



LEGISLATIVE ASSEMBLY FOR THE AUSTRALIAN CAPITAL TERRITORY

STANDING COMMITTEE ON PUBLIC ACCOUNTS

(Reference: [Inquiry into Auditor-General's report No 6 of 2015: Bulk water alliance](#))

Members:

MR B SMYTH (Chair)
MS J BURCH (Deputy Chair)
MS N LAWDER
MR J HINDER

TRANSCRIPT OF EVIDENCE

CANBERRA

THURSDAY, 31 MARCH 2016

Secretary to the committee:
Dr A Cullen (Ph: 620 50142)

By authority of the Legislative Assembly for the Australian Capital Territory

Submissions, answers to questions on notice and other documents, including requests for clarification of the transcript of evidence, relevant to this inquiry that have been authorised for publication by the committee may be obtained from the Legislative Assembly website.

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Amended 20 May 2013

The committee met at 9.32 am.

BARR, MR ANDREW, Chief Minister, Treasurer, Minister for Economic Development, Minister for Tourism and Events and Minister for Urban Renewal

NICOL, MR DAVID, Under Treasurer, Chief Minister, Treasury and Economic Development Directorate

BULLESS, MR NEIL, Executive Director, Expenditure Review Division, Chief Minister, Treasury and Economic Development Directorate

THE CHAIR: Good morning, all and welcome to the inquiry of the Standing Committee on Public Accounts into the Auditor-General's report No 6 of 2015, the Bulk Water Alliance. In accordance with the committee's resolution of appointment, all reports of the Auditor-General stand referred to the public accounts committee after presentation.

The committee has established procedures for its examination of the referred Auditor-General's reports. The committee considered Auditor-General's report No 6 of 2015 in accordance with these procedures and resolved to further inquire into the audit report. The terms of reference for this inquiry are the information contained within the report.

As part of the proceedings this morning, the committee will hear firstly from the Treasurer followed by witnesses from Icon Water Ltd. The hearing will conclude at approximately 12 noon and a short break is scheduled at 10.30.

Good morning, Chief Minister and Treasurer. On behalf of the committee I would like to thank you and your officials for attending today. I remind witnesses of the protection obligations afforded by parliamentary privilege and draw your attention to the pink coloured privilege statement before you on the table. Could you please confirm for the record that you understand the privilege implications of the statement?

Mr Barr: Yes.

THE CHAIR: So noted. Thank you very much. I also remind witnesses that the proceedings are being recorded by Hansard for transcription purposes as well as being webstreamed and broadcast. The Chief Minister has indicated that he does not wish to make an opening statement. So we will just proceed to questions, members.

Chief Minister, in the overall conclusions on page 3 of the report, the auditor makes some interesting conclusions, particularly about the cost overrun and the time overrun. To your knowledge, have the issues of how the overruns occurred, both in costs and time, been resolved to your satisfaction?

Mr Barr: Yes. The government responded to the auditor's overall conclusions in the government response to the report. That was tabled in the Assembly. The government welcomed the Auditor-General's report, which accepted that the alliance model selected to manage the three major water security projects was appropriate and effective, and that the process conformed with best practice guidance.

The audit report did illustrate the extent of the challenges and the inherent risks associated with the planning, preparation, design and construction of what I think we would all acknowledge are major infrastructure projects and that major projects can involve certain risks beyond the control of alliance partners.

The government has noted that there were cost overruns beyond the control of the project management for the enlarged Cotter Dam project, which included, as I think we have canvassed extensively over the last decade, the impact of significant periods of bad weather, three flood events and the discovery of a geological fault, which all contributed to delays and increased costs.

It is worth noting—again, this is on the public record—that the other two projects were delivered under budget and that the overall outcome is that the community now has a much improved water storage capacity that provides security against future climate change impacts and avoids the community having to resort to severe water restrictions during periods of prolonged drought.

The detailed findings and conclusions of the audit report in the main do outline that the day-to-day management of the dam construction through the alliance mechanism was appropriate. It acknowledged that all of the project completed by the Bulk Water Alliance did provide lessons to the alliance partners and that the now Icon Water would take these into consideration in relation to future projects.

THE CHAIR: In regard to the information given to cabinet about, particularly, the geological fault, when did cabinet first become aware of that and who provided that advice?

Mr Barr: I will take that on notice.

THE CHAIR: All right. You have no memory of how—

Mr Barr: Not to the exact dates and information that you are obviously seeking. So I will take that on notice.

THE CHAIR: All right, on the exact dates, but as it unfolded, what is your memory of how it was brought to the—

Mr Barr: I will take that on notice.

THE CHAIR: You are going to take your memory on notice?

Mr Barr: No, I will take your question on notice.

THE CHAIR: Perhaps Mr Nicol or Mr Bulless will. When was it first brought to Treasury's attention—

Mr Barr: Neither official—certainly Mr Nicol—was in the employ of ACT Treasury at that time.

THE CHAIR: Okay. Mr Bulless was.

Mr Barr: We will take that on notice.

THE CHAIR: So you are going to take on notice when Treasury found out?

Mr Barr: Yes.

THE CHAIR: So nobody here can tell us?

Mr Barr: I will take that on notice. I will get that information.

THE CHAIR: You do not want to consult with your officials to see if they—

Mr Barr: I will take that on notice.

MS BURCH: I think they have answered. They are going to take it on notice.

THE CHAIR: No, they have not answered.

MS BURCH: They are going to take it on notice.

THE CHAIR: I do not need your advice, Ms Burch.

MS BURCH: It is not advice; it is just a commentary, Mr Smyth.

Mr Barr: I will take that on notice.

MS BURCH: We could argy bargy for 10 minutes; I do not think you are going to get anywhere.

THE CHAIR: What was the cost of the geological fault to the whole project?

Mr Barr: We will take that on notice.

THE CHAIR: What was the cost of the three weather events to the project?

Mr Barr: We will take that on notice and provide that information to the committee.

THE CHAIR: So you are not prepared to answer questions?

Mr Barr: No, I am prepared to answer all of the questions. I will just get advice on each of those issues that you have raised and give the committee an accurate answer.

THE CHAIR: All right. The original cost released by then Chief Minister Stanhope was \$145 million. Can anyone tell us what process led to it going from \$145 million to the \$363 million then the final cost of \$410 million?

Mr Barr: Yes, certainly that has been outlined publicly. We will get the information that you need, which is obviously detailed, to the committee. It is already on the public record.

THE CHAIR: Yes, that is okay. But that is not necessarily before the committee. I will wait. Ms Burch, a new question.

MS BURCH: Just on those costs, if I look on page 15 of the audit report, it goes to some length about the communication between the then Chief Minister, Deputy Chief Minister and the ACTEW board. From memory, I think the public discussion was about was that information flow adequate for the then Chief Minister and Deputy Chief Minister to really be across this and then your obligation to communicate that back to the public? So a question for me, rather than the days and the dates is: was the flow adequate? Did you get the information you needed from the board and, in turn, pass that through to the community?

Mr Barr: I cannot speak for former Chief Minister or the former Deputy Chief Minister other than to reiterate to the committee what they have already said on the public record during the period in question. So I do not have anything to add to what they have said, and it would be best to direct questions around their satisfaction, beyond what they have already said, to them. I cannot speak for them in that context. I was not a shareholder until—

MS BURCH: And this is some of the difficulty. We are going back to 2009.

Mr Barr: Yes. I was not a shareholder until 2011. So I am not in a position to comment on what happened in the period before that other than to refer the committee to what has already been said on the public record and in the numerous inquiries, estimates hearings and questions over the past seven years.

MS BURCH: Yes, and I think they have gone to great lengths to explain the change over time of the ultimate figure. Just building up on Mr Smyth's question around various costs and cost impacts on the final cost of it, I note that in a letter received by the committee on 15 January you said that you have recognised there were cost overruns, but they were beyond the control of project management, that is, we accept that there are overruns, but they are beyond the control of the project management.

Mr Barr: All been extensively canvassed.

MS BURCH: What, then, can you do?

Mr Barr: Yes.

MS BURCH: Yes.

Mr Barr: It has all been extensively canvassed, discussed, debated over the past seven years.

MS BURCH: Yes.

Mr Barr: So I cannot add—I have got nothing new to add today to what has already been said.

MS BURCH: Yes. The other thing that I think goes to the report is that it made some overall conclusions. There were no recommendations as such in the report.

Mr Barr: Yes.

MS BURCH: But part of that overall conclusion is that the alliance was not an unreasonable vehicle to proceed with this.

Mr Barr: That is correct. That is what the auditor has concluded. And to the extent that there will ever be another dam built in any of our lifetimes—

MS BURCH: That was going to be my question: would a government consider an alliance of similar sorts for other major projects?

Mr Barr: I do not know how much construction technology will have changed in 100 years when it may be necessary to undertake a project like this again for the city. One thing I can say with a degree of confidence is that there will not be any new dams constructed—

MS BURCH: Because this does its job for many decades to come.

Mr Barr: Yes, this is a generational project. So I do not think there are any new dams on the horizon for the ACT, I would imagine, in any of our lifetimes, subject to the usual caveats that some people can live for a very long time.

MS BURCH: Apparently 125 nowadays.

THE CHAIR: Are you done?

MS BURCH: I am done.

THE CHAIR: Ms Lawder.

MS LAWDER: I would like to ask a question, but in the context of this project as a large infrastructure project rather than simply—not “simply” but—as a dam. In that Auditor-General’s report there is obviously a lot of discussion about cost increases. I am talking specifically about page 135 of the Auditor-General’s report where it is about ACTEW’s communication of the cost and timing of the project with the then Chief Minister, the then Deputy Chief Minister and the broader community. See the bit that I mean?

Mr Barr: The key finding or the conclusion?

MS LAWDER: Both. Taking on board your comments so far this morning that you were not the shareholder and, indeed, Mr Nicol was not in that position, how would you stop these types of issues relating to the information provided to the community and the Legislative Assembly from occurring in future large infrastructure projects? What lessons have you learned and what processes may have been put in place to avoid something similar happening?

Mr Barr: There have been changes in relation to Icon Water, and there was a subsequent review. So ACTEW no longer exists and Icon Water has been established. In relation to the second part of your question, I think the auditor was clear that the time frame between the then shareholders becoming aware of the board's deliberations and that being made public was, in fact, very short, so I do not think there are any concerns or any lessons to be learned there. As soon as that information was confirmed at a board level it was made publicly available. We certainly take on board the commentary of the Auditor-General, and I refer you to the government's response to the Auditor-General's report in terms of the broader issues.

MS LAWDER: Do you think these are issues that would be unique to this type of alliance or could they happen in something like your PPPs that you have got for a couple of projects?

Mr Barr: The commentary in relation to this from the Auditor-General refers to the context of this project and this alliancing structure.

MS LAWDER: The second part of my question was: do you think they could also apply to other PPP-type projects?

Mr Barr: I will reflect on that question, yes.

MR HINDER: My reading of the report is that part of the increased time and cost related to undetected geological faults at the base of the abutment of the dam, and then there were some other issues about the slower rate of progress and excavation and clean-up and things like that. These seem to me things that are just a risk associated with any sort of construction. Would that be a fair summary of what happens?

Mr Barr: Yes, I would think so, although you may wish to explore some of those more project-specific issues with Icon when they appear. They may be able to give you more insight into the finer detail of the specific issues associated with this specific construction.

MR HINDER: Yes. Obviously, as to the whole issue about the alliance contracting, the auditor outlined the fact that it was about ACTEW staff being involved during the design and construction because, ultimately, they were the ones who were going to have to maintain it. The way the thing was constructed, it obviously would assist if they had some input at that stage in their ability to do that in an efficient manner going forward for time to come.

There also appeared to be—forgive me if I am new to this—almost additional projects about preparation for mitigation for flood events and things like that. The figure I had was a final target overrun cost of around \$311 million rather than the \$150 million that the chairman was talking about, before the project started. Would those additional works have added to that cost overrun in some way?

Mr Barr: The detailed reconciliation of the different elements of contribution to the final cost I think is publicly available. I do not have that in front of me right now, but I think that is a reasonable question. If it has not already been provided we can certainly

make that information available, the contributing factors to each. There were, as I recall, insurance negotiations around what could be recovered and those processes finalised and there was a netted off final cost. All of that information is publicly available, and we will provide that to the committee.

MR HINDER: It appeared to me to be something that had not been in the original scope but was sensible to do whilst the big Tonkas were on site.

Mr Barr: To do whilst on site, yes.

THE CHAIR: Chief Minister, I appreciate you were not a shareholder during the initial period of this, but you were certainly in cabinet. When did cabinet or when did you as a minister who had a vote in cabinet become aware of the geological problems?

Mr Barr: I will need to take that on notice for the exact date as to when that was brought to cabinet.

THE CHAIR: As a shareholder now, what arrangements have been put in place with now Icon about communications with the shareholders through cabinet, and what has significantly changed to avoid these issues into the future?

Mr Barr: Certainly there is a more frequent set of meetings, scheduled meetings, between shareholders and both the board chair and deputy chair and then with the board itself. There is information available in relation to board papers and the like. It is obviously quite a long and detailed response that I will provide. Again, I think it has already been publicly provided, but I will provide that in writing to the committee.

THE CHAIR: What, if anything, has now changed in regard to major projects as to what validation Treasury undertakes, for instance, for an upcoming train project, perhaps, so that this sort of debacle does not happen again?

Mr Barr: I would not characterise it in those terms; they are your words, not mine. Yes, the government has put in place a range of new approaches. I have outlined those previously, and I will provide that information to the committee.

THE CHAIR: What work does the Treasury do to validate numbers that are presented to them on projects?

Mr Barr: By Icon Water?

THE CHAIR: By anyone. Specifically by Icon but, as a general approach to the delivery of infrastructure, what validation do we do with the numbers that are presented?

Mr Barr: Mr Nicol can help with that.

Mr Nicol: We analyse all proposals put to the government, particularly coming from a minister to cabinet, to budget cabinet. We look at the costs of those projects. We see if they are reasonable. The effort we put in, I think, depends on our assessment of the

risk and scale of the project. So, for example, the light rail project that you referred to, along with capital metro, we worked cooperatively, hired independent expert costing advice and went through several rounds of costings to provide the best information we could to government on the likely cost of the project. That, in the case of capital metro, took a deal of time, and I expect that costing to be a relatively robust costing from everything I have seen.

As to other projects, we will do in-house analysis. We will look at benchmarking with other states and other jurisdictions and other projects. We will do zero-based costing on projects. We will engage in discussions and negotiations in some senses with proposing agencies to test the assumptions they have used. Some costings have different components. Some are the price of materials and labour, which is based on information that we gain from the market and the intelligence we have. Some are based on assumptions about demand and take-up, and we try and test those. So we generally go through a very rigorous process for those sorts of internally generated proposals from government ministers.

We also get proposals put to government from outside. For example, in an unsolicited bid, if the government wishes to consider those sorts of proposals and it goes through the processes that the government has established, we will, at first, try to assess the costs internally to government. We may seek to engage with those proponents to test assumptions that they have made. But obviously that is a little bit of a different circumstance because the proponents are not internal to government and they have their own commercial interests and there might be commercial interests at stake.

Generally I personally place a very high degree of importance on providing the government with the best costing information we can give them before they make decisions on things. That is a very important part of the job of the Treasury.

THE CHAIR: Pardon me for not recalling, but when did you take up the position of Under Treasurer?

Mr Nicol: 8 April 2013.

THE CHAIR: Perhaps you might have to take this on notice given that date: as the costs of the Cotter Dam construction increased, what reviews did Treasury undertake internally against the ever-growing cost?

Mr Nicol: I would have to take that on notice, because it pre-dates me largely.

THE CHAIR: Does Mr Bulless know? Were reviews done?

Mr Bulless: Sorry?

THE CHAIR: As the cost increased, what reviews did Treasury undertake? Were there documents produced?

Mr Bulless: During the course of the life of the project, which commenced in the mid-2000s, so about 2005, Treasury relied on the advice from ACTEW, which was using experts to advise them. So, for example, in about 2007, 2008, they employed an

independent estimator to review the costings of 2005 and 2007. They provided that advice. That was based on an expert in terms of the costs and materials that were scoped into the project. As the project got to the point of around 2009, they also employed I think it was Deloitte to do an independent review of the costings as that figure of \$363 million became the final figure for the TOC.

As pointed out before, there was no firm figure until the TOC was determined, and that was in mid-2009. So the figures that pre-dated that were estimates. In looking at some of the advice from Mr Sullivan and other people during the course of the lead-up to 2009 during various hearings and other committee meetings, he made it very clear that there were a range of factors that would influence that TOC.

As Mr Hays has pointed out, the ICRC also reviewed the cost estimates, and I think they flagged the potential for a 30 per cent variation. I think we also need to recognise that during the mid-2000s, up to the point when the TOC was determined in 2009, we had been through a major mining boom. In fact, I think it was characterised as the largest infrastructure boom since the gold rush. That was driving up costs very significantly, particularly in relation to things like steel and concrete and fuel. So I think against that background, Treasury's role is to actually analyse the advice that is given to them. We are not engineers. We are not dam constructors. We rely on advice provided to us by the experts. The fact that ACTEW did an alliance arrangement reflected the fact that this is something they had not done before. They brought in partners to work with them to construct the dam.

As Mr Nicol pointed out, there was a large amount of advice provided by ACTEW which we reviewed, but, as we said, our view is to look at this and ask is it prudent, is it pragmatic, is it supported by experts? Overwhelmingly, ACTEW was being advised by experts in building dams.

THE CHAIR: ACTEW used an independent expert which validated their numbers, but, in hindsight, is it not unreasonable on a project this large for the government as the end recipient to have its own expert to look at those numbers?

Mr Bulless: One might argue that we did have that because we had the ACTEW Corporation, which was running our water projects and our water supply. They are the experts. The territory has set up a regime where it is a territory-owned corporation. It has legislation applying both at the territory level and the commonwealth as a company. The territory appoints a board of experts who then appoint a managing director who in turn appoints senior management. I do not think it is Treasury's role to come over the top of that and say they are wrong. We rely on the expertise of those various levels of governance and accountability and expertise to then advise us and then we, in turn, advise the government.

THE CHAIR: In comparison, say, to the proposal for Manuka Oval, would you accept their expert's advice or would you get your own experts to look at it? What would be the normal process there?

Mr Nicol: I think that is a partly hypothetical question, chair, but in a theoretical sense, rather than picking particular examples, when we are looking at the cost proposed by someone, we look at the evidence, as Mr Bulless has said, as to what

process is gone through to determine those costs. If that is a robust process then in certain situations I would accept the advice of those experts. If the costs were significantly large and I had questions about the expertise or the perspective of the experts providing advice, I may recommend that a further costing advice is sought, but it really depends on the circumstances and the evidence provided.

As has been noted, I was not around when this evidence was provided to government. But, from my reviewing of the Auditor-General's report and what I know of the project, it appears as though substantial experts in the field were gathered. A significant amount of work was done in terms of preparing the costings for this exercise. It is always difficult with hindsight to say what a government might have done differently, especially if you were not there. But looking back, my personal judgment is that it was reasonable to rely on the expertise that was presented through Icon for the costs of this project.

THE CHAIR: In relation to capital metro or Manuka Oval, how do you now go about determining whether or not you have got appropriate expertise to validate those numbers?

Mr Nicol: In the case of capital metro, for example, I think we hired the best costing people in the business. We went out to tender, we went out to the market. Certainly, as Mr Bulless has alluded to, better than any internal expertise that Treasury could have. We look at the information they provide, any expert. We try to interrogate their modelling, their assumptions, their costings. There is a lot of experience and expertise and judgment in making these assessments and coming to a view. If you are happy as an official advising government that the advice provided is robust, then so be it.

Every project has risks and you cannot foresee the future on every risk, so you have processes to try to cost in risk. Sometimes you get it right in terms of allowing enough contingency. Sometimes risks occur that are outside the normal accepted risk parameters of a P75 or whatever probability costing you want to get to in a project.

Again, looking in hindsight from a relatively uninformed perspective, some of the cost increases were largely due to events outside the control of the project team. Weather events—after an unprecedented drought, you start building a dam and it starts raining and flooding occurs—a geological fault, these are things that, in hindsight, I do not think call into question the TOC costs. They are unexpected events that, yes, you could build into a costing by taking a sufficiently large risk-adjusted cost at the front, but that would mean you would have a price for every project that is just so over the odds that that would be poor information to government as well.

MS BURCH: From your commentary, do I gather that whilst you will not go in and double-check the figures, you make sure that their methodology is robust? Do you have the skills within Treasury to effectively check their methodology and be satisfied that their experts are putting the right figures against—

Mr Nicol: I think that is right. It depends on the circumstances. For example—and it is really hard to speak in generalities—we build quite a lot of roads, so we are pretty good at costing a bit of roadwork. Even then, it depends on what ground you build over it and whether there is an asbestos pit, contamination or whatever. So there is

always a risk. I am sure I will deal with these problems in the upcoming election, in the costings process, in order to cost proposals by the parties. We will have to try to make our best judgement, using all the experience and knowledge that we have. In a costing, as I said, we engage with the proponents of the costings. We test the costings. Often, if you quiz and question, you can get a guide as to how confident the coster is about their data, and how much work they have actually done.

The other thing you can do is a sensitivity analysis. What if an assumption is wrong and it is 10 per cent instead of five per cent? What does that mean for the costing? If the outcome is that it does not make much difference, you might place a lower emphasis on getting that assumption exactly right. If it doubles the cost then you might spend a lot more effort on assessing whether five per cent or 10 per cent for a particular factor is the right variable.

Really, it is an art as well as a science. It takes a lot of experience and expertise. It is a risk-adjusted exercise, too. You would put a lot less effort into costing a barbecue in a park than you would when costing a light rail system.

MS BURCH: But this is bread and butter regarding how you would advise the Treasurer about significant investments?

Mr Nicol: That is right. The other thing with costings is that you should, ideally, advise about risk as well. In this project, looking back, for example, the ICRC noted that the risks were significant. Mr Sullivan at the time noted that there were uncertainties and that this was a big project that had not been done locally for a long time. So you advise government of risks—that there is a risk that project X may have a higher cost. You often have to say to a government that, for a project, the costing is likely to be highly accurate.

MS BURCH: On page 101 it talks about the Murrumbidgee to Googong pipeline and the dam spillway. From my reading of this, we came out okay on the cost. Would that be your reading of it, Mr Nicol?

Mr Nicol: My understanding is that, yes, they came in under budget.

MS BURCH: There has been no mention of that throughout this audit report.

Mr Nicol: Perhaps more accurately, they came in under the cost estimate.

MS BURCH: Yes. Whilst it is a bulk alliance, some of the cost overruns were around flood events and issues with the on-site concreting—how they were smashing the rocks, which is my crude analogy, from reading this. Do you then look at how they came in under budget? If you look at the bad to learn lessons, do you look at the good to learn lessons as well, from these major projects?

Mr Nicol: It depends on how close the figures are to the actual outcome. Ideally, yes, but I would have to admit there is a resource constraint on how much analysis you can do. Typically, an observation I would make in general for these exercises is that the focus is on those projects where costs exceeded estimates rather than where the costs came under.

MS BURCH: It is always the negative.

Mr Nicol: Not particularly with this project, but as a general rule we do look at particular ways in which projects are done to deliver efficiencies—contracting types, design types et cetera. We try to give government advice to say, “There might be a different way of procuring an asset,” such as a school, a road or light rail. A big part of the assessment was what the ideal contracting arrangement was and what that meant for risk and management of risk. That ultimately goes to cost. To that degree, we do advise government.

In a general sense, if a project is run very well, that is noticed and people do absorb lessons as to what went well and what did not. I am not talking specifically about this project, because with this project, in my view, events caused the increase in costs rather than anything else in the project.

MS BURCH: No-one would have foreseen the flood and expected to see that water spilling over the wall.

Mr Nicol: Exactly. I am taking what the Auditor-General has said here rather than making my own observations, but projects generally run well when governance is well specified and well run, when communications are open and encouraged, when you encourage a culture of dealing with problems quickly and effectively and when you set up your processes for managing, designing and implementing well, and they are well understood by everyone.

Mr Bulless: In terms of the context of the questions about what Treasury relies on and how Treasury characterises its advice, looking at the ICRC report of April 2008, they had engaged expert consultants called Halcrow to review both the ECD and the Murrumbidgee projects. It is quite interesting to reflect on the advice from the experts. The advice from the experts was that both of the projects had been reviewed. They were both deemed at the time to be robust estimates. There were appropriate contingencies. It was noted that the Bulk Water Alliance was continuing to establish the cost base and work towards advice that recognised that potentially there would be an increase in that cost. Quite interestingly, with respect to the processes used in both projects, the consultants stated:

The process used to estimate the capital expenditure for the project is deemed robust.

For Treasury to see that both in an ICRC report and by the experts engaged by them to advise them—

MS BURCH: It ought to give you some confidence.

Mr Bulless: That was also reflected in the advice from ACTEW. We noted that there was potential for change and we noted that the TOC was not going to be determined until mid-2009.

MS LAWDER: The Auditor-General’s report says:

While ... 'lean' Target Outturn Cost was designed to encourage better performance and minimise overall costs it proved to be too 'lean' as some costs were based on unrealistic construction schedules. Unforeseeable events, including the 1:100 year flood, while impacting on schedule and cost do not fully account for the extent of the overrun.

I note that in the government response you refer to the "significant periods of bad weather, several flood events and the discovery of the geological fault". Going back to the Auditor-General's findings, for example, the unforeseeable events were not fully responsible for the extra time. There was generally slow progress in relation to the excavation of the foundations and the preparation. The expert advice that the Auditor-General got was:

The low efficiency and slower-than-target progress ... was foreseeable. The geology of the site was well understood thanks to an effective geotechnical investigation programme. However ... it is evident that there was inadequate experience with this very specialised type of work brought to bear on this task at Cotter. The target rate of progress was very ambitious.

I would like to return to my earlier question about lessons learned and how you are going to avoid these types of foreseeable, avoidable and overly ambitious schedules in future large-scale infrastructure projects.

Mr Barr: That question goes to issues relevant to the Bulk Water Alliance. Let us be clear that these gentlemen and I were not engaged in that level of detail in relation to the specifics of the project. I am not in a position to help you with that in the context of a Treasury fiscal analysis. That question seems better directed to individuals who may be appearing before the committee later today who were actually tasked with the delivery of the project. They will be able to give you some commentary in relation to what the Auditor-General has stated there. I am really not in a position to add anything to what has already been put on the public record by those who were running the Bulk Water Alliance at the time and those within that area of government that was established at the time to conduct a project of this scale. It would be better to direct that specific question to them.

MS LAWDER: Let me rephrase my question, because I think the point of my question remains the same. Treasury, I would presume, would have an obligation to ensure the logical, responsible spending of public money on upcoming large infrastructure projects. Notwithstanding that this report relates specifically to the Bulk Water Alliance, what role might Treasury play in that risk management and in avoiding similar foreseeable delays, which might include cost overruns, in future large-scale infrastructure projects in the ACT? Do you understand what I mean?

Mr Nicol: I understand the question, Ms Lawder. Before I get to it, I agree with the Treasurer; we cannot make comment in relation to the Bulk Water Alliance projects.

MS LAWDER: That is not really what I am asking about.

Mr Nicol: I just want to make it clear that my answer is a broader answer.

MS LAWDER: My question is broader than that.

Mr Nicol: Yes, absolutely. It is true that, when giving advice to government, we assess the aggressiveness of a schedule in a project and give advice to government about the risks of that. I would say that a schedule overrun does not always equate to a budget overrun. That is one important point. They can be different. It can relate to a budget overrun as well, especially if you are keeping labour on and you are paying labour at daily rates and it goes for longer. So that is one point.

It is probably true to say that project proponents generally have an unrealistic expectation of how quickly they can roll a project out. Often, if a government has a significant infrastructure program, the size of the program may make it more difficult for a government to roll it all out as a whole rather than have individual projects one at a time. One piece of advice Treasury gives government is about the size of their infrastructure program and whether it is realistic that a bureaucracy of any size can reasonably manage the whole project. On a project-by-project basis there might be a different view. With a smaller overall program it might be easier to meet an aggressive schedule than with a large program, all things being equal.

The other thing to remember is that when you are designing a project program you often design an ideal rollout. You design it so that there are no weather delays, there is no contamination et cetera. The reason why that happens is because it actually might happen, and you want to design it as if the project is going to go well. Often, however, that is the optimal. You very rarely beat a project time line because it is an ideal. You are often delayed, and that leads to delays.

It behoves treasuries to provide advice to government on how to manage those from a whole-of-program perspective rather than necessarily a project-by-project perspective. I do not want to tell government, "Let's put a 20 per cent delay in the time lines for every project." I want to set pretty good, ambitious goals to roll out infrastructure. If you put a 20 per cent delay in, for example, and the project goes well, there might be a lack of budget to actually finish the project and we would have an artificial delay. From a whole-of-program perspective we can look at doing some things which we are currently thinking about for our program, about how we provide that scheduling advice.

I think the answer is twofold. One is that looking at the project delivery schedule is part of our advice. Quite often capital works projects come up and the outcome of deliberations by ministers, without being specific, is, "We won't get this done in the time line that is proposed. We're going to schedule it over another six months and we're going to delay it by six months." The other aspect is that we are very much engaged with directorates and agencies about whether the timetable is realistic. "Does this mean everything has to go well? Are you overestimating your ability to run tenders, assess and come up with a recommendation?" We are building more time into those schedulings. So we are doing it from a project perspective and also from a program perspective.

THE CHAIR: Mr Hinder.

MR HINDER: Thank you, chair. Again, forgive my newness to all of this, but what

is the time frame of this? The chair was talking about Chief Minister Stanhope, which is two chief ministers ago. When did this first start to be considered? Was it 2000?

Mr Barr: In 2005 there was a future water options report; so 11 years ago.

MR HINDER: Right. So—

Mr Barr: But then there would have been discussion prior to that to commission said report. But I guess—

THE CHAIR: Just on the history of the discussion, before that it was that there was no requirement for a dam, according to the Labor Party—not for the next 20 years or in Mr Stanhope’s lifetime. But it changed very quickly after an election.

MR HINDER: Well, we live longer these days; so when the auditor—

Mr Barr: And then what I think was the longest drought in some time.

THE CHAIR: Or it came from the Liberals’ election promise of 2004—

MR HINDER: So—

MS BURCH: Can we allow Mr Hinder to—

Mr Barr: A promise to build a dam somewhere where it did not rain. That is right. At least we know this one does catch water.

MR HINDER: So getting to my question, the auditor seems to have identified it was a high value, complex and long-term—meaning 10, 11, 12 years—project with many unknown factors. That is out of the report. The officials have identified the mining boom, of course, in the middle of that and that little thing called the GFC that we did not think about also. So some of the numbers that were probably talked about very early on in the discussion—it was some time ago—may not be relevant by the time dirt got on shovels.

The transaction adviser, it says, recommended the alliance as the most appropriate contractual arrangement. The view was that this would increase the potential for alliance partners and result in overall cost savings. It also identified—I think this is the issue we were dealing with in the last question—that the final target overrun cost was based on optimistic and ambitious production targets and low risk allocation. There does not seem anything unreasonable in that to me. It is where you place—how much contingency do you put on any project when you first are doing a budget for it.

It appears that it has been through at least four or five external reviews, some of which had two or three inside them. You can review and review and review, but it is still going to happen in the future. When I built a house and the contractor hit rock, I saw him rub his hands together. That is what happens when you hit rock. Some of these things, when you start on projects, cannot be foreseen. I acknowledge that.

Do you still consider the alliance to be the best way to go forward for these kinds of

projects? I acknowledge that we are not going to do this again. I cannot see something that is likely to take 15 years to do in the future. But is it fair comment by the auditor that that was still a reasonable way to go forward?

Mr Nicol: I think each project is different and should be assessed on its merits as to what the best contracting method is. I am talking particularly of larger projects. For smaller projects I think you do not spend a lot of effort to say what contracting arrangement you are going to use for a barbecue. But for a large project I think you do an assessment as to the contracting method. I accept the auditor's finding this was an appropriate contracting method for this project. I have not done an assessment about whether I would have a different view or not.

I think typically it gets down to when you are looking at a project. There is a range of questions. One of the most important is risk allocation, who is best placed to manage risk and what risks they manage. It also comes down to cost. Some procurement and contracting methods cost a lot more just in the legal and administrative arrangements. For example, a PPP is an expensive way of procuring an asset. So you have to judge the benefits of the PPP in that procurement: do they outweigh the costs?

MR HINDER: For a way of procuring an expensive asset?

Mr Nicol: That is right, yes.

MR HINDER: As opposed to an expensive way of procuring an asset.

Mr Nicol: No, it is a high cost way, just in the administrative and legal component. It is higher cost. For example, in a PPP it is private finance, whereas we could borrow at a cheaper rate. But that form of contract is really a form of insurance. We are paying to transfer risk and we have assessed that, in that case, that is the best way. It really needs to be—it will not be a size component. It will not be that everything over 500 will be this and everything under 100 will be that. That has an impact. It is also about risk; it is about knowledge. For example, we have a lot of experience in contracting for building roads. For risks that you understand, know of and can generally manage, it is much easier to do a more traditional form of contracting.

You learn your lessons from looking at these projects and seeing what contracting forms are used but, really, my view would be that you assess contracts on a case-by-case basis and come up with a judgement and expert opinion advice. On several projects we have engaged leaders in the field to advise us as to what they think the most optimal contracting method is.

MR HINDER: Sure.

Mr Nicol: Just to add one more thing, it depends on also the skills of the people managing the contracts. You cannot just go into a new contracting form without the necessary skills and expertise to manage it, otherwise that is a risk that is just quite frankly a little bit too much of a risk for a contractor to take, for a purchaser to take.

MR HINDER: Yes, we would all like a job where we had full use of 20/20 hindsight; but, on the issue of risk, the auditor identifies that, quite sensibly, there were what he

described as gain share, arrangements in relation to that. Then there was a financial incentive on the carrot side of that. But there seemed to be a suggestion that I am not sure which contractor—GHD, Abbey Group or John Holland in the context—had actually directed that at the project level rather than across the broader program, so—

Mr Nicol: I would refer those questions to Icon, I think.

MR HINDER: Okay.

Mr Nicol: They are coming up next.

MR HINDER: Sure.

Mr Nicol: They would have the knowledge of that.

MR HINDER: But in terms of whether there are any lessons to be learned from this very long process, is it possible to get any more control over where the incentives are directed in the contractual arrangements perhaps?

Mr Nicol: Again, speaking in generalities—not for this project—incentives are useful things to consider. I think one example is that we used incentives in the construction of the car park for Calvary; so if they beat the date, we shared the benefit, and that provides a pretty significant incentive for a contractor to build. But incentives are a double-edged sword. You want to make sure it is built right and safely and all of those sorts of things as well. So incentives have to be used very carefully and in the right circumstance, but I think in the right circumstance they can be effective.

THE CHAIR: As a final question, you mentioned that PPPs can be more expensive. To what degree does a PPP add to the cost of capital metro?

Mr Nicol: I would argue that the PPP has lowered the cost of capital metro in net terms, because we manage risks much more effectively.

THE CHAIR: But that contradicts what you just said.

Mr Nicol: No, I said the administrative and legal arrangements for a PPP might be more expensive than another one, all else being equal. But the reason why it is is that we are transferring risk; so you get the benefit from the transfer of risk. Just to elaborate, if we are constructing a major project and we have to borrow funds to construct that project—there is nothing unreasonable about that—by borrowing the funds on our balance sheet directly, we can get the rate of three-point-something. PPP Co would be significantly higher than that. The cost of funds is higher.

But, talking about incentives, that gives a strong incentive for PPP Co to build it correctly, on time and to budget and we have other arrangements for managing that. That is why the government has agreed to make a capital contribution in the case of the PPP Co to actually reduce that financing cost. It really is another way of effectively paying for insurance to transfer those risks of that project to someone else. In the project arrangements there we have to manage that risk transfer very carefully, because for every risk we transfer, a private provider will charge you for this.

We make an assessment of whether cost of that risk transfer in probability terms is worth the money you pay for it. Some risks you keep in house. You keep them to the government and in that way we will cover the cost of risk X rather than the private sector body. We make a very thorough analysis about the balance of benefit and cost in that arrangement.

THE CHAIR: What is the likely borrowing rate for capital metro if the government's borrowing rate is about three per cent?

Mr Nicol: I will have to take that on notice. I do not know. There also might be some—I mean, obviously that rate, I do not think, has been—let me take it on notice, chair.

THE CHAIR: That is fine. Our time together has come to a close. We would like to thank you for your appearance here this morning. You have undertaken to provide further information. Chief Minister, you personally took some questions on notice, particularly at the start. The committee has not set a formal deadline, but if we could have that information two weeks from now, that would be the normal expectation.

When available, a proof transcript will be forwarded to witnesses to provide an opportunity to check the transcript and suggest any corrections. We will now have a short break and resume at approximately 10.45.

Sitting suspended from 10.31 to 10.46 am.

KNOX, MR JOHN, Managing Director, Icon Water Ltd

HEZKIAL, MR RAY, General Manager, Project Delivery, Operations and Maintenance, Icon Water Ltd

BREADEN, MS JANE, General Manager, Business Services, Icon Water Ltd

SACHSE, MR SAM, General Manager, Finance, Icon Water Ltd

THE CHAIR: Welcome back to the Standing Committee on Public Accounts inquiry into Auditor-General's report No 6 of 2015, the Bulk Water Alliance. We now have before us representatives of Icon, and we welcome you here today.

To start with, you have in your hand, I see, the pink privilege statement. Could you confirm for the record that you understand the privilege implications of the statement? All have so confirmed. Thank you for that. Can I remind you that proceedings are being recorded by Hansard for transcription purposes as well as being webstreamed and broadcast.

Before we proceed to questions from the committee, Mr Knox, would you like to make an opening statement?

Mr Knox: Thank you. The Bulk Water Alliance was responsible, obviously, for the delivery of a suite of projects. Three of those are outlined in this report that we will be discussing today. Two out of the three reports were critical to achieving water security in the ACT, and the third ensured long-term safety of a water supply, that being the Googong spillway.

At the heart of these projects, the most obvious one, is the enlarged Cotter Dam, one of the most significant infrastructure projects in Canberra's history. It increased storage capacity by 35 per cent, and the suite of projects has achieved long-term water security for the ACT and relevant regional expansion. From a context perspective it was delivered through a very difficult time. There was a mining and resource boom, there was a GFC, there were extreme weather events—ie, sustained drought and a one-in-100-year flood. The ECD, in particular, has won multiple awards covering engineering, innovation and environmental achievements and, indeed, per the performance audit in front of us today, there were lessons learned, which have been leveraged by all the alliance partners moving forward.

The BWA partners and employees do remain and will continue to remain very proud of the overall achievements of the legacy of the enlarged Cotter Dam and more broadly the suite of projects. We should note for the record as well that across this very complex project from a safety performance there was no loss or major injury, with all personnel going home safely, which we are very relieved about.

The performance audit carried out by the ACT Auditor-General was a very robust process. It went for many months. It involved external subject matter experts, it involved many hours of interviews and Icon Water, formerly ACTEW Corporation, provided a substantial amount of data and records to the ACT Auditor-General's office.

It is important that we let you know that the majority of the representatives in front of

you today are relying heavily on the records retained by the Bulk Water Alliance and ACTEW Corporation. I am pleased to say that we have next to me one firsthand person who was actually on the projects, Mr Hezkial, and I might defer to Mr Hezkial for a quick introduction.

Mr Hezkial: Thank you. In a previous life I was the client site project manager on behalf of ACTEW Corporation for the ACTEW enlarged Cotter Dam project. I was full time on the project from August 2009 through to 2013 and based on site. Hopefully I can provide some insights for whatever questions may come.

THE CHAIR: Could we go to page 171 of the auditor's report, the geotechnical investigations, because the report makes it quite clear a large amount of the cost blowout was because of the geological fault that was found. It details four stages of the investigations. How is it the geological fault was not found earlier if such extensive geophysical investigations had been undertaken?

Mr Hezkial: You are absolutely correct, in the sense that the bulk of the overrun in the cost was attributable to geological issues that we encountered on site. One of the first things, I guess, in any major project that require a substantial amount of geological input is that an assessment needs to be made as to the level of investment in terms of detailed investigation that you undertake. We sought advice from independent technical experts on the degree to which we would undertake those geological investigations, and I guess they are spelled out in that page that you referred to.

But in the broader context, the project actually won multiple awards for the geological investigation and the modelling that was conducted, and in the opinion of our experts there was a sufficient degree of investigation conducted.

The geological fault found in the bottom part of the dam was located between two bore holes. There was no requirement at the time, based on the geological model we produced, which is a seismic graph of the actual bedrock of the site, to suggest that there was anything required to be further investigated between those two bore holes. Typically the process would be: you start with vastly spaced bore holes. You use that as a first-pass indication as to whether further investigation is required between any of those bore holes. If anything raises alarm bells, then you increase the degree of investigation between those bore holes.

There was nothing that indicated at the time that there was a problem between any of the bore holes we conducted, and the geological investigation basically was supported by the independent reviewer in the sense that this was, in their opinion, unforeseen. So we are confident that we conducted the right degree of investigation.

I think the other point I would like to make, if I may, is that there is always a spectrum on these sorts of decisions. The risk is that you could sink additional funds into endless detailed investigation and you get to a point where, I guess, there is a law of diminishing returns. Based on the initial investigation and the fact that nothing alarming was raised in those results, there was an on-balance risk assessment conducted to say that no further investigation was conducted.

THE CHAIR: What did the geotechnical investigations cost?

Mr Hezkial: I would have to take that question on notice.

THE CHAIR: And how deep did they go below surface?

Mr Hezkial: There has been a lot of literature around the depth. The depth varies depending on the location. If I was to provide a range, my recollection would be somewhere in the order of five to 10 metres depending on where you were along the perimeter of the actual dam's profile. In some cases we had to chase material out that was not suitable for foundation. In some cases we found relatively good rock at shallow depths.

There is a lot of detail in the post-construction report around the difference between the original design line and that which was encountered. It is pretty clear from that that there were some locations where we had to go deeper than we anticipated. And that has got a flow-on effect to when you actually end up getting into the actual construction of the dam, because, quite simply, the more you chase out unsuitable rock, the more you have to fill back in. So it is a double-edged sword in terms of an increase in concrete volumes and impact on schedule. That is certainly what we experienced on this project.

THE CHAIR: At what depth was the fault found?

Mr Hezkial: My recollection is that it ranged between three and five metres. I am working off memory here. We have pretty extensive photographic documentation that shows the depth of that crevice if that is required also.

THE CHAIR: On page 135 it talks about going down about another nine metres on what was anticipated for the foundations and that was not supported by geotechnical investigations. How did it come about that we found this fault?

Mr Hezkial: In preparation for the dam foundation we have to basically scratch away all the loose material. And you do make an estimation of how deep you think you are going to get before you hit sound rock. When we hit that particular location, we found that the material was unsuitable in the sense that there was actually a lot of clay content between the rock masses, and that was not something that was suitable to rest a dam on top of, primarily because it introduced a seepage risk. In those sorts of situations the excavations are conducted with a full-time geotechnical engineer on site, and typically what they do is literally crawl around in the crevice and spray-paint sections of rock that need to be removed until you get down to founding rock. It is a very critical and important process.

What follows on from that is that we then bring the level back up to the original design level of where we thought the foundation would need to be. We do not do that with roller compacted concrete; we use a concrete we term dental concrete, which really is to bring the levels back up to a consistent horizontal plain. The process typically involved chasing it out for as long as it went, based on the advice of the geotechnical engineer, filling that crevice back with dental concrete and then resuming where you thought you would need to start when you originally developed

the design.

THE CHAIR: On page 135 in the first box, the conclusion, it says that on 17 September 2009 ACTEW reported to the Assembly that the reason for the increase in cost was “used outdated information” from the earlier, December 2008, report. How did that occur?

Mr Hezkial: I would simply describe the development of the cost as a function of how much detail was known at the time. Typically in an engineering project you would undertake a concept design. That concept design would be based on a level of detail that would require you, hopefully, at a high level, to assess the level of risk and an order of magnitude cost that is quite high, and that would then inform whether the project is to proceed or whether there is further need for investigation.

The progression of those costs really aligned with how progressed the design was at the time. Initially we had only about 2,000 lineal metres of bore holes and by the end of the project as we moved into detailed design we ramped up the investigation and conducted more bore holes. What I am trying to say is that I think the progression of the cost is based on the progression of the design at that point in time, what we knew and the level of detailed investigation that had been conducted.

THE CHAIR: That does not address the second dot point on page 135, which says that on 17 September 2009 ACTEW reported to the Assembly “used outdated information” from an earlier, December 2008, report. How did that occur?

Mr Hezkial: I cannot specifically answer that question but I do know that there were multiple iterations of our options paper that were independently reviewed, I think, on about three or four occasions by GHD. It may well be that at that point in time, based on the facts that we had, we held constant on those assumptions. But I think there is a very logical and chronological development of the estimate based on the development of the design as it progressed in time. I cannot speak specifically to that comment but I am just trying to explain the process, how the process developed.

Ms Breden: If I could add, I worked with the audit office personnel looking for information and evidence on that very question. We were looking for the briefings that were given to the then managing director, reports that were given to him and even following email trails. As the report concludes, we were not able to determine how it happened, just that it did happen. As the report states, more care could have been shown, could have been used, in making those statements to make sure that the information was accurate.

THE CHAIR: What processes have been put in place to ensure it does not happen again?

Mr Knox: A bit more context there, if I may, chair?

THE CHAIR: Incorrect information was provided to the Assembly.

Ms Breden: I guess we have improved our governance arrangements across the board within Icon Water, certainly in the past two years and prior to that, at multiple

levels in terms of the way that we interact with the voting shareholders, our board's operations and its governance of the company, the way in which we executives brief the board and the quality of that information. We have continually improved our processes for how we produce board papers, brief the board, the managing director and how the managing director interacts with the voting shareholders.

Mr Knox: For example, beyond the operations of the board, both the chair of Icon Water, or deputy chair, depending upon my availability to meet with the shareholder every quarter on all matters—that is documented after our meetings and kept abreast of anything—we also have an annual strategy meeting. We had one last December with the Chief Minister. There was 2½ half hours of discussion around the general direction of Icon. If there are any critical matters that need to be briefed vertically to our shareholders, we do that on an out-of-session basis either by letter or phone call or advise relevant people. We had the current report several years ago which looked into various matters and governance et cetera and, as Jane points out, there has been a substantial uplift in the overall governance of the organisation.

MR HINDER: Chair, I have a supplementary. That was ACTEW. You are a different organisation altogether, aren't you?

Mr Knox: It was previously ACTEW Corporation.

MR HINDER: Everything has changed—how you do things?

Mr Knox: A lot of change has occurred.

MR HINDER: That was 2007.

Mr Knox: Yes.

MS LAWDER: Is that a question?

THE CHAIR: ACTEW has become Icon.

MR HINDER: I understand. It is a different animal altogether. Things must have changed, I would have thought.

Mr Sachse: Just to give some context, back in 2009 ACTEW Corporation Ltd, as it was then, was pretty much a holding company. A lot of the operations and maintenance of the water network were outsourced to ActewAGL, and that got brought in house on 1 July 2012. Since then, in 2014 ACTEW Corporation Ltd changed its name to Icon Water Ltd, to reduce the brand confusion with the ActewAGL brand name.

Mr Knox: Icon Water Ltd now is a fully vertically integrated water authority.

MS BURCH: So those improvements in communication from governance through to shareholders that you spoke about perhaps started before Icon, but it has certainly been consistent and followed through since Icon? I think there is a general sentiment about improved communication from one entity back into the Assembly and to the

shareholders?

Mr Knox: Correct.

MS BURCH: You have done that work and that is an ongoing piece of work?

Mr Knox: Yes.

MS BURCH: There seem to be two thrusts to this report. We heard earlier from the Chief Minister, who was then the Deputy Chief Minister, and the Under Treasurer was not around at the time as well. I recognise that, other than one of you, you were not involved in this. It is a significant project. It really has set up this city and our community with water security for decades to come. There seems to be commentary around the cost and the change in the original cost and the other commentary was around communication about that.

As dams are built around this country and internationally, geological faults are found. This would not be the only dam that started off with a plan, research was done and bores were drilled, and problems were found. I am sure this is not the first and only dam where that has been done. It is about having expertise on site at all times to allow you to move very quickly to make sure you find solutions in the quickest possible manner. You started off with a plan, but sometimes plan B is always better than the best plan A you have ever had, because that is what you have to deal with.

Mr Hezkial: I absolutely agree with everything you said, Ms Burch. The reason the alliance model was selected was in recognition of the fact that we did not have all the details that we needed to make a 100 per cent estimate. In fact, probably the detail that is a little overlooked is that the total out-turn cost was developed based on 30 per cent of detailed design. That is typical for most alliance projects. The complexity that arises is that you are actually developing the estimate and the design and seeking clarification on whatever environmental obligations may be imposed on you concurrently. So it is quite a complex set of variables to be juggling to try and set that total out-turn cost.

The benefit of the alliance is that it mitigates or it to some degree shares the risk of having to make those decisions based on that little amount of detail. In that context the alliance was quite a powerful model and one that enabled us to give the ACT and the broader community a solution in a relatively short time.

The one comfort that I take—and I have to keep myself in check because I was personally involved—is that most of the issues that related to the actual overspend of the project were not issues that were typically foreseeable, in my view. What I mean by that is weather and geology, with the caveat that the geological model and the investigations that were conducted were independently verified, praised by experts and something for which we won an award. So I feel personally satisfied that we did all that we could.

The other benefit of the alliance is that by having the constructor and the designer collocated full time on site, when issues such as the major flood that occurred in 2012 arise, you can mobilise quickly. For a one-in-100-year flood that flowed over the

top of the dam when it was halfway up, damaging cranes, damaging formwork, getting back into full operation within three months was a real demonstration of the benefit of that sort of contractual arrangement. Hopefully, that answers the question.

MS BURCH: Yes, it does. Following on from the alliance, I do not imagine that a dam will be constructed for some years in the ACT. Was it a useful thing—and you have touched on that a little bit—to do these projects that are of such major concern? There were two other smaller projects that were also done by the alliance. Was that good, smart strategy? If you were to enter into major capital works again, would you consider a similar alliance to do future work?

Mr Hezkial: The major benefit of the alliance is the risk-sharing model. It depends on the level of risk and the level of complexity of the project. If you are looking at a relatively simple project where the risks are very well known and there is a clear distinction between who is best placed to manage those risks, whether it be, say, Icon Water or a contractor, you would probably go down the path of a traditional contract, a lump sum contract or a variation thereof. You do pay a premium for entering into an alliance, but the assessment you make is as to whether the premium you pay for entering into an alliance is of greater benefit than the potential loss in realising those risks or encountering a risk that you did not bank on.

I think it is horses for courses. We currently still have an alliance within Icon Water, and that is delivering about 30 per cent of our capital works program presently—different partners but similar models. We have taken the lessons learned out of the Bulk Water Alliance and transposed those to the current alliance that we are operating, specifically in terms of the level of detail that the design must get to before a total out-turn cost is locked down.

All of those lessons that we learned from the Bulk Water Alliance are absolutely being used. In the context of the new alliance that we are a party to, the main driver is having the ability to scale up and down in a short time to respond to changes in our capital works program. We are not resourcing on a full-time basis within Icon Water to manage the very volatile bandwidth of projects that we might get; we have a reasonable amount of baseline resources within the organisation and we use the alliance to manage the fluctuation and the peak workloads. We think that is a very successful model.

MS BURCH: Again, if this is a way of doing business, so to speak, or a part of your business, you learn these lessons and you continue to finetune and finesse those better outcomes for those alliance partners—what you expect out of them?

Mr Hezkial: Absolutely.

MS BURCH: I am curious to know what one of the projects is.

Mr Hezkial: That is currently being run through the alliance?

MS BURCH: Yes.

Mr Hezkial: Presently, at the lower Molonglo water quality control centre, we are

about to have a whole series of renewal projects, predominantly related to end-of-life for various components of our treatment training at that plant. The benefit of doing that work is we can package that as a program and run it very neatly through the alliance. We can set key performance indicators. Again, it is a very similar model in the sense that there is some skin in the game for the contractor to perform to our expectations and there are penalties if they do not achieve those.

The one variation on the theme since the Bulk Water Alliance is the fact that we now seek a greater level of detail in the design development before we set that price so that we know we are not being taken advantage of. We also have a much more rigorous risk allocation process in terms of identifying where the risks should reside and who should take the premium on those risks.

Mr Knox: The alliance partner is actually collocated at lower Molonglo, and Stromlo as well.

MS BURCH: It is a similar arrangement; you have your partners there on site with you?

Mr Knox: Yes, they are in demountables.

MS LAWDER: In the Auditor-General's report one of the comments that the auditor made was:

The appropriateness of including the Googong Dam Spillway in the Bulk Water Alliance is unable to be determined as there was no monitoring or reporting on the expected benefits.

In conclusion, the auditor said:

The merits of including the Googong Dam Spillway project in the alliance have not been evidenced.

How do you come to include a project like that without including those metrics?

Mr Hezkial: I will start off by acknowledging that we did not do a very good job of actually tracking our benefits and quantifying those benefits. But in terms of context, given I was there for various conversations at the time, we had brought in some transaction advisers. The context at the time was that there was a furious amount of activity in the water sector around drought-proofing projects, particularly in south-east Queensland. We had been given information in relation to the fact that because this was a complex project, and to hedge our bets, we wanted to attract a tier 1 type contractor, such as John Holland. We were advised that we would need to move relatively quickly to engage their services in terms of not being gazumped by the rest of the water industry competing for a relatively small pool of resources.

We had previously done some design work, which was sitting on the shelf effectively, to upgrade the Googong Dam spillway. We saw the incorporation of the Googong Dam spillway as a means of engaging those services early and providing a program with enough critical mass that would be commercially attractive to a tier 1 contractor. The strategy was really to lock in a contractor now before they got taken by someone

else, so that they were available to run those water security major projects when we needed to. It was a strategy that was predicated on advice from those transaction advisers. Did we do a good job of tracking the benefits? Absolutely not. Did we actually leverage benefits across the program? I think we did, and I can expand on that, if you would like.

MS LAWDER: Is this something where you put new processes in place for future or even current projects, to make sure that there is better tracking of those benefits?

Mr Knox: Ms Lawder, moving away from a construction-type contract, a number of projects more recently that we are embarking on are technology-based projects such as refreshing our asset management system and the like. They typically run at a portfolio-program-project level. Indeed capturing all the benefits across the program, portfolio or projects is forefront in our mind. You would normally run a benefits realisation model and track all of those. They are not necessarily all bankable benefits; they can be non-bankable benefits and other types of benefits as well. It is another point as we go through this audit that is at front of mind, to make sure that whenever we are in a program of work we capture that benefits realisation model moving forward.

MS LAWDER: For example, with the current project that you spoke about, is that a future benefits realisation model or is it already in place?

Mr Hezkial: It is a future benefits model, in short.

Mr Knox: Yes.

MS LAWDER: IT infrastructure?

Mr Knox: Yes, the IT one is just kicking off now. We are in the process of building that benefits realisation model.

MS LAWDER: For your current project you are managing it outside that?

Mr Hezkial: Yes, the current projects are basically managed under a KPI regime. We have those contractual clauses that say we expect a certain level of performance and there are modifiers or penalties. Basically it is an incentive program. It is very similar to the Cotter Dam project, with different metrics to measure.

The point I would like to make around benefits realisation for the program is that benefits realisation works pretty well when you have a homogenous set of projects that you can leverage across the component projects. The Bulk Water Alliance was faced at the time with a spillway upgrade project, a pipeline project and a completely new dam. So having a benefits model across the program is quite difficult in that there are not very obvious synergies between those.

With respect to where the synergies were, a lot of lessons learned out of the Googong Dam spillway construction project were transferred across to inform the construction planning for the enlarged Cotter Dam. We also transposed a lot of the procedures and processes. Some of those subject matter experts and key personnel were also

transferred across to the Cotter Dam project. Did we realise the full benefit of the program? The answer is absolutely yes, in my mind. Did we document that and quantify it? We did not do a very good of that at all. That is what we are now looking to implement within the organisation.

MS BURCH: Ms Lawder was commenting about one of those projects, and justifying it within the alliance; am I right in saying that you took lessons from that and made improvements in the larger project from those smaller projects?

Mr Hezkial: Absolutely.

MS BURCH: So you had a benefit?

Mr Hezkial: Absolutely. With respect to one of the key mechanisms by which we are doing that, we have also completely overhauled the capital works approval process within Icon Water. We have very clear, set stage gates. In those stage gates the potential benefits are declared up-front. The further work that we have to do is developing the model that captures the declared benefits in those business cases and then tracking them. That is the bit we are working on at the moment. But we are at least now capturing them and recording them.

MR HINDER: The project exceeded, by my reading of it, the final target overrun costs by \$82 million. Without oversimplifying it, can you tell me what percentage of that amount was either good old bad luck or the knock-on effect of bad luck?

Mr Hezkial: I can talk to that. You are right; the overall overrun is in the order of \$81 million. As I mentioned earlier this morning, the bulk of the reasons for that overrun were related to the geological issues and the weather. About 70 per cent of the overrun relates to the non-achievement of the concrete production rates. On that particular issue, I would like to acknowledge that, yes, the targets were ambitious in terms of the production rates we set. That was deliberate in the sense that we wanted to develop a very lean TOC. There was no sense in allowing our construction partners to pad out an estimate and then have them reap the glory down the other end of the path when they got their gain share. So the idea was to try to get as lean as we could.

We had that to contend with, which was already a challenge to begin with. Then that was exacerbated by the weather. I think there is some documentation within the Auditor-General's report that suggests that we had about 246 days impacted by rain. Rain has multiple effects: it impacts your ability to place and, depending on the intensity of the rain, it could actually halt work altogether. The complexity that arises from that is that if the work is halted, you actually have then to re-prepare the surface—scratch it back, clean it up, sweep it up—before you can actually resume the placement of concrete.

The flow-on effect from that is, again, everything is on hire. So the extension in the schedule will then impact your crane hire; you have cranes that are there for longer. You have concrete batch plants that are there for longer. Obviously the labour and even the formwork were hired for this bespoke work. So there is a ripple effect based on the rain, without boring you with too much detail.

The geological issues I think we have discussed, but predominantly they relate to the geological fault at the bottom. There also were issues encountered on the left-hand abutment where we found a set of faults that we were concerned would act in concert, so the action of the faults together could lead to a failure of the abutment. So we decided to eliminate that risk and chase those defects further back than we had originally anticipated.

So there is 70 per cent for the concrete production and placement. About 11 per cent of the overrun related directly to the floods. We had the three floods, two in late 2010 and then the really big one in March of 2012. Five per cent was attributable to the dam foundation issue. Another five per cent related to expansion of the diversion tunnel. So after we went through the first two floods, we were advised about the size of that diversion, so that was a risk mitigation decision. I would say that about \$2 million of the total \$82 million was probably attributable to inefficiencies in delivering the dam, or areas in delivery, if I could put it that way. The rest I am confident in declaring that I think they are predominantly related to weather and geology.

MR HINDER: So 91 to 97 per cent, by my calculation, would be good old bad luck.

Mr Hezkial: Yes.

Mr Sachse: I think it is important also to note that while the actual cost was \$82 million higher than the TOC, a lot of that was recovered through the incentive arrangements that were put in place with the alliance partners. So \$29 million of that was recovered through the pain share arrangement that we had with the alliance partners. The owners' costs, there were some savings generated through that mechanism, as well as Icon Water—or ACTEW Corporation back then—had insurance in place to recover some of the additional costs associated with the 2012 flood. Overall, the increase was \$47.5 million higher than the budget allowance, which was 13 per cent higher than the \$363 million.

MS BURCH: I would not mind if you could provide that to the committee so it is very clear in a one-pager. We often have this figure of \$80 million-odd, but it balances down to a lesser figure.

MR HINDER: Yes.

Mr Sachse: That figure is detailed in the Auditor-General's report on page 10, paragraph 4.3. It talks about the \$410.5 million versus the \$363 million, an increase of 13 per cent.

MR HINDER: Yes, there are lots of numbers. We had a pre-TOC \$310.9 million, but the chair was talking earlier about \$100 million-odd back when Chief Minister Stanhope first aired the thing. There is a chronological history of those numbers, and I do not know what 2007 dollars were in today's terms either.

While we are on the pain-sharing arrangement, there seemed to be a criticism about the pain-sharing agreement, not that they did not think it was a good idea, because it clearly is, but that we lost control. I understand you pushed that arrangement on to the

partner, but they then focused the incentives on a project level rather than a broader program. Obviously we were interested in a broader program and you were interested in the broader program as the client. Whilst they thought the incentives were a good idea, they may not have been targeted to the right place by John Holland or whoever was in control of doing the subbie arrangements. Is that a fair comment? If there is something to be learned here, is it about having some input into how that is applied later? Or I suppose a better question is: are you doing that in a current project?

Mr Hezkial: I have had a lot of time to reflect on that question. I think the simple answer is there is not any one lesson, but there are some principles that can be applied to future scenarios. On the ECD project, the fundamental decision that was made by ACTEW Corporation at the time was to try to excise the risks they thought they could manage best. So you ended up with a non-traditional pain share, gain share model that had what we call a flat spot in the middle, which is basically like a dead man zone where ACTEW decided to bear the risk of flooding, which changed the model.

The context in which that decision was made was that we were in a drought. So there was an educated ploy, and the benefit of that to the Canberra community would have been to remove that out of the gain share calculation, again going back to the lean TOC principle. I think the principle remains that wherever you can manage the risk you take that out of the TOC. Perhaps the lesson learned for us is that we should have had a clearly articulated contingency that sat outside the TOC to account for those things. But if you had left it in the TOC, the risk would be that if you got to the end of the project and it was padded out and you paid a risk premium to transfer that risk to the contractor and it did not materialise, they walk away with more of the pie than you may have liked.

MR HINDER: It appears that part of that risk was mitigated by the fact that you had flood insurance, at least to an extent.

Mr Hezkial: Exactly, that is correct. We had separate flood insurance to deal with that risk. There was also a range of what we call non-cost items that we wanted to incentivise. We had a KPI pool that sat outside of the TOC, and the KPI pool covered things such as community engagement, so leaving a positive legacy. That was manifested in things such as education programs that we ran for schools. The Cotter Dam discovery trail fits into that.

We also had parameters around operability. Because we were in the middle of the drought, one of the curve balls we threw in there was we wanted to make sure that the existing Cotter Dam was accessible from a water supply perspective during construction of the dam. So we had an interruptions KPI. We also had KPIs around operability, so making sure that the legacy left to the people who were operating the dam was such that we could operate it in an efficient manner and that we could actually maintain the dam moving forward.

We also had KPIs relating to the environment in relation to the endangered Macquarie perch that were in the reservoir. Part of the project involved constructing seven kilometres of fish habitat. Basically those sorts of things—the environment and the safety—were used as modifiers. You did not get any extra brownie points for performing really well in safety and environment because that is just what we

expected. But if you did not perform well in those areas, it would garnish any sort of incentives that you did gain on other parameters. So you had total out-turn cost, some assessment of what risk should be in that TOC and what was held by ACTEW, and then for the non-cost performance areas we had a separate KPI pool. I hope that explains it.

MS LAWDER: A supplementary, chair?

THE CHAIR: Ms Lawder.

MS LAWDER: The Auditor-General's report says ACTEW negotiated down the final TOC, and you referred to that earlier. But, according to the auditor, in negotiating a lower target out-turn cost, you agreed to a revised gain share, pain share mechanism which was commercially advantageous to the non-owner participants. Had you assessed that, and why did you agree to something that was advantageous to the non-owner participants?

Mr Hezkial: The context in which that comment was made, in the sense that it was advantageous to non-owner partners, was that we basically indemnified them for risk—this is the dead man I was referring to—within a particular range. We basically said, “If you overspend within this range, we won't penalise you.” That was a calculated assessment conducted by ACTEW based on the probability of flooding. So rather than its being advantageous to the contractor, we removed the risk cost that would have been thrown back to ACTEW by including flood.

The only reason it was described as advantageous to non-owner partners is because, in essence, you are indemnifying them for any overruns within that band, but, in reality, what we thought we were doing was removing the greater risk cost to ACTEW for being charged a premium by leaving that flood risk within the Bulk Water Alliance.

MS LAWDER: You talked about this a little earlier, that you negotiated the price down. But in a very simplistic sense—I take into account what you have explained—it looks like your revised target, going back up to what the original TOC was, ACTEW agreed to bear pretty much that cost overrun, after which they would be equally shared. So, in fact, you are no better off and actually worse off by negotiating down to that leaner TOC.

Mr Hezkial: What I am trying to explain is that the flat spot was basically saying that, “We'll take that risk at the time”, and it was a calculated risk—

MS LAWDER: And it is only with hindsight that—

Mr Hezkial: With hindsight, yes. What we were saying is, “We'll take that risk, and so there's no need for you to take on that risk premium. And the trade-off is that we want you to come back with a much leaner TOC,” which is how you ended up with the 299.

MS LAWDER: Would you do that again?

Mr Hezkial: Based on what we knew at the time and based on the context—that we

were in a drought—I think it was a sound decision. In hindsight, probably no. But, to be frank, I would much rather have a lean TOC and indemnify the ACT from that risk of paying someone too much at the end for a risk that really was not there to begin with. There is a degree of discretion, but based on what we knew at the time, we were pretty comfortable with that decision.

MS BURCH: To build on that, it goes back to those principles—you cannot apply the same formula across different projects—about sharing that risk, understanding your partners’ role in an alliance and making sure that you as an entity and our community get the best.

Mr Hezkial: Absolutely, and things could go either way. Those sorts of decisions are conducted in a scientific manner, but the process itself is subject to the inputs and the assumptions that you make. Those assumptions can only be—and we are talking about predicting the weather—based on what you know at the time. We did go to the extent of using risk models to quantify it but, again, it was based on assumptions around the level of probability and risk that we thought we would get a flood, for example.

MS BURCH: Just out of curiosity, what is the level of the dam at the moment, do we know?

Ms Breden: It is 81 per cent at the Cotter Dam.

MR HINDER: With the risk of rain.

THE CHAIR: Just to follow up what Mr Hinder was saying, that much of it was, therefore, bad luck, on pages 96 and 97 there is a summary of the delays. It took 20 months longer to construct than expected. The clean-up took three months longer than was allowed for, the second stage diversion took 1½ months and the unexpected geological fault took 1½ months, so that is six out of the 20 months. In para 4.52 the rain event only cost 2½ months, so that is 8½ months. Slower rate of progress at 7½ months takes it to 16 months. So what were the other four months represented by?

Mr Hezkial: In essence, being impacted by rain during placement.

THE CHAIR: So beyond the March 2012 event?

Mr Hezkial: As I was trying to explain earlier, there are multiple ways you can be impacted by rain. So if it is a light shower, you could probably get away with continuing placement. If the intensity increases, your rate of placement is impacted and you need to start dealing with issues such as drainage, for example, as you are placing. So if you would appreciate, the dam is at the bottom of a valley, water is cascading down the sides. They are trying to place concrete, and you are basically contending with puddles been generated. That is at the light end of the impact. Then as the intensity increases your production gradually decreases, ultimately to the point where you cannot place any longer because the integrity of the concrete is compromised by the dilution of the rain, and so you would cease.

As soon as you cease, you introduce a cold joint. So not only are you dealing with the

slower production due to the rain, but the cessation requires you obviously not to place during that cessation, and then to resume there is quite stringent work that you have to do to prepare the surface again because the risk is that you can introduce a weak plane if you do not get a very strong bond. That takes some time. I think what you are seeing there in the report is the high level aggregate, bulky items that related to delay, but what is not being reflected in those numbers is the cumulative effect of rain on placement.

THE CHAIR: But all of the reports suggested that you were very optimistic. In fact, one of the lines in para 4.59 says that if you had actually reached what you had suggested, it would have been the second fastest roller compacted dam constructed in the world.

Mr Hezkial: Yes.

THE CHAIR: Littered through that section, though, are suggestions that it was never achievable. For instance, in 4.35:

The low efficiency and slower-than-target progress on the excavation and foundation clean-up of the steep valley sides was foreseeable.

It comments in 4.58, 4.59 and 4.60 that a more realistic average was of around 35 to 40, which is really what was achieved. So how much of it is really attributable to the weather when we just were not able to lay at the rate that was projected?

Mr Hezkial: Again, as I mentioned earlier—

THE CHAIR: And it should have been easy, because you had onsite aggregate, you had your batch plant nearby. Often some of the problems that other dams encounter just were not there at that site.

Mr Hezkial: Sure. I can talk about that. I think I acknowledged earlier on in the session that we knew the targets were ambitious, and that was a deliberate strategy to achieve the lean TOC. And in fact the total out-turn cost report clearly articulated that if we achieved these placement rates it would be the second fastest dam built in the world. From our perspective, from a commercial perspective, we thought that was a pretty good outcome because we were actually holding the construction bonus to a pretty hefty target.

What we ended up achieving, although we did not hit those production rates, was still quite a strong performance by world standards. And if you look at the RCC production rates for dams built across the world, we placed concrete faster than approximately 63 per cent of dams built across the world. The production rates that we achieved in the context of the weather were nothing to sneeze at anyway. We acknowledge that the targets were ambitious.

In terms of things that were foreseen, that view does not align with the view of our independent technical panel in the sense that they believed that everything we could have done to identify any geological issues was conducted. Again, it was the subject of multiple engineering awards in terms of that particular endeavour. I think for any

construction project that has geological uncertainty on this scale it is not unexpected that you will encounter something that you did not factor in. But do I feel comfortable that we did all we could to identify those issues ahead of time? I think the answer is yes.

THE CHAIR: In para 4.67 there are six dot points, and you can link them with paragraph 4.73. There were some delays associated with the March 2012 flood event, issues with the gallery construction method that led to delays, a high number of cold joints resulting from the rain, congestion of the roller compacted concrete surface due to equipment and embedments within the dam slowing progress, delays caused by the time taken to move formwork, and the Christmas shutdown period. It seems, whilst it is logical to take into account the rain and the flood event, there were far more factors than just weather. Can you give us a breakdown as to what percentage of the delays is associated with each of those six dot points?

Mr Hezkial: In terms of the delays associated with flooding in general, the percentage sits at around 11 per cent. In terms of a grab bag of impact on RCC production rates relating to rain, the ambitious targets that were set, that contributed to about 70 per cent. So that encompasses rain, lack of achieving the production rates—

THE CHAIR: Can we have it broken down to those six dot points, though? Because it is easy to say rain caused it all—

Mr Hezkial: No, that is not what I am saying.

THE CHAIR: but if we could break it down more specifically, even if you have got to take it on notice.

Mr Hezkial: Sure.

MR HINDER: Are you at 4.67 there, chair?

THE CHAIR: Yes. And with regard to the rain, if we go to paras 4.72 and 4.73, particularly in 4.73—

Mr Knox: Sorry, chair, could I just ask what page you are on?

THE CHAIR: Page 117. It says that:

However, after the March 2012 flood the rainfall that occurred was not unusual, and this period was equivalent to around the 45% rainfall, that is 55% of the years on record had a higher rainfall—

so 55 per cent of years had higher rainfall than the year that the flood event occurred in—

Therefore the rainfall that occurred in this period is similar to what they would have expected during the development of the [Final Target Outturn Cost]. However, even in this period of [roller compacted concrete] placement the [roller compacted concrete] placement rates did not improve.

We are putting a lot of store in the fact that it was rain and there was a rain event. According to the Entura report, the rainfall was what you would have expected—in fact, it was less than most years, and the problem seems to be the delivery of the roller compacted concrete.

Mr Hezkial: I am not shying away from the fact that we did not achieve the production targets. I think the point I am simply trying to make—

THE CHAIR: But I think you did achieve the production targets. It was the laying of the concrete, not the production.

Mr Hezkial: Sorry, placement.

THE CHAIR: Yes.

Mr Hezkial: Yes. So I am not shying away from that. What I am trying to say is it was exacerbated by the weather, by the rain.

THE CHAIR: And I think we all accept that, but to what degree was it exacerbated, which leads to the breakdown in 4.67? If we could have that, that would be appreciated.

Mr Hezkial: Absolutely.

THE CHAIR: If the batching plant delivered, what was the problem with the laying of the concrete?

Mr Hezkial: I think the predominant issue was real estate. If you consider the geometry of the dam wall, looking at it from the side view, it is triangular in profile. Effectively the process was designed so that you are placing fresh concrete on top of fresh concrete, and you do not want to interrupt that process. But as you move your way up and as the dam steps in, the working area gets narrower. That was one of the issues that I think slowed us up more than we expected. I think the other contributing factor is we may have underestimated the extent of drainage control required for stormwater sheeting off the abutments and on to the actual working surface.

When we put together planning, the construction placement plans, we did time and motion studies to a very granular detail in terms of timing how long it would take to do a layer, to leap forms, to secure those forms, to batch the concrete. We used international experts. We also brought in contractors who effectively travel around the world building these dams and developing those construction plans. I think some of those assumptions that we made at the time in hindsight were incorrect.

THE CHAIR: I look forward to the breakdown of 4.67. Ms Burch.

MS BURCH: There are two quite separate areas. One, you made mention of the awards you received. Perhaps you could talk broadly about engineering awards or others so that we get a sense of the depth of expertise that we actually then brought to this project. Two, were those awards a result of good partnerships? How did you go about deciding who your partners were?

Mr Hezkial: Thank you for the first question; I appreciate it. The Cotter Dam project was subject to 10 industry awards ranging across a different array of subject matters. We have won two engineering excellence awards at the national level. We have won two Institute of Public Works Engineering Australasia awards, obviously encompassing Asia. We have won the Civil Contractors Federation earth award predominantly relating to saddle dams—we have got the main dam and there were actually two supplementary dams as well. We have won an environmental excellence award from the International Erosion Control Association of Australasia. We have won a Master Builders national award for civil infrastructure. We have won an ACT Master Builders award. We have also won the Institute of Landscape Architecture award from the ACT Chapter, for Casuarina Sands, the Cotter Dam discovery trail and the upgrade works that we did in the Cotter precinct.

MS BURCH: That is impressive. Well done to you.

Mr Hezkial: In terms of the selection of partners, I was fortunate enough to be involved in that process. We formed a process that was developed by our transaction advisers. The process typically involved a request for tender. We then developed an assessment process that basically involved having those construction partners nominate their key personnel. They presented to us. We also had a series of workshops where we basically interrogated their ability to work together as a team, to work under pressure. Obviously all of the typical factors that you would account for, such as experience, were in that mix as well.

The unusual thing about the recruitment of our partners in this particular process was that we chose to engage the designer first. We did not want to be held hostage by a conglomerate or a joint venture that was presented to us that had a constructor and a designer. By engaging the designer first, that allowed us to actually pick the partner that we wanted. We were able to pick the best designer and then pick the best constructor without being constrained by a team that was presented to us. We then used those workshops to test the interaction and the ability of those parties to work in a collaborative contractor model.

The other benefit that is probably not well documented and probably not formal in the sense is—and the lesson that I got out of it—we actually ended up creating a bit of professional tension which I think worked in the ACT's favour in the sense that because these partners were not in cahoots, if I could put it that way, you actually had a degree of internal regulation by having another level of oversight of the designer keeping the constructor in check.

MS BURCH: By getting the designer first, the relationship between you and the designer was first and foremost?

Mr Hezkial: Absolutely. The other benefit, the carriage of the corporate history and the work that had been done on future water options and all the engineering work that had been done in selecting the ultimate Cotter Dam option, was actually conducted by the same design partner. So we had continuity of knowledge and design expertise. I think it probably would have contributed to keeping our design costs down given that that design team came in armed with all that previous knowledge.

MS BURCH: Just going back to the awards, is that a reflection, then, that whilst there have been cost overruns and time overruns, we have got a dam that is recognised internationally as being constructed well, designed well, put together well, all problems aside?

Mr Hezkial: Absolutely. The Cotter Dam has been the subject of international conference papers. On the technical side, there were many construction innovations developed. In fact, we had people coming from across the world to view the techniques that we were deploying on the Cotter Dam so that it could inform projects that they were looking at, particularly in Asia. And a lot of those lessons learned have actually been captured for posterity in our value-for-money report where we tried to capture all those construction lessons.

Examples would include the actual intake tower, that is, the structure that passes water through the dam and into town. That was constructed independently and ahead of the actual dam wall and actually used some technology that you typically use for constructing an elevator shaft but using that technology in a completely different application to what it is particularly used for.

The other innovation I would like to mention is the actual forming of the front steps of the dam. We were very cognisant that we needed to achieve an aesthetic look given its proximity to the recreational space in the Cotter avenue. We used a paving machine on the edges to get very clear lines so that it was aesthetically pleasing. The benefit of that was also reducing the safety risk of having people working closer to the edge and gave us a much more consistent finish with fewer personnel in a very confined space. That is the flavour of some of the innovations.

MS LAWDER: I have a question about communication between then ACTEW'S managing director and the Assembly. I asked a similar question of the Treasurer and Under Treasurer earlier this morning. The Auditor-General's report said there was some evidence of incorrect information, for example, something about significant increase in the cost of reinforced steel which was perhaps incorrect. Another was about the costed increase by going down another nine metres on what we anticipated for the foundations, which was not supported by the geotechnical investigations that were undertaken. I understand that the auditor certainly says in one instance ACTEW only had approximately one day to prepare and present this information to the Assembly. However, what have you done to make sure that you have all that information at your fingertips ready to communicate to the relevant authorities as and when it is required?

Mr Knox: Generally speaking, we engage with a number of the agencies, the government agencies, quite closely. We sit on a D-Gs water group, which is chaired by EPD. We are on a planning infrastructure group as well with one of the other agencies. We sit on the SEMSOG group. We also have a chair at the ACT and Region Catchment Management Group that Professor Falconer chairs as well. We have our regular briefings with the Treasurer. We also meet the Under Treasurer on a regular basis. We have a map of basically everybody that we keep in touch with all the way through things and provide regular briefings. We feel very confident that we are well prepared and across everything that needs to be clearly communicated.

Going back to our previous comments around our governance regimes, we have very open channels. All of our minutes from our board meetings and the agendas are transferred to the shareholders as well and we have the regular catch-ups.

MS LAWDER: At some point—this is before my time in the Assembly too that this happened—there was some motion in the Assembly calling on the Treasurer to provide this information the next sitting day or quite quickly. You are quite confident that you have those processes in place to provide that correct, factual information?

Mr Knox: Yes, we are.

MR HINDER: Just going back to the partner selection program and what sounded to me like a pretty exhaustive process you went through to make sure you had the right people and the right organisations—and I am mindful of the fact that you have created, if I can call it, an engineered collaborative tension and I can see the absolute benefits of that all the way through the project—would it be fair to say that the spillway project was part of that process in terms of a way of removing the start-up, first-date kinds of issues that you get with a partner before you then move on, and in terms of the start-up time for the ECD project?

Mr Hezkial: The short answer to that is absolutely. I think one of the benefits in getting Googong up before the enlarged Cotter Dam project was that when you set up an alliance of this size it is almost like forming an entirely new company complete with its own set of policies, procedures, work instructions, protocols, and that allowed us to get a head start on those things.

It also allowed us to establish the governance frameworks within the actual project delivery space: formation of the alliance leadership group, which is effectively the board of the alliance, and the alliance program management team, which is the level at which I operated at the time. It allowed us to bed those processes in. And a lot of those processes were simply transferred across, notwithstanding some of the benefits of learning from the Googong dam spillway, particularly around methods and techniques and stripping down the abutment that we could transfer across. It definitely gave us a head start.

To be honest, it also allowed us to verify the performance of our partners. There were personnel changes that were requested by ACTEW at that time based on having an opportunity to observe how people performed and where we felt their skill sets lay.

MS BURCH: It is just them working within those various organisations; it is not changing the organisations; this is how we think you can do your job better with us?

Mr Hezkial: Correct. Basically what you are doing when you are forming these alliances is making decisions about whose cost system will we use, whose quality system will we use, how will we manage these joint issues. It allowed us to make those selections so that when we got into the Cotter Dam project those decisions were made, people were familiar with them; we got into a momentum, if I could describe it that way.

MR HINDER: The analogy you are looking for is not setting up a new company; it is a second marriage and a blended family with the potential for red-headed stepchildren.

The only other thing I would like to add is that if we could officially forgive Mr Hezkial's use of the puns "flow-on effect", "ripple effect" and that there was a KPI "pool", that is all I have got, thank you.

THE CHAIR: A last question: para 4.74, the number of shifts to clean up a cold lift was seven when typically it should have taken four shifts. Can we have an explanation of why the green cut took up so much more time than was expected?

Mr Hezkial: I think in a nutshell it related to expectations around the degree of clean down. When we set the TOC there were some assumptions made around how much you would have to scabble off. It is also impacted by the ambient temperature at the time when you conduct those cold joints. Depending on the ambient temperature, you may need to go deeper than you would typically expect. I think it, again, comes back to some assumptions that were made that did not materialise. We ended up having to do much more extensive scabbling down of those surfaces when those cold joints occurred.

Obviously the other issue is that we encountered way more interruptions to the placement than we had originally anticipated, which created more of those cold joints.

THE CHAIR: Could you give us some more detail, something in writing, on that?

Mr Hezkial: Absolutely.

THE CHAIR: If you are a little out, but 75 per cent more than was expected is a fairly significant variance.

Mr Hezkial: Yes. Again—and I do not mean to labour the point too much—it is a function of the weather.

THE CHAIR: Sure.

Mr Hezkial: If you get more rain you get more interruptions to the placement process and you end up with more—

THE CHAIR: But Entura says it was the standard weather that you should have expected.

Mr Hezkial: Again, not shying away from the fact that there were some assumptions made at the start of the project about how many—we can share those with the Assembly.

THE CHAIR: If you could.

Mr Hezkial: We ended up getting more interruptions than we anticipated.

THE CHAIR: Thanks for that. We have run out of time.

MR HINDER: Mr Chair, can I ask one more? When the chair talks about standard weather you should have expected, that was across all of the recorded years of rain, was it not, as opposed to the drought year and the five years before that I might think would be reasonable?

Mr Hezkial: Absolutely. I think the issue with weather is that when you are talking about predictable weather patterns what you are really talking about is probabilistic expectations. For example, if you say that you are going to get a flood once every 100 years, that does not necessarily mean you will get two hundred-year floods in 200 years. You could actually end up with five one-in-100 year floods within a year and then get nothing for the next 500. So we just need to be careful around our language when we say these things were foreseen.

When we sized the diversion, for example, we looked at river flow records and rainfall records back to 1974 to size that diversion. And in the fullness of time and with a bit of hindsight, we now know that the flood diversion was not sized big enough. So I think the question for me is: did you make the right decision based on the information you had available at the time and did you make a reasonable assessment of that data? I think the answer to that question is yes.

THE CHAIR: Thanks very much. A number of questions were taken on notice. If we could have those, say, within two weeks, which is the normal expectation, that would be kind. When available, a proof transcript will be forwarded to the witnesses to provide an opportunity to check the transcript and suggest any corrections if you see fit to do so. I now declare this part of the hearing closed. Members will resume at 10 o'clock with a different hearing. Thank you for your attendance today.

The committee adjourned at 12.02 pm.