of the dam; compensation for the current dam and land owned by the people of TRC; control of the pipeline if the State Government assumes ownership of the dam; access by adjoining pipeline residents who access the current pipeline; seasonal yield of the new dam and quantity of water quarantined for TRC; impact of the Peel Valley and Namoi River water sharing plans and any changes required; the cost of the raw water from the dam when the principles of full cost recovery are employed; investigation of alternatives, including stormwater harvesting and water recycling; reliability of the new dam and will it provide the longer term water security promised by Minister Pavey; impact of the proposed pumped hydro scheme on Tamworth water supply should both the dam and pumped hydro scheme proceed; impact on water security and water charges should water infrastructure in New South Wales be privatised; who stands to benefit from the surplus water over and above the five gigalitres for primary production and seven gigalitres for TRC; and why the need to rush the proposal.

Even the Tamworth regional mayor, a friend to Government parties, is concerned that $500 million will be spent for inadvertent "stuff all security". I believe our communities would have more confidence if there was transparency and accountability surrounding water management by the State Government. The lack of transparency is extremely unhealthy. I believe something like a water register would go some way to provide the transparency that the residents of New South Wales need to understand why decisions are made. Some $484 million of public money could be better invested in the Tamworth region through more efficient water security projects and improved services that provide long-term employment and economic stimulus.

The CHAIR: Thank you very much, Councillor Rodda. Thank you for your submission and for making it to Sydney for this hearing.

Mr RODDA: My pleasure.

The CHAIR: Are Tamworth residents likely to be charged extra for water as a result of this dam?

Mr RODDA: Yes, definitely. We pay the most of any valley in the entire State of New South Wales.

The CHAIR: Already?

Mr RODDA: Already. My fellow councillors and the senior staff of Tamworth Regional Council [TRC] have always believed that postage stamp pricing would rectify that. Unfortunately, it has been a decade and a half long discussion and we have got nowhere on that issue.

The CHAIR: Okay. They already pay the highest and they are likely to pay a significant amount more if the full cost recovery process for this dam is implemented.

Mr RODDA: I think that is probably quite likely and quite horrific if you think about the dam costing $484 million minus the pipeline component of it. It is quite evident that Government like to recoup the cost of

constructing, running and maintaining dams. When the principles of full cost recovery are employed it would be a very expensive quantity of water to pay for. As I said, we are already impacted by that—our businesses do not have the certainty and are unable to compete on a level playing field like other businesses around the State. It is evident that in other valleys of New South Wales they probably get a great benefit because they are probably paying one-third or one-quarter of the cost that we are in the Peel Valley.

The CHAIR: Yes. So that type of money could go a long way to delivering other options for water security, such as water recycling. Has the council looked into that? We asked that question previously. What are the barriers to council doing water recycling?

Mr RODDA: There are currently Environment Protection Authority [EPA] and legislative barriers to water recycling. I understand that the Parliament cross-party committees are investigating water recycling, which is fantastic. If anything comes out of this, even if the new Dungowan Dam is not constructed, water recycling will be vital to the people of rural New South Wales because they are impacted by climate issues and they are not filling the storages like they used to. As we just saw from the recent drought, Tamworth was on 12.9 per cent, Walgett was on next to nothing, Coonabarabran next to nothing and Dubbo was headed that way as well. Water recycling is a panacea for our water woes.

Excitingly, Tamworth Regional Council has just announced that we are partnering with the CSIRO for a trial of forward osmosis reverse osmosis plants—one near a major chicken processing plant and one near our Westdale water treatment plant. They are the things that governments should be investing in because the rain is not falling to fill those storages. I looked at the dams that we rely on adjacent to Tamworth such as Peel, Dungowan and Keepit, and none of them are in healthy positions, except Dungowan, which is on a more reliable eastern and western fall so the water that enters that catchment seems to be a little bit more reliable. It is just a small catchment, that is all. I think that initiatives such as water recycling are the future of New South Wales.

The CHAIR: Just thinking about the cost again, because with all of this money being spent on Dungowan Dam, there is obviously the opportunity cost of not spending it on other things. Were Tamworth residents charged with increased water charges as a result of the Chaffey Dam upgrade?

Mr RODDA: Yes.

The CHAIR: That was in 2016. I understand that the Chaffey Dam was a 100 per cent full.

Mr RODDA: In September 2016 it was full.

The CHAIR: What was the expectation around that full dam? Were Tamworth residents told that it would provide the water security that was needed in 2016?

Mr RODDA: I cannot find the comment but it is well known that when it was full a comment was made that they felt that it would last us at least a decade even if it never filled in that time. To reflect the concern of my residents, I think that the people of my region were concerned when they saw the dam being emptied so quickly. I guess I should explain that our drought management plan, which is the council document, does not sit next to anything WaterNSW might do. So when the dam gets to 40 per cent it is a trigger to change to a level—35, 30 and so on. When we were getting those milestones in Chaffey Dam it was not reflected in the way that WaterNSW would release that water. It was almost as if to say that because there was plenty of water in the dam, let us just keep on releasing it. I think that that was a shock to people, particularly when four years ago the dam was at a healthy 100 per cent. Then we are in this invidious position at the beginning of this year of getting down to 12.9 per cent.

The CHAIR: Just one more question on that. When you say that the water was being released so quickly—you could see the levels dropping down so quickly—in 2016 it was 100 per cent full and being reassured that it could last 10 years. Why was it being released so quickly and who was being released to?

Mr RODDA: It is a question that I have struggled to get an answer to and I have attempted.

The CHAIR: It is a pretty key question.

Mr RODDA: I did note that between the 2017-18 water year 25,000 megalitres—one-quarter of Chaffey—was released. All we have to go on are the measurements at the Carroll Gap bridge, where the Peel meets the Namoi and that is end of system flow. Of course, in 2018-19 almost 9 gigalitres of water had travelled out there and then measured as it was leaving the Peel River. Nobody really much within the Peel Valley had got any use out of that water. I guess the crux of my concern when that dam was emptying so quickly was, who is it going to? Of course, they would not answer that. I asked questions about—of course, this is record no flows into the Chaffey at all over the past few years.

I feel the answer I did get was a bit erroneous—that there were tributaries attaching to the Peel River below Chaffey such as Goonoo Goonoo Creek, Cockburn and Timbumburi, that were obviously entering the Peel River. But there were no rain events. We had this problem that 34 per cent of Chaffey had drained in over two water years and no legitimate explanation about why that amount of water left the Chaffey Dam. I do not have a problem with environmental flows but that was an excessive quantity of water to be releasing during a significant drought event.

The Hon. PENNY SHARPE: If they were environmental flows, because you have not had clarification about that.

The Hon. TREVOR KHAN: Some of it definitely is.

The CHAIR: With environmental flows, they are recorded and that is very transparent.

The Hon. PENNY SHARPE: Yes, they should be able to tell you exactly how much was used for environmental flows.

The Hon. TREVOR KHAN: Yes.

The Hon. CATHERINE CUSACK: Can I understand the Government's arrangements for the dam and whether there is sufficient connection between the people who are funding the dam infrastructure and the accountability and role in the management of the dam?

Mr RODDA: Historically, Tamworth Regional Council has expert staff, they have demonstrated that they are able to manage Dungowan Dam, the pipeline from there, the treatment of it and things like that.

The Hon. TREVOR KHAN: You might explain a bit of the history of Dungowan Dam because that is reasonably unique, is it not?

Mr RODDA: Yes.

The Hon. CATHERINE CUSACK: I have no idea so I would love to hear.

Mr RODDA: Dungowan Dam is a wholly Tamworth Regional Council managed dam. All we pay to WaterNSW is the cost of that water. They do not have any other control over it, so when we need water out of Dungowan we release it. Our council is probably the best manager under that arrangement. I do not know whether Committee members have seen that there was a pipeline constructed late last year from Chaffey Dam to Calala Water Treatment Plant to deliver water out of Chaffey to reduce loss and increase the reliability of the water supply to the people of Tamworth. Tamworth Regional Council currently manages the current Dungowan Dam. I think the concern is that if a new Dungowan is constructed, the control, management and ownership will cede to State Government and then we will be in this invidious position.

The Hon. CATHERINE CUSACK: Just to understand this in relation to Chaffey Dam, how does that management of water work?

The Hon. TREVOR KHAN: It is managed by WaterNSW.

The Hon. CATHERINE CUSACK: I understand that it is controlled by WaterNSW but how are those decisions made? Is there any council involvement or is it just a pure get the information and council makes submissions to management?

Mr RODDA: From Chaffey Dam's point of view they put in a request for an order and WaterNSW delivers it. That is how it works. So they have got a 14 gig high security licence for Chaffey and if they need water they draw from there. Currently we are not drawing any water from Chaffey because the current Dungowan Dam is almost 100 and we want to try and boost the Chaffey Dam supply as best we can. It is currently today 33.3 per cent—

The Hon. TREVOR KHAN: I was close.

The Hon. CATHERINE CUSACK: Can you just help me to understand who is in charge of Chaffey Dam in terms of the water ministration?

Mr RODDA: WaterNSW.

The Hon. CATHERINE CUSACK: Yes, but how does that work? Is there a person or is it a group of managers?

Mr RODDA: Local staff manage Chaffey Dam.

The Hon. CATHERINE CUSACK: And they make a recommendation or do they do the approvals themselves?

Mr RODDA: No.

The Hon. CATHERINE CUSACK: Is there a Chaffey Dam tsar somewhere in the system?

Mr RODDA: I daresay they would take orders from their head office like the Public Service Works. So as far as a customer is concerned, Tamworth Regional Council rings them up, says we need water and they will release the water.

The Hon. CATHERINE CUSACK: In terms of their customers, are all of their customers contributing equally to the cost of the maintenance of the dam and can you comment on that?

Mr RODDA: No. So Tamworth Regional Council is probably the biggest stakeholder. Currently we pay over $7,000 a year for our licence—which is a significant amount of money. Again, we feel that that is pretty expensive. Obviously we have to share that cost with our ratepayers. The other customers—as we heard from Mr Spark previously—some of them have no entitlement but their contribution is a lot less. There is a Peel Valley Water Users group. Many stakeholders have contributed to the upgrade of the Chaffey Dam from 62 to 100 gigalitres. Peel Valley Water Users were one and Tamworth Regional Council were another, and of course the State and Commonwealth governments were other stakeholders. But the contribution as far as the upkeep of it, the burden seems to be borne by TRC ratepayers the most.

The Hon. CATHERINE CUSACK: What percentage of water do you get from the dam?

Mr RODDA: We have a high security licence for 14 gigalitres. Annually, I think, we might use about eight.

The Hon. TREVOR KHAN: Can I just go back to the recycling issue because I know you have been interested in the issue. It is the case, is it not, that Hunter Water, partly out of the agitation that you had on council, undertook an investigation into recycling in Tamworth and they essentially came back—and look I am not trying to—

Mr RODDA: No. So in 2015 there was an investigation into options and water recycling was one and also Dungowan Dam upgrade was another. Both those were considered pretty expensive at the time and I think the legislative imposts on water recycling at that time were not considered feasible either. Recently, last year we asked the question again and Hunter Water provided another update on water recycling. Again, because of cost and EPA and legislative restrictions, we knocked it on the head. I guess this is why I am a bit excited about the relationship we are going to have with CSIRO—

The Hon. TREVOR KHAN: It is exciting. Can I just ask one follow-up question with regard to that water recycling?

The CHAIR: So it is Penny's time not the Government's time.

The Hon. TREVOR KHAN: Actually there is something else I wanted to ask you but it does not really matter. Is there a problem in terms of the major meat exporting abattoirs in Tamworth using recycled water? It was put to me the other day, and this is not meant as a negative, but do I understand that there may actually be a problem at a Federal level with regards to those industries which are some of the major water users in Tamworth, using recycled water?

Mr RODDA: I think probably health wise they are still thinking the technology is not there yet but it is and I am sure you will find—

The Hon. TREVOR KHAN: You are not aware of whether it is a legislative or regulatory problem at a Federal level?

Mr RODDA: Not at Commonwealth level.

The Hon. PENNY SHARPE: Most of my questions have been covered, thank you very much fellow Committee members.

The Hon. TREVOR KHAN: It is cooperative.

The Hon. PENNY SHARPE: It is very good. We are a very friendly Committee. The projection for population of Tamworth is 100,000, isn't it? By what year?

Mr RODDA: By 2040.

The Hon. PENNY SHARPE: I know the council has done a lot of work, as you have outlined today. Will the Dungowan Dam proposal, if it was to proceed in exactly the way it is outlined, has council done any work on the estimation of whether that in any way will secure water for population of 100,000 people?

Mr RODDA: We would love to think that in a perfect world it would provide the water security we need but I personally am not confident that it will. Looking at the recent history of Chaffey Dam upgrade, would suggest that something— So that was 62 gigalitres to 100 gigalitres. This is from six gigalitres—

The Hon. PENNY SHARPE: But we have also had evidence that Chaffey—in the last two years—has not even been half full.

The Hon. TREVOR KHAN: No, it has not.

The Hon. PENNY SHARPE: It is fine to increase the capacity but if there is no water, there is no water.

Mr RODDA: That is exactly right. I think it is a mistake to keep on, in this environment, we only need to read the State of the Climate report by CSIRO to know rain events are reducing. I have grown up and lived in Tamworth for a long time. I can remember the storms and the rain events that we used to get that we do not get.. The Hon. Trevor Khan would be the same.

The Hon. TREVOR KHAN: Yes. Although I am not allowed to say.

Mr RODDA: We just do not get them anymore and it is not delivering the water that we probably need. I do not think that new dams is the answer. I think we have got to try and live with the dams that we have got and better utilise the water that we get out of those supplies. Mr Spark mentioned—and it was a tragic issue that we saw near the latter parts of the recent drought—that when the water was turned off from the Peel River below Chaffey and the images of the fisheries trying to grab cod and catfish. Then we saw deceased platypus families. It is a tragedy and I think Mr Spark touched on the Dungowan Creek platypus, I think they are probably extinct there and that is a tragedy that is probably repeated all around the state of New South Wales, particularly rural New South Wales.

The Hon. PENNY SHARPE: I have one more question and it carries on from the Hon. Catherine Cusack's question which is that TRC pays around $700,000 each year regardless of whether you use the 14 gigalitres or not, is that right?

Mr RODDA: Correct.

The Hon. PENNY SHARPE: How do you deal with that? Do you recoup that through your residential customer charges, is that the case?

Mr RODDA: Yes.

The Hon. TREVOR KHAN: Just go back to Dungowan, I know we talk about it in terms of what in essence is a new dam. There is a problem with the old dam, is there not?

Mr RODDA: Its safety standard is one in 100,000. I think they propose that with a new Dungowan Dam it should be one in 1 million, which is crazy because none of us are going to be hear in—

The Hon. TREVOR KHAN: But whatever the number is, one of the problems that exist with the current Dungowan Dam is that the dam safety committee essentially is requiring something to be done about the dam?

Mr RODDA: That is one of the pressures on TRC and the state of New South Wales that the dam safety committee has indicated that.

The Hon. TREVOR KHAN: I do not want to cut you off but my understanding is that one of the reasons that focus has been put on Dungowan Dam is that if something is not done about the dam, for instance a new dam, one of the things would be that you would have to reduce the height of the Dungowan Dam wall in some way—that is right, is it not?

Mr RODDA: And I think the amount that we store in it.

The Hon. TREVOR KHAN: That necessarily follows. So one of the problems that exists for everyone in this is that because of the dam safety issues, something has to be done and spent in terms of fixing what is old engineering works and that could in itself lead to a reduction in the amount of available water to the city of Tamworth. That is right, is it not?

Mr RODDA: Yes.

The CHAIR: When you were saying you were trying to find out where the water that was released from Chaffey Dam—some of it anyway—like where it went and who it was released to, can you explain what process you went through to try and find that out?

Mr RODDA: I did think it was an important question for our whole local government area and attempted to obtain the support of my fellow councillors for a notice of motion to officially ask Minister Pavey about that question. That matter was lost.

The Hon. CATHERINE CUSACK: Why was it lost? What was the argument?

The CHAIR: I think that was the National Party—

The Hon. CATHERINE CUSACK: There must have been an argument that they put—

The Hon. TREVOR KHAN: You are only asking one side of this and I have tried to avoid in any way getting involved in Tamworth Regional Council's politics, but if you want to start there—

The CHAIR: I think was Ms Cusack's question, actually.

The Hon. CATHERINE CUSACK: I am assuming it was not an argument you agreed with, but I just wondered what it was.

Mr RODDA: I guess it was that some people felt it was unduly political to ask that question. We could have framed the question any way we liked and that is why I left it open. I thought it was important. The feedback I got from ratepayers was that it was an entirely appropriate question to ask.

The Hon. PENNY SHARPE: You talked about the costings of the dam. We are talking about $484 million being spent with many questions, depending on your point of view. Given some of the work that has been done on recycling and how much recycling would cost, is there actually a figure around for that?

Mr RODDA: When we reinvestigated it a bit last year and had Hunter Water update their 2015 estimates, I think it was $230 million for a unit that would probably treat the amount of water that we would need treated each day, which is about 20-odd megalitres a day. That could have been set up within about six months, but I think the two main impediments were obviously the legislative issues related to water recycling and also dealing with salt and one final thing, still, of the ickiness of drinking something that you flushed down the toilet. We have not had that universal discussion with our ratepayers about—

The Hon. PENNY SHARPE: You need to have a conversation with the community about that.

Mr RODDA: Yes.

The Hon. CATHERINE CUSACK: I want to also ask about water recycling. Have you identified additional uses for water in Tamworth? One thing that I am particularly thinking of is how all the sporting fields keep closing, including at schools, during times of drought because the ground is too hard, which is terrible for the whole community—years of no sport.

Mr RODDA: Our council has undertaken a number of initiatives, including bore water. That is how—as best we can we do not use potable water on a lot of our playing fields anymore. Obviously, if there is access to bore water, we use that on our playing fields. During the deep drought that we just came out of—that we are coming out of the clutches of—I guess we staggered some of the water in just to keep the turf alive as best we could, hoping that rain would come. That is what we have done. Of course, we have a lot of schools that then take advantage of our facilities. We have some of the best in the State. But that is one of the—

The Hon. CATHERINE CUSACK: The kids cannot play at lunchtime.

The CHAIR: Thank you, Councillor Rodda. We are out of time, unfortunately. Thank you for the service you provide to your local community as well and advocating for these important issues.

(The witness withdrew.)

(Short adjournment)

DECLAN PAGE, Principal Research Scientist, CSIRO Land and Water, before the Committee via videoconference, affirmed and examined

GRAHAM BONNETT, Interim Leader, Drought Resilience Mission, CSIRO Agriculture and Food, before the Committee via videoconference, affirmed and examined

The CHAIR: We will welcome our next witnesses. Do either or both of you have a short opening statement?

Dr BONNETT: We have a statement. I will read the first part and hand over to Declan. CSIRO thanks the Committee for the invitation to talk to you today. We are here representing Australia's mission-led national science agency. I am personally leading the development of a portfolio of research involving partners that seeks to reduce the impacts of drought on agriculture, communities and the environment. As part of the activity, we have been investigating ways in which we could use water differently through time to try and increase the security of water in periods of lower rainfall. Also attending today is my colleague, Dr Declan Page, who has been conducting research into managed aquifer recharge. This is an approach that we are working towards demonstrating at scale to showcase and assess its value in regional settings to increase water security. As you will note from our written submission, our discussion today will focus on the research into managed aquifer recharge and water banking, which relate to term (e) in your terms of reference. I will now hand over to Declan Page.

Dr PAGE: Thank you Graham. My name is Declan Page, principal research scientist at CSIRO Land and Water in the water security program. I am based in Adelaide, South Australia. I have been at the CSIRO now for 15 years. I would like to briefly talk about water banking, some of its advantages, its history in Australia and some recent opportunities in a study that we have done in the Murray-Darling Basin. What is managed aquifer recharge? It is the purposeful recharge of water into an aquifer or underground storage for subsequent beneficial use. It can be different sources of water—anything from urban stormwater to wastewater, river or dam water, or even industrial water. There are different aquifers at different depths. It could be alluvial systems, karst aquifers and all sorts of different ones. The end use of the water could be used, again, for different end purposes, including agriculture, urban green space irrigation or in-house uses such as toilet flushing and even drinking water.

The advantages of managed aquifer recharge are that it is low cost, low energy and provides a bit of natural treatment to the water as the aquifer is not completely inert. It is improving water quality and allows time for naturalisation of the water, you could say. It is no longer [inaudible], for example, with treated wastewater, which can be the [inaudible]. It can act as a saline intrusion barrier and helps sustain groundwater and ecosystems. Importantly, it does not suffer the same effects as evaporation as said with water storage [inaudible]. Managed aquifer recharge has been used in Australia since about the 1960s. The first case was on the Burdekin River. It is still around today. It recharges about 65 gigalitres a year. It used to irrigate about 40,000 hectares of cane sugar. Other notable examples across the country include Adelaide stormwater aquifer storage and recovery, and many systems run by local councils, with an aggregate total capacity of around 20 gigalitres a year currently.

Another notable case is the Perth water supply, run by Water Corporation. They will aim to supplement their groundwater sources with about 28 gigalitres per year of treated wastewater, in this case again used for drinking water. The CSIRO has been involved in researching managed aquifer recharge and water banking across all States and territories to some degree over the last couple of decades. A recent study that a colleague of mine, Dennis Gonzalez, led identified significant opportunity for additional underground storage across the Murray-Darling Basin. In that study we looked at where there could be some easy, you could say, low hanging fruit in terms of costs and distances from existing water sources around non-saline groundwater. We identified about two to four kilometres cubic of aquifer storage potential across the Murray-Darling Basin. For context, that is equivalent to about 16 per cent of total surface water supply of all the combined dams in the Basin or about eight Sydney Harbours—that sort of metric if you like.

In New South Wales in particular, I would estimate there is about two cubic kilometres of aquifer storage potential with a salinity of around 3,000 milligrams per litre. If you would like to constrain it more—perhaps to drinking water supplies—it would be about 1.3 cubic kilometres. Thank you again for the opportunity to talk today.

The CHAIR: You have just talked about the potential in terms of drinkable water: some 1.3 cubic kilometres of potential aquifer storage available, but greater than that—was it two cubic kilometres or four cubic kilometres—in New South Wales within the Murray-Darling Basin area?

Dr PAGE: Correct. I refer the Committee to the study I had circulated prior, which gives you all the technical details. This is what you call a regional-level assessment done at a one-to-a-million scale—very rough, you could say, the first [inaudible] assessment. But we would estimate from that, looking only at what are called

alluvial aquifer systems—those around the rivers, for example, and very shallow aquifers, so not deeper confined aquifers, in water that is not too saline; for example, places like South Australia have very saline groundwater and does not have this opportunity we are talking about today—in New South Wales, with a salinity of less than 3,000 milligrams per litre, you would have about two cubic kilometres being identified across New South Wales. If you would like to constrain it more to 1,500 milligrams per litre, which is the limit for drinking water, it is about 1.3 cubic kilometres—again, across the total of New South Wales.

The CHAIR: Okay. I am just trying to get my head around that as an option compared to what the Committee is considering before us now, which are the various dams and other mass water storage. Would you like to talk to the Committee about how this option compares to, for example, the need for Dungowan Dam or the need to raise the Wyangala Dam wall? Does it serve as an alternative option for any of the projects that we are looking at now for water security?

Dr PAGE: I cannot comment on the specifics of any one individual dam. However, I would like just to say this: Aquifer storage and dams actually work really well in partnership. You can imagine a system where you might have a dam that is full or overtopping, or could be close to full—indeed, many dams have water supply and flood protection objectives—and downstream of the dam may have an underground storage. You could actually, you could say, trickle feed or release water from the dam to deliberately top up these underground aquifer systems—or "water banks", as you might call them—for subsequent recovery. There is a misconception that they are in competition; they are actually really good partners.

The Hon. MARK BUTTIGIEG: In these projects that we are looking at, you are not aware of the potential for connectivity or the feasibility of that infrastructure to allow that connectivity that you are talking about? Nothing is being looked at in that context, in terms of viability?

Dr PAGE: No, not at this stage. The first step was for us to do a regional assessment of the entire Basin. If there was specific interest in localised areas we would have to, I guess you could say, lower the helicopter down and look with a bit more detail at specific areas. Certainly, though, in places like the Lachlan and around Dubbo with significant capacity, especially around a place like Narromine, we can identify opportunities to recharge aquifers that exist today.

The CHAIR: To be clear, who has commissioned your current work?

Dr PAGE: The first piece of work was a strategic piece of work that I did for my colleague Dr Bonnett.

The Hon. CATHERINE CUSACK: Was that self-initiated?

Dr BONNETT: The CSIRO funded that piece of work, yes.

The CHAIR: For example, with the dam and the aquifers, you are saying they can potentially work in partnership if you have managed releases of water. It is just a natural recharge, I am assuming, with the water? We have heard from different witnesses about the potential for dams to in fact rob aquifers, if you like, of their water and have an adverse outcome—and also, obviously, groundwater-dependent ecosystems. That is a risk as well, is it not?

Dr PAGE: I will speak to those points. Water banking is where you recharge water into an aquifer, potentially for multiple years. For example, again, out in the Dubbo region we have done a bit of a simulation. Out of a 10-year period you might be recharging for seven years, and then the critical times during drought recovery are during those three years; that is water banking. Yes, it is the same water that naturally recharges the aquifer; however, it is enhanced. By that, you have got a number of, for example, infiltration basins—think of large Olympic-sized swimming pools, lots and lots of them. That water would be conveyed from the river to these pools with a deliberate objective of recharging the aquifer. They are managed so they do not clog, for example. They are managed specifically to recharge the water supply.

In terms of groundwater-dependent ecosystems, water banking is usually seen as a bonus because a lot of our groundwater systems are already largely overdrawn. This is an opportunity, by enhancing recharge, to bring these systems back into their natural equilibrium and, in that sense, help groundwater-dependent ecosystems.

The CHAIR: What discussion have you had with WaterNSW in relation to the potential for water banking in aquifers to be used as a viable option in the areas where this inquiry is looking at?

Dr PAGE: I have had no discussions with WaterNSW over the last three years. I did present to them perhaps three or four years ago the talk about the options. Certainly they showed interest in the idea.

The CHAIR: I assuming the comparison between storing water in aquifers compared to dams—there would be a massive difference in terms of water lost to evaporation, obviously. Would you care to address that?

Dr PAGE: Yes, sure. Some of the, you could say, less efficient systems across the Murray-Darling Basin—for example, there are two cubic kilometres stored in farm dams across the whole Murray-Darling Basin at about a 40 per cent loss rate per year. Similarly, some of the lower, shallower surface water storages, such as Menindee Lakes or Lake Victoria, also suffer from around a 40 per cent loss rate. When you put water into an aquifer, it is not 100 per cent recovery—it can be, but you do lose some as well, and you can lose some for a number of reasons. For example, there might be mixing with local saline groundwater and you might, you can imagine, lose some water around the edges of where you recharge. Similarly, these kinds of water may leach back out. These are not always confined storages, and the water that will naturally move towards the various sinks within the landscape.

The Hon. MARK PEARSON: Dr Bonnett and Dr Page, could you identify the factors in the underground that indicate that, yes, this is a possible space for an aquifer? What factors would make it not a possibility for an aquifer?

Dr PAGE: I will start with the "not a possibility" first, because they are much easier. We tend to target the non-saline areas, the fresher areas. If you were to put water in a saline area, the water would have a high propensity to mix and therefore be recovered at too brackish a level. It also would not target, for example, bedrock or fractured rock areas—again, this recovery of water from those systems is problematic. The easiest systems are, for example, what are called alluvial systems. They are the first superficial aquifer [inaudible]. These are [inaudible] the river valleys, and they are a gravel or a sandy aquifer where the water is fairly easy to get into. The bores of the local areas would have fairly high yields. As a general rule of thumb, if it is easy to get water out of an aquifer, it is easy to get it in there.

Another constraint that we considered in the study I forwarded to the inquiry was to be of reasonable proximity to an existing water course. Conveyance of water is obviously a factor and transporting it around the landscape—things like pumping costs. In that study, we constrained our analysis to within five kilometres of a major water course. If you removed that constraint then there would be significantly more opportunity. That being said, there are certainly also commercial chances across the Basin or in New South Wales that I have not yet identified that exist in the lower aquifers—or what are known as confined aquifers. Places like Perth and Adelaide will target aquifers up to 200 metres deep that can be brackish, but because they are confined you are able to maintain that bubble of fresh water and then draw it back up again. That is done on a yearly basis in places like Adelaide for irrigation, and in places like Perth it is used to augment public drinking water supply.

The Hon. MARK PEARSON: Just following on from that, if there is a crisis area and an aquifer would be extremely helpful—and may be lifesaving—is it possible to rectify any of those factors that are obstacles to using earth as an aquifer?

Dr PAGE: It is pretty difficult to do. You can rectify anything with enough money, but it is pretty difficult to do economically. When it has gone into the groundwater, in some limited spaces where the aquifers are confined, you can certainly inject fresh water and recover later. But your recovery efficiency—or the ratio of quantity recharged to recovered—is lower. In terms of the other factors, I would say no.

The Hon. MARK PEARSON: Has your research looked at whether it is better to have river water or stream water directly filling an aquifer as opposed to a dam, both in terms of the quality of the water in the aquifer and the health of the river or stream?

Dr PAGE: I do not quite understand the differentiation between stream and dam. A dam usually connects to a stream. However, the study largely focuses on water that has already recharged those aquifers. It is not a different water type. There can be problems. If for example you were to inject very fresh water, such as from a river or dam, into a very deep aquifer that is anoxic—so low in oxygen—then you can get things like the mobilisation of arsenic and other issues that need to be managed. Still, they can be fairly easily managed.

The Hon. CATHERINE CUSACK: Reading your submission, I think that you indicate—sorry, I will ask the question rather than quote from the submission. Is our current usage of groundwater sustainable in the Basin?

Dr PAGE: I am not able to answer that question. It is outside my area of expertise, I am sorry.

The Hon. CATHERINE CUSACK: Your submission indicates that there will be a decline of between 14 per cent and 55 per cent in groundwater recharge in future. Can you make no comment at all about the sustainability of our groundwater supplies?

Dr PAGE: I can absolutely talk about that, but I am not across all of the policies across the whole Basin.

The Hon. CATHERINE CUSACK: No, I am not asking about policy. I am just asking about the water.

Dr PAGE: What I can say is that a previous study by colleagues also at CSIRO—Olga Barron's 2015 study is the one that you are talking about—looked at the effect of recharge on groundwater systems in a changing climate. As a rough rule of thumb, for every one-millimetre decrease in rainfall there is a two-millimetre decrease in recharge to groundwater systems. If we are not actively keeping up with that in terms of increasing recharge then we are in fact losing resilience in those systems, purely by doing nothing. Put on top of that the increase in use needs of water and population growth and certainly the systems have become increasingly strained. That is observed across the Basin in many locales by a decrease in the water tables and groundwater levels.

The Hon. CATHERINE CUSACK: How is groundwater managed at the moment? I know that it is not your area of expertise, but who is in charge of groundwater? Is it all connected to the people in charge of the dams or is it a separate kind of licensing arrangement?

Dr PAGE: Groundwater is managed by the States. I would say that probably the best people to ask might be WaterNSW or somebody in the New South Wales Government.

The Hon. CATHERINE CUSACK: No worries, but is it fair to say that there needs to be a groundwater policy connected in with all of the other water management policies?

Dr PAGE: I believe there are some groundwater policies that exist within the State of New South Wales.

The Hon. CATHERINE CUSACK: It just does not seem to be connected into the bigger plan—or am I misunderstanding that?

Dr PAGE: Yes, there is a concept called conjunctive use of surface water and groundwater. By conjunctive use I mean managed as a system together. Traditionally in the past, and historically across all of Australia, there have often been separate jurisdictions and legal instruments for surface water and groundwater and they have been largely managed independently. However, those systems are intimately connected. The concept of conjunctive use, which all States and Territories are moving towards to some degree, is to look at the hydrological system as a whole and manage it for the best of the entirety.

The Hon. CATHERINE CUSACK: Thank you for that answer. What were the locations that you identified as having potential storage? Are they existing aquifers that are lower than they should be? Is that how your study works?

Dr PAGE: More or less. Across all of New South Wales—and indeed the Murray-Darling Basin—there are many groundwater irrigation systems. Those are irrigated agriculture systems that pump significant amounts of water for crop production. The systems have been in operation for decades and their operations have depressed the groundwater levels in those regions. That creates room in the aquifer that can be exploited and used again for storage. The basis of much of the study is that this room exists naturally in systems that have already been over-exploited, and to recharge and reboot it can in many cases bring some of those systems back to their natural levels.

The Hon. CATHERINE CUSACK: Is it almost like free storage that is available?

Dr PAGE: You certainly could put it that way. You can see that there are a number of dams that do not need to be built, absolutely.

The Hon. CATHERINE CUSACK: What is the cost of doing this? How would we find out those costs?

Dr PAGE: Costs vary, of course, as with all things. I can give you a couple of examples, though, that might perhaps illustrate the costs.

The Hon. CATHERINE CUSACK: A great example would be really helpful to the Committee. A case study would be great, thank you.

Dr PAGE: Yes, sure. It depends on the amount of water—the scale—and the way that you recharge. The cheapest way, of course, is having economies of scale and recharging the aquifer immediately below as a superficial aquifer. Systems like that use infiltration basins. There are great examples in places like Colorado and California, where they have very active water banks that are used to create water security for the community. They have prices in the order of 6c per cubic metre, which is about $60 per megalitre. At the other end of the spectrum is highly treated wastewater used for drinking water in very deep aquifers. This is where you have a number of treatment processes—usually including things like reverse osmosis and advanced oxidation—and then the water is injected, often under pressure, into a very deep and confined aquifer 200 or 300 metres below the surface. Those systems are significantly more expensive but again, if used for drinking water, they are cost-effective.

In Perth, where they already have two desalination plants, they found that it was much more cost-effective than building a third. They continue to upgrade those aquifer recharge systems rather than building additional desalination capacity. Another example that people may be familiar with is a study by Geoscience Australia that I was involved with in a township in New South Wales. At the time—I think it was about 2009 or 2010—Geoscience Australia and CSIRO were tasked to look at opportunities for underground storage around the township of Broken Hill, which was close to running out of water. We located some very good storage opportunities and we estimated that the cost in that case would have been about $50 million to supply the township of Broken Hill. That approach did not go ahead and instead a pipeline was built from Wentworth to Broken Hill at a cost of about $500 million, so it was about 10 per cent of the cost in that case.

The Hon. CATHERINE CUSACK: This sounds like a great idea and you sound passionate about it. Is it a struggle to get this idea on the agenda, on the smorgasbord of options that people are looking at as a solution to the problems and stresses being experienced at the moment?

Dr PAGE: In short, yes, and here is why. Unlike many other water treatment technologies, for example the osmosis, it is difficult to say up front exactly how much it costs. You can give an indication, but you can imagine that if you buy a reverse osmosis water treatment plant then you can containerise it and a company can tell you exactly how much it costs. With our systems, I guess there is a series of investigations that are needed and they are rather boutique and niche to that degree. However, once you could adapt technology or an area such as—I will give you the example of Adelaide—where councils now run a multitude, you know, dozens of those systems. The first one requires some investment and research to do—risk operations—but then subsequent ones follow. It is almost like a cookie-cutter approach because they are using the same aquifer and the same water sources. So I guess that has been an issue.

Certainly if you are looking at alternative water resources, such as treated wastewater and stormwater, it can be a significant emotional response from the public, who may say it is very unsafe. Most of those things are fairly easily managed, though, and have been managed, certainly, overseas. And I suppose the issue may be barriers in many States and Territories as well, but I am unable to comment on the significance of those.

The Hon. CATHERINE CUSACK: Can I just come back to an earlier question. Where exactly are the opportunities in New South Wales along the Murray-Darling system? Do you have a map of those?

Dr PAGE: I did include it in the study I forwarded to the inquiry—so a map is available along with the figures.

The Hon. CATHERINE CUSACK: Thank you very much. Thanks for those answers. They are great.

The CHAIR: Excellent. We will move now to questions from the Opposition.

The Hon. MARK BUTTIGIEG: Thanks, Chair. My colleague, the Hon. Catherine Cusack, asked some very pertinent questions. I suppose some of mine are more related to follow-ups and exploring some of those themes. Essentially, the proposition is this: Why would you spend all this money on augmenting or creating all this heavy costly infrastructure when you have excess storage capacity naturally occurring, and then create the interconnectivity for a more holistic approach, which would give you a much more efficient outcome in theory? I guess you are pointing to the fact that at this stage it is a little bit nebulous in terms of the cost of doing that because it is still early stages. To cut to the chase, to what extent does the Government take this stuff seriously? It sounds to me like this is a bit of a curiosity project with a lot of potential but perhaps Sydney Water does not take it seriously because they are used to dealing with dams. Would that be a crude way of putting it?

The CHAIR: It is WaterNSW.

The Hon. MARK BUTTIGIEG: I am sorry, WaterNSW, yes.

Dr PAGE: It could be one way to put it, certainly. I would probably put it like this: That there are certainly places across Australia that take it very seriously, places like Perth's Water Corporation. It augments 20 per cent of the Perth water supply in the future, 28 gigalitres per year, of treated wastewater is used for drinking water. Again, this is also wastewater that no longer goes through any outfalls. It protects the marine environment and the local beaches of Perth. Here in Adelaide, there are 20 gigalitres per year of stormwater that is prevented from going to the St Vincent Gulf, protecting local fisheries and then recharging the aquifer, but that is not used for anything, and recovered to urban green space irrigation while council is offsetting their costs of potable water supply from SA Water.

Great opportunities also are being explored in places like Queensland. Again, the Burdekin comes to mind, the Burdekin River, but also their bulk water agency, SunWater, operates Callide Dam and the Three Moon Creek systems as well specifically to recharge aquifers for subsequent use—productively using both, you could say. Victoria, Northern Territory—we have been involved in studies across all States and Territories to some

degree. In fact, we worked in the main as the National Water Grid Authority looking at specific ways to answer those questions and do a rapid assessment of opportunities across all of Australia for subsequently investment for augmentation of irrigated agriculture to boost agricultural productivity.

The Hon. MARK BUTTIGIEG: So if the implication is that New South Wales is a bit of a laggard, is there something going on in those other jurisdictions which has engendered a more cooperative approach between organisations like yourself and water authorities?

Dr PAGE: The history of my involvement in research in water security tends to follow, I guess, the opposite of water recyclers. So as soon as there is a drought there is a massive interest in water banking, but once it rains again there has been a tendency to drop off interest in investment. But really it is the opposite of how it should be operating. We should be investing today when there is water, we should be banking water today, in preparation for the next drought tomorrow. Each State and Territory is also different so a lot of it comes down to, at the local level, having a champion; having someone who says, "We want to do this", and be a push-through in all levels of government—public, engage with CSIRO or engineers and others—and have that vision or create that vision to make those projects a reality. Certainly I have worked with those people in the past in various projects.

The Hon. MARK BUTTIGIEG: I suppose it is stating the obvious to say it would be helpful to have a recommendation of this Committee that this area of storage and augmentation of existing dam infrastructure be seriously looked at?

The CHAIR: Can I just jump in on that: So if WaterNSW or the Minister, if you were able to suggest from your work what you would like to see or what we most need from WaterNSW, what would that be right now?

Dr PAGE: We have already had discussions with various parts of New South Wales—various government agencies; say, for example, New South Wales Department of Primary Industries who do the water security for many townships. We have a memorandum of understanding with them. And I have done some preliminary work around towns like Bathurst, Cobar, Dubbo, Orange and Tamworth to look at what are the opportunities for those towns and town water supply. In essence, we need to focus our investigations to go out from the regional scale down to the specific most well-targeted place to really look at what is the real opportunity in some of these places, how much would it cost and what are the options, such as augmentation.

Often a limitation of this is not the storage; it is actually having availability of water to store water. So in places like the Murray-Darling Basin, all the water is already accounted for. You can still buy water off the market, for example, so a simulation dig around Dubbo looked at: How could you operate a water bank sustainably? Could you, for example, buy water at a low price, say, $50 a megalitre, retail it, and then onsell it again during drought at about $1,000 a megalitre. We have found that over a 10-year period you could sell a bank for about $30 million worth of water with a cost of $15 million worth of water to buy that water on the open market.

You take it to the context of things like town water supply, which is a very high value use. That is $200-plus typically, but it could be much higher. And indeed during times of drought, when things like water carting are considered—and I know they are working in distressed areas and townships such as Stanthorpe and others in Queensland and I know that Dubbo also mentioned it in their drought response plan—you are looking at anywhere between 100 to 10,000 times the level of cost of supply. So yes I think there would be significant advantage to looking at specific areas in relation to town water supply or indeed agricultural districts as well as opportunities for entrepreneurs and perhaps even private interests to run water regulation within the Murray-Darling Basin.

The Hon. MARK BUTTIGIEG: That market-based approach to regulating the subsequent use of release once it is stored, is that the sort of thing that has been applied in those other jurisdictions like the United States and places like that?

Dr PAGE: So I will use the example of the United States because they have a similar socio-technological level to Australia. They have very different rules about how to regulate water. I do not think their legislation is comparable to ours. In fact, I think ours is superior in many ways. In terms of international, the biggest user by far is India. It beats everyone else by far in terms of the amount of water recharged. They are also very groundwater-dependent but their systems are simple. I think there are probably big challenges in things like water quality because they do not have the best water quality. So that is one approach, the market-based approach. We used it as an example in our study because we do have a water market there and, you know, we are encouraging water to go to the highest value use within entire basins—the point of the water market.

One option of that could be emergency water supplies or drought water supplies or town water supplies, any of the above; you could use those waters. In unregulated systems you might just capture water where there

are not those limitations or any allocation entitlements. You could also of course look at things like stormwater, treated wastewater or industrial water such as water associated with coal seam gas operations. Those waters are typically disposed of but they are actually a resource and they can also be treated to a high standard and recharged into an aquifer for subsequent readying for whatever you want to use it for.

The CHAIR: Okay. I just wanted to ask a question about the enlarged dams that this Committee is looking at. Basically, they will capture the natural flood recharge of aquifers, if you like. They will capture more of that water that would have naturally recharged aquifers. Is the proposal that you are referring to, then—you are factoring in replacing that natural recharge?

Dr PAGE: I would be looking to go further and augmenting it—increasing it further. By deliberately recharging more water into the aquifer, you can actually raise groundwater supplies.

The CHAIR: Yes. That is aquifers, I suppose, in particular areas. That is very targeted, because you are talking about a water bank, if you like. I assume, therefore, the natural flood situation—would other areas miss out as a result of that?

Dr PAGE: That would be down to the how the system is managed. [Inaudible] schemes, such as in Queensland—so, Callide Valley, Callide Dam, Burdekin, Emu Creek—are systems run by a bulk water operator. They release water down the creek, but often they do not have specific water banks. They release water to recharge an aquifer as a whole, for beneficial use further down the stream. So, in places like the Burdekin they might create temporary structures in the river to slow the water down as it comes rushing past and give it more time to infiltrate. Does that answer your question?

The CHAIR: Yes, that is fine. Thank you. You mentioned before that you have got a memorandum of understanding [MOU] with WaterNSW, was it?

Dr PAGE: No—NSW Department of Planning, Industry and Environment.

Dr BONNETT: It is the special activation precincts that we have the MOU with.

The CHAIR: Okay. So, to use Tamworth as an example, when was the MOU signed for that?

Dr BONNETT: I will take this, Dr Page. We have a general MOU between CSIRO and the special activation precincts to cover a range of activities, not just water. We have had more recent discussions around the Moree and the Parkes activation precincts in relation to water.

The CHAIR: Okay. So, in relation to water, you have signed an MOU with DPIE to essentially explore water options, or just the managed aquifer recharge? Let us stick with Tamworth, because we have had quite a bit of evidence this morning in relation to the Dungowan Dam.

Dr BONNETT: We have no specific project organised around water. We have a general MOU with the special activation precincts, giving the opportunity to develop specific projects underneath that. Currently we do not have any signed in relation to water.

The CHAIR: So, you have not had any discussions, then, as you are referring to? You have not had any discussions with, or there has been no—

Dr BONNETT: We have had discussions with the people who are developing the special activation precincts. They are quite interested in exploring this as an option because they realise that ensuring water security in those special activation precincts is something that they need to take into account. And so, they have started that ball rolling and we look forward to having further conversations to get into more detail with them.

The CHAIR: And the special activation precincts are—could you just explain for members what you mean by that?

Dr BONNETT: I do not know that I have the full history there, but in New South Wales you have identified several areas that are close to towns that you are designating as special activation precincts. They are being master-planned at the moment and they fit, I think, along the proposed inland railway line. They are areas where the State is trying to generate economic activity. In order to do that, it is trying to make sure that there is sufficient water to do that economic activity; hence why they are exploring various aspects of how they might re-use, recycle and store water in that precinct. But also, because they are associated with towns—how they might work in with the town's water supply, to make those more secure as well.

The Hon. CATHERINE CUSACK: Is Williamtown on that list or potentially on that list?

Dr BONNETT: I think Williamtown is one of the special activation precincts. We have not had conversations about that one, as far as I know.

The CHAIR: With these special activation precincts, in terms of your research now, you have not had any requests from WaterNSW or DPIE to undertake studies in relation to how managed aquifer recharge can assist with water security in those areas?

Dr BONNETT: Not yet.

The CHAIR: Thank you. That is the end of our time for questions. Thank you very much, both of you, for appearing today and for submitting your very extensive work and very useful information for the Committee's deliberation. Thank you so much for appearing.

(The witnesses withdrew.)

(Luncheon adjournment)

JOHN WEBSTER, Owner, Webster Pastoral Co., sworn and examined

KERRI WEBSTER, Owner, Webster Pastoral Co., sworn and examined

The CHAIR: We will now commence our next session and welcome our next witnesses. Would either of you care to make a short opening statement?

Mr WEBSTER: Yes, we both will. Thank you very much to the Committee for hearing us today. If the Wyangala Dam Wall Raising goes ahead, we stand to lose a significant part of our most productive land by means of compulsory acquisition. That acquisition would rob us of our highly fertile, productive country, which we use to produce our forage crops and our cereal crops to feed and finish our stock to their maximum potential. This project would fundamentally alter the nature of our business. On the basis of recent flooding on our property, we also expect that flood events after the dam wall goes up will have a significantly greater impact on our property than initially forecast, potentially resulting in substantial damage, including the danger of significant stock losses and even cutting access to our family home.

We expect land well outside the area being compulsorily acquired to be impacted by flooding events. In effect, the higher the dam wall, the closer we, our children and our livestock are to living in the flood zone. This is before we begin to consider the loss of riverfront habitat, destruction of historical sites and loss of immense personal history to our family. We see our job as being the management, maintenance and improvement of our property. This is a job that the Webster family has undertaken for generations and that we hope we can continue in the family for centuries. I grew up on the property. Our children have grown up on this land. Until recently, we assumed that their children would do the same.

Yet, in the face of this project, we cannot be certain that our continued efforts will be worthwhile for us or our descendants, given the impact of the project on the long-term viability of our family business. We cannot be certain whether we should plant a crop this year, next year or in the years beyond. We cannot be certain that we and our children will be safe in our home if, sooner or later, it floods. We hope that our presence here today will remind the Committee that this project, if it goes ahead, will have a real and irreversible impact on the lives, livelihoods and futures of real businesses and real families. Thank you.

Mrs WEBSTER: Thank you for the opportunity to appear before you to give evidence in this matter. As you can appreciate, this project has caused significant uncertainty and emotional strain on our family and our business. As prominent members of the Cowra community, we take issue with the statements made before this inquiry in relation to the quality of community consultation and the degree of community support supposedly uncovered by surveying the local population. Despite the fact that our family will be directly and severely impacted by the project, at no point have we been asked to participate in a survey. Now that we have been given the chance to have our voice heard, let us speak clearly and plainly: The best outcome for us is that the dam does not go ahead.

We understand that there are real issues to be addressed in terms of water management, particularly in drought years, but we are also heartened by the water management options that have been recommended to this inquiry as alternatives to raising the dam. It is clear that more time is needed for those options to be fully considered and that the science, together with common sense, must prevail. It appears to us that the public announcements made in relation to the dam raising project have been misleading and have painted a picture of a project that is not only certain but, in fact, already underway. In fact, the business case is yet to be completed and the full impact on farmers, communities and the environment, both up and downstream, is understood only in the most basic terms.

By making public announcements and commitments before proper analysis has been performed, the New South Wales and Federal Governments have shown a callous indifference to the impact these projects will have on those who live alongside the river. We note that since making our submissions we have also had a site visit from the inundation mapping team earlier this week, as well as from WaterNSW. Whilst we welcome this and any further engagement with the authorities as a positive step, we are still bogged in uncertainty. We understand that the results of the inundation mapping will be available to us mid-2021, but even this remains as an ambiguous time line. No clear timetable has been provided to us or, so far as we are aware, been announced. We have no definite understanding of when a compulsory acquisition process might commence or the extent of those acquisitions. These uncertainties are causing significant strain on our business, our family and our community. Thank you.

The CHAIR: Thank you. You have both read off written statements. Would you mind if we made a copy of those for our record?

Mrs WEBSTER: No, not at all.

Mr WEBSTER: That is fine.

The CHAIR: That would be wonderful, thank you. We will proceed to questions from myself and the crossbench, then questions from the Government and then from the Opposition. When did you first hear that the proposed dam wall raising project was pretty much a certainty and was going ahead?

Mrs WEBSTER: In late 2019 when the Prime Minister made his announcement and then, obviously, a substantial amount of media reports followed.

The CHAIR: And that was the funding announcement by the then Federal Government?

Mrs WEBSTER: That is right. That is when we started to enquire as much as we could to find out information. Constant phone calls, emails—

The CHAIR: Had you had any approaches by WaterNSW or the State Government before then in terms of the impact on—

Mrs WEBSTER: No, definitely not.

The CHAIR: Never?

Mrs WEBSTER: Not at all. In the initial inquiries that we made, the main thing we were told was that the effects on the Upper Lachlan were unknown at this stage. We were told that on a regular basis which, as you can imagine, infuriated us. We were under the impression from the announcement that it was a done deal, basically, yet the effects on Upper Lachlan farmers that live right on the river were not taken into consideration whatsoever.

The CHAIR: Is it an assumption that your land would be compulsorily acquired then? It has not been written in any communication to you?

Mrs WEBSTER: Not at that initial stage, but it certainly has been now. We have been told by WaterNSW that it will be compulsorily acquired.

The CHAIR: Some landowners may potentially see that as a way to get out of farming. For example, to be able to take the money and say, "Thank you very much." What are your thoughts?

Mrs WEBSTER: It is something we are very passionate about. If you could see where we graze our stock on the banks of the Lachlan River—beautiful shade, beautiful water, some of the best grazing country you can find. Basically, you cannot replace that. To give you a bit of an idea of some of the produce that come off the area, each year around 30,000 sheep and lambs come off the inundated potential area, about 1,000 head of cattle and about 1,000 bales of wool, plus the tonnage of grain and hay. Once this country is taken out of production, it is very hard to replace, extremely hard. In saying that too, there is also a big flow on effect from when that happens. When this country goes underwater, basically it is all of our good forage crop country like lucerne and cereal crops that we do to finish our stock. If that is underwater then we cannot finish our stock to the maximum potential.

The CHAIR: What else is there? I understand we were looking at potentially visiting the area at some point. We were planning to do it by now and we could not.

Mr WEBSTER: That is correct, yes.

The CHAIR: Hopefully, that will be happening in February. What else is at risk in terms of inundation? Assuming you are in contact with your neighbours, are there other landholders that will be inundated?

Mrs WEBSTER: Definitely.

Mr WEBSTER: Definitely

The CHAIR: And you mentioned cultural heritage?

Mrs WEBSTER: That is right. Obviously, our family home is of concern to us.

The CHAIR: It will be inundated?

Mrs WEBSTER: We believe so. Obviously, the inundation mapping is not finalised and, as we are aware, it will not be until mid next year. We believe that if the project goes ahead and the system is already inundated, if the dam is at full capacity and we receive a natural flood on top of that, we believe that our family home will be inundated as well.

The Hon. CATHERINE CUSACK: Is that the original homestead?

Mrs WEBSTER: It is.

The Hon. CATHERINE CUSACK: How old is it?

Mrs WEBSTER: It is approximately 150 to 170 years old. It has survived flood after flood up until now. Obviously, this may not be the case. There are also several other historical structures that we are concerned about. There is the original old hotel that dates back to the 1860s; there is the famous Frank Gardiner bushranger story that goes along with that hut, so there is a lot of history on the property that we believe will be inundated.

The CHAIR: There has been some assertions that the raising of the Wyangala Dam wall has been identified as the most feasible option for water security in the Lachlan. I am not sure, as landholders, whether you are engaged? I assume you are at quite a significant level in terms of water security as a landholder. Do you agree with the statement that it has been identified as the most feasible? And are you aware of other options that may have been or could be considered?

Mr WEBSTER: Yes, there are definitely other options that could be considered that will not take out this highly productive country. I do not know why they were not researched more heavily to be honest. As I said before, you cannot get that country back. Once you lose it that is gone and you cannot replace it with anything else.

The CHAIR: How across the other options are you? Could you talk about some of those other options?

Mr WEBSTER: Not really. I could not go into great detail, no.

The CHAIR: That is okay.

Mrs WEBSTER: We just hope that those other options are carefully considered.

Mr WEBSTER: Definitely.

The Hon. CATHERINE CUSACK: Did this come out of the blue?

Mrs WEBSTER: Yes, definitely.

Mr WEBSTER: Definitely. There was no inkling. We knew nothing about it at all.

The Hon. CATHERINE CUSACK: I grew up on a farm on the banks of the Yass River, which is a part of the Lachlan system.

Mrs WEBSTER: Yes.

The Hon. CATHERINE CUSACK: Our property was destroyed by the Roads and Traffic Authority when it rerouted the bypass on the Hume Highway, so I certainly can relate to the amount of the mental stress this must be inflicting on you and your family. In terms of dealing with government authorities, I suppose that your knowledge of your land being something that has not been put into the equation at all has been one of the big issues?

Mrs WEBSTER: I think so. We will jump over each other with this question. Yes, we have been incredibly frustrated with the inundation mapping that we have seen to date. We had to push and push to get some sort of answer with the mapping. We believe that it is incorrect to our personal experience. The Webster family has lived on the Lachlan River for generations, so if anyone knows that part of the river it would be our family. The natural floods that we have seen—there was a particular flood in August this year that completely contradicted the inundation mapping that we have seen so far. The extent of the damage will be a lot worse than what is being predicted.

The Hon. CATHERINE CUSACK: How large is the property in total?

Mr WEBSTER: About 12,500 acres.

The Hon. CATHERINE CUSACK: And how much land are you expecting they will look at for compulsory acquisition?

Mrs WEBSTER: That is a good question.

Mr WEBSTER: At this stage that is a good question because the inundation mapping we have seen is, as we said before, very inaccurate**.** There needs to be a lot more groundwork done before we can really know.

The Hon. CATHERINE CUSACK: But the river flats are the most productive part of the property?

Mr WEBSTER: Exactly.

The Hon. CATHERINE CUSACK: Will you lose river access altogether?

Mr WEBSTER: We will. There is a major bridge that goes over the Lachlan, which is basically a big artery for our business, to and from, also for the local community around us that will definitely go underwater, so obviously that infrastructure has to be fixed up. Yes, to answer your question. These flats are very important to us and very highly productive because we have hill country around it that runs down into these river flats.

The Hon. CATHERINE CUSACK: Absolutely.

Mr WEBSTER: Without the flats it does not run hand-to-hand.

The Hon. CATHERINE CUSACK: Will you have any river access left?

Mr WEBSTER: If the bridge does not get raised then we would not be able to cross the river to go to other parts of the property, no.

Mrs WEBSTER: To answer your question—sorry, darl. We are married as you can tell. We talk over the top of each other. All of our cropping country right along the river will be inundated. We will not have any access whatsoever left to our river flats, we believe.

The Hon. CATHERINE CUSACK: It is a complete disaster the property, is it not?

Mr WEBSTER: It is, definitely.

Mrs WEBSTER: It is, and it is the most beautiful country. It is a fantastic spot and you cannot get it back; once it is gone, it is gone.

The Hon. CATHERINE CUSACK: Having been privileged to have had the experience of growing up on a very historic property myself, the heritage values do not seem to count for anything in our State's heritage system.

Mr WEBSTER: No.

Mrs WEBSTER: No, they do not.

The Hon. CATHERINE CUSACK: I see that you have engaged solicitors. Can I ask, if you feel comfortable, how much money are you spending to go through this process? I do not want that to be a sensitive question, but it is a complete cost imposition on you.

Mr WEBSTER: It definitely is but we thought it was well within our interest to hire some legal advice to take it further if we need to. So it is a huge cost to us, which we are bearing the burden of, to answer that question.

The Hon. CATHERINE CUSACK: Which is sort of saying to me that it is a lack of faith in the process that you feel you need to do that.

Mrs WEBSTER: Definitely.

Mr WEBSTER: Yes.

The Hon. CATHERINE CUSACK: I feel for you.

Mrs WEBSTER: Thank you.

The Hon. PENNY SHARPE: I just want to follow up on a couple of the things that you told us. When were you told about the acquisition? I think you mentioned that you have been told now. I am interested when that was and what form that took.

Mrs WEBSTER: Without being able to recall the exact dates, to be honest, we were never officially told. We did not receive a letter to say, "Hi, Mr and Mrs Webster, we plan on flooding your property." That was never the case. It was only because we were so proactive finding out answers ourselves.

The Hon. PENNY SHARPE: When you were proactive, who were you contacting?

Mrs WEBSTER: Local members who obviously confirmed that, yes, this has been announced and, yes, the Upper Lachlan will be affected but we do not know how at this stage. It was mainly WaterNSW that we made contact with.

The Hon. PENNY SHARPE: And they are your primary contact now? Who is talking to you?

Mrs WEBSTER: WaterNSW and nobody else, to be honest.

The Hon. PENNY SHARPE: Do they have someone allocated to liaise with yourself and other landholders in this position?

Mrs WEBSTER: I would say that is our other frustration. We have invited WaterNSW out on several occasions. They have been obliging the majority of the time, but we have had different representatives every time and we have had to explain our whole situation all over again from scratch. It does not seem to be passed through to the next representative.

The Hon. PENNY SHARPE: You cannot identify anyone from WaterNSW who is in charge of dealing with yourselves and landholders in a similar position to liaise and provide information?

Mrs WEBSTER: No. There would be one person that we have now started to contact, only because we happened to have that name set in stone to us that we kept contacting that person. But we completely lost all confidence with WaterNSW because of the fact that we had to rehash our story every time; there was no consistency.

The Hon. PENNY SHARPE: If I can go to the community consultation issue, because it has been the subject of some discussion at this Committee. We have been presented with evidence to say "We have sent this many emails and this many things and there was a survey and everyone was really happy with it." Given that you have been an active, interested participant in what is going on and wanting to find out, what sort of invitations have been sent or has it been passive in that there has been an ad they expect people to respond? There has been no active reaching out, again, particularly to directly affected landholders.

Mrs WEBSTER: No, definitely not.

Mr WEBSTER: No.

Mrs WEBSTER: It is only if we just happened to see something on social media, through word of mouth or neighbours. We are certainly not alone in this position. Other landowners in our area who are in the same situation and have experienced similar consultation—or lack thereof, I should say.

The Hon. PENNY SHARPE: It is actually quite common. With community consultation around some of the infrastructure that is built in the city, for example, there are often complaints about when people are told about what is going to happen. I know that for the acquisition of things such as WestConnex and others, the department of roads has people who go and doorknock affected people or have people who are case managing their cases. You had none of that?

Mr WEBSTER: No.

Mrs WEBSTER: No.

The Hon. PENNY SHARPE: My last question has to do with the acquisition. I do not know how it works in rural settings in terms of land acquisition; I have far more experience in the city. Your property is about 12,000 acres and you can expect these inundation maps will come. You are obviously worried about your home, the homestead and those type of things. Do you expect that acquisition would then be for the entire property or would you be left in a more bizarre situation where they would only acquire the bits that are worth any money?

Mr WEBSTER: Yes, that is definitely correct.

The Hon. PENNY SHARPE: And you would be left with land that is effectively locked out of your business.

Mr WEBSTER: That is right.

Mrs WEBSTER: Yes, exactly.

The Hon. CATHERINE CUSACK: That is what happened to us.

Mr WEBSTER: Exactly what you are saying is dead right. As we have said, the hillier country moulds with the river flats. Without that, our business is a bit hamstrung, to be honest. Once you take that out and they acquire that country we are left with—

Mrs WEBSTER: Nothing.

The Hon. PENNY SHARPE: As far as you know, is that the kind of way in which the acquisition will look? There will not be the opportunity or I suppose you do not know yet about talking about the whole property except in that you do not want to do that at all and all of those things.

Mrs WEBSTER: That is right. Initially, WaterNSW told us that it would be a partial acquisition. So they will pick the eyes out of it, basically.

The Hon. PENNY SHARPE: Thank you. I am sorry it is very stressful for you.

Mrs WEBSTER: Thank you for your understanding.

The CHAIR: Is it your understanding that the dam wall will be raised no matter what? Is that what you are being told—that your property will be compulsory acquired?

Mr WEBSTER: Yes, that is definitely what we have been told.

The CHAIR: Nothing is subject to approvals?

Mrs WEBSTER: Not that we are aware of, no. On Wednesday this week we had our lawyer present when WaterNSW and a representative for the compulsory acquisition came to our home. He talked through the compulsory acquisition process with us, so I would take that as a done deal and assume that it is going ahead based on that.

The CHAIR: We have the water Minister up next, actually. What impact will this have on you? I can see your children sitting behind you in the public gallery. What impact will this have on your family if this goes ahead? Hopefully we can have a good outcome as a result of this inquiry, but what next?

Mr WEBSTER: Basically, we would have to try to buy some more country elsewhere—all the properties are adjoined so they would have to be transported. We are probably looking one to two hours away from where the property currently is. We have an irrigation licence on the current land so we would need to have irrigation on it to be the same as what we have. In the drought it was very handy to be able to irrigate that country. We cannot find the same or similar country—it is very hard to do. The type of parcel of land that we are talking about would be very hard and could take a number of years. For future generations it will be extremely difficult.

The CHAIR: What is your understanding of the other landholders in the area? Where are they at? Are they experiencing similar issues to you? Are they reluctant to sell? Can you give us an understanding of that?

Mrs WEBSTER: Certainly. We know of quite a few of our neighbours who are in the exact same situation that we are. You cannot put a price on what we and our neighbours are going to lose. It is the family connection to the land—you just cannot put a price on it. You do not know where to begin. They are certainly experiencing the same frustrations in that we cannot get any definite answers and are running businesses in complete uncertainty—and have been from the day it was first announced.

The Hon. MARK PEARSON: In your legal advice, have you been advised if there is any avenue at all for appeal to such an acquisition to the High Court or Federal Court?

Mrs WEBSTER: We have not actually gone down that stage yet.

Mr WEBSTER: No, we have not.

The Hon. MARK PEARSON: Has it been suggested to you or pointed out to you that there is such an avenue, maybe as a class action with your other neighbours?

Mrs WEBSTER: We had hoped that it would not get to that point.

The Hon. MARK PEARSON: No, but I am just wondering if that is an avenue.

Mrs WEBSTER: That is certainly not an avenue we would like to take.

Mr WEBSTER: It is something we have talked about, yes.

Mrs WEBSTER: We have discussed it.

The Hon. CATHERINE CUSACK: How many people live on your farm?

Mrs WEBSTER: Obviously our family lives in the main family home. John should answer this question.

Mr WEBSTER: We have our family and we have a manager, an overseer, two station hands and we get casual staff in. So it could be six or seven people at any one time living on the property.

The Hon. CATHERINE CUSACK: How many homes are they living in?

Mr WEBSTER: That would be about four homes.

The Hon. CATHERINE CUSACK: How many people do you employ?

Mr WEBSTER: Probably four people permanently and casuals on top of that.

Mrs WEBSTER: Obviously, the river divides all of those homes as well, which is an issue. It divides the property so access is a huge concern.

The Hon. CATHERINE CUSACK: It has been a short appearance but it has been valuable to us and we appreciate the long trip you have made for it.

The CHAIR: Thank you very much for appearing. Unfortunately, our time is up. We are very sorry to see you having to go through this situation and hopefully this Committee's work can shed some light for you or have some outcomes.

(The witnesses withdrew.)

MELINDA PAVEY, Minister for Water, Property and Housing, before the Committee

JIM BENTLEY, Chief Executive Officer (Deputy Secretary), Department of Planning, Industry and Environment, on former oath

ANDREW GEORGE, Acting Chief Executive Officer, WaterNSW, on former oath

The CHAIR: As everybody here has been sworn in previously and you do not need to, Minister, we will just commence. Would any of you like to make a short opening statement?

Mrs MELINDA PAVEY: I want to thank the Committee for the opportunity to discuss the important work that the Government is doing to improve regional water security not just for towns and productive uses but also for our environment. I am sure everyone here today can agree that with climate change and prediction of longer drier periods punctuated by flood, that storages and maintaining connectivity is now more important than ever. There are no simple solutions and our reversion to pre-development environment conditions is simply not a reality. We would not have survived the last drought without our dams and pipelines.

We have collated data that outlines when the rivers would likely have stopped flowing without the upstream dams during the last drought, which is included in the DPIE Water submission. It shows that without dams most northern river systems would have dried up from about October 2017 and there was not enough rain until February 2022 provide inflows to get the rivers running again. While the rain earlier this year was welcome, the situation in the north of the State is still fairly dire. Cease to flow events have occurred in parts of the border, Gwydir and Namoi systems as well as the Barwon-Darling system from Mungindi to Menindee except small flows to the Macquarie River near Brewarrina. But I am still delighted that there is around 450 gigalitres in Menindee Lakes following our floodplain harvesting embargo during that February event.

Storage levels in northern New South Wales are still quite low compared to the rest of the State. History has taught us time and time again that the time for talking about improving key water conservation infrastructure is over. Any delays to upgrading key infrastructure is time we do not have. We also have to look at the policy settings to ensure that we have them aligned with our infrastructure to run rivers as efficiently as possible. It is no secret that our dams and water infrastructure is ageing because successive governments over the last 50 years have failed to invest in upgrading key water infrastructure.

With no new major dams being built since 1987, our existing stock is starting to reach the age when we need to look at not only how can we extend its working life but how we can bring it into the twenty-first century and improve efficiencies in conserving water and using water. During the last drought we spent millions of dollars on improving water supplies for towns via new pipelines and alternative water sources such as bores. On the demand side we are working with local governments to plug the leaks, recycle water and implement new technology such as smart meters to drive down water leaks and wastage.

We are investing over one billion dollars through the Safe and Secure program into local government water utilities to help local governments improve their water security and water efficiencies. The work we are doing on our regional water strategies is very profound. It includes cutting-edge climate and paleo-modelling and highlights most regional communities want their population to grow, with cities such as Tamworth wanting to double its population to 100,000 people. The key to this growth is water security. When the drought retreated in Tamworth earlier this year, the current Dungowan Dam spilt. If we had had the new dam in we would have been able to catch an additional year's supply of water for Tamworth.

With the new dam coupled with improvements on the demand side we can start to mitigate the worst impacts of increased temperature and longer droughts. A key issue to come out of the drought, which was briefly touched on by this Committee, is the issue of what exactly is critical human need. Both the New South Wales and the Commonwealth water acts prioritise critical human needs over everything else. Yet both acts failed to provide a definition of exactly what critical needs are. In attempting to answer this question, Professor Pitcock from the Australian National University told this committee that he believed jobs in towns were part of critical human needs and said:

> Abattoirs being next to things like town water supplies and further agricultural processing industries, absolutely, they are very important to sustainable jobs.

The reality is that no one believes that providing just enough water to drink is sustainable as a definition of critical human needs. We need to provide jobs and economic growth, even in times of high temperatures and record-breaking droughts. There have been massive changes and reforms in the water sector over the past two decades and especially in the past three to four years, which is taking its toll on our communities and reform in this climate

is extremely difficult. As the Committee has heard from many of the witnesses, everyone benefits with better dam infrastructure. It is hard. The evidence we just heard from that family was heartfelt but it does impact everybody.

Some of the soundest advice I have received is that the most expensive litre of the water is the one you do not have and options to avoid running out of water are increasingly becoming more and more expensive as the cheaper solutions were adopted years and years ago. We need newer, better infrastructure and better conversations with all elements involved in water, whether it is from environment, other users, towns, more respectful conversations is a very important and profound way that we can deliver water security to our communities.

The CHAIR: Thank you, Minister. We will take questions from the crossbench, questions from the Opposition and I understand the Government will reserve the right.

Mrs MELINDA PAVEY: I might just point out that Anissa Levy, who is now the head of Water Infrastructure would have been with us today except it clashed with her role as chair of the Lord Howe Island board and she had to attend her final meeting.

The Hon. PENNY SHARPE: Did she have to go to Lord Howe?

Mrs MELINDA PAVEY: I think so, yes. I am jealous, too.

The Hon. CATHERINE CUSACK: Priorities, priorities.

The Hon. PENNY SHARPE: That is where I would like to be.

The CHAIR: Order! If I could begin by focusing on the Wyangala Dam wall raising project. I am just trying to look at how it was identified as the most feasible option, just the history of that. On the WaterNSW webpage in terms of the background of this project, it says that it was identified in WaterNSW's 20-year infrastructure study and was selected due to its initial feasibility study and the significant benefits to the Lachlan Valley. What was the initial feasibility study?

Mrs MELINDA PAVEY: It was work WaterNSW did in about 2016.

The CHAIR: What was that study?

Mrs MELINDA PAVEY: I will get Mr George to answer that because it was before my time. The work showed that valley has the least water security for its users but also the most vulnerable to flood. You might remember in 2016 when the State was awash and flush with water. We had to close the Newell Highway for eight to 10 weeks. So you have this confluence of situations. If we had been able to store some more water we would not have got to a point where that dam was running at 9 per cent at the worst part of the drought. Mr George, you might talk to that fact that it is our worst water security area—

The CHAIR: I will get to questions on flood mitigation later but specifically the question was that initial feasibility study. We have had a number of witnesses assure us this has been selected as the most feasible option in that feasibility study. Firstly, what is the study? Feel free to take it on notice to provide us that, if you do not know.

Mr GEORGE: The first study undertaken was a feasibility study to improve water security and reliability in the Lachlan Valley. It was done at a time when there was an earlier announcement about a new dam at Cranky Rock in the Belubula and the study was initiated to look at alternatives or other options to the option.

The CHAIR: Was the Wyangala Dam wall raising project identified as the most feasible option in that study?

Mr GEORGE: It was.

The CHAIR: Out of every other option?

Mr GEORGE: Out of the other dam options, it was.

The CHAIR: Out of the other dam options. What about all options for water security?

Mr GEORGE: When that study was completed—that feasibility study—another study was initiated that was completed in 2017—

The Hon. CATHERINE CUSACK: Sorry, the first one was 2014, is that correct?

Mr GEORGE: That is the earlier study. That is the first study, correct, which is available on our website. The second study was completed in 2017, which narrowed down those options. It only looked at, for example, the Wyangala Dam, we looked at other the options at Cranky Rock and we looked at the pipeline between Lake

Carcoar and Lake Rowlands. It also looked at water efficiency schemes in the lower Lachlan amongst other operational options as well.

The CHAIR: I think the question was that this is not a feasibility study into identifying a dam for water security. We are talking about a feasibility study for water security.

Mr GEORGE: Correct.

The CHAIR: Your answer was that, yes, the Wyangala Dam wall raising was chosen as the option.

Mr GEORGE: Correct.

The CHAIR: But it wasn't. I am asking about the option in terms of water security generally in the Lachlan. That feasibility study did not say that raising the Wyangala Dam wall is what we should do to enhance water security and that is it.

Mr GEORGE: In the first study, it was identified as having the largest water security benefit at the time compared to the other 15 dam options that were identified. The separate study was then started that looked at other options. It was a broader study.

The CHAIR: The draft Lachlan regional water strategy that is out now has a list of 48 options. Is that it?

Mr BENTLEY: It is about that. There is quite a number—several dozen, yes.

The CHAIR: How does the approval—or the order or direction, I should say—from you, Minister, to WaterNSW to progress Wyangala Dam fit in with all of the 48 other options currently being looked at as part of the draft water strategy for the Lachlan?

Mrs MELINDA PAVEY: As Mr George just pointed out, it was the standout option in 2014. In terms of community engagement and consultation, it is seen as a positive option. I suppose that also depends on where you live and what impact that may have on you. The previous Minister, Niall Blair, obviously saw that as a great option. It was a commitment that we made based off the 2014 work and then the further work in 2017. A commitment was made at the election to that dam-wall raising.

The CHAIR: So the commitment was raised at the election. In fact, I did ask WaterNSW when they last appeared—you have a media release on your website about your first meeting and what you said about building dams in that first meeting, Minister.

Mrs MELINDA PAVEY: I am not sure what you are referring to, Ms Faehrmann. I had a lot of meetings when I first became Minister. There were a lot of conversations. Obviously, when you win an election, whether that is again or for the first time, you are given a book in relation to outstanding or contentious issues or policy directions, which also includes commitments that have been made in an election. It was listed that it was an election commitment.

The CHAIR: Okay. So Wyangala Dam wall raising is an election commitment. That is why it is being built.

Mrs MELINDA PAVEY: Coupled with the work we did in 2014 with WaterNSW and further studies in 2017. It was the standout option.

The CHAIR: What I was just referring to was the media release on The Nationals' website dated 10 October 2019, "Water Minister Cracks The Whip On Bureaucrats". This is from the NSW Nationals website, where it says—

Mrs MELINDA PAVEY: That is a news article, is it not? It is not a press release.

The CHAIR: " Water Minister Cracks The Whip On Bureaucrats"? But it does say that you entered the room saying:

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

Is that what happened?

Mrs MELINDA PAVEY: I will not go into the details of the meeting. I think Mr Bentley, in his previous evidence and advice here—it was a conversation generally, as that article does say, about water infrastructure. It was important that we had everybody rowing the boat in the same direction. We made commitments to the people of New South Wales. I intend for us to honour those commitments, whether it is dam infrastructure, weir infrastructure, the Safe and Secure Water Program, all the work that we are doing across Sydney and the regions,

or genuine and proper dialogue with all of our councils across the State. I mean, we have some major challenges. We have 92 water authorities in New South Wales compared to 16 in Victoria.

We need to be able to support our smaller communities, provide safe and secure water, and deal with growth, particularly on the North and South Coast as well as Sydney. There is a strong intent to get on with the business of running water better in New South Wales. It has been an enormous effort over the past 18 months getting our water sharing and resource plans into the Commonwealth and working in alignment with our environment agencies to ensure that we get on and deliver the infrastructure and ensure that our towns and communities are supported in those processes.

The CHAIR: In relation to the same page I was referring to for the WaterNSW—the Wyangala Dam wall again. The WaterNSW webpage does say that it was identified in WaterNSW's 20 Year Infrastructure Options Study. Is that your understanding? That that has been identified as being selected. What is the situation there?

Mrs MELINDA PAVEY: Are you asking about the 10 metre—what is your question?

The CHAIR: Yes, that is the dam wall raising. Your webpage says that the Wyangala Dam wall raising project was identified in WaterNSW's 20-year water infrastructure strategy. Is that an accurate statement?

Mr GEORGE: That is correct.

The CHAIR: The infrastructure study though also stated very clearly that it was an options study. It specifically says:

> … the options identified in this strategy will need to be studied in more detail and will require major Business Case review before investment decisions can be made.

Are you aware of that?

Mrs MELINDA PAVEY: We are aware that we are going through that work to get to final business case and that will also involve environmental studies. You would be aware that we have made Dungowan Dam a priority as a piece of critical State water infrastructure as well as Wyangala. Also, just for the record, the Oven Mountain Pumped Hydro proposition between Kempsey and Armidale is going to add—

The CHAIR: That is fine. My question is not in relation to that, if we can—

Mrs MELINDA PAVEY: Well, it is in relation to critical—I am answering it on the basis that it is a priority of this Government. It is a priority of regional New South Wales, which is why it is on a critical State path infrastructure progress. That shows that we are serious and that we are doing the work that we need to do and ensuring that it meets the environmental requirements between the New South Wales and Commonwealth governments. We are supporting that dam.

The CHAIR: Minister, there have been a lot of other options identified in the feasibility study, including other storage or dam options. These other options were identified in the New South Wales 20 Year Infrastructure Options Study as well. That specifically states:

> This study is not a capital works plan. It identifies potential options which, if consider appropriate can be progress to the business cases for WaterNSW and Government consideration through formal review … From there Government may consider progressing such projects to completion.

That is the WaterNSW feasibility study. Nowhere have any of the studies identified the Wyangala Dam wall raising project as the best option. Why have you gone down this path of saying that this must be the project? We have just heard from families who are going to be inundated. We heard from floodplain graziers that their businesses will undergo serious, irreversible damage—wetlands. Why this particular project when there are other options on the table?

Mrs MELINDA PAVEY: For the very clear reason that we have indicated. We have not had major infrastructure progress in terms of dam and water security in this State for a long time. I might also point out that, in a survey of around 900 people through the Lachlan valley, 85 per cent of them want us to get on with this and provide the water security that those towns need along the running of the Lachlan. I also might point out that it was a standout as a project and option during the two studies in 2014 and 2017, which led to the election commitment. That does not mean that we would turn our back on other projects that were identified and are important. We want to generally, where we can, improve water security and opportunities across the State. But that does not make it easy for the people who were here before. I get that. I would not like it if it were my farm. But sometimes we have to make very difficult decisions which have an impact on people.

We are doing as best we can in preparation for the environmental impact statement [EIS] and consultation. It is not easy—I get that—but it is not easy making tough decisions, and it is not easy to improve

water security across this State. That is what we are doing. We have made a commitment to the people and that is what we will get on with.

The CHAIR: Thank you. I just want to move, then, to the issue of the Murray-Darling Basin Plan and the issue of the sustainable diversion limit. Obviously any major increase in water storage could have an impact on the ability for the Government to continue to meet its obligations under the Murray-Darling Basin Plan—

Mrs MELINDA PAVEY: No, not at all. Trust me, because it is written in law: There is a limit. We have to keep to that limit. What this does—

The CHAIR: Okay, so where is the additional—

Mrs MELINDA PAVEY: —is give security to towns and farmers. General security delivered in that valley is only delivered on—what percentage is it, Mr George?—about 33 per cent of the time. This will increase reliability for the farmers along there that have general security allocations in the Lachlan Valley. I also understand the concerns of those at the end of the system, but we are also providing data, and that will be further enhanced through the EIS work. We saw it in February with the good rains. There is a view that the only water they get is from the catchment up the top; that is not the case. There is a lot of water that happens on the floodplain and post the catchment area of the dam. We have to do a better job in communicating that and explaining that to those users, that it will not mean the end of water at the end of the system.

Mr BENTLEY: Could I just add a point about the sustainable diversion limits [SDL]? Those will not be exceeded. The cap, we talked about last time. The cap is the sustainable diversion limit—

The Hon. MARK PEARSON: Could you move the microphone around?

Mr BENTLEY: Sorry. The long-term average—over several years you have to stay within the sustainable diversion limit. That remains, and we will not be breaching that. The difference is, particularly in the Lachlan at the moment, that there are people who would choose not to use all of the water that could be allocated to them because they do not want to plant, thinking that there may not be enough water stored to deliver to them when they need the water for those plantings. This will give those people confidence that they can use up to the amount of water that has been allocated to them. In many cases at the moment they do not want to take that risk, because they would have planted and then they have not got confidence that water is available to deliver to them. The cap or the SDL will not be exceeded, but it should give more confidence to users that they can use the amount of water in a particular year up to the amount that has been allocated to them.

Mrs MELINDA PAVEY: They are not getting more allocation, Ms Faehrmann. They are just getting more reliability of when they are getting that.

The CHAIR: Sticking to Wyangala Dam wall raising, what is the cost of that estimated to be built at?

Mrs MELINDA PAVEY: We are still working through that. Our election commitment was around the $650 million mark. That was based on estimates from 2017. We have come to agreement with the Commonwealth at that level that it was going to be half a grant and then half a loan, but now it has come to the party with a 50-50 grant at the announced amount of $650 million. We are working through that process and we will have a better idea of that number at the end of the final business case, which is September next year.

The Hon. PENNY SHARPE: Can I confirm that those costs with include things like land acquisition, replacement infrastructure, purchase of any water licences and biodiversity offsetting?

Mrs MELINDA PAVEY: That final figure will include those types of figures.

The Hon. PENNY SHARPE: Do the current figures include that?

Mrs MELINDA PAVEY: Yes, they do; not all of it, but—

The Hon. PENNY SHARPE: Which ones do they include?

Mrs MELINDA PAVEY: There are costings towards biodiversity.

The Hon. PENNY SHARPE: For biodiversity offsetting? Does it cover all of the costs?

Mrs MELINDA PAVEY: That is what we have got to work through. You will see that in the final business case.

The CHAIR: Can you guarantee to the people of New South Wales that this dam wall raising project for Wyangala will not cost more than $1 billion?

Mrs MELINDA PAVEY: I am not going to give any commitments one way or another until I get the work around the final business case next September. It is a major piece of infrastructure—an important piece of infrastructure—but I am not going to get into a cat-and-mouse or a guessing game with you, Chair.

The CHAIR: With respect, Minister, this is an inquiry looking at these issues. We have had a lot of experts—and the community, in fact—concerned about $650 million being such a waste of money at the cost of what it would be per megalitre of water. We have had quite a lot of input in relation to that. Now you are here not able to guarantee that in fact it will not be costing more than $1 billion. Yet you are here adamant that it has been approved, but the business case has not been approved and you are saying you will not in any way know the final cost until a business case is released mid next year. But we could be seeing, say, an additional, I do not know, say another $1 billion—

The Hon. TREVOR KHAN: Is this a question or is it—

The CHAIR: Yes, I am getting there, Mr Khan. It is a question like you ask pretty much all the time.

The Hon. TREVOR KHAN: Right. I am just watching the time go by.

The CHAIR: Minister, the $650 million of taxpayers' money has already been committed to pay for what was essentially a National Party commitment before the election.

Mrs MELINDA PAVEY: From the proceeds of the sale of the Snowy Hydro to the Commonwealth Government there has been a pool of money set aside so that we can rejuvenate infrastructure throughout regional New South Wales. We are very excited about that.

The CHAIR: But it is approved.

Mrs MELINDA PAVEY: As we have said, 1987 was the last time we built a major piece of water infrastructure in regional New South Wales. We are really excited about the work that we are doing. But I am not going to play a cat and mouse guessing game with you. It is just like we are committed to building western Sydney metro to enhance the public transport across western Sydney; we do not have a final dollar on that. But we are sending a message. We are being upfront with the people of New South Wales: You are going to get more train lines in western Sydney and you are going to get—

The CHAIR: Let us stick to water.

Mrs MELINDA PAVEY: —a new dam in regional New South Wales at Wyangala and Dungowan. We are proud of that commitment. We will work through that. We will go through all the gateway reviews that we need to. We will do the environmental impact statement work. But our intent, 100 per cent, is to build and improve water security in the Lachlan Valley and the township of Dungowan.

The Hon. PENNY SHARPE: Just to follow up on that, we have got lots of evidence—and it includes the WaterNSW submission—that states that these projects only go ahead if they actually tick the boxes. They have to go through the EIS process, they have to go through the funding process, whereas you have said very clearly here today, Minister, that these are election commitments and you are going to deliver on them. Is there a point at which you will say no to them if the costs are too prohibitive or there is another reason?

Mrs MELINDA PAVEY: I am intent on doing the work to prove that they are the right thing for our communities. We have made a commitment—

The Hon. PENNY SHARPE: But what if the economics do not stack up? What if Treasury says there is no way—you have said that Wyangala is $650 million and you are getting half of that from the Commonwealth. What if it is over a billion dollars? Given you cannot tell us what costs are currently in there, at what point do you say no?

Mrs MELINDA PAVEY: At the point—

The Hon. PENNY SHARPE: Or is it that because it is a commitment it is happening, no matter what all of these assessments do?

Mrs MELINDA PAVEY: It is a commitment that we are working towards. We are doing the due diligence. We are doing our homework. We are doing final business cases, strategic business cases. We have done the initial analysis. There is a very, very strong economic case for this dam, and we will be working towards that end.

The Hon. PENNY SHARPE: The previous witnesses to give evidence, the Websters, were obviously very distressed given the impact of the dam wall raising on their property. They were very critical, as many others have been, of the consultation process in relation to a number of projects. In your previous evidence you have

talked about the survey. I note that both the ICAC and a report that has been reported on today talked about the narrowness with which WaterNSW has conducted its community consultations and said that it has favoured irrigators and some stakeholders over others. What guarantees can you give to this Committee that all stakeholders have been appropriately consulted in relation to the projects that are ongoing?

Mrs MELINDA PAVEY: Thank you very much for that question, the Hon. Penny Sharpe, because it gives me an opportunity to talk to the people that were consulted particularly in relation to the article that you refer to in *The Guardian* today. Just to give you an indication, 60 organisations were consulted with: the National Parks Association of NSW, the Inland Rivers Network, Murray Irrigation, the Australian Floodplain Association, Border Rivers Food and Fibre, Coleambally, Environmental Defenders Office, Dubbo Environment Group and the list goes on.

The Hon. PENNY SHARPE: Why weren't the Websters, who—

The Hon. TREVOR KHAN: Point of order: You have asked a question and she should be able to answer it.

Mrs MELINDA PAVEY: I was tempted to read out the 60, but I was not going to.

The Hon. PENNY SHARPE: If you want to take up your time to cover for yourself then that is fine, Minister.

The Hon. TREVOR KHAN: Point of order: You have asked her a question. She should be able to answer it. I might say that she should not read out the 60, but she should be entitled to answer the question.

The CHAIR: Yes, the Minister can at least have some time to respond to the questions.

Mrs MELINDA PAVEY: I am giving you a sense of the groups that were consulted with. As I mentioned at the beginning of my opening statement, consultation can also be fraught at times. I have had the most vulgar and vile Facebook posts and stalking and carrying on by some of those groups. That was just a warning to some of the public servants. It was between themselves, just to say to be aware that whatever they send could be played around with. But there is genuine consultation and I am proud of the work that they are doing. I will ask Mr Andrew George to talk more directly about some of the consultation with the Websters and other groups—and even Indigenous groups—in relation to the Wyangala Dam. Clearly when you are building a major piece of infrastructure there will be perceived winners and losers.

There has been consultation with a lot of these groups. I genuinely understand and I would probably be feeling the same way if I were them. But there has been reaching out, just like to the 60 groups to whom we were reaching out to do that further consultation.

The Hon. PENNY SHARPE: That is great, Minister. Can I just then follow up directly on that? Evidence has previously been provided to the Committee about how many people, so I really do not need you to go through who you say you have consulted with.

Mrs MELINDA PAVEY: That was in relation to *The Guardian* story. I am just putting that on the record.

The Hon. PENNY SHARPE: In relation to this it is very important, because as I said there have been numerous reports now of selective consultation and preferment within the bureaucracy over certain projects.

Mrs MELINDA PAVEY: What are you referring to?

The Hon. PENNY SHARPE: The ICAC report and *The Guardian* report.

Mrs MELINDA PAVEY: I just explained that *The Guardian* report was wrong.

The Hon. PENNY SHARPE: The ICAC did suggest that there was a problem—

Mrs MELINDA PAVEY: I have just explained that the ICAC report—

The CHAIR: Order! Do not talk over each other.

Mrs MELINDA PAVEY: On that, I would argue that we have improved our stakeholder engagement.

The Hon. PENNY SHARPE: I am just asking for reassurance that you are not doing selective consulting.

Mrs MELINDA PAVEY: I am proud of the work that we are doing around water transparency measurement and the Natural Resources Access Regulator. To the explicit question around favoured treatment or

lack of consultation, I will ask Mr Andrew George to talk to the community consultation and how we are approaching farmers and communities.

The Hon. PENNY SHARPE: I do not need a long list that is already in your submission. I am seeking a commitment from you, Minister, that there is not preferential treatment. If you say no then I will take that at face value at this point.

Mrs MELINDA PAVEY: Absolutely not.

The Hon. PENNY SHARPE: Okay, thank you. The previous economic feasibility study into Dungowan found that it was too expensive and the then water Minister, Niall Blair, at the time rejected it as a feasible option. What has changed to bring it back onto the agenda?

Mrs MELINDA PAVEY: The drought. The Peel Valley had never had such stress in terms of inflows, ever. The worst recorded drought prior to this one was 1960. We completed the Chaffey Dam—was it 10 years ago, the Hon. Trevor Khan?

The Hon. TREVOR KHAN: Five-ish.

Mrs MELINDA PAVEY: Five-ish years ago. If we had not had that infrastructure in place—the increased height to the Chaffey Dam—we would have had to evacuate the town of Tamworth during this recent three-year lack of inflows and lack of rain. During the drought that finished in February, we already had to expend something like $39 million on a pipeline to avoid transmission losses and extend the life of the water in Chaffey for the town by about 50 per cent.

The Hon. PENNY SHARPE: Is that not also because the inflows into Chaffey, particularly in the past two years, would have been very low?

Mrs MELINDA PAVEY: That is what a drought is.

The Hon. PENNY SHARPE: Yes, thank you, which leads me to my next question. Can you confirm that the available water determinations modelled by WaterNSW do not take into account the extreme low flows experienced in 2019-20? In your predictive modelling for the future, are you actually taking those into account?

Mrs MELINDA PAVEY: We are doing work into the future through our regional water strategies.

The Hon. PENNY SHARPE: But when you are doing the modelling for Dungowan Dam, given what you know, does the water allow you to accommodate the most recent event—which you say is what has changed and why that dam is being built?

Mrs MELINDA PAVEY: We will continue to consult with the community about the regional water strategies, but it was very clear from this recent drought that we need more water security in the community. There are also issues in terms of the safety and security of the old Dungowan Dam. We had to make some investment decisions around that.

The Hon. PENNY SHARPE: I am not arguing about that. I want to know about your water modelling. Does the available water determination modelling by WaterNSW take into account the low flows experienced in the drought, which you have just pointed to as the reason for the dam? Can Mr George or Mr Bentley answer that if you cannot or will not?

Mrs MELINDA PAVEY: The issue is that the drought and the lack of inflows showed that we need to do more to improve water security for the Peel Valley, for the industries, for the jobs, for the towns—

The Hon. PENNY SHARPE: But Minister, do you accept that if there is no water then it does not matter how big the dam is because no water will go into it?

Mrs MELINDA PAVEY: To my point previously, at the end of building the Chaffey Dam around five years ago it filled and kept that town and that community in water. That is why we need to further enhance water security. There are two rain areas: one around Chaffey and one around Dungowan. It gives us the best chance of capturing water to give that community water security. As I said in my opening statement, the most expensive water is the water that you do not have.

The Hon. PENNY SHARPE: But you will not include in the modelling the available water determinations based on that drought. I just want a yes or no on that. Will someone please answer that for me?

Mr BENTLEY: I can tell you that up until now we have not been including that in the water sharing plans. This was a subject that came up many times in recent times. What we said—I think it was at budget estimates—

The Hon. TREVOR KHAN: It might have been at another inquiry, actually.

The Hon. PENNY SHARPE: This is not a new issue.

The Hon. PETER PRIMROSE: I remember the term "drought of record" coming up.

The Hon. TREVOR KHAN: That does ring a bell.

Mr BENTLEY: Either at a previous inquiry or at estimates, we said that the regional water strategies are based on the new climate modelling work that we have done. The draft for this valleys regional water strategy will go on exhibition from 26 February until 9 April. Our final business case for Dungowan Dam is not due for completion until the end of 2021. We have time to hear the community's feedback on the work that we put out in that draft regional water strategy and take that into account, both in finalising the regional water strategy and in our evaluation of options. There is time to take that into account in the final business case and the EIS, should that be required.

The Hon. PENNY SHARPE: Which drought of record are using?

Mr BENTLEY: That will be determined through that consultation on the regional water strategies, which because it looks at—

The Hon. PENNY SHARPE: So you need to consult over whether you should be taking into account the most recent—

Mr BENTLEY: Let me answer that.

Mrs MELINDA PAVEY: Start again.

Mr BENTLEY: We always consult on the water sharing plans.

The Hon. PENNY SHARPE: Yes, I am not suggesting that you do not do that. I am asking about the science.

Mr BENTLEY: Excuse me. That is where we agree what drought we should be taking into account when setting the rules for water sharing. We said in those previous hearings or inquiries or estimates—whichever it was—that when we have consulted on the regional water strategies, we will have more community feedback to help guide the decision-making in the water sharing plans. That will be done in time for that to be taken into account in the final business case and the EIS for the Dungowan Dam. So, yes, we do consult on that but we are putting all the information out with the climate modelling. Why we said we need to do that rather than pick a drought of record was that the climate modelling takes into account a hell of a lot more than just the last few years.

The Hon. PENNY SHARPE: Yes. I think that is a very good idea, by the way. I am not arguing with that.

Mr BENTLEY: So that is the logic behind it and that is why we are unable to say today exactly what would be confirmed on that final assessment.

The Hon. PENNY SHARPE: Who finally decides what is in what is out?

Mr BENTLEY: The regional water strategies—there is an executive committee, which I chair, and then we make recommendations to the Minister and others in terms of—

The Hon. PENNY SHARPE: So the Minister has final sign-off?

Mr BENTLEY: I might take that on notice, if you do not mind.

The Hon. PENNY SHARPE: Yes. I would appreciate understanding that decision tree.

Mr BENTLEY: Let us take that on notice. I chair the executive committee which is an across Government and that will review the feedback that comes from consultation on those regional strategies. But, like I say, that is why we are unable to tell you exactly today what that rule will be.

The Hon. PENNY SHARPE: Sure. But that is a change from the past. Minister, who will pay for Dungowan Dam?

Mrs MELINDA PAVEY: We made in announcement in October last year when the Premier, the Prime Minister, the Deputy Premier and the Deputy Prime Minister were visiting that it also was going to be a fifty-fifty arrangement.

The Hon. PENNY SHARPE: That is fifty-fifty to $650 million?

Mrs MELINDA PAVEY: Well, no. I did not say $650 million.

The Hon. PENNY SHARPE: Oh, I am sorry. I was talking about Wyangala. Sorry, my apologies. It has been a long day. How much is it? I think it is $484 million for Dungowan. Is that right?

Mrs MELINDA PAVEY: And, again, that was the estimate and we will have final business case figures last quarter to deal with what the final cost will be.

The Hon. PENNY SHARPE: How does that work with water pricing rules that require user-pays full recovery?

Mrs MELINDA PAVEY: It does not in the regions. We are not under the same rules as Sydney Water and Hunter Water because the legislative framework does not include that. We do, obviously, deal with the Independent Pricing and Regulatory Tribunal but there was also a $74 million commitment from the Commonwealth to improve Tamworth's town water.

The Hon. PENNY SHARPE: Yes, Barnaby Joyce—very keen

Mrs MELINDA PAVEY: Yes, because Tamworth deserves that.

The Hon. PENNY SHARPE: Sure. So the $74 million, that is the announcement. Sorry, I am getting the two mixed up. So it is $484 million and so far the Commonwealth has agreed to $74 million. Is that right?

Mrs MELINDA PAVEY: No. They had already had an announcement towards Dungowan of that $74 million.

The Hon. PENNY SHARPE: And they have agreed to more than that now. So, what? They are going to provide all-up $240 million in the form of a grant. Is that right?

Mrs MELINDA PAVEY: Yes. The total Commonwealth commitment at this point is $567 million for both.

The Hon. PENNY SHARPE: Yes, that is for the whole thing, but for Dungowan specifically, around $240 million. Is that right?

Mrs MELINDA PAVEY: Yes.

The Hon. PENNY SHARPE: And the commitment will be matched by New South Wales. That covers the cost of the building but, again, I assume we have the same issues whereby we are not sure about biodiversity offsetting water licences and replacement infrastructure. I mean, it does not include, for example, fixing up the problems with the current Dungowan Dam, or is it the complete replacement?

Mrs MELINDA PAVEY: Which we needed to do anyway.

The Hon. PENNY SHARPE: Yes.

Mrs MELINDA PAVEY: It will also include the pipeline costs which we are doing as a no regret decision and we will have final costs—

The Hon. PENNY SHARPE: What does a "no regret" decision mean, Minister?

Mrs MELINDA PAVEY: We needed to do it anyway. The pipeline, as we have mentioned—

The Hon. PENNY SHARPE: Have you signed the documents on that? That was due in October.

Mrs MELINDA PAVEY: I think—well, have we announced the tender on that one, Mr George?

Mr GEORGE: We are about to award it.

The Hon. PENNY SHARPE: Close. Yes, okay. That was not in the document. All right. So you have $480 million. Leaving aside the fact that I think there is a lot of work to be done, which you accept—that it could cost a lot more and a lot of other factors that have not been done—assuming that the Commonwealth and the State are able to come to the party with whatever the final cost of this project is, the money that is above and beyond that and the ongoing maintenance, ownership and control of that dam, where are you up to with the Tamworth Regional Council?

Mrs MELINDA PAVEY: We will be able to have better conversations by the end of next year but we will be guaranteeing their town and that community water supply in ongoing conversations, just more generally, given the length of time to construct this type of infrastructure. I have been advised by the Hon. Trevor Khan that there is a very exciting CSIRO study into more recycled water opportunities for the town. Half the town's water is currently used by business and industry with the chicken facilities and the abattoir facilities. There is a need to give that community further water security. They have done it particularly tough the last couple of years. We will

continue to work with them and ensure that the town does have a safe and secure supply that can help reach their goal of increasing the population of the community to 100,000 people.

The Hon. PENNY SHARPE: My understanding is that it is not a goal. It is just based on population projections on a do-nothing basis; that there will be 100,000 people there pretty much moving. It is not based on major lever changes in terms of encouraging people to live there. Tamworth is going to get to 100,000 people. Is that right?

Mrs MELINDA PAVEY: I think the jobs that will need to be there for them to grow to that extent and for the jobs to come you need the water and the security and investment from business.

The Hon. PENNY SHARPE: So do you believe that the Dungowan Dam—

Mr BENTLEY: I am sorry, could I—do you mind if I make a point there?

The Hon. PENNY SHARPE: Of course. Yes, of course.

Mr BENTLEY: The current infrastructure available to Tamworth is unable to deliver up to the licence that Tamworth holds. With this new infrastructure there is the potential to supply another 7 gigalitres per year for the use of Tamworth. That, in combination with the potential re-use projects that were being talked about just now with the potential to have reverse osmosis plants in to feed the industrial use means a very significant increase in the potential availability of water for the town. So this particular project does have the potential to give significant benefit to the town growth.

The Hon. PENNY SHARPE: So just to be clear, the money that is allocated, though, is for the dam only. The recycling work is preliminary at this stage.

Mr BENTLEY: Correct.

The Hon. PENNY SHARPE: We heard some estimates this morning that to do—the Hon. Trevor Khan knows more about this.

The Hon. TREVOR KHAN: I do.

The Hon. PENNY SHARPE: That full recycling quote of around a quarter of a billion was for an entire recycling project rather than just these industrial once, do you know?

The Hon. TREVOR KHAN: I think it was never anticipated that the whole thing would be recycling.

The Hon. PENNY SHARPE: Okay. So that really gets to my question which is that you accept that the dam is not going to be the one piece of infrastructure that secures the water security for Tamworth into the future?

Mrs MELINDA PAVEY: We accept that there is a whole range of strategies and solutions.

The Hon. PENNY SHARPE: Yes, but you have only funded this one. I am wanting to know what your commitment is around the recycling project, given that it seems pretty clear to me that the dam, if you go ahead with the dam, is not going to provide the water security for 100,000 people and the jobs that go with it in Tamworth in the future, without additional work.

Mrs MELINDA PAVEY: As I was saying, we are very happy to have conversations with the Tamworth City Council. They are not at their full supply level, given the infrastructure that they do have, but of course we will continue to have conversations. We want our regional cities and towns to grow and to provide jobs and opportunities. We are seeing post-COVID a whole range of people escaping Sydney, knowing that they can live more comfortably and in better communities and have a better lifestyle, and that has been borne out on the South Coast and the North Coast, and it will happen in places like Tamworth. But with Tamworth we will particularly need to focus on water. Recycling water for industry is a sensible proposition and we will continue to have those conversations.

The Hon. PENNY SHARPE: It is terrific, but there is no funding for that, Minister.

Mrs MELINDA PAVEY: We have not been approached for a grant yet.

The Hon. TREVOR KHAN: It is getting close, though.

The Hon. PENNY SHARPE: I have one more question. One of the issues raised about Dungowan was the impact on potential water security and towns like Walgett and concerns about capturing the tributary inflows. Are you confident that the water supply to Walgett and some of those smaller towns downstream is going to be secure as a result of the Dungowan Dam?

Mrs MELINDA PAVEY: I might just point out that we are under enormous stress already. I mean, I am in conversations with communities up around Collarenebri and Moree at the moment to try to encourage that Commonwealth water environmental holder to release some more of their water to keep the flows going from the Gwydir system throughout to come Collarenebri.

The Hon. PENNY SHARPE: Sure, that is the Commonwealth, but you are about to build something that people are concerned about having an impact on water security further down the line. How is that being taken into account?

Mrs MELINDA PAVEY: I think that the Peel River goes into the Namoi, which goes into the Darling, which does not go anywhere near Walgett.

The Hon. PENNY SHARPE: Look, I am not going to argue with you about it. You are saying that you are confident this project is not going to impact on Walgett. You can say no, if you think that is the case.

Mrs MELINDA PAVEY: We are very focused on Walgett and very interested when I look at some of the levels that are in the Queensland storages who do not have the same energy that we do in terms of compliance with the Murray-Darling Basin Plan. Those communities up there have been impacted, that is for sure. We are very pleased that our embargo on floodplain harvesting during the big events has ensured that we got a good flow. I can read off pages and pages of evidence of those river systems, the Darling running dry, pre-industrial change in that part of the world. It is a system that has run hot or has run frequently dry, but Walgett is a community that we supported through the drought. It is a challenge and that is why we need further water security and storages across the entire basin. I might just get Andrew George to comment, particularly on Walgett.

The Hon. PENNY SHARPE: I am okay. I will come back to that. I will get another go in a bit, but I have got to share with these guys.

The Hon. MARK PEARSON: Thank you very much. In 2016 there was an augmentation of Chaffey Dam, giving it an additional 38.5 gigalitres, but it actually did nothing to improve Tamworth's water security at all.

Mrs MELINDA PAVEY: It did, actually.

The Hon. MARK PEARSON: About 65 per cent of the water went somewhere and we do not know where it went. Do you know where it went?

Mrs MELINDA PAVEY: Yes, we do.

The Hon. MARK PEARSON: Where?

Mrs MELINDA PAVEY: I am going to give this question to Mr George, who will look at our portal to show what happened in the past 12 months and how much went to industry over that period, how much went to transmission, how much went to evaporation, and how much went to the environment, the environmental agencies and the Commonwealth Environmental Water Holder. It is no secret. I would be really happy to have my team give you a brief so you can understand how the river flows and how the water is accounted for.

The Hon. MARK PEARSON: I do not think I need that much detail.

Mrs MELINDA PAVEY: You do. It is good.

The Hon. MARK PEARSON: It looks like you have got it covered. I will have the rest of the answer in writing, thank you.

The Hon. TREVOR KHAN: No, no, no. Point of order—

Mrs MELINDA PAVEY: Oh, please. Mr Pearson, seriously, you asked a question.

The CHAIR: Order! A point of order has been taken.

The Hon. TREVOR KHAN: Point of order: The member asked a question with regards to—where did the water go? The Minister through the advisers is in a position to answer it. It has been a matter that has been ventilated. The member now cannot take it back and say it is going to be a question on notice.

The Hon. MARK PEARSON: As long as it does not go on forever.

The Hon. TREVOR KHAN: No, I accept that.

Mr GEORGE: We have a water balance report that is available on our water insights portal on our website, which clearly illustrates where all that water went in the year that you are referring to. It was one of the lowest inflow years on record. So, when you are comparing it to what everyone has experienced in years gone by,

where there have been inflows topping up the system—simply, it was the demand on the system. The biggest use of water in that year was planned environmental water, followed by the licenced water for use. It is there. We have also published a report that is available on our website that goes into some detail to explain the difference that was observed at the end of the system, at Carroll Gap. Rather confusingly in the Peel system there are a lot of tributaries downstream of the dam, which accounts for the difference in the numbers that people often talk about. So, the water is not lost. It is just—

The Hon. MARK PEARSON: Thank you for that, but we have heard evidence today that there was no real explanation that has been sufficiently, adequately and convincingly provided as to where all that water went to. I will point the witness in that direction for that evidence, if it actually answers the question. Minister, one of the things we are trying to grapple with is that we have received a lot of evidence from very learned people with a great deal of experience, who have studied the issues of water nationally and internationally. Many of them are not saying that dams are pretty much the answer.

They are saying that there are a whole gamut—a great deal of different possibilities as to how we can store or manage water differently. If that is the case, why would a dam be the stand-out option for you? Why would you say to a room, "If you are not interested in dams, get out?" Why ride roughshod over all of those other well-meaning and genuine contributions from experts, both nationally and around the world, that say that building dams can have serious consequences on many levels and there are other ways that we can ensure and secure water? Why take such a stand?

Mrs MELINDA PAVEY: As we just pointed out—Chaffey Dam, Tamworth. Augmented 2016—98 per cent full. Then we went into a three-year period with record low inflows. Never had we seen in modern history such a low inflow into the Tamworth community and the Peel River. If we had not augmented that dam, the town would have run out of water. Similarly, Wyangala—we are augmenting that dam, increasing its supply by 10 metres and 650 gigalitres because, as I said in my opening statement, it is not just about dams. It is about desalination plants as well. It is about recycling. It is about individuals having greater respect for water.

The Hon. MARK PEARSON: So, why did you show everybody else the door who were not talking about dams?

Mrs MELINDA PAVEY: You were not in the room. You were not part of the conversation. I was making it clear that we had a mandate. We were elected on a commitment and we were also elected to ensure that we improved water security around New South Wales. The event in Menindee had a very visceral impact on the people of New South Wales—no more than regional New South Wales. That is why we have got 450 gigalitres of water now in Menindee Lakes. We have responded. We have amended some of the activities that were going on in the water sharing plans. We now have a Natural Resources Access Regulator—water cops on the beat, making sure people are doing the right thing.

The Hon. MARK PEARSON: Okay. Thank you very much, Minister. One last question—

Mrs MELINDA PAVEY: It is not just about dams. But dams are an important part—and have been through civilisation—in ensuring that we can manage the food production throughout the world, as well as town water supplies and civilised communities.

The Hon. MARK PEARSON: Just finally, I understand that you are concerned—obviously, as you would be—about the health, life and wellbeing of people in communities and towns.

Mrs MELINDA PAVEY: And platypi.

The Hon. MARK PEARSON: Sorry?

Mrs MELINDA PAVEY: And platypi.

The Hon. MARK PEARSON: "Platy-pie"? It is "platy-pee".

Mrs MELINDA PAVEY: You got me.

The Hon. MARK PEARSON: That is the classical language pronunciation.

The Hon. TREVOR KHAN: Well, you could knock me down with a feather!

The Hon. MARK PEARSON: There you go. Is there pressure upon you, Minister, from large corporate agribusiness such as rice and cotton, to ensure that they have water? This is from two industries that really are in question as to whether they have a social licence to exist in Australia, considering our climate.

Mrs MELINDA PAVEY: I would back a rice and a cotton grower here over some of the environmental practices in other countries in the world. That is what we have to do—convince the people of the cities, as they

are buying their rice in their supermarkets, that Australian rice has actually done an incredible job in reducing water take around the world. Our science and our research has had a profound impact. Do you know what the great thing is about rice, as well as cotton? You only put it in if you have an allocation. If you do not have an allocation upriver in the dam, you do not put it in. Unlike other crops, like almonds—do you know the almond extract at the cafes? That is a really high, intense water user because you have got to keep giving that water, even if you are in a drought. If you are in a drought, you do not put in the rice and you do not put in the cotton. It is a very interesting conversation and I think we need to explore those conversations more. We need to have respectful conversations with each other to ensure that our producers—

The Hon. MARK PEARSON: Unless, of course, we steal the water. Thank you very much, Minister.

Mrs MELINDA PAVEY: I want to eat Australian rice, put a cotton shirt made in Australia on my back and also drink a glass of chardonnay from Australia.

The CHAIR: Alright, thank you. We do not have that long for questions and answers.

The Hon. TREVOR KHAN: Shame.

The CHAIR: It is a shame.

The Hon. MARK PEARSON: We could have got on with some more Latin.

The CHAIR: Minister, you said that with dams there are always winners and losers.

Mrs MELINDA PAVEY: I think I said major infrastructure.

The CHAIR: Major infrastructure, okay. I wanted to just think about some of the other options and why they have not been explored more fully by your Government. We have had a number of witnesses talk about the irrigation infrastructure upgrade potentially for the Lachlan Valley. There was a 2009 study by the Commonwealth Government that commissioned an assessment of the potential for irrigation water efficiency in the Lachlan. I understand that report found that could in fact serve around 25 gigalitres. I understand that is similar to what the new dam is potentially going to provide in terms of annual average return. Why has the Government not looked at that? That is the Jemalong project, I understand. Where is the Government up to on assessing that and giving that further consideration?

Mrs MELINDA PAVEY: We are focused on the commitments we have announced and we are delivering that. I might ask Mr George to talk more broadly about Jemalong. Do you have any other commentary on some of the challenges with that project?

Mr GEORGE: Are you talking about the Jemalong Irrigation trust?

The CHAIR: Yes. Firstly, there is a report from the Commonwealth in 2009 in terms of identifying the potential 25 gigalitres that could be saved. This report was in 2009 for $170 million. Minister, are you aware of that report?

Mrs MELINDA PAVEY: I have not read that report.

The CHAIR: As water Minister, are you aware of the potential for irrigation efficiency projects that that report identified?

Mrs MELINDA PAVEY: I am, which is why I have a bid currently in with the Commonwealth of $250 million for major infrastructure projects off farm across New South Wales because that is a really sensible investment to make where we can put in pipelines to stop transmission losses. It is a really, really clever thing to do. Any work that we can do on that front we should be doing and we should be supporting. There is $4 billion sitting currently in the Murray-Darling Basin Authority towards better efficiency of water, to return water to the environment. We would be very happy to explore any options, as we have been doing.

The CHAIR: The reason many witnesses have raised this is because this looks like a potential alternative for a lot less public money to get the same level of savings for irrigation for town water security that the dam would.

Mrs MELINDA PAVEY: As I said, I have not read the report.

The CHAIR: You have not looked at that as an option?

Mrs MELINDA PAVEY: But you referred to it saying that it would save 25 gigalitres of water. This dam would be looking at 650 gigalitres and it was $170 million. There are always options and those who are impacted by certain options are always going to be very supportive and advocating for other options, but that does

not mean we would not in the future be looking at that type of project to give further water security and assurance given the vulnerabilities that we know we are going to experience with continued climate change.

The CHAIR: The point with the 25 gigalitres is whether you could explain that the 650 gigalitres of additional capacity by raising the Wyangala Dam wall does not mean there is 650 gigalitres available for irrigators.

Mr BENTLEY: As I said before, the cap will not be exceeded. Because we have more storage capacity does not mean we will be giving out more water, as it were, making more water available. It means that people will have confidence that they can access the water that has been—

Mrs MELINDA PAVEY: Allocated to them.

Mr BENTLEY: Indeed. Thank you, Minister. It is not more water. We do not exceed the cap. It is more reliability of water.

The CHAIR: Essentially, you are storing more water in a bigger dam.

Mrs MELINDA PAVEY: In a bigger event.

The CHAIR: So that it is available for industry when they need that water.

Mrs MELINDA PAVEY: And the environment.

The CHAIR: Have you factored the evaporation losses into your calculations?

Mrs MELINDA PAVEY: Evaporation losses are a normal part of what happens through the system through the life cycle of an event.

Mr GEORGE: So, that 650 gigalitres equates to about 21 gigalitres improvement on a long-term average basis for general security categories. Hopefully, that reinforces the point that you are making available water last longer.

The CHAIR: That is exactly right. That is what I was talking about in terms of the irrigation efficiency projects when I was talking about the 25 gigalitres that was identified in that report a cost of $170 million. I do not think we can compare the 25 gigalitres in that report to the 650 gigalitres. The Minister inferred that 650 gigalitres was a lot bigger than the 25 gigalitres. In fact, you have just said that 21 gigalitres is the long-term average.

Mr BENTLEY: Can I add, Chair, that is not directly comparable with an efficiency improvement at 25 either because if the water is not there to use you cannot make the efficiency improvement from it, so we do need to work on both ends of this. We need more water to be more readily available and to be used more efficiently for example, that is why we did the pipeline in the Dungowan area earlier—

Mrs MELINDA PAVEY: Chaffey to Dungowan pipeline—$39 million.

Mr BENTLEY: Chaffey to Dungowan, so that we could avoid those transmission losses.

The CHAIR: There will be more water lost due to evaporation by storing more water in this dam; therefore, that water lost to evaporation needs to come from where?

Mr BENTLEY: Well, no—

The CHAIR: From industry?

Mr BENTLEY: No because—

The CHAIR: If you are going to—

The Hon. TREVOR KHAN: Point of order: If you ask a question and you stop—

The CHAIR: Fair enough. Let us keep going.

The Hon. TREVOR KHAN: You have to play by the rules as well.

The CHAIR: I hear you. I will now let Mr Bentley continue.

Mr BENTLEY: Things are happening at different periods of time. If we are storing more water and if the surface area is bigger from which we are storing more water, you will get more evaporation than you would have done from a lower level. But you would have more evaporation from a bigger overall volume of water. I think we are getting a bit confused with some of the mass balance stuff. Equally, you cannot save water that does not exist, so if you have not stored enough water to make it reliably available, you cannot directly compare the

amount of more reliable water you have with the amount of efficiency save you can get. They are all good, they are all helpful and, clearly, if our surface area is bigger we have more evaporation potential.

The CHAIR: Are these dams going to require any changes to water sharing plans?

Mr BENTLEY: Yes, through consultation, as is usual.

The CHAIR: Okay. When is that consultation happening?

Mr BENTLEY: In the last little period of time we have remade many water sharing plans across the State. That is what triggered the conversation we had before that we cannot quite remember which hearing it was from. We are not obliged to review those water sharing plans yet, but we would be obliged to do so if we were introducing a new means of using water. Before we could implement the new dams, as it were, we would have reopen those water sharing plans. For example, in the Dungowan system I said seven gigalitres per year potentially could be available for the town because at the moment they cannot use all of their licence, but because you cannot exceed the cap or the SDL— we would not do that. We are not allowed to do that—you would have to reconsider the water sharing arrangements if one user, like the town, was having more water than the others than it previously did.

The CHAIR: Minister, have you heard from concerned stakeholders downstream from Wyangala on the impact it is going to have on significant wetlands and their livelihoods in terms of floodplain grazing?

Mrs MELINDA PAVEY: Yes, I was privy and I read the evidence of Maryanne Slattery, who is employed by those groups to do work on their behalf.

The CHAIR: Regardless of who they employ to make a submission to you, have you spoken with the lower Lachlan landholders who have significant concerns about the impact of Wyangala Dam on their businesses and the wetlands?

Mrs MELINDA PAVEY: I may have met them at a function in Cowra some time ago, but certainly I have read their information and their evidence. I am very aware of their concerns.

The CHAIR: And are you concerned about the impact that Wyangala Dam is going to have on the some 450,000 hectares of floodplain and wetlands in that area?

Mrs MELINDA PAVEY: As I said earlier, I respect those concerns but also think there is a view that all the water that finds its way down there comes from upper catchment. We need to do some more work in providing evidence that that has not been the case, certainly, during the rain in February. Yes, I am aware of those concerns.

The CHAIR: You are aware of them. Does it concern you that there is going to be such an impact downstream?

Mrs MELINDA PAVEY: I am concerned that there are people concerned, but I am also concerned that we nearly ran out of water during this last drought from that system. Wyangala got to 9 per cent storage, is that correct?

Mr BENTLEY: Near. That is about it.

Mrs MELINDA PAVEY: About 9 per cent, and challenging water supply to towns like Cowra and Condobolin, that concerns me too. There are a lot of concerns but there are also a lot of opportunities and we will have honest dialogue with them through the EIS and work through those processes.

The CHAIR: Minister, why produce a business case for major infrastructure like a dam, for example?

Mrs MELINDA PAVEY: Because that is part of the process that you go through—strategic business case, final business—as a respectful thing to do in terms of investing taxpayer dollars.

The CHAIR: What is the purpose of the business case?

Mrs MELINDA PAVEY: They are to go through the processes—the costings—which we will be doing off the back of two other studies that showed that it was an excellent option to provide further water security to the Lachlan Valley.

The CHAIR: The New South Wales Government business case guidelines, which Treasury has, are quite extensive but, essentially, business cases are to inform investment decisions and they need to apply to all investment proposals. You have essentially committed all this government money despite having a business case. As the Hon. Penny Sharpe mentioned earlier, that business case obviously will not be prepared by you, Minister. It could show that, for example, Wyangala Dam, which is just one of the projects, is terrible value for money for

the taxpayer. That is what a business case is supposed to do—guide investment decisions. Why is the business case not being released—

Mrs MELINDA PAVEY: It will be.

The CHAIR: —until after the decision has been made? Why do a business case at all?

Mrs MELINDA PAVEY: In terms of the work that we do within Government—

The CHAIR: Because you will not listen to a business case.

Mrs MELINDA PAVEY: We are going through the processes that the Government goes through. We are confident from the previous studies and the community will, that this is the right thing to do. We are very confident that it will reach the investment level and cost-benefit ratio that it needs to. We are committed and we will show that through the strategic business case, the final business case and the EIS. This is a major piece of infrastructure that will have an impact—mostly a beneficial impact—on communities. But, yes, it will have an impact on others and we will respectfully go through those processes. We have made a commitment and, as I said earlier, we have made major infrastructure commitments throughout Sydney and we will use our infrastructure to improve the lives of people in regional New South Wales and across the whole of the State.

The CHAIR: That is some crystal ball, Minister. I wish a lot of us had that to predict the future.

The Hon. PENNY SHARPE: Wyangala Dam is 650 gigalitres of extra water. What percentage of that will be for town water versus irrigation or other uses?

Mr GEORGE: The same as it is today.

The Hon. PENNY SHARPE: So it is the same percentage, there is no change. Good, thank you. In relation to the costing issues associated with going to IPART—and I understand that it is not necessarily full cost recovery and there are limits looking at that—what work is done around communities' willingness to pay and surveys of the like? I know that we sometimes do those. Could you just explain to me when we do those and whether they will be conducted for each and every one of these projects?

Mr GEORGE: Certainly. That is part of the business case. That work has not yet started but it will start once we have a more definitive understanding of the costs and there are processes around how costs are recovered, as well.

The Hon. PENNY SHARPE: So communities will be asked what their willingness to pay is and what it is likely to cost them in an ongoing manner, even if the initial, upfront costs are covered?

Mr GEORGE: Certainly, and some of that work was started in the earlier stages—some willingness to pay work was already started, which has guided us to this point and further work will be done next year.

The Hon. PENNY SHARPE: Because, as you can imagine, one of the greatest anxieties around all of these projects is how much it will cost individuals. Obviously, as an example, Peel irrigators are very concerned about high water costs and worried about a small number of people having to pay for a very expensive project. Minister, are you able to guarantee that the Peel Valley irrigators will not be lumped with the entire ongoing cost of this project?

Mrs MELINDA PAVEY: They will not be lumped with the entire cost of this project.

The Hon. PENNY SHARPE: How much do you believe they will have to pay?

Mrs MELINDA PAVEY: Once we get through the final business case we will come to those decisions where we will work through that. I can assure you that, as I mentioned earlier, the proceeds from the sale of Snowy Hydro will be going towards underpinning this investment.

The Hon. PENNY SHARPE: No matter how much it costs?

Mrs MELINDA PAVEY: We will get to the final business case and I know, with my crystal ball and the facts I have around me as well, that it will be a project that will be beneficial in terms of cost-benefit ratio. It will be—

The Hon. PENNY SHARPE: I am glad you are confident but we will wait for the business case. I like your confidence, Minister.

Mrs MELINDA PAVEY: That is good, Penny.

The Hon. PENNY SHARPE: My understanding is there has been some proposal around the place for an extra 10 per cent cost—around $46 million—for Dungowan to be double the size, but that has been rejected by the Government. Can you confirm what the position is in relation to that?

Mrs MELINDA PAVEY: No, I cannot.

The Hon. PENNY SHARPE: Okay. Your local member has been out there saying that, no, he is not going to do it.

Mrs MELINDA PAVEY: Andrew has some information.

Mr GEORGE: The analysis we have done is to confirm the maximum yield you can get from the catchment. So, what has been proposed is the optimum size of the storage. Any larger storage will not improve the water security outcome.

The Hon. PENNY SHARPE: So you do not agree with the report? That is fine, that is what I am asking. In relation to the grants from the Commonwealth, if you go through this process—which everyone says will be rigorous—and look at the economics, social and environmental assessments and they do not stack up, how confident are you, Minister, that you could renegotiate with the Commonwealth to keep that money to improve water security in a different way?

Mrs MELINDA PAVEY: In terms of the Murray-Darling Basin?

The Hon. PENNY SHARPE: No, I am talking about the money that is committed for these dam projects. Is it for the dam projects only or is there room for flexibility if, after all of this process, it comes back and the money does not stack up? One of the concerns is that, for example, $75 million would disappear out of Tamworth if you did not go ahead with the dam—

Mrs MELINDA PAVEY: I doubt that money could disappear out of Tamworth.

The Hon. TREVOR KHAN: Too right.

The Hon. PENNY SHARPE: Well, that is not what Barnaby says. My question is: If you decide to take a different path, how much room is there for you to negotiate with the Commonwealth about that funding that is no longer loans but now grants and significantly hundreds of millions of dollars?

Mrs MELINDA PAVEY: We are in regular conversations with the Commonwealth and the new CEO of the National Water Grid. In fact, I had a lengthy conversation with the Deputy Prime Minister yesterday around progress and timings. Just like we were able to get to an incredible position with the Commonwealth support 80 to 20 on the dual carriageway of the Pacific Highway—

The Hon. PENNY SHARPE: That is great but it has nothing—

Mrs MELINDA PAVEY: —which will be opening in a couple of weeks.

The Hon. PENNY SHARPE: Yes, thanks, Minister, but that has nothing to do with this—

Mrs MELINDA PAVEY: Yes, it has everything to do with a good, working, cooperative relationship with the Federal Government—

The Hon. PENNY SHARPE: No, I am asking specifically about what strings are attached to the funding of these dams projects.

The Hon. TREVOR KHAN: Point of order: I do not think Hansard would have got any of that. It is outrageous.

The CHAIR: Yes, I agree.

The Hon. PENNY SHARPE: I reckon they can do it; they are pretty good.

The CHAIR: Yes, but I do not think it is best practice.

The Hon. PENNY SHARPE: No, I accept that.

The CHAIR: Ms Sharpe, you will continue with your questioning, pausing to allow the Minister to respond.

The Hon. PENNY SHARPE: As I said, we can talk about the Pacific Highway 80 to 20 and funding for roads forever but it has nothing to do with this inquiry. My question is: What strings are attached to the Commonwealth funding? Is it only for dams? If there are other options and this stand does not stack up, are you confident that New South Wales will be able to keep that money?

Mrs MELINDA PAVEY: I am confident that we are in alignment politically with the Federal Liberal-Nationals Government to spend money on infrastructure in regional Australia and regional New South Wales. The good working relationships that we have with them is going to ensure that we have support not just for Wyangala but for Dungowan, we are also doing a $24 million business case—

The Hon. PENNY SHARPE: I am talking about options if they do not stack up, Minister. I know you are confident that they are going to stack up.

The Hon. TREVOR KHAN: Point of order!

The Hon. PENNY SHARPE: I am happy to move on because we are not going anywhere with this.

Mrs MELINDA PAVEY: No, because I am reminding you of what we are doing in the regions and you do not like it.

The Hon. PENNY SHARPE: No, I do not like you promising something that is not going to have a rigorous process associated with it. I want to talk about Gin Gin Weir, which is slightly different. We have had some different evidence that is unclear to me. Everyone understands that Gin Gin Weir is very old and it needs to be replaced in whatever way that we do that. Can you just confirm that the total amount of storage that will be in Gin Gin Weir is going to be 4,000 megalitres as opposed to the 15 to 2,000 megalitres now?

Mrs MELINDA PAVEY: I will ask Mr George to answer that because there has been some disinformation about that and what we are doing is improving the capacity, the leakage—

The Hon. PENNY SHARPE: So it is going to be storing more water?

Mrs MELINDA PAVEY: —and the infrastructure at a weir that is not fit for purpose any longer.

The Hon. PENNY SHARPE: So it is currently able to store around 1,500 to 2,000 and now it is going to be able to store 4,000. I just want to clarify that it is 4,000 in total. It is not 1,500 plus 4,000?

Mr GEORGE: Can I take a moment to find that information for you?

The Hon. PENNY SHARPE: Of course.

Mrs MELINDA PAVEY: While Mr George is looking for that, we have been delayed unfortunately on the Wilcannia Weir, on the original timeframe. That is another major weir project.

The Hon. PENNY SHARPE: Again? When is that going to be done?

Mrs MELINDA PAVEY: So—

The Hon. PENNY SHARPE: This has been promised for the longest. We have been talking about Wilcannia Weir for 10 years.

Mrs MELINDA PAVEY: They have been talking about it for 10 years. There was a commitment in November 2018—about three months before the State election—when the State and Federal water Ministers were out there. That was the first time that money was actually committed, which was a positive but there was a lack of recognition at that announcement that we needed to do a review of environmental factors. So once we got past the election we then realised we needed to do a review of environmental factors. So we were about to start that work in March with the autumn period, COVID-19 hit and we were not able to get people out there to start that work. It has been explained to me that scientists are out there this spring and that is a really important time to—

The Hon. PENNY SHARPE: What is the expectation for finalisation on Wilcannia?

Mrs MELINDA PAVEY: Wilcannia is around 12 months away.

The Hon. PENNY SHARPE: Is that for approval?

Mrs MELINDA PAVEY: No, no. It is just a review of environmental factors. It is not a big EIS but we are looking for Wilcannia.

Mr GEORGE: It is still July next year for the business case but then we will go through the processes after that for decision-making.

The Hon. PENNY SHARPE: So we are still a couple of years away?

Mr GEORGE: Next year.

The Hon. PENNY SHARPE: Okay. Have you got an answer for me, Mr George?

Mr GEORGE: Sorry.

The Hon. PENNY SHARPE: You can take it on notice. It is fine.

Mr GEORGE: I will take it on notice.

The Hon. PENNY SHARPE: I was unclear in the questioning and some of the evidence that has been given and I have been told different things so I am just trying to get to the bottom of it.

Mrs MELINDA PAVEY: To be fair to you, the original stakeholder engagement was not great. There was a lot of misinformation going on at that time. We have learned from that and are trying to improve that because there are some good environmental outcomes with that investment.

The Hon. PENNY SHARPE: Which leads me to my next question. There has been significant concerns raised about the Macquarie Marshes, as you know, a Ramsar-listed wetland that has already had to be notified as being in a poor state. Professor Richard Kingsford has told us that about half of it has already gone. In an environment where there is significantly decreased rainfall that is—if we did nothing—stressing out the wetlands, how confident are you that Gin Gin Weir is not going to make things worse?

Mrs MELINDA PAVEY: Drought makes things worse. Interestingly, the Macquarie Marshes are in a very flush position at the moment, certainly to what they were 12 months ago.

The Hon. PENNY SHARPE: Yes, but over time they are 50 per cent smaller than they used to be.

Mrs MELINDA PAVEY: There are also some very big wild pig problems out there and some other environmental degradation.

The Hon. PENNY SHARPE: Well, raise with Minister Kean what he is doing about that but I am asking what you are doing.

The Hon. TREVOR KHAN: You are being ill disciplined again.

The CHAIR: Order!

Mrs MELINDA PAVEY: In terms of the Macquarie Marshes, yes, a really important part of the world. We have also handed back 1,000 gigalitres of water to the Murray-Darling Basin Plan to ensure that we have greater connectivity, greater environmental outcomes and that is one of the things that I am seeking to work with the Commonwealth with, to get more of that money spent on investment on infrastructure to improve river health. If we were to honestly look at all that water that is coming back, one of the goals was to improve our native fish stocks. There are ways we can do that with different access points of our dams so that the water temperature does not change. I am really interested in ensuring that we have that type of investment so that we get rid of as much carp as we can and encourage our native fish breeding.

The Hon. PENNY SHARPE: We had some terrific fish people in—some of the fish scientists—who were really terrific. One of the key threatening processes though around fish stocks—and fisheries generally—is regulating rivers. The Myall River proposal will go from an unregulated river to a regulated one. Do you believe that fish stocks and all of those issues that you say are so important will be better off as a result of regulating that river?

Mrs MELINDA PAVEY: It can have a very positive impact because—

The Hon. PENNY SHARPE: It is identified as a key threatening process for most endangered species.

Mrs MELINDA PAVEY: Well, it is also a key threatening process when you do not have any water in the river, which is what would have been the case in many of those rivers in around 2017 if we did not have the storages that we have so the Myall River will have a positive impact on ensuring that there is continued flow down the Darling.

Mr GEORGE: Can I take the answer to answer that question before?

The Hon. PENNY SHARPE: Please do.

Mr GEORGE: The proposed Gin Gin Weir will store six gigalitres, which is approximately four gigalitres more than what it currently stores.

The Hon. PENNY SHARPE: So that is not what we were told this morning.

The Hon. TREVOR KHAN: Definitely not what we were told.

The Hon. PENNY SHARPE: I am so glad that I asked, thank you. So it is going from around 1,500 to 2,000 to 6,000.

Mr GEORGE: Which is four gigalitres more than it currently holds.

The Hon. PENNY SHARPE: Yes, thank you. That is quite important and we were given very different information this morning. I wanted to go back to Walgett. Actually, sorry, I will ask a different question that you may have to take on notice. You have indicated previously that within your current costings, some of it includes biodiversity offsetting, some of it includes purchase for water licence, some of it includes replacement infrastructure and some of it includes land acquisition. Would you be able to provide back to the Committee on notice a breakdown of the current funding and what has been allocated within those budget envelopes for those matters?

Mrs MELINDA PAVEY: I will take that on notice.

The Hon. PENNY SHARPE: Yes, I was not expecting you to be able to do it now but that would be great.

Mrs MELINDA PAVEY: Whether we can, in terms of commercial sensitivities around that and the development of the final business case, but we will take that on notice.

The Hon. PENNY SHARPE: At least an indication would be useful because the costs bounce around a lot. To go back to Walgett, you suggested in your previous answer that Walgett was not on the Namoi River. It is an my question remains what work is being done around the impact, and I know it is further down the chain, around water security? We know that it is already stressed and we know that there has been water carting and there are a whole lot of towns in that situation but what impact and what work is being done on what water security will mean if there is more water being held back further upstream at Dungowan?

Mrs MELINDA PAVEY: As I previously mentioned—

The Hon. PENNY SHARPE: You tried to suggest that Walgett was not on the Namoi.

Mrs MELINDA PAVEY: By having greater storage, greater capacity, greater water security, there is more opportunities for the water to stay within the system and to flow longer.

The Hon. PENNY SHARPE: But how does that work when you have got—

Mrs MELINDA PAVEY: For example, if we had—

The Hon. PENNY SHARPE: It is primarily for water security of Tamworth. No-one is arguing that that is not an urgent matter that needs to be addressed and that there has got to be 100,000 people going into Tamworth. Walgett is a long way down from there. There is not going to be a massive amount of new water. Everyone accepts that. There is probably going to be less. What does that mean for towns at the end of the line like Walgett? Surely they get less water. How do they get more water?

Mrs MELINDA PAVEY: It means greater water security. Can you answer that please, Mr George, because—

The Hon. PENNY SHARPE: No, I understand the water security. But if it is going to be taken up before it gets to Walgett—

Mrs MELINDA PAVEY: There is going to be more opportunity for the water to stay in the system with more held back during events when you are capturing it.

Mr GEORGE: Certainly a large degree of the water that enters the Namoi and flows into that part of the bottom end of the system comes from tributaries that are downstream of the confluence. So the contribution of the existing Dungowan Dam or even the new dam to those impacts will be fully assessed as part of the modelling that we are doing.

The Hon. PENNY SHARPE: And they will be addressed. Okay, I will move on from there.

The CHAIR: Just going back to Wyangala—we could have spent two hours on every project. Has DPIE undertaken hydrological modelling for the Wyangala Dam wall raising?

Mr BENTLEY: I am not sure what DPIE has done and what the Minister has done. It may be—

The CHAIR: Has any hydrological modelling been undertaken? I might start there.

Mr BENTLEY: It might be safer to take on notice exactly what modelling has been done.

Mr GEORGE: Hydrological modelling is being undertaken as part of the design for the dam. The work that DPIE are undertaking in particular—which Mr Bentley referred to before—is the climate modelling. That is important to feed into the engineering hydrological modelling, which goes to confirming the engineering features of the dam for extreme floods and things.

The CHAIR: But, just to be clear on that, the expansion—you are saying that hydrological modelling is still being undertaken. Then what is showing the annual average return of 21.05 gigalitres?

Mr GEORGE: Yes. That was some of the preliminary hydrological modelling that was undertaken for the previous studies.

The CHAIR: So the hydrological modelling is incomplete along with the business case and everything else.

Mr GEORGE: The further we go into doing more detailed studies, the more complex and more detailed the modelling work that we undertake is.

The CHAIR: Okay. I will leave it there. Thank you very much. I appreciate the Minister for appearing before the Committee as well as Mr George and Mr Bentley.

(The witnesses withdrew.)

(Short adjournment)

DEREK RUTHERFORD, Director, Water for the Environment, Department of Planning, Industry and Environment, affirmed and examined

MICHELLE DUMAZEL, Executive Director, Biodiversity & Conservation Environment, Energy and Science Group, Department of Planning, Industry and Environment, affirmed and examined

The CHAIR: We will begin our last session for today's hearing. Would either of you care to make a short opening statement?

Ms DUMAZEL: We thought it would be useful if we identified why we are both here in terms of our respective roles. In my role, I have responsibility for three regions. Two of those are north-west region and south-west region. They are responsible for providing advice in terms of environmental assessment.

Mr RUTHERFORD: Within Environment, Energy and Science, we also lead an environmental water management function within New South Wales. Separate to the water group within the department that administers the Water Management Act, we hold and manage environmental water licences within the State and we also manage allocations made under water sharing plans for an environmental purpose. We also cooperate with the Commonwealth Environmental Water Holder in New South Wales and effectively deliver Commonwealth-held environmental water within State well. We cover that full function.

The CHAIR: In relation to environmental water flows, let us take, for example, the Macquarie Marshes. Is there going to be any impact from, for example, the Gin Gin Weir on the ability for those flows to reach the marshes, Mr Rutherford?

Mr RUTHERFORD: That will be part of the environmental assessment process. Ms Dumazel may want to talk to that process but, look, there is a lot of evidence in the scientific literature on the impacts of river regulation and regulation structures. The causes of degradation on rivers were largely the reasons for the establishment of the Water Act in the Commonwealth in 2007 and the basin plan and the sustainable levels of take that underpinned that plan. Those were underpinned by a wide body of scientific evidence. So river regulation structures in general will impact upon the site and downstream environments, but it is the role of the environmental assessment process to consider those impacts, benefits and mitigating actions that may be undertaken and weigh those issues up.

Ms DUMAZEL: What we do is we will review the environmental impact statement when it comes in. We will also review—there will be a biodiversity development assessment report. That will be developed. That report has to take into account the biodiversity assessment method. That is a very rigorous scientific method of assessing impact. In terms of biodiversity, we will also look at flooding and hydrology. When the environmental impact statement comes in, we will assess all impacts.

The CHAIR: You will assess all the impacts, say, with Wyangala, Mole River Dam, Dungowan Dam and Gin Gin Weir. But take Wyangala Dam wall raising project. We have just had the Minister in here saying that it is going ahead. It was The Nationals' commitment that they took to the election. It is going ahead before all these approvals are in place. So you assess the impacts, but what then?

Ms DUMAZEL: The way the Biodiversity Offsets Scheme works, there is a hierarchy. With projects there is the option—first, you look at trying to avoid or mitigate the impacts and, if that is not possible, you look at offsetting the impacts. Proponents have got a number of options that are available. One is where you might have, for example, some other sites that you might have some biodiversity stewardship agreements on. You could also buy credits on the market with local landholders. For example, we have got the Biodiversity Conservation Trust. To pay for your credits, you could actually pay the Biodiversity Conservation Trust to find those credits for you, or there are certain environmental conservation projects that you could agree to fund.

The way that the process works is that we will have a look at the environmental impact statement. We will assess that. We will have a look at the biodiversity development assessment report, which we call the BDAR. Then we will look to see how that is being done. Some credits will be required in terms of any impacts. Then there are those options in terms of offsetting.

The CHAIR: Mr Rutherford, given your experience in wetlands and environmental flows, you would be quite familiar with the lower Lachlan flood plains and wetlands.

Mr RUTHERFORD: Yes.

The CHAIR: We have heard from a number of witnesses about the potential for the Wyangala Dam wall raising to limit the flood events that currently make their way to the lower Lachlan. I have in fact flown over that part and have seen how extensive that is. I think there are potentially people who have suggested it may reduce

that flood event from one in four or five years to potentially one in 10 years or more. That will have a significant impact on the lower Lachlan flood plain and wetlands.

Mr RUTHERFORD: If that is the outcome, then that would be a significant impact on the ecological character of those flood plains, but we are yet to see the modelling of what that hydrologic impact will be. I understand that modelling is still being undertaken, but we would expect to see information on that sort of change to flooding regime through the environmental impact statement.

The CHAIR: For example, if the environmental impact statement did say, and the hydrological modelling suggested, that the flood events reduced from one in five years to one in 10 years or longer then it would have a significant impact. For example, some of the wetlands in the area—the Booligal Wetlands, the Cumbung swamp and others—would be severely impacted, and we may lose some. That could be an outcome, for example, in the environmental impact assessment.

Mr RUTHERFORD: We would expect the environmental impact assessment to set out that hydrologic impact, firstly, and then give an assessment of what the ecological impacts of that would be. Different parts of the ecosystem, if you like, will respond in different ways. Particularly in terminal floodplain wetland systems like the Cumbung swamp, for example, or the Macquarie Marshes in the Macquarie, you will find central core areas of those wetland systems that typically flood nearly every year or every year and will have a distinct plant community established around that, or in response to that. You will have higher levels of the floodplain that may typically only flood once every several years and will have, more typically, open woodland communities. The communities themselves differ greatly across the floodplain and their response to the changed flooding regime will differ. The EIS will need to assess that.

The CHAIR: If the EIS finds that some of these significant, potentially Ramsar-listed wetlands—and recognising that some of the significant swamps and wetlands in the lower Lachlan are not Ramsar listed but potentially should be; there is strong argument that they should be—if some of these water infrastructure projects impact them to the extent that some of them will die or we will lose some, how is that offset? Say, for example, losing a Ramsar-listed wetland?

Ms DUMAZEL: I think there are a couple of points here. Until we see the final environmental impact statement, I think that probably the best thing that I can say is that, because there are controlled actions under the Environmental Planning and Biodiversity Act 1999, and we have a bilateral arrangement with the Commonwealth, any matters of national environmental significance [MNES] get assessed using our biodiversity assessment methodology [BAM]. What we will do is we will assess those Commonwealth values using our BAM and then we will provide that information to our Planning and Assessment colleagues. Obviously the final approval of that will be a matter for the Commonwealth, but under the bilateral arrangement we will use our rigorous BAM method to consider those potential impacts.

The Hon. PENNY SHARPE: Can I just be clear—let us just use the Macquarie Marshes as an example, because they are Ramsar listed. Obviously the Commonwealth has an interest in that. It has got to deal with a lot of other signatories to the migratory bird protocols and all of those things. Will there be a role for the Commonwealth in some way to sign off on these projects? I understand the assessment will done in New South Wales under our methodology—

Ms DUMAZEL: Yes, but the approval—

The Hon. PENNY SHARPE: —but there is a sign-off at the Federal level that will be triggered—so there is that one. Are there any others?

Ms DUMAZEL: Primarily it will be—if it is triggered as a result of the MNES then we will assess it, but the final approval will be with the Commonwealth. But we will obviously take into consideration any impacts on wetlands, and that will be important. We will be looking for that in the environmental impact statement.

Mr RUTHERFORD: When a Ramsar site is listed, the obligation under the Ramsar Convention on Wetlands—to which a Commonwealth is a signatory, not New South Wales—is to maintain the ecological character of that wetland system. I would expect that we, and the Commonwealth, would be looking for an assessment of the impact of any changed hydrologic regime on the ecological character of those wetlands.

The CHAIR: We have had some witnesses who are concerned that these projects will impact the Murray-Darling Basin Plan, if you like. We have got the SDL. There is some concern that the additional water, if you like, has to come from somewhere. The Government has said that it will not come from environmental flows. Is that your understanding?

Mr RUTHERFORD: Ultimately that will be a matter for the Murray-Darling Basin Authority to assess. In my view, certainly a project like Wyangala, for example, will require changes to the water sharing plan.

The water sharing plan has very complex rules in it, if you like, including in relation to environmental water provisions. For example, on the translucent dam flows, if you like, for certain months of the year, when a certain amount of water has flowed into Wyangala Dam, a rule is triggered whereby a percentage of inflows are released to achieve a flow downstream in the Lachlan River. That complex rule, in itself, has dam level triggers built into it. Those rule will need to be adjusted, because with a larger dam those trigger levels will need to change.

That, as an example of a change to the water sharing plan, will need to be referred to the Commonwealth, and the Commonwealth will assess consistency with the Basin plan. Its test, as well as on achievement of the sustainable diversion limits over time, is on the impact of any changes on planned environmental water. The Murray-Darling Basin Authority and, ultimately, the Commonwealth Minister will need to be satisfied that the project does not impact on or, if you like, change the volume or effectiveness of planned environmental water.

The CHAIR: There is planned environmental water; I understand that a lot of the stakeholders have suggested that it is the unplanned or the natural flows, if you like—potentially the reduction in that could have a significant environmental impact. Mr Rutherford, from your experience, is that a genuine concern? Could that happen as a result of these projects?

Mr RUTHERFORD: That will be a matter for the Murray-Darling Basin Authority to assess. It will only accredit an amended plan if it is convinced that the planned environmental water is maintained.

The CHAIR: No, but I was talking about the unplanned. I understand there is planned environmental water that benefits wetlands and then there is the natural flows and the spillover, if you like: the natural flows that go all across the floodplain.

Mr RUTHERFORD: That groundwater, if you like, that natural flow of the river is defined as planned environmental water. It is part of the planned environmental water. Planned environmental water can come in a number of forms. It can be the translucent flow that I referred to, where there is a specific rule relating an inflow to an outflow under different circumstances. It can be the creation of an environmental water allocation in a storage that an environmental water manager can access, but it is also the residual flow in the river and in the water source after all water access that can be legally taken, is taken. The residual flow in the river is considered to be planned environmental water.

The CHAIR: Is there a risk, then, that there could be impacts on the amount of planned environmental water as a result of the potential changes to the water sharing plans? That could happen.

Mr RUTHERFORD: We have not seen the modelling of the impact of the increase in the storage at this point for Wyangala, for example, or for the impact of any of the other projects. We are yet to see that hydrologic modelling and yet to see the description of what those changes will be. But it is a risk—

The CHAIR: Right, so we do not know, but we have been told by the Minister today that the dam has been approved. What about—

Mr RUTHERFORD: Well the dam has not yet been approved. I understand there is a commitment to—

The CHAIR: It has been committed to.

Mr RUTHERFORD: There is an election commitment there. The approval will come through the Environmental Planning and Assessment Act 1979–EP&A Act—and the Commonwealth process.

The CHAIR: I want to go back to the potential offsets for the impacts downstream of, say, Wyangala or Gin Gin Weir—the offsets for the impact that these projects could have on those significant wetlands. Ms Dumazel, is the department section that you are leading doing work on what those offsets would be? Has work started on offsetting the impact on wetlands in the lower Lachlan?

Ms DUMAZEL: That work is done by WaterNSW and the assessors that they get in to do the work. We are providing support and advice on how the biodiversity assessment method operates and any questions around that. But until we actually see the environmental impact statement and how they have treated the biodiversity assessment method in their report, it is really hard to comment. When questions are posed we are supporting them in the understanding of the method, because it has to consider all of the values.

The CHAIR: So WaterNSW is leading that process to determine the downstream environmental impact of Wyangala.

Ms DUMAZEL: Yes.

Mr RUTHERFORD: As the proponent, it is their requirement to do that work. Under the offset scheme, there are assessors who are essentially accredited to apply the biodiversity offset method. There are particular

people who are trained in the application of that method and would need to be engaged by WaterNSW to do that work.

The CHAIR: Explain the biodiversity assessment method to me again. You tell them that there are different ways to reduce, mitigate or offset.

Ms DUMAZEL: Yes, the accredited assessors will apply the biodiversity assessment method.

The Hon. PENNY SHARPE: Just to clarify, they are consultants to WaterNSW. They are not public servants.

Ms DUMAZEL: They are consultants. No, they are not public servants. We have accredited assessors who we audit. There is a network and we provide them with advice on how they can apply the biodiversity assessment method. It is hard to comment until we see the environmental impact statement and we can see what the footprint is, because the report that those assessors will prepare will have quite a detailed calculation on the impact on different species and on water. That assessment report will then work out how many credits will be required for different species that might be impacted. The way that the whole biodiversity offset scheme works is that the first principle is that you try to avoid it. You look at what your footprint is—

The CHAIR: Yes, which is not going to happen.

Ms DUMAZEL: Then you look to mitigate it, so you think about some of the changes that you might do. If you cannot do that then the scheme provides a couple of options for offsetting. The way that the offsetting works is that—

The CHAIR: Yes, I am aware of the offsetting. So where is the other Great Cumbung Swamp, for example? If the environmental impact statement suggested that there was going to be a significant impact on this wetlands and a good portion of it would die, Mr Rutherford, is there a comparable area in the State to restore and protect? We could take Macquarie Marshes as well. I am very curious about this. The Minister has said that it is going ahead, so "minimise" is gone. Is there somewhere else? You are a wetlands expert, Mr Rutherford.

Mr RUTHERFORD: I would not profess to offer forward an alternate site or even to say that might be an acceptable scenario. An alternate scenario may be that some of the additional water security that is captured by the dam will result in additional or improved reliability for the environmental water licences that we hold. There is some benefit in that. There could be, for example, additional environmental water allocations or additional licences created as a consequence of the works. We do not know. When Chaffey Dam was increased in size recently, for example, an environmental water allocation was made as part of the mitigation for the dam impacts. There are a range of strategies that could be employed to mitigate those sorts of outcomes.

The CHAIR: And that is what you will be feeding in on in terms of what would be the necessary environmental water allocations to mitigate the impact.

Mr RUTHERFORD: In the secretary's environmental assessment requirements we would expect to see analysis looking at the hydrological impacts, looking for ecological impacts associated with that and looking at ways in which those impacts could be mitigated.

Ms DUMAZEL: Yes. When we get the environmental impact statement, we will provide advice to our Planning colleagues and will do an assessment against that. We will do an assessment of the EIS and that biodiversity development assessment report that I was talking about and will provide advice to our Planning colleagues on our thoughts around the impacts of the proposal that is before us.

The CHAIR: Is that a public document? Does the advice that you then provide to Planning become public?

Mr RUTHERFORD: Yes, I think it does go onto their website as a submission to the EIS.

The Hon. PENNY SHARPE: You were just talking about the Secretary's Environmental Assessment Requirements [SEARs]. At what point are they done? Are they done at the moment in preparation for the EIS, in terms of the issues that need to be covered, or are they done subsequently? I should know this, but it has been a long day and I have forgotten.

Mr RUTHERFORD: Yes, they are published beforehand and inform the preparation of the EIS.

The Hon. PENNY SHARPE: So your part of the department has a say in that and you have provided advice in relation to the SEARs at this point, even though they are not public yet. Or are they, for some projects?

Mr RUTHERFORD: My understanding is that they are for Wyangala, for example.

The Hon. PENNY SHARPE: For Wyangala, but not necessarily for all of them?

Mr RUTHERFORD: I am not sure about the others.

Ms DUMAZEL: I thought that we had SEARs for all three and they are publicly available. When the EIS comes in, we will look at the advice that we have requested in the SEARs and see whether that EIS and the BDAR actually meet that.

The Hon. PENNY SHARPE: It all marries up. That is great. I really only have one other question. WaterNSW within their costings for the three big projects has suggested that they have done some calculations in relation to biodiversity offsetting and what that might cost. Have you had any input into that, or would that be something that they have done on their own?

Ms DUMAZEL: That would have been done using the publicly available information, but we are supporting them and providing them some advice on how to navigate the scheme.

The Hon. PENNY SHARPE: They will have to have a fairly clear idea within the EIS and the business case of what the possible biodiversity offsets would be.

Ms DUMAZEL: Yes.

The Hon. PENNY SHARPE: But they do not yet have that.

Ms DUMAZEL: Yes.

The Hon. PENNY SHARPE: But they did indicate that they have taken into account in the costings some level—it feels very back-of-the-envelope to me and I am just trying to get a handle on how much input you would have into that.

Ms DUMAZEL: Not so much. When you have the full footprint then they will start making choices around offsets. We will certainly support them in the opportunities around developing stewardship agreements or—especially with the Biodiversity Conservation Trust—around those kinds of opportunities for them to be able to source the credits. But that is a process that they are undertaking and we are on hand to support them through that process.

The Hon. PENNY SHARPE: In relation to the Ramsar-listed, obviously we talk a lot about the Macquarie Marshes but it has been suggested to us that a few other of those that wetlands probably meet the criteria in relation to listing and further investigation—I know that there has not been anything listed in any way for quite a while—in the assessment in the work that you will do, with the Great Cumbung Swamp for others that perhaps could be listed, are these projects potentially problematic around causing harm, which would mean that they would no longer really be able to meet the criteria? For instance, is there any assessment of that in the process? Are you involved in that?

Mr RUTHERFORD: Firstly, it is usually typically the landholder who will propose a site for listing. In New South Wales most of the sites are Government-owned sites, if you like, but there are a number of privately owned sites as well. It is up to the landholder to put forward a listing and do the assessment against the criteria. I guess that assessment would occur at the time of the proposal for listing.

The Hon. PENNY SHARPE: But if they are not on the list now, there is nothing that is triggered through this process in terms of anything in the works.

Mr RUTHERFORD: There are no current nominations that are relevant to any of these sites.

The Hon. PENNY SHARPE: No. That is great.

Mr RUTHERFORD: As far as I understand.

The Hon. PENNY SHARPE: No. I do not know of any new ones, either—which is a pity. I have a list I could give to you but I won't.

The Hon. MARK PEARSON: I have just a couple of short questions. Who or what applies for an environment water licence?

Mr RUTHERFORD: Anybody can acquire a water access licence. You do not have to hold land to own a water access licence. That was a reform that was introduced with the Water Management Act 2000. In around 2005 the New South Wales Government started acquiring water access licences, so after the commencement of the first water sharing plans in New South Wales the Minister for the environment at the time was of the view that more needed to be done to improve environmental outcomes in rivers and committed to purchasing water licences and to dedicating the use of those licenses to the environment. That was under a program at the time called New South Wales Riverbank and it committed $100-odd million to that purpose—$105 million.

The Commonwealth subsequently, before it introduced its Commonwealth Water Act and before the existence of the Commonwealth environmental water holder, also gave us money towards that program: in the end about $70-odd million or $80-odd million. The process is simply once you hold a licence you can nominate its use to be for an environmental purpose and that is done under a section of the Water Management Act. Once you do that, you still need to comply with all the requirements that other licence holders do, of having appropriate approvals in place to use the water at a particular site.

The Hon. MARK PEARSON: Okay. My understanding is that you actually analyse the reports that come in from various experts. If we are looking at these proposals, for example, where various reports are done on environmental impact, et cetera, and your job is to analyse them and put it together as an advisory document. Is that correct?

Mr RUTHERFORD: Yes, that is correct. We provide advice to the planning section of our department—planning and assessment.

The Hon. MARK PEARSON: Right. Do you recommend any other assessment or analysis to be done if you glean that it is not satisfactory or that there is an area that needs to be elucidated upon or explored more?

Mr RUTHERFORD: Look, in my view, having been a regional director for a while and having overseen that planning function for a while, that is quite common that we will receive a draft document and we will advise planning of where we think more work needs to be done.

The Hon. MARK PEARSON: In terms of the chain of advisory documents or advice to the Minister or to the secretary, where are you in that chain? Are you the authors of virtually the final document of advice?

Ms DUMAZEL: No. That is our planning colleagues. They will provide the final advice to the Minister for Planning and Public Spaces, who has the responsibility for the Environmental Planning and Assessment Act. So what we will do is provide our advice to our planning colleagues. They might also come back and seek some further advice from us, particularly if there are conditions that might be in place. I suppose the other thing too is that we will look at the environmental impact statements. We will look at the biodiversity development assessment report. We will also look at any kind of submissions that might come in as a result of the environmental impact statement consultation process.

We will provide that advice to our planning colleagues and they will come back to us for clarification, or if they come up with some conditions that they want us to have a look at, but ultimately it is the responsibility of the Minister for Planning and Public Spaces.

The Hon. MARK PEARSON: There were reports in the media that sometimes there has been undue interference or influence on officers in Government departments in New South Wales that interfere with the actual report they are putting together and changes what that advice is going to be. Have either of you ever experienced that?

Ms DUMAZEL: Look, I think the great thing about—this is what I love about the biodiversity assessment method, yeah? It really looks in terms of—it has got quite a lot of scientific rigour. It has been peer reviewed. It is a very vigorous process. What we do is we have kind of a very clear mandate. We look at that and we consider an environmental impact statement against those criteria. From that perspective we have got fairly clear guidelines that we need to work within and provide our advice against those.

The Hon. MARK PEARSON: So you have never really experienced any of those concerns that were reported?

Ms DUMAZEL: No.

The Hon. CATHERINE CUSACK: I have just a couple of quick questions. Is there a provision in relation to environmentally sensitive land that cannot be offset? Is that a conclusion that your organisation is capable of making or is allowed to make?

Ms DUMAZEL: So, what will happen is that we will look at it. Where the offsets are difficult to obtain, there are a couple of options, yeah? If the proponent cannot find—

The CHAIR: Unlike the Great Cumbung Swamp.

The Hon. CATHERINE CUSACK: Sorry, I am not actually asking that. It is not so much they cannot obtain offsets; it is that the land is too valuable to be destroyed. You look bewildered.

The Hon. TREVOR KHAN: Intrinsically unique.

The CHAIR: How much is Macquarie Marshes worth?

The Hon. CATHERINE CUSACK: You look absolutely bewildered by that suggestion. Is it possible that in a landscape there is very environmentally sensitive land?

Mr RUTHERFORD: There is, for example, a category of entities, if you like. For example, critically endangered ecological communities that are regarded as having the potential, if they are damaged, to have a serious and irreversible impact on the existence of those entities. If one of those entities is being impacted by a project, specific consideration has to be given as to the extent of that impact on whether that impact will cause the loss of that entity, for example.

The Hon. CATHERINE CUSACK: Is there a possible outcome for this process that says, no, this land is not suitable for environmental offsets because it just is irreplaceable? Is that a potential outcome of the process?

Ms DUMAZEL: I cannot comment on that because until I see the environmental impact statement and I understand the report or I see the report, I am not—

The Hon. CATHERINE CUSACK: Maybe I can ask it differently. Has that ever happened?

Ms DUMAZEL: I do not have that information on me. I know, as Mr Rutherford was saying before, where it is critically endangered ecological communities, that will have a different kind of—it will need to have a different part in the hierarchy when we are kind of assessing it.

The Hon. CATHERINE CUSACK: Yes, and potentially the level of offset might be greater. I am actually not asking—

Mr RUTHERFORD: Under the Biodiversity Offsets Scheme, for example, under part 4 matters essentially being assessed through local government, local developments if you like, if it is determined that a development will have a serious and irreversible impact, then that development must be refused. But under State significant infrastructure the Minister has the discretion to consider or to weigh up and balance, if you like, the full range of benefits and costs that the project can have and make a determination.

The Hon. CATHERINE CUSACK: Just to clarify, that is the Minister for Planning and Public Spaces. Am I correct?

Mr RUTHERFORD: Yes.

Ms DUMAZEL: Yes, it is the planning Minister.

The Hon. CATHERINE CUSACK: And the advice that goes to the planning Minister—is that transparent or is that confidential advice?

Mr RUTHERFORD: I think the advice that goes to the Minister would be public and published by the Department of Planning.

Ms DUMAZEL: Yes. If I could just add—for example, when I was talking before about the different kinds of pathways depending on the impact and what kind of category that species is in terms of threatened species, what we do is look at, "Well, if it cannot be offset, what are the options?" In the offsetting regime, you find something equivalent that you can use or you invest in the conservation actions. There is, kind of, a menu of choices. And so, it really depends on the individual or community. So, where it is really of high biodiversity value and is critically endangered, the way that we look at that is very different to the way we might look at—

The Hon. CATHERINE CUSACK: So, the Act has changed so that we do not have local categories of endangered species anymore?

Ms DUMAZEL: We are in line with the Commonwealth listing and also the way that the International Union for Conservation of Nature looks at it, as well.

The Hon. CATHERINE CUSACK: Yes. I understand the position, but—

Ms DUMAZEL: We are really trying to be consistent with those kinds of international approaches.

The Hon. CATHERINE CUSACK: I hear that. It is just that we have been talking a lot of evidence that has been hard to listen to about what has happened to platypus during the drought and in terms of the management. They have had a really tough time. But, because we do not have any more categories of local endangered populations, I do not think the platypus is endangered in New South Wales, is it? I do not think it is on the list, anyway.

Ms DUMAZEL: No, it is not.

Mr RUTHERFORD: I think there has been a nomination submitted to the Commonwealth scientific committee for its listing as vulnerable.

The CHAIR: There has.

The Hon. TREVOR KHAN: Very recently.

The Hon. CATHERINE CUSACK: Oh, okay. So, they have become vulnerable?

Mr RUTHERFORD: That is not yet determined.

The Hon. CATHERINE CUSACK: That is so disappointing. Anyway, would that factor in or not factor in? The fact that locally it is maybe critically endangered is not something that can necessarily be considered now. Am I correct in that?

Ms DUMAZEL: We will consider the impact on all species, including the platypus.

The Hon. CATHERINE CUSACK: But on the basis of its local—

Ms DUMAZEL: On the basis of how the platypus is within that area. That is part of the process of assessing the impacts.

The Hon. CATHERINE CUSACK: For those surviving platypus that are there, if they are going to be wiped out by the project, how would you offset that?

Ms DUMAZEL: Well, we would expect that the EIS would describe any mitigation measures where there might be an impact on the platypus. That would be one of the things that we would be looking for.

The CHAIR: We have had a fair few scientists give evidence to this Committee about the impact of the dams downstream that I think Ms Cusack is referring to. We have had Professor Jamie Pittock, for example, from the Australian National University, who has given us a very good submission. Professor Richard Kingsford was really concerned about the impact of the Gin Gin Weir on Macquarie Marshes. Professor Jamie Pittock suggests that the environmental harm from Wyangala Dam Wall Raising would impact on potentially 470,000 hectares of freshwater ecosystems.

He is predicting that the direct impacts would be extremely negative for potential threatened species and migratory birds. He lists a whole lot if you look at his submission, and I am sure you could. What price, therefore, would be required for offsets under the Biodiversity Conservation Act for this project? You are talking about mitigation and other things. But at some point what you are suggesting—if it cannot be mitigated, the offset actually is a price. What is the price? How do you determine that? Are you starting to price it?

Mr RUTHERFORD: It is not our role to price it, if you like. But generally, in response to what you just said, the 470,000-odd hectares is the scale of wetlands in the lower Lachlan system. So, that is the potential area that may be impacted through the loss of flooding or a change to the flooding regime downstream of the dam. Not all of that area will be fully or severely impacted, but it is the role of the assessment to figure out what that change in the hydrological regime will be and what the impacts will be.

Certainly, the existence of the environmental water management function is a mitigation to historic river regulation. It is a function of Government that only commenced post-recognition that river regulation has impacted on rivers and wetlands. Those impacts are the reason, as I said, for the Basin Plan. They are the reasons for governments buying water back and recovering water for the environment. It is the reason we manage water for the environment—to mitigate the impacts of that river regulation and hopefully to restore those values and improve those values downstream of dams at the moment.

The CHAIR: You just said you do not determine. Who determines the cost of what is lost? Say certain wetlands will be lost and that is determined. Who determines that cost?

Ms DUMAZEL: The proponent will determine that based on the assessment report that is provided.

The CHAIR: The proponent being WaterNSW?

Ms DUMAZEL: WaterNSW. As part of the development of that biodiversity development assessment report, we would expect that to outline the intention to offset the impacts. As part of that, there will need to be some thinking about where those offsets are going to be sourced and how they are going to be sourced. There are a couple of different options. There is the purchasing of credits or the payment of an amount to the Biodiversity Conservation Trust to take care of the impacts.

The CHAIR: Okay. We have heard about the 100,000 pairs of straw-necked ibis, which are a threatened migratory species, Mr Rutherford?

Mr RUTHERFORD: Migratory birds, yes, or colonial nesting waterbirds, if you like.

The CHAIR: Yes, and we have certain obligations for those birds under particular treaties?

Mr RUTHERFORD: Yes. So, the Cumbung is one of a handful of—probably five or six—key waterbird breeding sites. Not just the Cumbung—the lower Lachlan, if you like. So, the Booligal wetlands, the Cumbung and the Lachlan swamps are a recognised area of congregation and breeding for colonial nesting waterbirds—those waterbirds that nest in large colonies. It is an important site for them.

The CHAIR: The nature conservancy that manages or owns that property is extremely worried about the impact on, for example, those straw-necked ibises. When you talk about offsetting, if there is an impact on the Great Cumbung Swamp, we have heard from The Nature Conservancy Australia's Professor Jamie Pittock who says it will impact the Great Cumbung Swamp to the point that the straw-necked ibises might not get the flooding events that they need to breed. Firstly, Mr Rutherford, would you agree that might be the situation?

Mr RUTHERFORD: Sorry, I missed that.

The CHAIR: The 100,000 pairs of straw-necked ibises needing certain flood events to breed, that the Wyangala dam wall raising project may have adverse impacts on those flooding events.

The Hon. TREVOR KHAN: You are starting to asking questions —

Mr RUTHERFORD: That would need to be assessed.

The Hon. TREVOR KHAN: He can answer them.

The CHAIR: Yes, he can.

The Hon. TREVOR KHAN: I think you start to impair the later decisions he will have to make if you ask questions that, in a sense, ask him to pre-judge an outcome.

Mr RUTHERFORD: All I would say is that Cumbung is a recognised area for waterbirds and migratory waterbirds. The straw-necked ibis is not actually threatened and they are not a migratory bird either, but they are an important species that nests in large numbers in that area. They perform significant ecosystem functions, if you like, with pest control. Their function there is recognised.

The CHAIR: My final question is, therefore, in offsetting the Great Cumberland Swamp, for example, what happens with the straw-necked ibises that nests in that area if that is destroyed by the Wyangala dam?

Mr RUTHERFORD: That is a presumption we are yet to understand.

The CHAIR: But where do they go? They do not go to just the offset areas. They will come back to that wetland, will they not?

Ms DUMAZEL: From my perspective, it is really important for us to see the environmental impact statement. It will be important for us to look at the biodiversity development assessment report. We will consider it rigorously against our biodiversity assessment method. We will make sure the conditions that were set in terms of the SEARs are looked at. We will be looking at it in terms of the requirements under the MNES from the Commonwealth's Environment Protection and Biodiversity Conservation Act. We will provide our advice to our planning colleagues and we will support them in terms of any advice that they provide to the Minister for planning. Until we actually see the environmental impact statements for these projects, it is just too difficult to comment.

Mr RUTHERFORD: They are a very mobile species. They will go to other areas. But the potential impact that you are describing is an important matter to be considered under the EIS and the impact that would have on the success and continuation of that species and waterbirds generally.

The Hon. CATHERINE CUSACK: The reason this has been raised with us by the scientists was that they are concerned that the breeding is in decline and that that is going to have a big impact on farmers all across Australia. This is not about the Lachlan Valley. This is about the most important breeding ground for these birds that manage pests for free for farmers across the whole of Australia. It was put to us that those costs are not being included in the project cost.

Mr RUTHERFORD: Well, they are certainly potential impacts that should be considered through the environmental assessment.

The Hon. CATHERINE CUSACK: How would this costs be included, or are they not included? We have heard stories of them mowing down locust plagues and all of that great work they are for doing for free. How is that calculated or included in the project cost that is likely to reduce their numbers?

Mr RUTHERFORD: It is a matter for WaterNSW.

Ms DUMAZEL: What I will say is that we will investigate the EIS. We will also review any of the submissions the come in as a result of the EIS, so that might consider environmental impacts. We will take all of that into account when we are providing our advice to our planning and assessment colleagues.

The CHAIR: I believe we reached the end of our questions. Thank you very much for your flexibility to come in early, and thank you for the ongoing work you do for the environment and New South Wales. That concludes today's hearing.

Mr RUTHERFORD: Thank you.

Ms DUMAZEL: Thank you.

(The witnesses withdrew.)

The Committee adjourned at 16:35.