RICHARD BEASLEY SC

30 November 2022

The Hon Dr Susan Close
Deputy Premier of South Australia
and Minister for Environment and Water
GPO Box 11071
Adelaide SA 5001

Dear Deputy Premier,

Re: Commissioner for River Murray (SA)

Introduction

1. Although my Consultancy Agreement with the South Australian Government does not require me to produce a report until 30 June 2023, I thought it timely to provide you with an update now as to various meetings and briefings I have had on key issues prior to the next Basin Ministers' meeting next year. I have assumed that you do not mind that my preference for reporting to you is by written correspondence, rather than by text message[1].

Meetings and Briefings

2. Set out below is a list of the meetings I have had since 22 August 2022 (some of which are raised in more detail on other sections of this report):

   (i) 23 August 2022 – Meetings in Adelaide with departmental officers of the Department for Environment and Water (including Ben Bruce, Dan Jordan, and Emma Finnie).

   (ii) 2 September 2022 – Meeting with Kate McBride and Rob Campbell from the Australian Institute.

[1] Cf: The former Australian "Drought Envoy".

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(iii) 5 September 2022 – Conference with Chief Executive (Andrew McConville) and Chair (Air Chief Marshall Sir Angus Houston AK, AFC (Ret'd)) of the Murray-Darling Basin Authority (**MDBA**). Mr McConville has kindly facilitated a number of briefings concerning ongoing work of the MDBA, and with relevant people in other government agencies.

(iv) 9 September 2022 - Zoom conference with Alliance of Conservation Councils CEOs and Members.

(v) 5 October 2022 – Briefing by MDBA concerning climate change and the Basin Plan.

(vi) 6 October 2022 – Meeting with SA Department Officials; conference with Federal Minister the Hon Tanya Plibersek; meeting with Ngarrindjeri representatives; attend Stakeholders' meeting with various representatives from environmental and irrigation groups.

(vii) 14 October 2022 – Zoom conference with Karlene Maywald, SA Water Ambassador.

(viii) 20 October 2022 – Briefing (in Canberra, accompanied by Dan Jordan) with MDBA on SDL adjustments and accounting.

(ix) 20 October 2022 – Briefing with MDBA River Operators, principally on "constraints".

(x) 21 October 2022 – Attend MDBA Board meeting with Mr Jordan.

(xi) 4 November 2022 – Meeting in Sydney with Rachel Connell and Emma Solomon from the "Water Reform Taskforce" of the Department of Climate Change Energy, the Environment and Water (Cwth) (**DCCEEW**).

(xii) 21 November 2022 – Meeting in Sydney with Professor Mary O'Kane, who is currently conducting a "water science" review into aspects of the Murray Darling for DCCEEW.

(xiii) 29 November 2022 – Telephone conference with Dr Celine Steinfeld, Director, Secretariat of the Wentworth Group of Concerned Scientists.

The 450 Gigalitres

Introduction

3. Although some of what follows is very well known to you, it is convenient first to set out a summary of a part of the Plan that has become both unnecessarily controversial, as well as a near total failure – that is, the adjustment of the Basin Plan to recover an additional 450GL of water on an average annual basis for the environment.

Why have a Basin Plan?

4. Any discussion of the 450GL should begin with at least a briefly stated outline of why the Basin Plan was enacted. It was because by 2006 (and probably well before) the relevant Basin state governments, and the Commonwealth government, recognised that there had been a significant overallocation of the Basin's water resources for consumptive uses, to the considerable detriment of the environment. A clue could have perhaps been taken since 1982, when the Murray Mouth was first dredged. The treatment of our frequently hydrologically challenged rivers as though they could sustain the endless expansion of the growth of food and fibre not only risked the environment, but also risked Australia falling into breach of various international treaty obligations. I can resist providing you as footnotes to this letter references to a multitude of scientific reports supporting these facts. To make the points good I need only refer to s.21(2) of the *Water Act 2007* (Cwth) in which the Commonwealth Parliament took the unusual step of legislating as a fact that overextraction had caused environmental damage, and that "special measures" were needed to address this. The special measure became the Basin Plan.

Core of the Basin Plan – an Environmentally Sustainable Level of Take

5. The core of the Basin Plan is the determination of an Environmentally Sustainable Level of Take (**ESLT**)[2] for the Basin, which itself forms the basis for the long-term average Basin wide Sustainable Diversion Limit (**SDL**) – the amount of water that can sustainably be taken from the Water Resource Plan Areas, and then the Basin as a whole. The ESLT is best thought of as the amount of water that must be recovered from consumptive uses and returned to the environment to prevent long term degradation. This involves complex science. It required the work of experts from many disciplines, with judgments being made as to what are the "key environmental assets" of the Basin, what flow rates they need, in what years, and in what volumes. I will not attempt to set it all out here. For better or worse, this amount was determined on a yearly average. Also for better or worse, it had to be determined by the MDBA "taking into account" Ecologically Sustainable Development (ESD) (which includes the precautionary principle): see s.21(4)(a) of the *Water Act*. Further, the ESLT must be based on the "best available scientific knowledge": s.21(4)(b). I say for better or worse as it is almost a philosophical issue (as well as a political one) as to whether it would have been better or preferable for the *Water Act* to require the Basin Plan to have been made through being "informed" by best science, not solely based on it. This might have given more scope for lawful input by policy makers, and by those who are usually referred to as "stakeholders". I do not think this would have been preferable, or better. I'm not sure it would have been worse, either. It could have been different. It wasn't.

An unlawful Plan – but this is no longer the central issue

6. In his Royal Commission Report into the Murray-Darling Basin Plan, Commissioner Walker SC found the Basin Plan to be unlawfully made, and at least in part invalid. One of a number of reasons for this was that he found the determination of the ESLT – how much water the environment needs returned to it – was made by political compromise, not "best available science". It is unarguable this is what happened, but it is not a matter I intend to dwell on in this letter, or explore further in my role. It is relevant, but no longer the main game. There is compelling evidence the current partly invalid and

[2] The ESLT is defined in s.4 of the *Water Act*, by purely environmental criteria

unlawfully made Basin Plan provides real benefits for the environment. It is an adaptive Plan, that is regularly to be reviewed[3]. It can be made better, which is where I consider the main focus should be. That said, in 2010 the MDBA's position was (presumably at least then based on "best available science") that 4000GL to 7000GL on a yearly average needed to be returned to the environment for the Basin wide SDL to represent an ESLT[4]. Less than a year later the volume was said to be represented by this equation: 2750GL, plus 450GL, less 605GL. This change, and the subsequently agreed equation, makes good Walker's finding that the determination of the ESLT was more politics than science. While not wishing to get back into those details, that reduction in the range of the ESLT does emphasise the importance of two things: **first**, the return to the environment of the extra 450GL is crucial; **secondly**, the need for real scientific credibility concerning the non-recovery of the 605GL.

SDL adjustments

7. The agreement reached between the Basin States and the Commonwealth for an environmental water recovery target of 2750GL per year on average was, as should be clear from the above, conditional. It required insertion into the Basin Plan of what became Chapter 7. This Chapter of the Plan allows for the adjustment of the Basin Wide SDL. The aspect of the SDL adjustment mechanism relating to NOT having to recover approximately 605GL as a result of what are defined as "supply measures" in the Basin Plan is discussed in the next section of this letter. A further adjustment is for the recovery of the additional 450GL of water for the environment on average each year.

450GL and Efficiency measures

8. The 450GL of extra environmental water (for some reason referred to occasionally as "up-water") is provided for in s.86AA of the *Water Act*, and Chapter 7 (especially s.7.09, 7.16 and 7.17) and Schedule 5 of the Basin Plan. The legislated object of the extra 450GL is to be to achieve certain environmental targets for the Southern Murray, and for the Coorong, Lower Lakes, and Murray Mouth. As currently enacted, the water

[3] In 2026

[4] And for the objects of the *Water Act* to be met, and for Australia to fulfil its international treaty obligations, upon which the constitutional validity of the *Water Act* depends. This was the volumetric figure published in "The Guide to the Basin Plan", (MDBA, 2010).

is to be recovered through what are defined in the Basin Plan as "efficiency measures", through a fund called the "Water for the Environment Special Account". An example of an "on-farm" efficiency measure is "replacement of less efficient irrigation methods with drip irrigation". An on or off farm efficiency measure might be the lining of water channels to also reduce evaporation or losses of water to groundwater. Such measures – which have controversy attached to them concerning both cost and the reliability of how much water is actually recovered for the environment – were the means chosen to recover the 450GL in lieu of the Commonwealth purchasing water entitlements (sometimes called "buybacks"). Efficiency measures are to *"achieve neutral or improved socio-economic outcomes"*, a term defined in s.7.17(2)(b) of the Basin Plan. An attempt was made to alter these socio-economic criteria at a meeting of Basin Water Ministers in December 2018. What was agreed was in my view (and I am not alone) not just absurd, but invalid (see below).

Recovery of 450GL set to take 1,125 years

9. Claims were made at Senate Estimates on 11 November 2022 that approximately 4GL of the 450GL of environmental water has been recovered under the Basin Plan. This recovery is over a 10-year period. This represents a rate of recovery of 0.4GL per year. This would mean that at the current rate it will take approximately another 1,125 years to recover this water.

Floods, drought, climate change and the 450GL

10. I appreciate it might seem odd to some to discuss recovering water for the environment at a time when many areas of the Murray-Darling Basin are experiencing horrendous flood events. Some of these floods are at and beyond record levels, and have caused great hardship to a large number of people. Talking about recovering water for the environment in times of shortage or drought raises similar sensitivities, because drought causes different but often equally severe impacts on people and businesses. There are people who have insisted the topic of climate change not be mentioned at the time of fires[5]. The Basin Plan, of course, does not cause drought or flood or climate change.

[5] Although never by people actually affected by fires

Further, historical climate data as well as projections for the future reliably inform us that it is unlikely to take long for the Basin to shift from a flood year to drought.

11. Climate projections now indicate, at a level of near certainty, that the future for the Murray-Darling Basin is for a hotter climate. It will almost certainly be hotter and drier in the Southern Basin, with the potential for significantly less run-off into its rivers and watercourses. The future for the Northern Basin is almost certainly hotter too, although there are scenarios involving it both being hotter and slightly drier, or slightly wetter. If slightly wetter, that will likely be through torrential downpours. None of this is assertion, or new science – it represents a probably inadequately short summary of the work of the CSIRO from the "sustainable yields" project and beyond, as well as that of other credible research including reports of the IPCC. Other than amongst lunatics, the debate is no longer about whether the climate will get hotter on a daily average basis – it is only a question of how much hotter, and hence how much less run-off or water availability that might mean for the Basin. The current scenarios indicate a decrease in rainfall of about 10%, and a decrease in runoff of 30% by 2050.

The 450GL does not require the building of an Ark

12. I will resist the urge to respond in detail to the notion, that I have seen suggested by some people recently, that an extra 450GL of water recovered for the environment under the Basin Plan would likely lead to the sort of flooding we are now witnessing. It is better for a scientist rather than a lawyer to dispose of that nonsense. I cannot help though to say that such suggestions are wrong at a level that makes them arguably offensive. The short point is that despite the huge volume of water in the system at the moment, the 450GL is still vitally important for the environmental health of the Southern Connected Basin, as well as the Coorong, Lower Lakes and Murray Mouth. That is not an assertion, or something made up by a lawyer – it's another very short distillation from a plethora of scientific reports. Not that it matters to everyone, but the 450GL recovery is also part of the law.

Albanese Labor Government commitment

13. The new Commonwealth Government made five election commitments regarding the Murray-Darling Basin. The first was expressed as follows:

"Working with Basin governments and stakeholders to deliver on water commitments, including the 450GL for the environment."

14. Whatever view is taken of this commitment, the intent behind it can only sensibly be construed as one involving delivery of the 450GL in the near future, and not at the rate that would see it fulfilled in over a thousand years. The current policy (and perhaps legislative provisions) to "deliver" this water has failed. There have been reports in the media that the new Commonwealth Government might be considering purchasing water to recover some of the 450GL. Those reports, regrettably, may not be accurate. From what I heard at Senate Estimates, and from material published by DCCEEW, strategic water purchases might be implemented to bridge what is described as the current "gap" in water recovery (49GL), but not (at least currently) for the 450GL. My views about this are set out in the paragraphs that follow.

Much of the 450GL should be purchased by the Government

15. First, it should not be forgotten that there would be no Murray Darling Basin Plan without the 450GL of environmental water provided for in Part 2AA of the *Water Act* and Chapter 7/Schedule 5 of the Basin Plan. The then South Australian government was clear – based on scientific reports at the time – that the Plan needed to recover a minimum of 3200GL on average per year to fulfil the ecological targets set for the Plan.

16. As mentioned above, as currently legislated, the *Water Act* and Basin Plan provide for the 450GL to be recovered through "efficiency measures" paid for by money in the Water for the Environment Special Account. A recovery of 4 of 450GL in 10 years demonstrates that this means for recovering the extra 450GL has failed.

17. There are numerous peer reviewed scientific papers (as well as a report by the UN Food and Agriculture Organisation) that question the reliability of the recovery of water from efficiency measures, or at least cast real doubt about the amounts claimed to have been recovered[6]. It has also been established by various water economists in peer reviewed

[6] Perry and Sedato, "Does Improved Irrigation Technology Save Water?", Discussion Paper, Food and Agriculture Organisation of the United Nations, 2017. See also Wang et al, "Groundwater and Return Flows Impact Report" (short title), Melbourne School of Engineering, Water, Agriculture and Environment, October 2018.

papers that recovering water through efficiency measures is far more expensive to taxpayers than recovering water through the voluntary purchase of water entitlements. The facts and opinions about "return flows", and the reliability of efficiency measures as a means of recovering water, are best resolved by relevantly qualified scientists rather than me. The unarguable point is that 450GL does not appear likely to be recovered through efficiency schemes (which in and of themselves might otherwise be worthwhile investments) within any reasonable timeframe. A sizeable proportion of the 450GL will have to be bought.

Misinformation about buybacks

18. Should the Commonwealth Government decide to purchase water entitlements to recover some or all of the 450GL (which might require legislative amendments to be made at some time), it will be criticised for doing so. It is likely much of that criticism will be by way of assertions in media releases rather than being evidence-based. The impacts of water purchases by the Government have been either overstated or, on occasions, invented. What is likely to be said about the government making voluntary purchases of water for the environment are that they:

    (i) "..are a water grab, which …devastates Basin communities and industries"[7]; and
    (ii) "will rip the heart out of communities" and "erode the economic base of town" and are "economic vandalism"[8]; and
    (iii) cost jobs; and
    (iv) create stranded irrigation assets, and increase water delivery costs; and
    (v) damage the social fabric of towns, and reduce population.

19. What is unlikely to be said about the purchase of water are the following matters:

    (i) There is no proportional relationship between a reduction in the use of water for consumptive use, and farm production.

[7] NSW Irrigators Council Press Release, 26/10/22
[8] Sam Birrell MP, Federal Member for Nicholls, quoted (I assume accurately) by the "Shepparton News", 4/11/22

(ii) Most irrigators/farmers who historically sold water to the government sold a partial and not an entire entitlement. They stayed in irrigated agriculture/farming.

(iii) Money obtained from the sale of entitlements was spent locally

(iv) Job losses and economic contraction in rural and regional communities has many causes – mechanisation; increased urbanisation; climate change; fluctuation in commodity prices etc. The Basin Plan, on peer reviewed evidence, is not a similar level cause of economic loss.

(v) It is much cheaper to buy water than to attempt to recover it through efficiency measures.

(vi) Any credible economic analysis must include the economic benefits of recovering water for the environment, not just any alleged negative impacts.

Impacts should be mitigated

20. A further point should be made here. There have been examples of heavily water dependant towns that suffered impacts as a result of what could be argued to be non-strategic buying of water by the government, that largely occurred before the Plan was even enacted. My experience is that this created genuine fear and distress in some parts of the Basin. That distress, and any negative impacts water purchases had, should not be ignored or trivialised. As a matter of obviousness, any third-party impacts from the purchase of water entitlements should be sought to be avoided, or minimised and compensated as far as possible. However, the matters outlined in [19] above represent the work of far too great a portfolio of peer reviewed economic literature for me to footnote in this letter. Amongst the authors of this work however are Professor Sarah Wheeler, Professor Quentin Grafton, Dr A Lock, Dr D Adamson, many others – and, relevant in a different context to this work, the independent report of Ernst & Young referred to below. Unfortunately, at least to date I have not seen a great deal of appetite by any government to deal in facts and data concerning buybacks. Hyperbole seems to be preferred. Of course, no Australian politician from any side of politics would engage in "fear mongering" in relation to water buybacks, but if they did it would be not just unforgivable, but contrary to the National (and local) interest.

Why has the 450GL not been recovered?

21. There have been a few key reasons why only 4 of the 450GL has been recovered over the last 10 years. They are as follows:

    (a) A plan to purchase the water should have been implemented years ago, when it was obvious it would not be recovered though efficiency measures alone.

    (b) The socio-economic criteria "agreed" to at Min-Co in December 2018. Those criteria make for difficult reading. They are written in a manner that is beyond my level of literacy. More importantly, they appear designed to stymie the recovery of the 450GL rather than to ensure it happens. Although you would no doubt be inclined to obtain more detailed advice concerning this, the socio-economic criteria agreed to at Min-Co in December 2018 are also in my opinion almost certainly invalid. I have a reasonable degree of confidence that I am not the only lawyer that would hold this view. They are not consistent with s.7.17(2)(b) of the Basin Plan. A sensible response from all of the Basin State Ministers and the Commonwealth Water Minister would be to now put aside these criteria as a mistake. Expressed another way, it is long past the time for Recommendation 11 made by Commissioner Walker SC to have been taken up – that is, the socio-economic criteria agreed to at the Min-Co meeting of 14 December 2018 *"should be abandoned"*[9]. While on this topic, it should not be forgotten (although it appears to have been by some Basin states) that the most comprehensive and independent study of efficiency measures in the Basin (conducted by Ernst & Young in 2017-18) concluded that off farm efficiency measures generally have positive socio-economic impacts. The authors also found on-farm efficiency measures almost always have positive impacts for the irrigators/farmers involved. While concerns were raised that participants in efficiency schemes might have an advantage over those that did not participate, no evidence was found of such negative socio-

[9] Royal Commission Report page 73

economic impacts.[10] I have not read any critique of this report that suggests the authors were wrong. Rather, the report has been ignored as its findings did not seem to suit the NSW and Victorian governments, or the then Federal government. Again, I am confident that no Australian politician would ever ignore an independent economic or science-based report simply because the findings did not align with ideology or political gain, but if that ever were to happen, it would be gross negligence, and perhaps worse.

(c) Lack of progress on constraints. Nearly 10 years after a constraints policy was developed by the MDBA, little progress has been made in relation to constraints. That is not a criticism of the MDBA – it is not empowered to fix this problem. I have been advised that, in particular, New South Wales and Victoria have made no real attempts to make progress in relation to constraints, and there is also resistance by some landowners to constraint measures such as the construction of culverts or the building of bridges for land access. Lack of progress in relation to constraints seems to have been used as an excuse for a lack of action in relation to the recovery of the 450GL. Priorities should be reversed. The 450GL should be recovered. Constraints progress will have to follow. Further, and crucially, given the non-recovery of the 605GL as part of the SDL supply measure adjustment, the constraints issue should be manageable on the modelled outcomes I have seen even if all of the extra 450GL was recovered. Even with the extra 450GL, it would be a mistake to think of the Plan as one involving a return of a volume of 3200GL. It would be an (approximately) 2100GL Plan, plus 450GL, plus an alleged equivalency of 605GL. That alleged equivalency is not "real" water.

Is it ethical to prevent people from selling water to the government for environmental purpose?

22. I have been advised in the course of my meetings that since the May 2022 Federal Election a number of water entitlement holders have contacted the Federal Government expressing interest in selling some or all of their water entitlements. There exists an "unsolicited water entitlements register". There is no environmental, social or economic reason why relevant

[10] Ernst & Young, "Analysis of Efficiency Measures in the Murray-Darling Basin: opportunities to recover 450GL in additional Environmental Water by 2024 through Efficiency Measures by 2024 with Neutral or Positive Socio-Economic Impacts – Independent Report to the Murray-Darling Basin Ministerial Council" (January 2018).

changes should not be made such that water is now purchased by the Commonwealth Government in a strategic way to make real progress with the recovery of the 450GL.

23. It seems remarkable (and not in a good way) that in Australia a holder of a water entitlement can sell that entitlement to anyone, including a large corporate entity, but is prevented from selling their water to our federal government to aid the environment. I have no desire to delve into what could be thought to be a form of "legal moralism", but in what way is this considered to be ethical by those who are decision makers? Why should people be prevented from selling their water voluntarily for an environmental purpose? If this were a debating question, I know which side I would like to argue.

24. Finally, it is difficult to see how the Commonwealth Government will meet its key election commitment in relation to the Basin Plan without acquiring a significant proportion of the 450GL through strategic water buybacks. It should do this. At every meeting I have had I have impressed upon the participants all of the matters referred to above. I am yet to hear a convincing reason[11] why voluntary water buybacks should not be used (even if in conjunction with efficiency measures), to recover a large proportion of the 450GL. In conclusion, I have not heard any reason of substance why Recommendation 8 from Commissioner Walker SC's Royal Commission Report should not be adopted by the Commonwealth Government – that is:

> *"Future water recovery for the environment, including the 450GL, should be purchased through buyback. This requires repeal of the 1500GL cap on buybacks and s.85C of the Water Act."*[12]

The 605 Gigalitres

What is this adjustment?

25. Section 23A of the *Water Act* provides for adjustments to be made to the long-term average SDL for the Basin. Through Chapter 7 of the Basin Plan (and schedules 6 and 6A), and the implementation of "supply measures", 605GL[13] of water does not need to be recovered for the environment, as these supply measures, as a result of

[11] By reason I mean fact-based opinion. Something supported by credibly economics and science.
[12] Royal Commission Report p.72
[13] Technically 543GL

"environmental equivalency", will represent this volume of water. Examples of supply measures given in the Basin Plan include *"reconfiguring suitable lakes and storage systems to reduce evaporation"*, *"changing the methods of environmental watering"* and *"reducing the quantity of water required to deliver water at a particular place"*: see s.7.03 of the Basin Plan.

26. In practice, there were 36 supply measure projects proposed for the supply measure SDL adjustment. I will not provide a list of them for the purposes of this short report. Some were beyond problematic – for example, the Menindee Lakes supply measure (said to represent 106GL of the 605GL) would, if proceeded with, perhaps have devastated up to 28,000 ha of native fish habitat[14]. While it is open for policy makers to prefer humans to fish, this is a lot of habitat. Leaving this aside, it is now clear that many supply measures proposed will not have been built or implemented by 30 June 2024. At the National Press Club on 22 November 2022, MDBA Chief Executive Andrew McConville said the range might now be between 290GL to 415GL in lieu of 605GL. This is consistent with other briefings I have had. My concern however is that any "supply measures" that will be operational by 2024 cannot properly be said to represent even a range of 290GL to 415GL of water.

27. This SDL adjustment therefore makes what is sometimes referred to as a "3200GL plan" – that is, a plan that recovers 3200GL for the environment – in truth this: *2750GL minus 70GL (Northern Basin Review) plus 450GL (of which 4GL has been recovered) minus 605GL.* While a person being introduced to the Basin Plan may consider this equation somewhat perplexing, the fact that the Basin Plan has an adjustment mechanism should be seen as a good thing – there should be the capacity for the Plan to be adaptive. The supply measure adjustment mechanism however is extremely troubling for the reasons I set out below.

The 605GL adjustment risks being an environmental fraud

28. The supply measure SDL adjustment involved the creation of an "Ecological Elements [scoring] Method", which measures (scores) the environmental impacts and benefits of

[14] A risk identified by the MDBA

supply measures against four species of waterbirds, six species of vegetation, and two species of fish. I am mindful I am not a scientist. Since first reading about this part of the Basin Plan I have attempted to temper my initial reaction to the Ecological Elements Method as being something closer to a pea-and-thimble trick than science. I have so far failed in this attempt, but remain persuadable. Given my failure, as I have made clear to relevant people at the MDBA, I remain deeply concerned about the reliability and credibility of the science behind the non-recovery of 605GL of the Basin Plan environmental water recovery amount as part of the "supply measures" scheme. Commissioner Walker SC found Ch 7 and Schedules 6 and 6A of the Basin Plan to be *"an attempt to put into legislative form a complex, and distinctly imperfect, scientific procedure"*.[15] He found that the ecological element scoring method in Schedule 6 of the Basin Plan had *"alarming shortcomings"*. He found the supply measure contribution (the 605GL, or more accurately at present 543GL) to be *"the result of a highly uncertain experiment with the environment to the Basin … that is not consistent with the requirements of the Water Act"*.[16]

29. While having noted I am not a scientist, I have closely read the various expert reports and expert reviews about the science behind the supply measure adjustment. These scientific reviews have described the SDL adjustment Ecological Elements Method as *"novel and untried"*, *"without precedent"* and that *"no one should assume that the adoption of the* [method] *is without significant uncertainty or risk"*.[17] An independent panel made an observation that there was a *"substantial error space"* inherent in the model and method used. Other criticisms could be made, but I simply refer you generally to Chapter 7 of Commissioner Walker's Royal Commission Report. I would add this: it is one thing to ignore Walker, as has been done. The reports and science reviews he relied on for his views should not be ignored.

30. I have not been able to find anything that provides me with any confidence that this part of the Basin Plan is reliable or that it represents "the best available scientific

[15] Key Finding 7.1, page 56
[16] Key Finding 7.6, page 57
[17] Royal Commission Report p.303

knowledge".[18] One description of the supply measure SDL adjustment under the Basin Plan is that it is a gamble with the environment. An environmental gamble is not authorised by the *Water Act*. Another description – based on reading the expert reports on this part of the Plan that are available to be read – is that it at least runs a risk of being a fraud on both the environment, and the objects and purposes of the *Water Act*. That is also not authorised by the *Water Act*, and something no government should want to be a party or bystander to.

31. The use of the words "gamble" and "fraud" are not used flippantly. The Basin Plan is a scheme that anticipates that it will change, be reviewed, and evolve. Like no doubt other long-term plans that are to be science based, there should be recognition that science can itself evolve, advance, or at least be better understood. No rational person in my view that has read the published expert opinions concerning the SDL supply measure adjustment could be left with any other view than there is tremendous uncertainty about the science behind it, particularly the Ecological Elements Method. How it all amounts to a volume of water – be it 543GL, or 605GL, or even 10GL – is a mystery to me. That would not be such a problem if it were not also a mystery to people with relevant scientific qualifications and experience. It does not look like an adjustment to the Basin Wide SDL (of a huge volume of water) that is sufficiently science based to be lawful. It arguably more than flirts with falling foul of s.21(4)(b) of the *Water Act* ("based on best available scientific knowledge"), and it is difficult (at least for me) to see how it sits properly with the concept of "ecologically sustainable development", and in particular the "precautionary principle"[19]: see s. 21(4)(a) of the *Water Act.*

32. I have indicated to the MDBA (who I don't doubt are working in good faith to implement the supply measures scheme) that I would like some further and better explanation provided to me as to why anyone should hold confidence concerning this part of the Basin Plan. I will follow this up with Andrew McConville. Of course, as a non-scientist I am happy to be informed through reliable means that we all should have complete confidence in this part of the Basin Plan which absolves the States from

[18] *Water Act* s.21(4)(b).
[19] A good definition of ESD and the precautionary principle can be found in *Telstra Corporation Limited v Hornsby Shire Council* [2006] NSWLEC 133; (2006) 67 NSWLR 256 at [108]-[115] Per Preston CJ

recovering nearly 605 GL of water that might otherwise go to the environment as part of the 2,750GL.

There should be an independent review of the 605GL adjustment

33. Beyond a brief to me, I believe there should be a full and comprehensive independent review by relevant experts of this part of the Basin Plan. There is sufficient uncertainty here that in my view a responsible government would ensure that there is a fully independent scientific inquiry into the supply measures aspect of the Basin Plan. I appreciate how difficult that will be, given that we have been travelling down this road for 10 years now. However, the findings of Commissioner Walker SC about the supply measures SDL adjustment, and the concerns he had about it, were not lightly made. They were only made after close analysis of the available reviews of the "science" associated with this part of the Plan.

34. With this in mind, I note that Professor Mary O'Kane (former Chief Scientist of NSW, and current Chair of the NSW Independent Planning Commission) has been engaged by DCCEEW to conduct a "water science" review of Murray Darling Basin[20], but not of the Basin Plan itself. I think we all should welcome this. In my view, we would be well served if the extent of Professor O'Kane's review was extended to examine the science behind the supply measure SDL adjustment, which is a view I expressed when I met with her on 21 November.

BDL/SDL Adjustment

35. As you would be aware, New South Wales has still not provided to the MDBA the majority of its Water Resource Plans to be accredited under the Basin Plan. The original deadline for this was 30 June 2019. Since then, the NSW Government has passed legislation concerning floodplain harvesting and the licensing of it. As I understand it, in some of the water resource plan areas, there will be an increase in the baseline diversion limits (**BDL**). BDL is defined in the Basin Plan, but in terms too broad to set out here. A simplistic (but not complete) understanding is to think of it as the volume of water taken from each water resource plan area in the basin as of 30 June 2009

[20] See O'Kane Review "Fact Sheet"

(before the Basin Plan was made and enacted). The MDBA's position is that an increase in the BDL for each water resource plan area will lead to an equal increase in the SDL for those water resource plan areas. As I understand it, the MDBA's position is that this can be done without an amendment to the Basin Plan.

36. It is of concern to me that there will be increases in the SDL for various valleys in northern NSW as a result of its floodplain harvesting licensing regime. The increases for the SDL for NSW in total appear likely to amount to about 324GL[21]. This was the subject of one of the briefings I had with the MDBA in October. I am aware (as are they) that submissions were made during the course of the NSW Parliament's Inquiry into Floodplain Harvesting that the approach that the MDBA appears likely to take (increasing SDLs without an amendment to the Basin Plan) has been said to be unlawful. Part of a legal opinion was tendered to the NSW Government Inquiry concerning this. Briefly, it seems that the argument being raised is that the *Water Act* contains provisions/schemes within it for the exercise of power to make an adjustment to the SDLs such that they are the provisions that must be followed to lawfully adjust/increase the basin-wide SDL. It is not part of my role to provide legal advice to the MDBA. I raise this matter simply so that you are aware of it (and I know that your departmental officers are) and note that there has been at least some indication that there may be a legal challenge to the approach that the MDBA intends to take.

Climate Change

37. The ESLT for the Basin Plan, and hence the Basin Wide SDL, was determined by modelling climate data from 1895 to 2009. Despite indications from the CSIRO that not including climate change projections into the modelling was "indefensible", the ESLT was determined by the MDBA without the use of such projections. This has been found this to be "maladministration" and "gross negligence"[22].

38. Based on the briefings I have received from the MDBA, it is now my understanding that climate change projections are likely to be incorporated into the Basin Plan

[21] "SDL Accounting Overview", MDBA, 20 October 2022, p 15
[22] Royal Commission Report at, for example, page 55, 247.

modelling, and at least for the review of the Basin Plan in 2026. This work is being undertaken by the CSIRO with the MDBA.

39. Since the CSIRO undertook its sustainable yields research back in 2008-2010, there has been no significant change to the likely climate scenarios for the Murray Darling Basin (except for a higher degree of confidence in relation to those projections). As discussed above, scientists now consider that it is a matter of certainty that it will be hotter in the Murray-Darling Basin by 2030 and 2050. How much hotter is likely to depend upon the reductions of greenhouse gas emissions globally. The Basin is already 1.1° to 1.4C hotter than it was on a daily average from pre-industrial times. On average, for every 1°C it gets hotter in the Basin, and in particular the Southern Basin, there will be 15% less water runoff. A 2°C increase could be catastrophic. It may also be hotter and drier on the Northern Basin, although a realistic scenario is hotter and wetter. Unfortunately, that is not wetter in a good way – that is, wetter through increased torrential downpours. As set out at [11], by 2050 there is a real risk of a reduction of runoff of 30%.

40. Controlling global emissions and daily temperature rises is outside of the terms of reference for my Consultancy Agreement. So is advising about what difficult decisions and structural adjustments will need to be made if the Basin suffers a 30% reduction in water. I can say that incorporating climate change projections in the Basin Plan for its review in 2026 may reveal that an increase in water for the environment is needed for the purposes of ensuring the Basin-wide SDL represents an ESLT as that term is defined in the *Water Act*. It should result in a more science-based plan.

41. As an aside, there is currently before the NSW Land and Environment Court a case involving a challenge to the lawfulness of one of NSW's Water Sharing Plans (the Border Rivers Plan). That challenge centres on an allegation that this Plan was not made with any regard to climate change projections (I think a matter that is not in dispute). This case will turn on the proper construction of the *Water Management Act* 2001 (NSW), and not the *Water Act* 2007 (Cwth), but it is not impossible that the case could have some implications for the Basin Plan.

Conclusion

42. At the end of the stakeholders' meetings in Adelaide on 6 October 2022 Minister Plibersek and I briefly discussed a further meeting, which I would certainly welcome. I also intend to meet again before Min-Co with relevant Commonwealth bureaucrats. This would be to further reinforce some of the matters raised above and also to raise some additional matters that have emerged since then. At a fundamental level, however, it is difficult to see how the Commonwealth Government will meet its election commitments concerning the Basin Plan (particularly in relation to the 450GL) without a strategic purchase of water entitlements – perhaps in conjunction with a properly operating efficiency measures scheme based on the socio-economic criteria described in s.7.17(2) of the Basin Plan (and not the invalid mishmash of criteria that emerged from the December 2018 Min-Co) (see generally [15] to [24] above).

43. While it looks highly unlikely that all supply measures will be in place by 30 June 2024 in any event, for the reasons outlined above, there remains such uncertainty from a scientific perspective about this adjustment that it should not be ignored. The Commonwealth should stand up an independent scientific review of the supply measure adjustment (see generally [28] to [34] above).

44. As a final matter, I want to let you know that I have had excellent support from senior people within your department (Ben Bruce, Dan Jordan, Emma Finnie), as well as fruitful and informative discussions with them. As stated above, Andrew McConville has provided me with great assistance in facilitating engagement with relevant people at the MDBA which I have appreciated, and I have no doubt will continue.

45. I would of course welcome the opportunity to discuss any of the matters raised above with you or any of the senior people of your department that I have been speaking to in the recent months.

Yours sincerely,

Richard Beasley SC
Commissioner for the River Murray in South Australia