LEGISLATIVE COUNCIL

PORTFOLIO COMMITTEE NO. 7

Rationale for, and impacts of, new dams and other water infrastructure in NSW

Part 2

Report 8

7

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Portfolio Committee No. 7 – Planning and Environment

Rationale for, and impacts of, new dams and other water infrastructure in NSW

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Terms of reference

1. That Portfolio Committee No.7 - Planning and Environment inquire into and report on the rationale for, and impacts of, new dam and mass water storage projects proposed by Water NSW including Wyangala, Mole River and Dungowan Dam projects, the Macquarie River re-regulating storage project, the Menindee Lakes Water Savings Project and the Western Weirs project, particularly:

    (a) the need for the projects, including the historical allocation of water and consideration of other options for ensuring water security in inland regions,

    (b) the economic rationale and business case of each of the projects, including funding, projected revenue, and the allocation and pricing of water from the projects,

    (c) the environmental, cultural, social and economic impacts of the projects, including their impact on any national or state water agreements, or international environmental obligations,

    (d) the impacts of climate change on inland waterways, including future projections, and the role of dams and other mass water storage projects in ensuring security of water supply for social, economic and environmental outcomes

    (e) water infrastructure technologies that may promote enhanced environmental outcomes,

    (f) any other related matter.

2. That the committee table Part 1 of the report by 22 March 2021 and Part 2 of the report by 30 July 2021, and Part 3 of the report at a later date, which will address the final business cases once released, and any other related matter.

The terms of reference were self-referred by the committee on 12 August 2020.[1]

[1] *Minutes*, NSW Legislative Council, 25 August 2020, p 2889.

Committee details

Committee members		
Ms Cate Faehrmann MLC	**The Greens**	*Chair*
Hon Mark Pearson MLC	**Animal Justice Party**	*Deputy Chair*
Hon Catherine Cusack MLC	**Liberal Party**	
Hon Ben Franklin MLC	**The Nationals**	
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* The Hon Rose Jackson MLC replaced the Hon Mark Buttigieg as a substantive member of the committee on 21 June 2021

Chair's foreword

This inquiry was established to examine a number of new water infrastructure projects proposed by the NSW Government. Part 1 of this report was tabled on 18 March 2021, and examined the proposed raising of the Wyangala Dam wall project. This Part 2 report examines the following 5 other water infrastructure projects identified in the inquiry terms of reference:

- Dungowan Dam project
- Mole River Dam project
- Macquarie River re-regulating storage project
- Western Weirs project
- Menindee Lakes Water Savings Project

These projects are part of the NSW Government's broader water infrastructure program, which was developed in the context of the recent severe drought. It is clear that there is a need to ensure water security in inland NSW in a way that both lets communities prosper and rivers stay healthy. However, this inquiry demonstrated that there is a great danger that the government's projects will achieve neither of these objectives.

The committee heard convincing evidence about the significant ecological impacts of a number of these projects. For example, the construction and operation of the proposed Mole River Dam would have significant impacts on native vegetation, fish and migratory birds due to the inundation of farm and bushland, changes to river flow and fish movement, and the loss of floodplain habitats. Similar ecological impacts were identified as consequences of the Dungowan Dam project, the Macquarie River re-regulating storage project, and the Menindee Lakes Water Savings project.

In addition, it was not able to be demonstrated that these projects represent good value for money, or were the most effective way of ensuring water security and reliability. The committee has genuine concerns about the decision-making process regarding the Dungowan and Mole River dams, noting that these investment decisions do not appear to have adequately considered alternative options, and were made before business cases have been finalised.

The impact that building new mass water storage projects on rivers have on First Nations people was particularly apparent throughout this inquiry. For example, the committee found that the Menindee Lakes Water Savings project, and the subsequent drying up of Lake Menindee, would have the effect of exacerbating and further disrupting the sacred and unique spiritual connection that the Barkindji and other First Nations people have to the river and country.

Committee members were shocked to hear the experience of some First Nations representatives regarding the consultation process for the proposed Mole River Dam, with some witnesses giving evidence of feeling dismissed and patronised. The NSW Government must address its methods of consulting with First Nations people as a matter of urgency.

This report recommends that the NSW Government address these significant concerns in the planning processes for the relevant projects.

On behalf of the committee, I would like to thank all participants for their contribution to this important inquiry, including the many organisations, community groups and individuals who made submissions and gave evidence at public hearings. Finally, I extend my thanks to my fellow committee members for their cooperation and commitment to this inquiry, as well as to the committee secretariat for their assistance.

Cate Faehrmann MLC

Committee Chair

Findings

Recommendations

Recommendation 1 **15**

That the NSW Government investigate alternative options to ensure water security in the Peel Valley, including managed aquifer recharge, water efficiency and water recycling as a matter of urgency.

Recommendation 2 **16**

That the NSW Government note the significant concerns raised in relation to the Dungowan Dam and Pipeline Project and ensure these concerns are adequately addressed as part of any independent planning process to assess the project. These significant concerns include:

- its high cost
- limited additional water yielded
- impact of climate change resulting in reduced rainfall events and reduced water
- inflow into dams in the Peel Valley
- irreversible ecological impacts on fish species, platypus and general river health.

Recommendation 3 **29**

That the NSW Government take urgent action to improve consultation with First Nations stakeholders regarding the cultural impacts of water infrastructure, to ensure they feel respected and that the consultation is genuine.

Recommendation 4 **29**

That the NSW Government note the significant concerns raised in relation to the Mole River Dam project and ensure these concerns are adequately addressed as part of any independent planning process to assess the project. These concerns centre on the significant negative impacts of the construction and operation of the dam, including:

- impacts on supplementary water users
- irreversible ecological impacts on native vegetation, fish and migratory birds
- impacts on First Nations people and cultural sites.

Recommendation 5 **43**

That the significant negative ecological impact on the riverine environment of the Macquarie River re-regulating storage project be fully and adequately addressed as part of any independent planning process to assess the project.

Recommendation 6 **48**

That the NSW Government, as part of the Western Weirs Project, investigate options such as the use of groundwater and off-river storage, as a possible alternative to building new weirs or expanding weirs.

Conduct of inquiry

The terms of reference for the inquiry were self-referred by the committee on 12 August 2020.

The committee received 174 submissions and 5 supplementary submissions.

The committee also received 210 responses to two pro formas.

The committee held 5 public hearings: 4 at Parliament House in Sydney and 1 in Broken Hill.

The committee also conducted 1 site visit to Wyangala Dam, Menindee Lakes and Sunset Strip on 9 and 10 February 2021.

The committee tabled Part 1 of its report on 18 March 2021.

Inquiry related documents are available on the committee's website, including submissions, hearing transcripts, tabled documents and answers to questions on notice.

Chapter 4 Introduction and Dungowan Dam and Pipeline Project

This Chapter provides a brief introduction to Part 2 of the report, and then focuses on the proposed Dungowan Dam and Pipeline Project. The Chapter will first examine how this project was identified, in addition to its current status. The estimated costs and benefits of the project are analysed, in addition to the arguments for and against the proposed project. Finally, alternative options for addressing water security in the Peel Valley are explored.

Introduction to Part 2 of the report

4.1 The committee resolved on 10 February 2021 to deliver a first report addressing the Wyangala Dam wall raising project by 22 March 2021, and to deliver a second report addressing the remaining water infrastructure projects by 15 June 2021.

4.2 Part 1 of this report was tabled in the Legislative Council on 18 March 2021.

4.3 This report addresses the following five water infrastructure projects, as referred to in the terms of reference shown on page v:

- Dungowan Dam project
- Mole River Dam project
- Macquarie River re-regulating storage project
- Western Weirs project
- Menindee Lakes Water Savings Project

4.4 This report will also examine the future of water infrastructure in NSW, with a focus on changing approaches and attitudes to water management, and options for addressing water security challenges.

4.5 The committee resolved on 13 May 2021 to deliver a third report at a later date, which will address the final business cases once released, and any other related matter.

Background to the Dungowan Dam and Pipeline Project

4.6 The Dungowan Dam Project is part of the NSW Government's major water infrastructure program. Like the Wyangala Dam wall raising project, this project is similarly in the 'investigatory phase'.[2]

4.7 The existing Dungowan Dam is near the regional city of Tamworth, in the north western region of NSW. The existing dam provides water to Tamworth via a 55 kilometre pipeline.

4.8 The project involves three major components:

[2] Submission 50, Water NSW, p 2.

- A new 22.5 gigalitre Dungowan Dam on Dungowan Creek - approximately 3.5 km downstream of the existing Dungowan Dam;
- A new delivery pipeline from the new Dungowan Dam to the Calala Water Treatment Plant to replace the current end-of-life pipeline; and
- The decommissioning/partial decommissioning of existing Dungowan Dam.[3]

4.9 WaterNSW stated that the principal objective of the Dungowan Dam project is to secure the long-term water supply security for the regional city of Tamworth. The project will enable future population growth for Tamworth which, together with an already-augmented Chaffey Dam, will maintain a productive level of general security reliability and water use for irrigation. Over time, this objective is expected to underpin water affordability that will support broader agricultural productivity benefits for the region.[4]

4.10 Tamworth Regional Council confirmed its growth strategy which has a goal of doubling its current population of 50,000 people to 100,000 by 2040.[5]

4.11 Tamworth's water supply currently comes from the Chaffey Dam (State owned), the existing Dungowan Dam (Council owned) and the Scott Road Drift Wells.[6]

4.12 WaterNSW outlined the relevant studies that identified the project as a possible option for addressing water security in the Peel Valley. This is the valley that supplies water to Tamworth, in addition to other smaller townships, irrigated agriculture and industry.

4.13 The Commonwealth Government established the National Water Infrastructure Development Fund (NWIDF) to deliver 'planning and construction of water infrastructure projects that will deliver new and reliable water to enhance water security and underpin regional economic growth, including irrigated agriculture and other primary industries'.[7]

4.14 WaterNSW was subsequently contracted and funded by DPIE Water, acting on behalf of the Commonwealth, to 'undertake an investigation'[8] into the 'feasibility of building the Dungowan Dam and develop a Preliminary/Strategic Business Case in relation to the recommended infrastructure solution that improves water security and flood security'.[9] This study, the *Dungowan Dam and Peel Valley Feasibility Study: Feasibility Assessment Report* was completed in 2017.

4.15 The NSW Government told the committee that: 'The study found the optimal solution was a 22.5 gigalitre dam. This would provide an increase in capacity from the existing 6 gigalitre dam. This will provide an estimated increase in town water supply of around 7 gigalitres per annum'.[10]

3 Submission 50, Water NSW, p 20.
4 Submission 50, Water NSW, p 21.
5 Submission 59, Tamworth Regional Council, p 3.
6 Submission 59, Tamworth Regional Council, p 3.
7 Submission 50, Water NSW, p 14.
8 Submission 50, Water NSW, p 14.
9 Submission 50, Water NSW, p 15.
10 Submission 152, NSW Government, p 3.

4.16 The proposed project was also identified in the NSW Government's *20 Year Infrastructure Options Study,* released in 2018.[11]

4.17 The Options Study identified a new Dungowan Dam and a new pipeline as the 'preferred option'[12] for addressing water security issues in the Peel Valley, with a preliminary project cost of $484 million.[13]

Status of the Dungowan Dam Project

Commitment to the planning and delivery of the Project

4.18 This project, like the Wyangala Dam project, was subject to the Ministerial Direction made to the WaterNSW Board under section 20P of the *State Owned Corporations Act* on 13 May 2020.

4.19 This Direction required WaterNSW to submit a Final Business Case for investment decision by July 2020, and deliver pre-construction activities for Dungowan Dam by October 2020. It also directed WaterNSW to deliver an 'early works package including the replacement of the existing Dungowan Dam to Calala Water Treatment plant pipeline'.[14]

4.20 As noted above, the Ministerial Direction required that a Business Case be prepared for the project by July 2020. However, in evidence to the committee, Mr Jim Bentley, Department of Planning, Industry and Environment, stated that the final business case for Dungowan Dam is not due for completion until the end of 2021.[15]

4.21 The Notice of reasons for giving the Direction stated that:

> There are growing risks in relation to water security in the Namoi region, particularly with regard to town water supplies for Tamworth and water access along the Peel Valley. Drought conditions have been severe in the Namoi region, with Stage 4 drought conditions in the Peel valley, and Stage 3 drought conditions in the Upper and Lower Namoi.[16]

11 See chapter 3 of Report 1.

12 WaterNSW, *20 Year Infrastructure Options Study, Rural Valleys, Summary Report*, June 2018, p 26.

13 GHD, Report for WaterNSW – Dungowan Dam and Peel Valley Feasibility Study: Feasibility Assessment Report, September 2017, p 58.

14 Direction to the Board of WaterNSW (responsibility for progressing the Wyangala, Dungowan and Mole River Dam Projects) 2020, under the *State Owned Corporations Act 1989* (NSW), 13 May 2020.

15 Evidence, Mr Jim Bentley, Chief Executive Officer (Deputy Secretary), Department of Planning, Industry and Environment, 4 December 2020, p 41.

16 Notice of reasons for giving the Direction: *Direction to the Board of WaterNSW (responsibility for progressing the Wyangala, Dungowan and Mole River Dam Projects) 2020,* under the *State Owned Corporations Act 1989* (NSW), 13 May 2020.

4.22 Further, it explained that 'constructing the new Dungowan Dam and upgrading the Dungowan pipeline will secure town water supplies for Tamworth, support population growth and improve water security for the region'.[17]

4.23 As has occurred with the Wyangala Dam wall raising project, this project has also been declared a Critical State Significant Infrastructure (CSSI) under Schedule 3 of the *Water Supply (Critical Needs Act) 2019* (NSW).[18]

4.24 This classification means that the Project is subject to 'accelerated timelines for delivery by WaterNSW'.[19] In practice, this allows the 'procurement and design phases to progress in parallel with the EIS (Environmental Impact Statement) and Final Business Case development'.[20] Similar to the reasons for the Minister's Direction, WaterNSW noted that this approach ensures the project will be ready to commence construction work, pending relevant approvals and finalisation of pre-construction works.[21]

4.25 The NSW Government submission noted that the relevant Secretary's Environmental Assessment Requirement's (SEARs) were issued on 27 July 2020, and environmental assessment to inform the EIS, which must be prepared in alignment with the SEARS, had commenced.[22]

4.26 The impact of this classification on the relevant approvals processes for the project, including relevant environmental approvals, and the Expenditure Review Committee of Cabinet process, were outlined in detail in relation to the Wyangala Dam Project in Chapter 3. As noted in that Chapter, WaterNSW stressed that despite the CSSI status of the project, and it being subject to a Direction, the Project would still be required to meet all relevant requirements and approvals before going ahead.

4.27 As was noted by the NSW Government in the context of Wyangala, this Project is also a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), due to 'likely impacts to Matters of Environmental Significance'. This means that the project will be 'assessed under the bilateral agreement between the NSW and Commonwealth Governments'.[23]

Concerns expressed regarding the decision-making process

4.28 The committee heard evidence that the decision to proceed with the planning and delivery of the Dungowan Dam and Pipeline project was not sufficiently evidence-based. This issue was similarly raised in relation to the Wyangala Dam wall raising project, specifically in regard to the studies used to underpin the Government's decision to proceed with the Project.

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17 Notice of reasons for giving the Direction: *Direction to the Board of WaterNSW (responsibility for progressing the Wyangala, Dungowan and Mole River Dam Projects) 2020,* under the *State Owned Corporations Act 1989* (NSW), 13 May 2020.

18 Submission 50, Water NSW, p 3.

19 Submission 50, Water NSW, p 3.

20 Submission 50, Water NSW, p 3.

21 Submission 50, Water NSW, p 3.

22 Submission 152, NSW Government, p 3.

23 Submission 152, NSW Government, p 3.

4.29 The Productivity Commission released the *Draft National Water Reform Report* in February 2021, which raised concerns about decision-making processes for water policy and infrastructure reform. The report identified a range of common issues arising when governments invest in major water infrastructure. These included:

- Poor project selection and funding decisions
- A failure to consider other, non-infrastructure options when making investment decisions
- Business cases not being sufficiently long term or comprehensive
- A lack of transparency with regard to decision-making
- Commitment to undertake projects occurring before the finalisation of robust business cases, resulting in governments being unlikely to back away from these commitments, even if a project is shown to impose significant costs.[24]

4.30 The report stressed that these issues in the decision-making process often result in the project cost increasing substantially between early feasibility work and final construction.

4.31 The Productivity Commission identified the Dungowan Dam project as an example of this kind of 'flawed decision making'. The report referred to 'three key shortcomings' of the 2017 feasibility study underpinning this investment decision. One key shortcoming was the failure to adequately consider other options prior to investment decisions being made. The report stated:

> Non-infrastructure options were excluded from the analysis. Some of these options may be considerable more cost-effective – for example, the cost of securing Tamworth's water supply by directly purchasing general security entitlements is estimated at just 2 per cent of the Dungowan Dam construction cost. [25]

4.32 The Productivity Commission's report also stated:

> Commitments of public funding before publication of robust business cases (which substantiate whether the infrastructure is in the public interest) put governments in a situation where they are unlikely to back away from these commitments, even if a project is shown to impose significant costs, creating a risk that projects that are not in the best interests of the community are funded.[26]

4.33 Other stakeholders reiterated these concerns, and told the committee that the decision to undertake the project did not adequately consider other non-infrastructure options. Cr Mark Rodda stated that:

> No alternative water security options or more beneficial regional investment projects have been considered, including a pipeline from Keepit dam or Split Rock dam or a pipeline closer to Gunnedah to tap into the Great Artesian Basin which may represent far more cost-effective alternatives.27

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24 Productivity Commission, National Water Reform 2020: Draft Report, February 2021, p 167.

25 Productivity Commission, National Water Reform 2020: Draft Report, February 2021, p 171.

26 Productivity Commission, National Water Reform 2020: Draft Report, February 2021, p 169.

27 Submission 105, Cr Mark Rodda, p 1.

4.34 Mr Phillip Spark made a similar point regarding the decision-making process, and told the committee that 'there has been no adequate study of other options for securing Tamworth water supply'.28 Mr Spark went on to say that:

> There is growing public concern that the decision to build Dungowan Dam lacks justification, and Tamworth Regional Council are also questioning the wisdom of the decision to build the dam, with several councillors pushing to have other alternatives investigated.29

Concerns relating to the 'fast-tracking' of the proposed project

4.35 The committee also heard evidence regarding concerns about the fast-tracking of the project. These issues were similar to those identified in Chapter 3 in relation to the Wyangala Dam Wall raising project.

4.36 This included concerns about the commitment to the project being made prior to the business case and EIS being finalised or made publicly available, meaning that there had not been sufficient analysis done to justify these commitments.

4.37 Additionally, stakeholders expressed concerns about the impact of the project being classified as Critical State Significant Infrastructure. This classification provides for accelerated delivery timelines, meaning that the procurement and design project phases progress at the same time as the development of the EIS and Final Business Case. As previously noted, WaterNSW stated that doing this ensures construction work for the project will be ready to commence, pending relevant approvals.[30]

4.38 Mr Spark expressed these concerns, and stated that:

> A full business case will not be completed until June 2021 and will not be fully disclosed to the public. The environmental assessment is being conducted at the same time. Meanwhile WaterNSW is ready to sign contracts for pipeline construction in Oct 2020. There is a lack of transparency and poor consultation in regard to investment of public money on a project that is likely to fail to meet its purpose.[31]

4.39 Mr Spark described the decision to undertake the project as a 'political knee jerk reaction', and argued that the classification of the projects as State Significant Infrastructure 'enabled Dungowan Dam to commence without the normal environmental and economic assessments'.[32]

4.40 The concern about decisions being made pre-emptively and commitments being undertaken without adequate analysis was reiterated by Cr Rodda. He described the fast-tracking of the project without an adequate business case or EIS as a 'grave mistake'.[33]

28 Submission 37, Mr Philip Spark, p 4.
29 Submission 37, Mr Philip Spark, p 2.
30 Submission 50, Water NSW, p 3.
31 Submission 37, Mr Philip Spark, p 4.
32 Submission 37, Mr Philip Spark, p 1.
33 Submission 105, Cr Mark Rodda, p 1.

4.41 Similar concerns were expressed by Healthy Rivers Dubbo, who told the committee that the three regional dam projects, including Dungowan Dam, were being 'unnecessarily fast-tracked'.[34]

4.42 The Inland Rivers Network told the committee that the project was being 'fast-tracked before the completion of any approvals process at either the state or federal level'. They went on to argue that announcements about 'shovels in the ground' and commencement dates had occurred without 'any clear description of what that work might entail or what approvals process had been undertaken for that work'.[35]

4.43 Further, the Inland Rivers Network also questioned the premature announcement of funding for the projects, stating:

> The announcement of funding for these [Dungowan & Wyangala] dam proposals without business cases or environmental assessment does not meet the requirements of the National Water Initiative (NWI) Agreement signed by the Commonwealth and States in 2004.[36]

Concerns relating to the need for the Dungowan Dam Project

4.44 Healthy Rivers Dubbo and the Inland Rivers Network argued that the justification for declaring these projects Critical State Significant Infrastructure was no longer relevant, as recent rainfall had reduced the risks to town water supplies, and that the projects should no longer be fast-tracked. Ms Beverley Smiles stated:

> The existing storages are currently filling with the recent regional rainfall. Wyangala Dam is now at 63.2 per cent. Dungowan Dam is at 97.4 per cent. Chaffey Dam is at 30 per cent and rising. The town water security is no longer a critical need. If these inflows are better managed than the last major fills in 2016 then the people of New South Wales will not find themselves under so much threat.[37]

Issues relating to the ownership of the proposed new Dungowan Dam and Pipeline

4.45 The committee heard that there are outstanding issues relating to who will own and manage the proposed new Dungowan Dam and Pipeline.

4.46 Mr Bruce Logan, Director, Water & Waste, Tamworth Regional Council, noted that Council currently owns and operates the existing Dungowan Dam, but that 'the ownership of the new dam has not been resolved as yet'.[38]

4.47 Mr Logan noted that Tamworth Regional Council would like to own and operate the new dam, however, he also observed the likely interest of the State:

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34 Submission 70, Healthy Rivers Dubbo, p 2.

35 Submission 116, Inland Rivers Network, p 8.

36 Submission 116, Inland Rivers Network, p 9.

37 Evidence, Ms Beverley Smiles, Inland Rivers Network, 29 October 2020.

38 Evidence, Mr Bruce Logan, Director, Water & Waste, Tamworth Regional Council, 2 November 2020, p 29.

> …we are probably assuming, given that it is a significant investment by the State, that they may own that dam. That obviously raises some issues with the ownership and operation of the old dam, but we are working through those issues with WaterNSW at the moment'.[39]

4.48 Mr Logan explained that if the dam was owned by the NSW Government there would be a significant financial impost on Council:

> We are concerned about the financial impact. At the moment the Dungowan Dam water is relatively—well, it is almost free for the council. We pay the Government some fees per megalitre, but other than operational costs there are very little other costs passed on to our community. We are concerned that, with the new dam operated by WaterNSW and owned by government, if the same charges apply that we pay from Chaffey Dam, there would be an incredible increase in the cost of water for Tamworth residents.[40]

4.49 In a supplementary submission, the Inland Rivers Network provided a letter from the Minister for Water, Property and Housing, the Hon. Melinda Pavey MP to the Treasurer made available under the Government Information (Public Access) Act 2009. The extract from the letter states that 'WaterNSW must be the assumed owner of the assets to avoid immediate budget impacts', and referred to an attachment that 'confirms the Government's intention that WaterNSW is the assumed owner of the Dungowan Dam assets, which will allow it to capitalise these costs'.[41]

Arguments supporting the Dungowan Dam project

Water security issues in the Peel Valley

4.50 As noted earlier in this Chapter, the principal reason for the proposed project is to ensure water security in the Peel Valley and the broader Namoi region, specifically for the regional city of Tamworth. This is in line with the NSW Government's broader undertaking to invest in 'major dam projects and other water infrastructure to secure water supplies for regional NSW'.[42]

4.51 When describing the importance of the proposed major dam projects, including the Dungowan dam, the NSW Government stated:

> We need to invest in long-term water security to build the resilience of our regional communities. This will assist with improving the surety of the environmental flows necessary to maintain the health of NSW's regional catchments, as well as provide productivity benefits for regional economies.[43]

4.52 Further, WaterNSW told the committee that the principal objective of the project is to 'secure the long-term water supply security for the regional city of Tamworth', given the growing risks relating to water security in the region. As noted in the Ministerial Direction relating to this

39 Evidence, Mr Logan, 2 November 2020, p 29.
40 Evidence, Mr Logan, 2 November 2020, p 30.
41 Submission 116a, Inland Rivers Network, p 7.
42 Submission 152, NSW Government, p 1.
43 Submission 152, NSW Government, p 1.

project, there had been severe drought in the Namoi regions, reaching Stage 4 drought conditions in the Peel Valley.[44]

4.53 Tamworth Regional Council expressed its concerns about water security in Tamworth, and stated that the most recent drought was the worst on record with the maximum level of water restrictions (level 5) in place for almost a year. Tamworth last experienced level 5 water restrictions in 2006/2007.[45]

4.54 Tamworth Council argued that 'without improved water security Tamworth cannot grow', and that it had anecdotal evidence that businesses and residents are choosing to go elsewhere because of the severity and frequency of water restrictions in Tamworth.[46]

4.55 The Council noted that there are two primary ways of addressing this issue, being reducing water demand and increasing water supply. It argued that additional storage, such as the proposed Dungowan Dam project, is a 'critical component'[47] in providing greater water security and thus the 'construction of the new Dungowan Dam and associated pipeline has the full support of Tamworth Regional Council'.[48]

4.56 Peel Valley Water Users Association Inc. also indicated their support for any measures that would improve water security in the Peel Valley, and stated that 'we support the concept of constructing the new Dungowan Dam, because we support any action to conserve water in the inland regions of NSW'.[49]

4.57 In their submission NSW Farmers expressed support for dams generally, stating:

> NSW Farmers policy supports the construction of dams, in a strategic manner for town water needs, stock and domestic water, irrigation, primary production, community needs, electricity production and mutually beneficial outcomes. With a changing climate trending towards less frequent rainfall, dams and other mass water storages would assist in ensuring the security of water supply for a range of uses and social, economic and environmental outcomes. Enhanced water storages will assist in water security through the opportunity to capture and store more water during large rainfall events for use in times of water shortages.[50]

Necessary works for the existing Dungowan Dam and the Pipeline

4.58 The committee heard evidence that parts of the proposed project, specifically the decommissioning of the existing Dungowan Dam and the delivery of the replacement pipeline from the new Dungowan Dam to the Calala Water Treatment Plan, are necessary works.

44 Submission 50, WaterNSW, p 21.

45 Submission 59, Tamworth Regional Council, p 3.

46 Submission 59, Tamworth Regional Council, p 4.

47 Submission 59, Tamworth Regional Council, p 9.

48 Submission 59, Tamworth Regional Council, p 9.

49 Submission 40, Peel Valley Water Users Association Inc., p 2.

50 Submission 142, NSW Farmers Association, p 1.

4.59 Mr Jim Bentley told the committee that 'Dungowan Pipeline is a project that needs doing whether or not a dam gets built'.[51] Mr Bentley went on to state that some of this work would be classified as 'early works'[52], meaning it could be commenced prior to the full approvals process being undertaken, as per the Ministerial Direction.

4.60 The scope of this work was described in more detail by Ms Anissa Levy, DPIE:

> ..it is the first stage of the pipeline work, which is only the section that we would consider again to be "no regrets" work. It is the section that connects from the town to the point at which the Chaffey pipeline connects in. That is the piece of the pipeline that is aged and requires upgrade. So, that is the piece of work there.[53]

4.61 The necessity of this pipeline was also reiterated by Cr Rodda, who stated that: 'A new pipeline is vital to our communities, even if the other tiers of government abandoned the dam'.[54]

Arguments against the Dungowan Dam project

Cost of the proposed project

4.62 Some stakeholders expressed concerns regarding the cost of the proposed project, as compared to the water security that would be gained.

4.63 This issue was addressed in the Productivity Commission's Draft National Water Reform Report, which noted that the 2017 feasibility study estimated a benefit-cost ratio (BCR) of 1.06, with a cost of $484 million.[55]

4.64 When describing this BCR, the Report stated that it is 'marginal and contingent on optimistic assumptions'. The report also stated that 'any further increases in construction cost would likely result in the project becoming unviable.'[56]

4.65 The Productivity Commission described the project as a 'costly way to protect general security licences, relative to the value of the water'.[57] The report went on to state that 'the dam is estimated to provide an additional 6 GL of water (annual average) which has a current market value of only $11 million'.[58]

4.66 The report explained that if the 'additional water was issued as entitlements to general security irrigators at full cost, it would be valued at more than $60,000/ML'.[59] This is compared to the

51 Evidence, Mr Bentley, 29 October 2020, p 2.

52 Evidence, Mr Bentley, 29 October 2020, p 2.

53 Evidence, Ms Anissa Levy, Chief Executive Officer, Water Infrastructure NSW, Department of Planning, Industry and Environment, 29 October 2020, p 6.

54 Evidence, Cr Mark Rodda, 4 December 2020, p 12.

55 Productivity Commission, National Water Reform 2020: Draft Report, February 2021, p 171.

56 Productivity Commission, National Water Reform 2020: Draft Report, February 2021, p 171.

57 Productivity Commission, National Water Reform 2020: Draft Report, February 2021, p 171.

58 Productivity Commission, National Water Reform 2020: Draft Report, February 2021, p 171.

59 Productivity Commission, National Water Reform 2020: Draft Report, February 2021, p 171.

current prices of $1341/ML. The report argued that given this high cost, irrigators will be unlikely to be willing to pay for this additional water.[60]

4.67 Peel Valley Water Users Association affirmed this statement and noted that irrigators would not be willing to accept any additional charges arising from the construction costs of the dam without an equivalent amount of additional water being made available to them.[61]

4.68 Peel Valley Water Users Association noted that while it supports the construction of new Dungowan Dam, it was unclear whether it was the best value for money option:

> Basically, we support the concept of constructing the new Dungowan Dam, because we support any action to conserve water in the inland regions of NSW. However, whether the new Dungowan Dam is the best value for money option in terms of shoring up the water supply for the residents of Tamworth Regional Council is a whole different matter, and it is not dealt with in our submission because it is outside the terms of reference for the Inquiry.[62]

4.69 In its submission, the Inland Rivers Network provided a document containing a DPIE Capital Works Summary dated 6 November 2020, which was obtained in the Legislative Council through a 'Standing Order 52 - order for papers'. The Summary forecast the 'estimate to complete' for the Dungowan Dam as between $470 million and $870 million, which the Network observed was a potential cost blowout of up to $386 million.[63]

4.70 The committee heard evidence regarding the lack of clarity regarding cost recovery for this project. Some stakeholders, such as Mr Spark, expressed concerns that the costs would likely be recovered by ratepayers in Tamworth Regional Council. Cr Rodda echoed these concerns, noting that if principles of full cost recovery were pursued, the water in Dungowan Dam would be the most expensive in the State.[64]

4.71 The Inland Rivers Network provided evidence to the committee that there were concerns within the NSW Government about how it intends to fund the project outlining detailed concerns within NSW Treasury about how the project will be paid for and the risks of debt funding the business case for Dungowan and other dams.[65]

4.72 DPIE confirmed the state government was debt-funding the business cases for the project and that the commonwealth was providing grant funding for a component of the three dam projects which are the subject of this report.[66]

4.73 Further, in a supplementary submission made by the Inland Rivers Network, it noted that Water NSW's 2020-2021 Corporate Plan stresses the importance of confirming the construction costs and financing arrangements for Dungowan Dam within 12 months. It also warns that if IPART

60 Productivity Commission, National Water Reform 2020: Draft Report, February 2021, p 171.

61 Submission 40, Peel Valley Water Users Association Inc., p 4.

62 Submission 40, Peel Valley Water Users Association Inc., p 2.

63 Submission 116a, Inland Rivers Network, p 5.

64 Submission 37, Mr Philip Spark, p 4, Submission 105, Cr Rodda, p 1.

65 Submission 116a, Inland Rivers Network, p 7.

66 Evidence, Mr Bentley, 29 October 2020, p 4.

does not determine asset investments are prudent and efficient, there is a risk that they may not be able to recoup costs through water pricing.[67]

Impact on improving water security

4.74 The committee also heard evidence that articulated concerns about how effective the proposed project would be in providing water security for Tamworth.

4.75 Stakeholders described their experience with the construction of the new Chaffey Dam in 2016, and stated that this additional storage did not adequately address water security issues.

4.76 This issue was identified in the Inland Rivers Network submission, which stated that: 'Ratepayers in Tamworth have already been charged for the augmentation of Chaffey Dam in 2016 without receiving improved town water security because of NSW water allocation policy'.[68]

4.77 Further, this submission noted that while the dam was filled in 2016, following its completion, it was down to 8% at the start of the recent severe drought. They stated that 'the promised improved security for Tamworth town water supply failed because of the high allocations to irrigation'.[69]

4.78 Additionally, the committee heard evidence that due to climate change, there will likely be significantly less rainfall, and less inflow, meaning that additional water storage will not be an effective way of ensuring water security.

4.79 When discussing the impacts of climate change on water security in Tamworth, Mr Phillip Spark stated that:

> High temperatures cause higher evaporation rates from large dams and increased transmission losses. The failure of the augmented Chaffey Dam to secure Tamworth water supply, its prime purpose, demonstrates that dams are not the long-term solution to water security in a drying climate.[70]

4.80 Mr Spark summarised this point by stating that: 'Dams will not make it rain anymore'.[71]

4.81 Cr Rodda made a similar argument, confirming to the committee that the Chaffey Dam had not been even half full in the last two years. He went on to tell the committee that in his experience, Tamworth no longer experiences the storm and rain events it once did:

> We just do not get them anymore and it is not delivering the water that we probably need. I do not think that new dams is the answer.[72]

67 Submission 116a, Inland Rivers Network, p 6.
68 Submission 116, Inland Rivers Network, p 15.
69 Submission 116, Inland Rivers Network, p 6.
70 Submission 37, Mr Philip Spark, p 7.
71 Evidence, Mr Spark, 4 December 2020, p 7.
72 Evidence, Cr Mark Rodda, 4 December 2020, p 16.

Ecological impacts

4.82 The general ecological impacts of large water infrastructure, such as dams, are outlined in detail in Part 1 of this report. However, stakeholders identified some of the possible specific ecological impacts that may arise as a result of the proposed Dungowan Dam and Pipeline project.

4.83 The committee heard about potential negative ecological and environmental impacts of the project, including a disturbance of native fish and platypus species, and a general impact on river health.

4.84 Mr Phillip Spark explained these risks, and told the committee that:

> Dungowan Dam will impact on the health of the Peel River system – which is habitat for threatened native fish species listed for protection under Federal environmental law (EPBC Act) - the critically endangered Silver Perch and vulnerable Murray Cod. Other water dependent species include platypus, water rats, turtles, and water birds.[73]

4.85 Mr Spark noted that the Dam would result in further loss of fish passage, meaning that fish population movements up and downstream will be significantly hindered. Further, he noted that the disruption of natural flows will 'degrade river ecosystem function'[74], impacting temperature, oxygenation, nutrient transfer and macroinvertebrate food sources.

4.86 Professor Richard Kingsford stated that Dungowan Dam would degrade the *Aquatic ecological community in the natural drainage system of the lowland catchment of the Darling River*, an Endangered Ecological Community classified under the NSW Fisheries Management Act.[75]

4.87 The Inland Rivers Network noted that the augmentation of the Chaffey Dam in 2016 impacted the native fish and platypus populations in the Peel River. The Network observed that this impact would be exacerbated as part of the proposed project, given more water would be 'impounded'.[76]

Alternative options for addressing water security in the Peel Valley

4.88 This section of the report will identify alternatives to the Dungowan Dam project that address water security in the Peel Valley. New water infrastructure technologies will be examined in more detail in the final chapter of this report.

4.89 It was established that there was a need to address water security issues in the Peel Valley, specifically for the town of Tamworth. However, the committee heard evidence that there are more effective and efficient mechanisms of addressing this issue that do not involve the construction of a new dam.

4.90 This point was reiterated by Mr Spark, who when discussing the significant investment required for the Project, said that: 'That money would be much better spent on improving water

73 Submission 37, Mr Philip Spark, p 5.

74 Submission 37, Mr Philip Spark, p 5.

75 Submission 99, Professor Richard Kingsford, p 12.

76 Submission 116, Inland Rivers Network, p 12.

management, innovative water efficiencies and re-use and recycling of water to improve water security for Tamworth'.[77]

4.91 Stakeholders told the committee about the potential benefits of water recycling, with Cr Rodda stating that 'water recycling will be vital to the people of rural New South Wales because they are impacted by climate issues and they are not filling the storages that they used to'.[78]

4.92 The committee heard about work already being undertaken by Tamworth Regional Council in partnership with CSIRO relating to water recycling options. This work involves investigating 'reverse osmosis plants'[79]. Dr Page, CSIRO, explained to the committee what this process is, stating that:

> At the other end of the spectrum is highly treated wastewater used for drinking water in very deep aquifers. This is where you have a number of treatment processes—usually including things like reverse osmosis and advanced oxidation—and then the water is injected, often under pressure, into a very deep and confined aquifer 200 or 300 metres below the surface. Those systems are significantly more expensive but again, if used for drinking water, they are cost-effective.[80]

4.93 Further, in the submission made by Tamworth Regional Council, they noted that in 2015, Council 'engaged Hunter H2O to complete a high-level assessment of long-term augmentation options for Tamworth's bulk water supply'.[81] This study investigated 24 options, and determined that the following four options 'warranted further consideration'[82]:

- Keepit Dam Transfers
- Upgrade Dungowan Dam
- Off River Storage for Tamworth
- Augmented Groundwater.[83]

Committee comment

4.94 The committee is concerned about a number of elements of the Dungowan Dam project. Firstly, we acknowledge the comments of the Productivity Commission characterising the decision-making process for Dungowan Dam as flawed. The committee shares concerns about the estimated high cost and limited effectiveness of the Dungowan Dam and Pipeline project. The evidence from the Productivity Commission that the benefit-cost ratio of the project is only 1.06, and was dependent on optimistic assumptions meaning there is a likelihood that it will be even lower, is of particular concern.

77 Evidence, Mr Spark, 4 December 2020, p 7.

78 Evidence, Cr Mark Rodda, 4 December 2020, p 7.

79 Evidence, Cr Mark Rodda, 4 December 2020, p 13.

80 Evidence, Dr Declan Page, Principal Research Scientist, CSIRO Land and Water, 4 December 2020, p 21.

81 Submission 59, Tamworth Regional Council, p 7.

82 Submission 59, Tamworth Regional Council, p 8.

83 Submission 59, Tamworth Regional Council, p 8.

4.95 The evidence that this project will result in an average additional 6 GL per year at an estimated project cost of $484 million was also of concern to committee members. This water at full cost would be valued at more than $60,000 /ML, as compared to the current average cost of water of $1,341/ML. The committee notes the concerns expressed by Tamworth Regional Council ratepayers and irrigators about having to pay these high costs if full cost recovery will be pursued.

4.96 The committee notes that the augmentation of Chaffey Dam in 2016 did not alleviate Tamworth's water security issues and was not convinced by the evidence that the proposed Dungowan Dam would secure Tamworth's future water availability.

4.97 The committee supports the call for greater water security for Tamworth, both to support the current community and allow for future growth. However, it is also evident that the commitment to the planning and delivery of the Dungowan Dam and Pipeline could also have considered other more sustainable and cost effective options.

4.98 The committee notes the arguments from experts, stakeholders and the local community challenging the justification for the project to be designated as Critical State Significant Development under the NSW Water Supply (Critical Needs) Act 2019.

4.99 The committee appreciates the evidence of stakeholders who identified possible alternative options for ensuring water security, including new water efficiency methods, water recycling options and managed aquifer recharge. The committee recommends that the NSW Government investigate alternative options to ensure water security in the Peel Valley to the Dungowan Dam project.

Finding 1

That the claimed economic and water security benefits to Tamworth of the election commitment to build the Dungowan Dam are yet to be demonstrated.

Recommendation 1

That the NSW Government investigate alternative options to ensure water security in the Peel Valley, including managed aquifer recharge, water efficiency and water recycling as a matter of urgency.

Recommendation 2

That the NSW Government note the significant concerns raised in relation to the Dungowan Dam and Pipeline Project and ensure these concerns are adequately addressed as part of any independent planning process to assess the project. These significant concerns include:

- its high cost
- limited additional water yielded
- impact of climate change resulting in reduced rainfall events and reduced water
- inflow into dams in the Peel Valley
- irreversible ecological impacts on fish species, platypus and general river health.

Chapter 5 Mole River Dam Project

This Chapter focusses on the proposed Mole River Dam project. The Chapter will first examine how this project was identified, as well as the current status of the project. The concerns that have been identified in relation to this project will then be analysed, including any adverse impacts on local communities, the environment and First Nations people.

Background to the Mole River Dam Project

5.1 The Mole River Dam Project is part of the NSW Government's major water infrastructure program. It is the third of the 3 regional dams projects, in addition to Wyangala Dam and Dungowan Dam.

5.2 The project involves the construction of a rockfill dam and associated spillway and other infrastructure to provide nominally 100 gigalitres (GL) of storage capacity on Mole River. [84] Mole River is one of the Border Rivers, located in the Northern Tablelands.

5.3 The Border Rivers is a large catchment that services both NSW and Queensland users. Its water supply is serviced by three relatively small catchment dams and large on-farm storages.[85] WaterNSW stated that: 'A new dam will have the potential to secure more water in flood sequences so that in drier times more water would be available to communities, agriculture, and the environment'. [86]

5.4 WaterNSW outlined the relevant studies that identified the project as a possible option for ensuring water security in the Border Rivers Catchment.

5.5 The Commonwealth Government established the National Water Infrastructure Development Fund (NWIDF) to deliver 'planning and construction of water infrastructure projects that will deliver new and reliable water to enhance water security and underpin regional economic growth, including irrigated agriculture and other primary industries'.[87]

5.6 WaterNSW was subsequently contracted and funded by DPIE Water, acting on behalf of the Commonwealth, to 'undertake an investigation'[88] into the 'financial and technical feasibility of a major water storage on the Mole River to supply security to users in the Border Rivers catchment'. WaterNSW appointed Jacobs Engineering Group to undertake the NWIDF Mole River Feasibility Study.

5.7 The study considered options for a 100, 200 and 300 GL dam on the Upper Mole River, and noted that 'other dam locations were not considered as part of the study'.[89] WaterNSW argued that other water security options had already been considered:

84 Submission 50, WaterNSW, p 23.

85 Submission 50, WaterNSW, p 24.

86 Submission 50, WaterNSW, p 24.

87 Submission 50, Water NSW, p 14.

88 Submission 50, Water NSW, p 14.

89 Submission 50, Water NSW, p 15.

> Non-asset options have already been approved and implemented and include water licence buy-backs, on-farm efficiency improvements and capacity building to facilitate improved water efficiency.[90]

5.8 The Jacobs report noted that preliminary modelling showed that a 100 GL dam could increase supply reliability by 17%, in addition to a 27% increase in the demand supplied. The report also determined that larger dams, such as the 200 GL and 300 GL options, would provide limited further increases in water supply.[91]

5.9 When assessing the economic viability of the project, the report stated: 'Based on the preliminary hydrological assessment undertaken to date and the current assumptions in the CBA (cost benefit analysis), none of the options considered are economically viable'.[92]

5.10 Further, the report observed that in order for any of the options to be economically viable, there would be a need for 'greater land-use change from improved water reliability and security'. It was noted that further consultation with irrigators would be required to understand any land-use changes that could arise from improving water reliability and security in the region.[93]

Stakeholder concerns about the findings of the Mole River Feasibility Study

5.11 Some stakeholders expressed their concerns about the findings of the Jacobs review, specifically regarding the assessment that a Mole River Dam would not be economically viable without changes to land-use.

5.12 The committee heard that in order for the dam to be viable, higher value, permanent crops would have to be grown. Ms Kate Boyd, Mole River Protection Alliance, stated that the analysis in the report relied on an assumption that people may be prepared to grow these permanent crops, such as nut trees, if they were able to have a higher security licence, and were confident that they would have more reliable access of water.[94]

5.13 This was reiterated by Ms Sandra Smith, an irrigator in the Mole River, who told the committee that in order to 'make the numbers stack up for this dam to be viable', downstream water users, such as cotton-growers, may be encouraged to grow higher value crops if they had more security of water.[95]

5.14 However, stakeholders pointed out that some of these crops, such as almonds, use significantly more water than what is currently produced, and would not be a financially viable endeavour for small producers. It was argued that only large corporate irrigators would be able to undertake this kind of agricultural production, and the dam would benefit them at the expense of other smaller producers.[96]

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90 Submission 50, Water NSW, p 15.

91 Jacobs, *Mole River Dam Feasibility Study*: WaterNSW- Feasibility Study Report, 15 August 2017, p 28.

92 Jacobs, *Mole River Dam Feasibility Study*: WaterNSW- Feasibility Study Report, 15 August 2017, p 7.

93 Jacobs, *Mole River Dam Feasibility Study*: WaterNSW- Feasibility Study Report, 15 August 2017, p 7.

94 Evidence, Ms Kate Boyd, Convenor, Mole River Protection Alliance, 3 May 2021, p 4.

95 Evidence, Ms Sandra Smith, Landowner, Mole River, 3 May 2021, p 9.

96 Submission 107, Mole River Protection Alliance, pp 3-4, Evidence, Mr Robert Caldwell, 3 May 2021, p 10, Evidence, Ms Smith, 3 May 2021, p 9.

5.15 Further, Mr Robert Caldwell, a landowner in the Mole River, explained that if high-security licences were given to those growing permanent, high value crops, there would be a real issue for cotton-growers and towns being unable to access to this water in times of drought. This would be in part due to the high volume of water required for these types of crops.[97]

Status of the Mole River Dam Project

Commitment to the planning and delivery of the Project

5.16 Following what was described by WaterNSW as the 'strength of the opportunities provided by the Mole River Dam Project'[98], the Commonwealth and NSW Governments announced $24 million in funding for the development of a Final Business Case by NSW.

5.17 This project, like the Wyangala Dam and Dungowan Dam projects, was subject to the Ministerial Direction made to the WaterNSW Board under section 20P of the *State Owned Corporations Act* on 13 May 2020.

5.18 This Direction was made in the context of one of the worst droughts in recent history. WaterNSW noted that in many cases inflows into the State's rivers and storages were the lowest ever recorded. By February 2020 the drought had extended for over three years, and most catchments in regional NSW were on stage 4 critical drought status. Modelling showed that without significant rainfall events within that year, most regional storages have run dry.[99]

5.19 The Ministerial Direction required WaterNSW to submit a Final Business Case for investment decision by July 2021. Unlike the Wyangala and Dungowan Dam projects, the Direction does not require WaterNSW to deliver pre-construction activities for the Mole River Dam.

5.20 The Notice of Reasons for giving the Direction stated:

> The Border Rivers' economy is heavily dependent on agriculture. Low reliability of water· supply is eroding on-farm productivity and is a significant issue for the region. Investigations will consider the potential for a Mole River dam to improve the reliability of water supply and other possible benefits such as mitigation of flood damage. This direction will ensure that the necessary investigations are prepared and assured in a timely manner.[100]

5.21 As has occurred with the Wyangala Dam and Dungowan Dam projects, this project has also been declared a Critical State Significant Infrastructure (CSSI) under Schedule 3 of the *Water*

97 Evidence, Mr Robert Caldwell, 3 May 2021, p 10.

98 Submission 50, WaterNSW, p 24

99 Submission 50, WaterNSW, p 9 -10.

100 Notice of reasons for giving the Direction: *Direction to the Board of WaterNSW (responsibility for progressing the Wyangala, Dungowan and Mole River Dam Projects) 2020,* under the *State Owned Corporations Act 1989* (NSW), 13 May 2020.

Supply (Critical Needs Act) 2019 (NSW).[101] However, this Project is not subject to the same accelerated timelines that the Wyangala and Dungowan Dam projects are.[102]

5.22 The relevant Secretary's Environmental Assessment Requirement's (SEARs) were issued on 27 July 2020, and environmental assessment to inform the EIS, which must be prepared in alignment with the SEARS, had commenced.[103]

5.23 The EIS and assessment process will 'describe and outline management and mitigation of environmental impacts, such as to threatened species and ecological communities listed under the *Biodiversity Conservation Act 2015* (NSW) and their habitat which will be impacted by inundation'.[104] Additionally, impacts to flows in the Border Rivers system, including connectivity to the Barwon-Darling, will also be assessed as part of this process.[105]

5.24 This Project is a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), due to 'likely impacts to Matters of Environmental Significance'. This means that the project will be 'assessed under the bilateral agreement between the NSW and Commonwealth Governments'.[106]

Committee comment

5.25 The committee notes that the Ministerial Direction to the Board of WaterNSW confirms that the purpose of the Mole River Dam is to ensure greater reliability of water supply for irrigation. The committee also notes that the Jacobs study commissioned by WaterNSW found that regardless of size, a dam on the Mole River would not be economically viable without changes to land use.

5.26 The committee shares the concerns of some local landholders that the construction of a dam on the Mole River will facilitate changes in land use to more high-value, permanent crops meaning less water for other users in times of drought, including town water.

Finding 2

That considerable issues have been raised by local communities and stakeholders in relation to the construction of the Mole River Dam including its economic viability and concerns that high security water licence holders will need to shift to more high-value permanent crops, impacting other water users' ability during times of drought, particularly town water supplies.

101 Submission 50, Water NSW, p 3.
102 Submission 50, Water NSW, p 3.
103 Submission 152, NSW Government, p 4.
104 Submission 152, NSW Government, p 4.
105 Submission 152, NSW Government, p 4.
106 Submission 152, NSW Government, p 3.

Concerns regarding the Mole River Dam Project

5.27 The committee heard evidence regarding a number of concerns about the proposed project. These included issues relating to impacts on supplementary licence holders and irrigators along the Mole and Dumaresq rivers, as well as ecological consequences. Additionally, the committee heard that the project is likely to have an impact on First Nations people and sacred cultural sites.

Impacts on supplementary licence holders and other water users

5.28 While WaterNSW has stated that the aim of the proposed project was to address water reliability for the agricultural industry and irrigators in the Border Rivers region, some stakeholders argued that this would be at the expense of other water users along the Barwon-Darling.

5.29 The Mole River Protection Alliance argued that the project would only result in limited additional water reliability due to the variable climactic conditions of the region, and that these limited benefits for irrigators did not justify the more significant negative impacts on other water users.[107]

5.30 The committee heard that most of the farms on Mole River are used for livestock production, and importantly, rely on unregulated water supply to 'grow much of their winter feed and to build fodder storages for drought years'.[108] Mr Bruce Norris, a landholder in Mole River, stressed that if the project were to proceed, the Mole would become a regulated river and put existing water allocations at risk by either becoming unavailable, or being subject to prohibitively expensive licences.[109]

5.31 Mr Norris told the committee that the scoping report stated that 28,300 ML of supplementary water would have to be removed from the system in order for the proposed dam to be operated. He argued that this would place small to medium farms at significant risk, as the water they currently rely upon would be captured by the dam. He stated that:

> Many of the irrigators along the Mole and Dumaresq believe that the dam will make their enterprises less viable. Since we submitted our concerns about the dam, people along the Mole and Dumaresq below the dam site have been increasingly frustrated by WaterNSW's failure to meet with them, discuss options for water management or to provide useful answers to questions.[110]

5.32 Other landholders expressed similar concerns, stating that they had not been consulted on how the project would impact them, and their current water supply. Miss Sandra Smith, a landholder and irrigator on the Mole River, said that there had been no discussion regarding the possibility of the water supply becoming regulated, and it had not been established if she would be worse off. Miss Smith told the committee that the project would result in water costs being higher,

107 Submission 107, Mole River Protection Alliance, p 4.

108 Submission 78, Mr Bruce Norris, p 2.

109 Submission 78, Mr Bruce Norris, p 2.

110 Evidence, Mr Bruce Norris, Landowner, Mole River Protection Alliance, p 42.

and water security and reliability being impacted unless high security licences were made available.[111]

5.33 This point was summarised by Ms Wendy Hawes, who when describing the project, said that:

> What it will do is remove a number of existing, presumably viable, farming operations within the Mole River valley, by flooding the most fertile and productive land within the valley, to provide some limited benefit to a number of downstream irrigators, with significant environmental costs.[112]

5.34 Ms Hawes questioned 'what makes the downstream irrigators' agricultural enterprises that have an existing water supply more important than the agricultural enterprises of the Mole River valley?'[113]

5.35 The Mole River Protection Alliance explained the importance of unextracted flows from the Mole River for communities and towns along the Barwon or Darling, downstream from the Border Rivers. They told the committee that these flows become either environmental water in the Macintyre River and its floodplain, or become 'end-of-system'[114] flows. These flows were described as 'essential inflows to the Barwon'[115], and contributing to environmental, social and town water supply, which would no longer be available if the project were to proceed.

Ecological impacts

5.36 The committee heard evidence from some stakeholders who identified the potential significant ecological impacts that could arise as a result of this project. They argued that these risks outweighed the benefits of undertaking the project, with one stakeholder describing the project as 'environmental vandalism'.[116]

5.37 The Nature Conservation Council of NSW stated that the proposed project would inundate approximately 829 hectares of farmland and bushland.[117]

5.38 Similarly, Healthy Rivers Dubbo noted that 778 hectares of native vegetation would be disturbed, including the 'critically endangered Box Gum Woodland, and endangered Semi-evergreen vine thicket'.[118]

5.39 The committee heard that changes to river flows and flooding regimes would have a significant negative impact on vegetation communities that rely on ground water or surface water flooding for survival. Examples of vegetation that would be impacted included the:

- River red gum communities; and

111 Submission 128, Miss Sandra Smith, p 1.
112 Submission 55, Ms Wendy Hawes, p 2.
113 Submission 55, Ms Wendy Hawes, p 2.
114 Submission 107, Mole River Protection Alliance, p 1.
115 Submission 107, Mole River Protection Alliance, p 3.
116 Submission 128, Miss Sandra Smith, p 2.
117 Submission 140, Nature Conservation Council of NSW, p 8.
118 Submission 70, Healthy Rivers Dubbo p 12.

- Coolibah Black Box woodland, which is an endangered ecological community listed under the *Biodiversity Conservation Act 2016* NSW and the *Environment Protection and Biodiversity Conservation Act 1999* (Cth.).[119]

5.40 The committee also heard from an ecologist, Ms Wendy Hawes, who explained that the impact on these vegetation communities could have a flow on impact on the long-term survival of the koala, which relies on these vegetation and tree species for shade, shelter, food and moisture.[120]

5.41 The Mole River Protection Alliance told the committee that the Mole River valley is a habitat for a large number of threatened ecological species. They noted that 76 individual threatened terrestrial species occur in the Mole River valley, in addition to six plant and eight animal species which are endangered.[121]

5.42 The committee also heard about the significance of the Mole River itself, which has been recognised in the Murray Darling Basin Plan as being a 'high ecological value aquatic system'[122] due to it being an unregulated flow with relatively undisrupted natural ecology. These flows from the Mole are critical to the sustainability of rivers downstream and their floodplains, due to the Mole being one of the most reliable tributaries in the Border Rivers.[123]

5.43 Further, it was explained that changes in the flooding and flow regimes of the Mole would impact downstream wetlands such as Boobera Lagoon, Morella Lagoon, Pungbougal Lagoon, Malgarai Lagoon and Wombyanna Lagoon.[124]

5.44 Inquiry participants also explained the potential impact of the proposed project on migratory bird species, due to the damage to their floodplain and wetland habitats. The committee heard that these important habitats will be degraded due to a number of changes resulting from dam construction and operation, including changes to:

- water flows
- flooding regimes
- temperature
- oxygen levels
- nutrient pulses, and
- sediment movement.[125]

5.45 Ms Hawes stated that species with habitat likely to be impacted by the dam includes the:

- Great Egret

119 Submission 107, Mole River Protection Alliance, p 7.

120 Submission 55, Ms Wendy Hawes, p 3.

121 Submission 107, Mole River Protection Alliance, p 6.

122 Submission 107, Mole River Protection Alliance, p 6.

123 Submission 107, Mole River Protection Alliance, p 6.

124 Submission 107, Mole River Protection Alliance, p 7.

125 Submission 55, Ms Wendy Hawes, p 4.

- Black-eared Cuckoo
- Oriental Cuckoo
- Rainbow bee-eater
- Common Greenshank.[126]

5.46 The committee heard that Australia is a signatory to a range of international agreements for the protection of migratory species, including the China Australia Migratory Bird Agreement, the Japan Australia Migratory Bird Agreement, the Republic of Korea Migratory Bird Agreement, and the Bonn Convention – Convention on the Conservation of Migratory Species of Wild Animals. Some stakeholders argued that if the project were to proceed, Australia would be in breach of its obligations imposed by these conventions.[127]

5.47 Stakeholders also told the committee that the proposed project posed a risk to the various threatened fish species in the area. Healthy Rivers Dubbo explained that fish such as the Murray Cod and Purple Spotted Gudgeon, Western Olive Perchlet and Eel Tailed Catfish will lose upstream and downstream movement, as well as access to breeding and feeding sites, as a result of the dam.[128]

5.48 Additionally, the committee heard from inquiry participants, such as Ms Wendy Hawes, that the Mole River is one of the very few unregulated rivers in NSW. Some stakeholders argued that this itself makes the river unique and distinctive, and should be preserved.[129]

Impacts on First Nations people

5.49 The committee heard about the importance of the dam site as a location for the First Nations community to camp, fish, hunt, gather and reflect. It was stressed that if the dam is built, and the environment surrounding the proposed site is impacted, the spiritual connection between the Ngarabal people and the land cannot be upheld.[130]

5.50 Some of these concerns were expressed by Severn River, Ngarabal and Kwiambal Aboriginal Corporation (Severn Aboriginal Corporation). The Corporation explained that the area of the proposed dam site is significant to the Ngarabal people, and noted that there is an Aboriginal reserve in the area, with at least one ancestral burial site. The area is also part of Ngarabal trade routes with other tribes.[131]

5.51 Ms Lynette Marlow, Director, Severn River, Ngarabal and Kwiambal Aboriginal Corporation, described these sites to the committee, stating that historical maps, such as William Wedge Darke's map, showed that the Mole River was a major walking track for local First Nations

126 Submission 55, Ms Wendy Hawes, p 4.

127 Submission 55, Ms Wendy Hawes, p 4.

128 Submission 70, Healthy Rivers Dubbo, p 12.

129 Evidence, Ms Wendy Hawes, 3 May 2021, p 3.

130 Submission 141, Severn River, Ngarabal and Kwiambal Aboriginal Corporation (Severn Aboriginal Corporation), p 2.

131 Submission 141, Severn River, Ngarabal and Kwiambal Aboriginal Corporation (Severn Aboriginal Corporation), p 1.

people. Ms Marlow also told the committee that manuscripts showed that Upper New England-Lower Darling tribes met at the junction of Mole River and Pikes Creek, prior to going into war with early colonists. She spoke about the extensive archaeological evidence in the area that shows that the Mole River was used by First Nations people as a native highway.[132]

5.52 Further, Ms Marlow told the committee that other historical records, specifically the Norman Crawford manuscript at the University of New England, suggested that the Mole River was the site of a massacre of Ngarabal people by poisoning. She went on to state that this was corroborated by Colonial Secretary records.[133]

5.53 In addition to these concerns, Severn Aboriginal Corporation reiterated the potential negative ecological outcomes that may arise as a result of the proposed project, and stressed the importance of a healthy river: 'Ngarabal rely on river systems for hunting, gathering, ceremonial. It is a part of our society and culture'.[134]

5.54 The committee heard that the Murray Cod is a specific part of Dreaming stories, and would be severely impacted by the proposed project, given they are unable to spawn in the cold waters of dams. Ms Marlow told the committee that: 'The flora and fauna in Ngarabal country is our concern and these are our Dreaming and song lines and our law'.[135]

5.55 Uncle Theo Wright strongly expressed the impact of the project on the Ngarabal people, and the significance of the site:

> The impact on my people when that dam gets built—then you have killed our Dreamtime. You have killed my walking track. You have killed all my storylines, my dance lines—you killed them all. So to this day we're still getting killed, no matter which way you look at it.[136]

5.56 Mr Fred Hooper, Chairperson of the Northern Basin Aboriginal Nations, told the committee that the proposed dam would have a severe impact on the Aboriginal community in the Border Rivers, due to cultural activities like telling stories to children at the river being threatened as a result of degraded river health.[137]

5.57 Mr Hooper noted the disruption to social connections as a result of the construction of the dam:

> Certainly the First Nations people in that area have concern about the dam being constructed and more water being held back within the system…they are certainly not in favour of the construction of the dam because they say if that water is held back, it

132 Evidence, Ms Lynette Marlow, Director, Severn River, Ngarabal and Kwiambal Aboriginal Corporation, May 3 2021, p 21.

133 Evidence, Ms Marlow, May 3 2021, p 21.

134 Submission 141, Severn River, Ngarabal and Kwiambal Aboriginal Corporation (Severn Aboriginal Corporation), p 1.

135 Evidence, Ms Marlow, May 3 2021, p 22.

136 Evidence, Uncle Theo Wright, Ngarabal Elder, Severn River, Ngarabal and Kwiambal Aboriginal Corporation 3 May 2021, p 23.

137 Evidence, Mr Fred Hooper, Chairperson of the Northern Basin Aboriginal Nations, 29 October 2020, p 28.

> is going to affect their livelihoods. When I say livelihoods, I mean their social connection to the rivers. If that water is not running, they are not going down to the rivers and taking their kids down and telling them the stories and so on.[138]

5.58 The committee also heard about a significant cultural site for the Bigambul and Kamilaroi people – the Boobera Lagoon, which is a largely permanent wetland in the Border Rivers. Ms Wendy Hawes told the committee that this wetland is reliant on intermittent flooding for its health and survival. This flooding would be disrupted by the construction of the dam, jeopardising the survival and cultural heritage value of the site.[139]

Lack of adequate consultation with First Nations people

5.59 The consultation between WaterNSW and First Nations people was also criticised. Due to the COVID-19 pandemic, parts of the consultation process were conducted electronically, with this being described as not 'culturally appropriate consultation', due to the need for this kind of consultation to occur on the impacted country.[140]

5.60 Ms Lynette Marlow described the consultation process as being 'set up to fail'. She stressed that Elders in the community do not readily use means of video conferencing, and would be put at great risk if they were to travel during the pandemic.[141]

5.61 Further, Ms Marlow and Uncle Theo Wright told the committee they had a very negative experience during the consultation period, stating that at times they felt patronised, and that they did not feel listened to or understood.[142]

5.62 When describing the experience, Ms Marlow said that: 'We felt quite patronised…There were times when our community felt that our intelligence was insulted'.[143] Uncle Theo reiterated this, stating that: 'Nobody wants to listen to us. You all want to steamroll us, and that's wrong. Very wrong and disrespectful'.[144]

5.63 Ms Marlow explained to the committee that she consistently provided advice to the anthropologists conducting the consultation and preparing the cultural heritage report which was not listened to. This included a range of anthropological records relating to massacres, and land being given to First Nations people in the 1840s following colonial wars on the rivers. She stated that this evidence was not incorporated into the cultural report.[145]

138 Evidence, Mr Fred Hooper, 29 October 2020, p 28.

139 Submission 55, Ms Wendy Hawes, p 8.

140 Submission 141, Severn River, Ngarabal and Kwiambal Aboriginal Corporation (Severn Aboriginal Corporation), p 1.

141 Evidence, Ms Marlow, May 3 2021, p 21.

142 Evidence, Ms Marlow, May 3 2021, p 21, Evidence, Uncle Theo Wright, 3 May 2021, p 23.

143 Evidence, Ms Marlow, May 3 2021, p 21.

144 Evidence, Uncle Theo Wright, 3 May 2021, p 24.

145 Evidence, Ms Marlow, May 3 2021, p 24.

5.64 Uncle Theo similarly explained that advice from First Nations people about evidence relating to massacres that occurred on the affected land, such as bones being found in caves, was not acknowledged or adequately taken into account.[146]

5.65 This was reiterated by Aunty Helen Duroux, who told the committee that the cultural knowledge of First Nations people had not been appropriately respected, or incorporated into the relevant reports regarding this issue. She explained:

> Our cultural expertise has often been disregarded as not expert as the educated archaeologists and anthropologists that have been involved. As we all know our knowledge is not learnt in books, it is cultural knowledge that has been handed down to each generation and it is knowledge that I have a lot of confidence in the truth of it.[147]

5.66 The committee heard accounts from Aunty Helen about the treatment of various artefacts during the preparation of the cultural heritage report. She told the committee that artefacts such as clay balls, which were used for cooking, were not treated with the appropriate respect, and were disregarded. She described the balls as having been 'tossed out of the way', and their significance and importance to the Aboriginal workers on site being ignored.[148]

5.67 Aunty Helen also noted the existence of at least six birthing trees in the area, which were not adequately acknowledged when considering the cultural heritage of the Mole River site.[149]

5.68 When summarising the cultural heritage report, Aunty Helen said that: …'their evidence of cultural heritage that is on that proposed dam site is not a truthful one, or it is not based on thorough facts, and has not been reported on in a cultural heritage sense truthfully'.[150]

Concerns about diverting the Clarence River

5.69 The committee heard specific concerns from Clarence Valley Council regarding the potential for future diversion from the Clarence River into the proposed Mole River Dam.

5.70 Mr Greg Mashiah, Clarence Valley Council, told the committee that diversion from the Clarence had historically been discussed in the context of a dam at Mole River.[151] The Border Rivers Draft Regional Water Strategy also identified diversion from the Clarence as one option for addressing water security and reliability in the region.[152]

5.71 This opposition to diverting water from the Clarence has arisen from the significant water security concerns in the Clarence Valley. Council noted that in October 2019, the Clarence River

146 Evidence, Uncle Theo Wright, 3 May 2021, p 24.

147 Evidence, Aunty Helen Duroux, Chief Executive Officer, Moombahlene Local Aboriginal Land Council, May 3 2021, p 22.

148 Evidence, Aunty Helen Duroux, May 3 2021, p 24.

149 Evidence, Aunty Helen Duroux, May 3 2021, p 24 – 25.

150 Evidence, Aunty Helen Duroux, May 3 2021, p 22.

151 Evidence, Mr Greg Mashiah, Manager, Water Cycle, Clarence Valley Council, 27 November 2020, p 31.

152 Evidence, Mr Mashiah, 27 November 2020, p 31.

stopped flowing. They noted that any diversions would have a significant negative impact on the community and the economy, and reduce the benefits of flood flows, thus impacting soil fertility, groundwater recharge and the natural ecological cycle.[153]

5.72 Additionally, the committee heard that any diversions would have a particular impact on the Clarence fishing industry, due to the potential disruption of natural river flow and fish habitat.[154]

Committee comment

5.73 The Committee heard compelling evidence of the potential negative impacts of the proposed Mole River Dam on downstream communities and the environment.

5.74 The committee agrees with the concerns identified by landholders along the Mole and Dumaresq Rivers about the potential impact of the proposed Mole River Dam on their operations. The Government has not answered questions about how the current water arrangements will be impacted, and if water licences will become unaffordable for small-medium operators.

5.75 The committee has consistently heard throughout this inquiry about the significance of uninterrupted water flow in rivers, and the high ecological value these flows have. The Mole River is no exception, and it is clear that disrupting natural flows will have a range of environmental consequences. This includes degrading the habitat of numerous threatened bird species, including ones in which we have an international obligation to protect, as well as threatened native fish species.

5.76 The evidence of the impact of the construction and operation of the Mole River Dam on First Nations people and their cultural heritage, including sacred sites, was distressing. The committee acknowledges the importance of the site to the Ngarabal people and that it is the location of trade routes and burial sites. The committee was moved by the evidence received about the importance of the spiritual connection between the Ngarabal people and the land, and is concerned that the proposed project would disrupt this important relationship.

5.77 The committee was shocked and found it unacceptable that state and local government, and the consultants they used, failed to undertake consultation on the project in a culturally sensitive way. While the committee acknowledges the challenges faced by the COVID-19 pandemic, it was evident to the committee that the consultation process has not allowed all impacted First Nations people to feel respected, heard and acknowledged. Rather, some have felt patronised and as though their unique and important cultural knowledge has been ignored and devalued. The committee members believe this is unacceptable and would like to see this addressed as a priority by the NSW Government.

5.78 In response to the concerns raised, WaterNSW wrote to the committee stating that it takes these matters very seriously. Further, that WaterNSW and Water Infrastructure NSW are working directly with Indigenous community groups and their contractors to better understand these claims and how these concerns can be addressed.

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153 Submission 46, Clarence Valley Council, pp 1-2.

154 Evidence, Mr Mashiah, 27 November 2020, p 31.

Finding 3

That the consultation process with some Aboriginal stakeholders with regard to the Mole River Dam was inadequate.

Finding 4

That the Mole River has high cultural significance for the Ngarabal and other First Nations people and, if dammed, will negatively impact the unique spiritual connection between First Nations people and the river.

Recommendation 3

That the NSW Government take urgent action to improve consultation with First Nations stakeholders regarding the cultural impacts of water infrastructure, to ensure they feel respected and that the consultation is genuine.

Recommendation 4

That the NSW Government note the significant concerns raised in relation to the Mole River Dam project and ensure these concerns are adequately addressed as part of any independent planning process to assess the project. These concerns centre on the significant negative impacts of the construction and operation of the dam, including:

- impacts on supplementary water users
- irreversible ecological impacts on native vegetation, fish and migratory birds
- impacts on First Nations people and cultural sites.

Chapter 6 Weir Upgrades – Macquarie River and Western Weirs proposed projects

This Chapter focusses on the proposed Macquarie River re-regulating storage project, and the Western Weirs project. The Chapter will examine how the projects were identified, in addition to their current status. The justification for each of the projects will be assessed, in addition to any concerns that have been raised regarding the projects. Finally, any alternative options that have been raised will be examined.

Background to the Macquarie River re-regulating storage project

6.1 The Macquarie River re-regulating storage project is one of the NSW Government's water infrastructure projects that are currently in the 'investigatory phase'.[155] The proposed project has been identified as a means of addressing water security issues in the Macquarie Valley.

6.2 WaterNSW has been funded by the NSW Government to develop a Final Business Case for the proposed project, which involves a 'proposed gated re-regulating weir and fishway structure on the Macquarie River between the townships of Warren and Narromine'.[156] The proposed site of the weir is approximately 200 meters downstream of the existing Gin Gin Weir.[157] The future of the existing Gin Gin Weir will form part of the project with studies to consider fully or partially decommissioning the weir.[158]

6.3 WaterNSW has also been funded to develop an Environmental Impact Statement (EIS) following an investment decision being made.[159]

6.4 The Macquarie Valley was identified as a 'high priority catchment for the delivery of critical infrastructure projects'[160] in both the 2014 and 2018 State Infrastructure Strategy Updates.

6.5 The project was also identified in 2018, in WaterNSW's 20 Year Infrastructure Options Study. This study referred to the project as one of two 'preferred options under consideration'[161] for addressing water security issues in the Macquarie-Cudgenong Valley. This study estimated the preliminary capital cost of a new re-regulating weir to be $36 million.

6.6 With regard to the need for a re-regulating weir, the study stated that:

> The Macquarie River System does not have any re-regulating structures along the regulated river system. The system experiences high water distribution losses due to the

155 Submission 50, WaterNSW, p

156 Submission 50, WaterNSW, p 26.

157 Submission 50, WaterNSW, p 27.

158 Submission 152, NSW Government, p 4.

159 Submission 50, WaterNSW, p 26.

160 Submission 50, WaterNSW, p 11.

161 WaterNSW, *20 Year Infrastructure Options Study, Rural Valleys, Summary Report*, June 2018, p 29.

> existence of long rivers and creeks. New re-regulating weirs could be built to improve the water delivery efficiency in the valley.[162]

6.7 As discussed in Chapter 3 of this report, WaterNSW made clear that the Options Study was not a Capital Investment Plan, but was 'a baseline to guide future decision making and benchmark future investments'.[163] The cost estimates contained within the study were described as 'strategic (pre-feasibility) level estimates, and so carry inherent uncertainty commensurate with the level of detail of this work'.[164]

6.8 Following the Macquarie Valley being identified as a priority area in the 2014 and 2018 SIS, WaterNSW were funded by the NSW Government to undertake a study on the available infrastructure options. This resulted in the *Macquarie Priority Catchment Study* being produced, the purpose of which was to 'investigate and compare options for securing water security outcomes'.[165]

6.9 WaterNSW prepared a 'comprehensive list of "build" and "non-build" options…for further consultation with community and stakeholders, to assist with addressing water access reliability and resilience for the Macquarie Valley'.[166] The proposed project was one of the options, which was then shortlisted and recommended to be proceeded with.

6.10 The project is considered a State Significant Infrastructure (SSI) Project under clause 1 of Schedule 3 of the *State and Regional Development State Environmental Planning Policy 2011* (NSW) (S&RD SEPP).[167] Unlike the Wyangala Dam and Dungowan Dam projects, this project has not been declared Critical State Significant Infrastructure (CSSI), meaning this project is not subject to the same accelerated timelines as the Dam projects.

6.11 The NSW Government submission noted that 'the project is being developed to align with the Macquarie-Castlereagh Regional Water Strategy'[168], which will 'identify policy, planning and infrastructure options that deliver resilient water resources for all water users in the Macquarie Valley'.[169]

Status of the Macquarie River re-regulating storage project

6.12 In their submission, WaterNSW stated that they had 'completed the preliminary assessments including geotechnical studies, hydrological modelling and Aboriginal cultural heritage assessment to inform the Final Business Case'.[170] Whilst the final business case was expected to

162 WaterNSW, *20 Year Infrastructure Options Study, Rural Valleys, Summary Report*, June 2018, p 30.

163 Submission 50, Water NSW, p 13, quoting WaterNSW, *20 Year Infrastructure Options Study, Rural Valleys, Summary Report*, June 2018, p 9.

164 Submission 50, Water NSW, p 13, quoting WaterNSW, *20 Year Infrastructure Options Study, Rural Valleys, Summary Report*, June 2018, p 9.

165 Submission 50, WaterNSW, p 12.

166 Submission 50, WaterNSW, p 27.

167 Submission 50, WaterNSW, p 3.

168 Submission 152, NSW Government, p 5.

169 Submission 152, NSW Government, p 5.

170 Submission 50, WaterNSW, p 28.

be completed in late 2020, WaterNSW have since indicated on their website that it is now due in early 2021.[171] Once finalised, it will be 'assessed by Infrastructure NSW under the Infrastructure Investor Assurance Framework gateway 2 process'.[172]

6.13 WaterNSW noted that the relevant Secretary's Environmental Assessment Requirement's (SEARs) had been issued in March 2020, with supplementary SEARs received in July 2020. Further, it was noted that the SEARs will be addressed in the EIS, which was expected to be on public exhibition in mid-late 2021.[173]

6.14 As was noted in the context of the proposed Wyangala and Dungowan Dam projects, this project is a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) 'due to likely impacts to Matters of National Environmental Significance'.[174] Due to this status, the project will be 'assessed under the bilateral agreement between the NSW and Commonwealth Government'.[175]

6.15 The committee also heard about the additional environmental approvals and requirements that are relevant due to the Macquarie Marshes being Ramsar listed. The Ramsar site is located downstream of the proposed storage.[176]

6.16 The NSW Government submission noted that the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) obligates Australia to protect 'the ecological character of the Ramsar wetlands'.[177] Further, the Macquarie Marshes are also subject to 'international bilateral bird agreements, and local, regional, state and national policies and legislation including the NSW Wetlands Policy'.[178]

6.17 WaterNSW stated that the EIS would address the project's potential impacts on the 'entirety of the Macquarie Marshes'[179], as relevant SEARs specifically require the EIS to assess the impacts of the project on Ramsar wetlands.

Justification of the Macquarie River re-regulating storage project

Improving water access reliability and efficiency in the Macquarie Valley

6.18 WaterNSW told the committee that the benefits of the project include improvements to long term water security, delivery efficiency and reducing transmission losses in delivering water

171 WaterNSW, *Macquarie River Re-Regulating Storage,* https://www.waternsw.com.au/projects/regional-nsw/macquarie-river-re-regulating-storage.

172 Submission 152, NSW Government, p 4.

173 Submission 50, WaterNSW, p 28.

174 Submission 152, NSW Government, p 4.

175 Submission 152, NSW Government, p 4.

176 Submission 152, NSW Government, p 4.

177 Submission 152, NSW Government, p 4.

178 Submission 152, NSW Government, p 4.

179 Answers to questions on notice, Mr Jim Bentley, Deputy Secretary, Water, NSW Department of Planning, Industry and Environment, 20 November 2020, p 6.

through the system.[180] They noted that this would be done by using an 'adaptable, gated structure that can manage better supply to towns and industries downstream'.[181] WaterNSW explained that:

> The gated structure will temporarily capture the operational surplus (excess dam releases from cancelled water orders and savings in delivery losses) and then release this volume to meet downstream water orders when needed.[182]

6.19 Mr Andrew George, A/CEO, WaterNSW told the committee that gated structures, such as the one being proposed as part of this project, will 'enable WaterNSW as the river operator to manage low-flow events rather than having these weir pools having to fill up first before water can then travel further downstream'.[183]

6.20 Mr George told the committee that the 'proposed Gin Gin Weir will store six gigalitres, which is approximately four gigalitres more than what it currently stores'.[184] WaterNSW argued that this additional storage will not be inconsistent with relevant Water Sharing Plans, and that the project would 'maximise available water for general security customers within the sustainable diversion limits set under the Murray-Darling Basin Plan'.[185]

6.21 Additionally, WaterNSW told the committee that 'monitoring gauges will be upgraded as part of the project to ensure flows pass through in accordance with the Water Sharing Plans'.[186]

6.22 The significance of this project in ensuring more efficient water management in the Macquarie Valley was reiterated by Macquarie River Food and Fibre, who told the committee that the project would 'contribute to long term water security in the system for all users, agriculture and communities alike'.[187] Further, they stated that the project would 'provide WaterNSW with an effective piece of infrastructure to mitigate drought conditions into the future'.[188]

6.23 Mr Tony Quigley explained to the committee that the new weir would hold additional water when there are rejected irrigation waters, which are to be used in the future. He said that the additional water 'acts as a buffer...against those peaks and troughs that come down the system for various reasons'.[189]

6.24 The importance of being able to temporarily hold excess water was also expressed by Cr Craig Davies, Mayor of Narromine. He stated that:

> With the new weir we will see the opportunity, particularly in times of high rainfall events in the lower parts of the irrigation areas along the Macquarie, where irrigators

180 Submission 50, WaterNSW, p 27.
181 Submission 50, WaterNSW, p 27.
182 Submission 50, WaterNSW, p 27.
183 Evidence, Mr Andrew George, A/CEO, WaterNSW, 29 October 2020, p 9.
184 Evidence, Mr George, 4 December 2020, p 52.
185 WaterNSW, *Macquarie River Re-regulating Storage Project – FAQ*, 23 September 2020, p 4.
186 Submission 50, WaterNSW, p 27.
187 Submission 53, Macquarie River Food & Fibre, p 1.
188 Evidence, Mr Tony Quigley, Chairman, Macquarie River Food and Fibre, 4 December 2020, p 3.
189 Evidence, Mr Quigley, 4 December 2020, p 3.

> have the opportunity to be able to ring the water department and say, "Look, I had water ordered, I have 650 megalitres coming down the river, I have just had 75 millimetres of rain and I simply cannot take that water. Can you hold it, please?" That water will be held at Gin Weir and the subsequent irrigation event will utilise the water behind the weir.[190]

6.25 Cr Davies told the committee that additional water security and efficiency is critical to the social and economic wellbeing of communities in the Macquarie Valley, specifically in regards to projected job growth in the Narromine Shire. He stated that: 'The most precious and important resource needed to facilitate this growth, investment and job creation is water'.[191]

Current requirement to upgrade the existing Gin Gin Weir

6.26 The committee heard evidence regarding the need to decommission or replace the existing Gin Gin Weir due to its poor condition.

6.27 In the January 2020 *Macquarie River Re-regulating Storage Scoping Report*, WaterNSW stated that the Gin Gin Weir was built in 1896, and has been cut down to its current height of 4-5 meters due to damage occurred due to flood damage in 1903. They noted that there is 'no regulating infrastructure associated with the weir, and there is no fishway'.[192]

6.28 Further, the Study stated that:

> A 0.9m diameter cast iron scour outlet pipe was located in the main crest near the base of the weir but has been dislodged leaving a substantial hole in the weir structure. WaterNSW is proposing to install a new gate valve to the scour outlet to control this leakage.[193]

6.29 Mr George summarised the damage and the current status of the Weir, describing it as 'structurally deficient'.[194]

6.30 This was reiterated by Cr Davies, who said that: 'This replacement of the dilapidated infrastructure that is inoperable is way overdue but very welcome to save water for the Valley'.[195]

6.31 Similarly, Macquarie River Food & Fibre told the committee that: 'The project is required to replace an existing structure that was built over 100 years ago that is failing and no longer serviceable for regulating river flows'.[196]

190 Evidence, Cr Craig Davies, Mayor of Narromine Shire Council, 27 November 2020, p 11.

191 Submission 16, Cr Craig Davies, Mayor of Narromine Shire Council, p 1.

192 WaterNSW, *Macquarie River Re-regulating Storage – Scoping Report*, January 2020, p 14.

193 WaterNSW, *Macquarie River Re-regulating Storage – Scoping Report*, January 2020, p 14.

194 Evidence, Mr George, 29 October 2020, p 8.

195 Submission 16, Cr Craig Davies, Mayor of Narromine Shire Council, p 1.

196 Submission 53, Macquarie River Food & Fibre, p 2.

6.32 Ms Melissa Gray, Healthy Rivers Dubbo, told the committee that the weir 'is old and crumbling and it needs to be addressed. It needs to be either removed or it needs to be replaced. There is no doubt about that'.[197]

6.33 The committee heard specific concerns that the existing Gin Gin Weir does not provide adequate fishway access, and must be replaced in order to address this issue.

6.34 Mr Quigley told the committee that due to the current design of the existing Gin Gin Weir, fish passage is not possible. He said that: 'There is no facility for fish to move, even in a flood, because of velocities and there is no ability to build a fishway on this existing weir because it is simply a lump of cement'.[198]

6.35 Cr Davies reiterated this point, noting that 'the current weir has been an impediment to the movement of fish through the river almost since its building back in the early 1900s'.[199]

6.36 When describing how the proposed project would address this issue, WaterNSW stated that:

> A new state-of-the-art fishway would also accommodate the free passage of fish up and down 140 kilometres of river for the first time in over 100 years, following the full or partial removal of the damaged Gin Gin Weir.[200]

Concerns regarding the Macquarie River re-regulating storage project

Impact on Aboriginal cultural heritage sites

6.37 The committee heard about the impact of the project on First Nations people and cultural heritage sites. The committee also heard that consultation with Traditional Owners of the impacted area has been insufficient.

6.38 Murray Lower Darling Rivers Indigenous Nations (MLDRN) told the committee that consultation had not occurred with 'individuals and organisations with cultural authority to speak for lands and waterways affected by the project'.[201] They noted that while Local Aboriginal Land Councils have been consulted, 'Elders and Traditional Owners of the Wiradjuri Nation…have not been engaged'.[202]

6.39 The Nature Conservation Council of NSW also expressed this concern, telling the committee that the relevant Elders and Traditional Owners have not been a part of the consultation process.[203]

197 Evidence, Ms Melissa Gray, Convenor, Healthy Rivers Dubbo, 27 November 2020, p 46.
198 Evidence, Mr Quigley, 4 December 2020, p 2.
199 Submission 16, Cr Craig Davies, Mayor of Narromine Shire Council, p 1.
200 Submission 50, WaterNSW, p 28.
201 Submission 130, Murray Lower Darling River Indigenous Nations, p 9.
202 Submission 130, Murray Lower Darling River Indigenous Nations, p 9.
203 Submission 140, Nature Conservation Council of NSW, p 13.

6.40 The committee also heard that an Aboriginal cultural heritage site may be inundated as a result of the proposed project. Daroo Landcare stated that:

> Of concern…is the inundation of a registered Aboriginal site known as Terramungamine Rock Grooves. This would be an infringement of rights of the Wongaibon clan who are charged with caring for cultural heritage.[204]

6.41 When addressing this issue, Ms Jane Paul, Conservation Officer, Daroo Landcare, stated that: 'Too many Aboriginal cultural sites that should have been preserved have already been lost'.[205]

6.42 MLDRN expressed concern about issues relating to conserving Aboriginal cultural heritage sites. They told the committee that the Scoping Report suggested that similar sites to those that will be inundated exist along the river. In response to this, MLDRN stated that:

> It is grossly inadequate to suggest that cultural heritage sites subject to induction and destruction can be substituted for other sites along the waterway. All cultural sites bear a unique testimony to cultural traditions and occupation of Country and cannot be substituted.[206]

6.43 This was reiterated by Healthy Rivers Dubbo, which described the analysis in the Scoping Report as having a 'flippant attitude'[207] towards the significance of Aboriginal cultural heritage sites that would be at risk of inundation.

Ecological impacts of disrupting natural flows

6.44 Stakeholders expressed concerns about the proposed project disrupting natural and unregulated flows in the Macquarie River. This included concerns about capturing and storing tributary flows, and general issues relating to the disruption and diversion of natural river flow.

6.45 Mr Garry Hall, President, Macquarie Marshes Environmental Landholders Association, told the committee that: 'Where the proposed re-regulating structure is, there are no inflow streams downstream of that structure. It would be able to capture the downstream tributary flows in the Macquarie'.[208]

6.46 Mr Hall told the committee that WaterNSW have stated that the new weir will not capture any tributary flows. However, Mr Hall expressed some concerns regarding this statement. He told the committee that current river operations include the capture of tributary flows to fill water orders, however, data regarding how much of these flows are captured is not made available. Mr Hall said that because of this, it will be difficult to understand how much, if any, tributary flows are being captured. Mr Hall said that:

> WaterNSW has got to explain to us the current river operations of the use of tributary flows to fill existing water orders. We are constantly being told that there will not be

204 Submission 94, Daroo Landcare, p 2.

205 Evidence, Ms Jane Paul, Conservation Officer, Daroo Landcare, 2 November 2020, p 14.

206 Submission 130, Murray Lower Darling River Indigenous Nations, p 5.

207 Submission 70, Healthy Rivers Dubbo, p 15.

208 Evidence, Mr Garry Hall, President, Macquarie Marshes Environmental Landholders Association, 29 October 2020, p 45.

> any increase in take from the tributaries, but we do not know—we have got no numbers—what is currently being used, so we have no benchmark to start on.[209]

6.47 Healthy Rivers Dubbo similarly outlined concerns about the capture of tributary flows as a result of the proposed project, and the use of these flows to fulfil water orders. The submission stated that:

> WaterNSW have not published the volumes of tributary inflows that enter the Macquarie River from below Burrendong dam that are used to meet customer orders. This definition of operational surplus will give WaterNSW a blank cheque for capturing tributary inflows and regulating them as general security.[210]

6.48 The committee heard evidence regarding the importance of unregulated flows, including tributary flows, on the general health of the river. When referring to the significance of rain rejections and tributary flows, Dr Martin Mallen-Cooper, an aquatic scientist, stated:

> All environmental water is not equal. River flows that are uninterrupted by dams and weirs have extremely high ecological value, compared to flows that are stored in dams and weirs and re-released.[211]

6.49 This was reiterated by Mr Hall, who stated that:

> …a tributary flow is nutrient rich, laden with silt, it comes down the river and spreads out of the Macquarie Marshes and then is filtered and provides clean, high-quality water to the Barwon-Darling.[212]

6.50 Mr Hall argued that the proposed project would capture unregulated flows, which would have a range of negative impacts on marsh grazing, floodplain grazing and the unregulated irrigation industry, in addition to a range of ecological ramifications.[213]

6.51 Further, Mr Hall told the committee about the value of the irrigation rejection water, which would also be captured by the proposed project. He said that:

> The volumes from irrigation rejection are quite small, have been in the past few years with low availability. But that water is currently providing an environmental service, so it is going down the river and if it is not reallocated to another user it arrives in the Macquarie Marshes or is extracted by an unreged irrigator or connected to the Barwon-Darling. So there is a service being provided by that water that is irrigation rejection.[214]

6.52 Ms Gray provided additional detail regarding the importance of the unregulated flows which may be captured by the proposed project. She stated that:

> …there is a lot of water that exists outside of licensed New South Wales and Commonwealth environmental water holders that is benefiting the environment.

[209] Evidence, Mr Hall, 29 October 2020, p 49.
[210] Submission 70, Healthy Rivers Dubbo, p 8.
[211] Submission 87, Dr Martin Mallen-Cooper, p 6.
[212] Evidence, Mr Hall, 29 October 2020, p 49.
[213] Evidence, Mr Hall, 29 October 2020, p 45.
[214] Evidence, Mr Hall, 29 October 2020, p 49.

> Tributary flows and these cancelled rain rejected orders, they are all a form of free-flowing water in the system and they perform the type of ecological services that dam releases do not have a chance.[215]

Impact on the Macquarie Marshes

6.53 The committee heard evidence about the significance of unregulated flows and flood events in maintaining the Macquarie Marshes, noting that if the flows no longer reach these wetlands, the Ramsar listed Marshes could be endangered.

6.54 Healthy Rivers Dubbo noted the importance of unregulated flood events on the sustainability of wetlands. They said that these events 'are essential flooding regimes which support some of Australia's most important wetland areas for biodiversity'.[216]

6.55 The potential impact on the Macquarie Marshes was explained by Professor Richard Kingsford, who told the committee that the 're-regulating storage proposed for the Macquarie River will exacerbate the degradation of the Ramsar-listed Macquarie Marshes'.[217]

6.56 Professor Kingsford stated that 'there is clear scientific evidence for the impacts of diversions of water and river regulation on the Macquarie Marshes'.[218]

6.57 Further, Professor Kingsford stressed that the Department of Planning, Industry and Environment are responsible for conserving the Macquarie Marshes Nature Reserve, and stated that:

> It is a key responsibility of NSW in relation to protected areas, including National Parks and National Reserves to protect environmental and cultural values. Further, all governments in Australia are also responsible for the conservation and wise use of all wetlands under their jurisdiction under the Ramsar Convention, not just those gazetted.[219]

6.58 The NSW Bird Atlassers noted the importance of natural flows that will be captured behind the new weir:

> Natural flows from unregulated Bell River, Little River, Talbragar River and Coolbaggie Creek will be captured behind the massive weir. These flows are critical for the river below Burrendong Dam because they mimic the natural flow regime on which many ecological processes and organisms depend. They are vital contributors to large floods that reach the Macquarie Marshes and inundate the extensive mosaic of different types or vegetation…Capturing these waters at Gin Gin will likely have a significant impact on nationally threatened plant and animal species in the marshes, Matters of National Environmental Significance under the EPBC Act 1999, as well as native reptiles, many species of native fish, small and large native mammals, native frogs, and hundreds of plant species (NSW Office of Environment and Heritage, 2012).

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215 Evidence, Ms Gray, 27 November 2020, p 45.

216 Submission 70, Healthy Rivers Dubbo, p 15.

217 Submission 99, Professor Richard Kingsford, p 12.

218 Submission 99, Professor Richard Kingsford, p 10.

219 Submission 99, Professor Richard Kingsford, p 10.

6.59 Ms Jane Paul, Daroo Landcare, reiterated the international importance of the wetlands, and stressed that the Government has an obligation to care for these sites, given their listing under the Ramsar Convention.[220]

6.60 The Ramsar Convention 'aims to halt and, where possible, reverse the worldwide loss of wetlands and to conserve those that remain through the adoption of wise use principles'. Australia signed the Convention in 1974, meaning it agreed to protect and maintain the character of ecological sites that were listed under the Convention. Agreements are in place between the Australian and NSW Government, and other stakeholders, to protect the Ramsar listed sites in NSW, and 'uphold Australia's commitments under the Convention'.[221]

6.61 Professor Richard Kingsford warned that all the scientific evidence currently available indicates that Australia is failing to meet its international obligations for its Ramsar listed wetlands and that:

> This was one of the major reasons the Australian Government, under its international responsibilities (see also migratory birds) was able to establish new water legislation, the Water Act 2007, to try and avoid the mismanagement of the Murray-Darling Basin by the States. Australia's two internationally listed wetlands under the Ramsar Convention in NSW (Gwydir wetlands, Macquarie Marshes) will continue to change their ecological character, mainly as a result of reductions in flow. Current water management is not sufficiently providing for the ecological character of the two internationally listed wetlands which are in ecological decline.[222]

Impact on bird species

6.62 The importance of the Macquarie Marshes for waterbird breeding was also identified by the Macquarie Marshes Environmental Landholders Association. They stated that 'it is the most important colonial nesting waterbird breeding site in Australia for species diversity and nesting density'.[223]

6.63 The NSW Bird Atlassers identified the many species of birds that will be affected by the project:

> Bird species that will be affected in the Macquarie Marshes include migratory species and nationally threatened species which rely on triggers and stimuli from these flows for survival, breeding and recruitment.
>
> There are thirteen migratory species listed for consideration as Matters of National Environmental Significance that use the marshes during migration. Among these are the Bar-tailed Godwit, Common Greenshank, Common Sandpiper, Latham's Snipe, Marsh and Sharp-tailed Sandpiper and many others. The proposed weir will likely have a significant impact on these nationally threatened migratory species, a Matter of National Environmental Significance under the EPBC Act 1999.

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220 Evidence, Ms Paul, 2 November 2020, p 14.

221 Department of Environment, Climate Change and Water NSW, *Delivering the Ramsar Convention*, June 2010, p 3 - 4.

222 Submission 99, Professor Richard Kingsford, p 11.

223 Submission 86, Macquarie Marshes Environmental Landholders Association

6.64 Healthy Rivers Dubbo explained that unregulated flows in the Macquarie Marshes are critical in ensuring significant bird breeding events:

> Managed water for the environment is important to maintain habitat in the Ramsar wetlands, but it cannot recreate the natural conditions required to trigger colonial waterbird breeding events. Unregulated tributary flows that are likely to be affected by the project are the most important for the breeding of water birds. The Macquarie Marshes are one of the most important sites for waterbirds in Australia.[224]

6.65 The Nature Conservation Council of NSW stated that if the project were to go ahead, and flow regimes were further disrupted, it would 'exacerbate ongoing decline in habitat for 14 species of migratory birds, 10 colonial-nesting species, and a total of 233 native species of birds, including 77 species of waterbird, some of which are listed as critically endangered'.[225]

6.66 The committee heard that decreased natural flows would threaten 'reed beds, couch grass, mixed marsh and River Red Gum woodlands'[226] which are 'important wetland habitats'[227] for a variety of species, including colonial waterbirds and migratory waterbirds.

6.67 Professor Kingsford noted that many waterbird communities across the Murray-Darling Basin rivers and wetlands are already in 'long-term decline'[228] as a result of historical water allocations and decreased river flows on major wetlands, like the Macquarie Marshes. Specifically, Professor Kingsford noted that the breeding of colonial waterbirds is in decline.[229]

6.68 Daroo Landcare stressed the importance of uninterrupted flow for various bird species, and noted that a range of 'nationally threatened bird species' will be impacted by changes to the natural flows, given they rely on 'triggers and stimuli from these flows for survival, breeding and recruitment'.[230]

6.69 In addition to these concerns, the committee heard about the existence of various international obligations regarding the protection of migratory birds. Ms Paul noted that Australia is a party to a number of international treaties that seek to protect various migratory bird species that rely on the Marshes as their habitat. She stated that:

> We are also committed to other treaties, including JAMBA, which is Japan-Australia Migratory Bird Agreement, and ROKAMBA, which is Republic of Korea-Australia Migratory Bird Agreement. Migratory birds that use the marshes for habitat will be significantly impacted if the proposal goes ahead.[231]

224 Submission 70, Healthy Rivers Dubbo, p 16.

225 Submission 140, Nature Conservation Council of NSW, p 14.

226 Submission 91, Central West Environment Council, p 5.

227 Submission 91, Central West Environment Council, p 5.

228 Submission 99, Professor Richard Kingsford, p 4.

229 Submission 99, Professor Richard Kingsford, p 4.

230 Submission 94, Daroo Landcare, p 1.

231 Evidence, Ms Paul, 2 November 2020, p 14.

Impact on fish and fish breeding events

6.70 The committee also heard evidence regarding the importance of uninterrupted flows on various fish species. When discussing these naturally occurring flows, Professor Kingsford stated that:

> A lot of that water is really important in terms of the fish breeding, the invertebrates and all of the things that make the river healthy because it is not cold from the bottom of Burrendong Dam, it is coming through natural processes and the nutrients are still there.[232]

6.71 Professor Kingsford explained the potential impact of the proposed project on fish, and told the committee that:

> We know that these weirs also capture sediment and nutrients as well as being barriers for things likes fish species. There is certainly no environmental benefit of building that weir and there is a lot of risk in terms of downstream impacts, not just to the environment—the river—but also to the rural communities downstream.[233]

6.72 The potential impact of the 'capture of rain rejections and tributary flows'[234] on fish populations was expressed by Dr Martin Mallen-Cooper, who explained that:

> Uninterrupted river flows pick up nutrients (especially carbon such as dead eucalyptus leaves) and generates natural productivity of plankton, which is the essential food source of fish larvae. This is the fundamental process of river ecosystems that sustains native fish populations.[235]

6.73 Dr Mallen-Cooper told the committee about the significant advantages of uninterrupted river flow, and stated that this water has high ecological value. This is because it 'occurs with a natural season; it has a natural rise and fall in river level; and it has natural, flowing water, hydraulics. It also has no thermal pollution'.[236]

6.74 In addition to uninterrupted river flow, Dr Mallen-Cooper also noted that there is significant ecological value in 'rain rejections', which would also likely be captured as part of the proposed project. He said that: '"Rain rejections" combine local rainfall and released flow from the dam. These also have high ecological value combining the advantages of local runoff with increased discharge'.[237]

6.75 Dr Mallen-Cooper summarised this information, and told the committee that:

> In the Macquarie Valley, tributary flows, rainfall events and rain rejections downstream of Burrendong Dam are one of the most valuable ecological assets that are presently sustaining native fish populations. If the proposed regulator captures and re-regulates

232 Evidence, Professor Richard Kingsford, Professor of Environmental Science, Director of Centre for Ecosystem Science, School of Biological, Earth and Environmental Sciences University of New South Wales, 27 November 2020, p 4.

233 Evidence, Professor Kingsford, 27 November 2020, p 4.

234 Submission 87, Dr Martin Mallen-Cooper, p 6.

235 Submission 87, Dr Martin Mallen-Cooper, p 6.

236 Submission 87, Dr Martin Mallen-Cooper, p 6.

237 Submission 87, Dr Martin Mallen-Cooper, p 6.

> these tributary flows and main-stem flows that result from rainfall downstream of Burrendong Dam, native fish populations will have less successful breeding and populations will certainly decline.[238]

6.76 Healthy Rivers Dubbo told the committee that the proposed project will have significant impacts on specific fish species, namely the 'critically endangered Silver Perch, endangered Trout Cod and vulnerable Murray Cod'.[239]

6.77 The Nature Conservation Council similarly expressed concern about the impact of the project on fish species, and noted that native fish in the Macquarie River are already listed as an 'Endangered Ecological Community'.[240] They argued that regulated flows will not meet the necessary ecological criteria of unregulated flows, and will be unable to support breeding, feeding or migration of native fish species.[241]

Committee comment

6.78 The committee has significant concerns about the potential negative ecological impacts of the Macquarie River re-regulating storage project. In particular, the lack of clarity regarding the use of tributary flows for water orders, the lack of information about how these flows are currently used and how this will change as a result of the project, is concerning..

6.79 It is evident to the committee that disrupting the flows that would otherwise travel downstream and reach the Macquarie Marshes will have a negative impact on the Ramsar listed wetlands, disrupting waterbird populations and breeding events.

6.80 The committee accepts the evidence received regarding the high ecological value of uninterrupted flows for native fish species. The re-regulating storage project is likely to change river water temperature and the nutrients in the water, significantly impacting on fish species such as the Silver Perch, Trout Cod and Murray Cod while recognising that the new weir, as long as it is appropriately maintained and monitored, will improve fish passage.

Recommendation 5

That the significant negative ecological impact on the riverine environment of the Macquarie River re-regulating storage project be fully and adequately addressed as part of any independent planning process to assess the project.

Background to the Western Weirs Project

6.81 The Western Weirs Project is one of the NSW Government's projects aimed at addressing water security in regional areas. The project involves the review of the existing weirs along the Barwon-Darling River. WaterNSW explained that a range of issues have been identified with

238 Submission 87, Dr Martin Mallen-Cooper, p 7.

239 Submission 70, Healthy Rivers Dubbo, p 17.

240 Submission 140, Nature Conservation Council of NSW, p 14.

241 Submission 140, Nature Conservation Council of NSW, p 14.

this existing infrastructure, and thus there is a need to undertake a strategic analysis of the operation of the weirs in the region.[242]

6.82 Further, the NSW Government submission recognised that there had been long standing Local Government and community concerns about the adequacy of the existing weirs, and the subsequent impacts of these issues on town water supply and water security.[243]

6.83 The NSW Government has made a funding commitment of $4.2 million for WaterNSW and Department of Planning, Industry and Environment (DPIE) Water to jointly develop a Strategic Business Case (SBC) for the Western Weirs Project.

6.84 The SBC was initially scheduled for completion in 2021, however, it was noted by WaterNSW that this timeline is subject to change due to COVID-19 related restrictions.[244]

6.85 As has occurred with the Wyangala Dam Wall raising project and the Dungowan Dam project, this project has also been declared a Critical State Significant Infrastructure (CSSI) under Schedule 3 of the *Water Supply (Critical Needs Act) 2019* (NSW). However, this Project is not subject to the same accelerated timelines that the Wyangala and Dungowan Dam projects are.[245]

6.86 When describing the project, WaterNSW stated:

> The Strategic Business Case (feasibility study) will examine the proposal for the holistic management and operation of the weirs in the Barwon-Darling unregulated and Lower Darling regulated systems to support remote community water security and other benefits.[246]

6.87 The NSW Government said that the project is 'investigating options that could improve long-term water availability and access for far west regional towns as well as enhanced water delivery efficiency'.[247] It was also stated that the project is 'assessing the capacity of town weirs to provide water for far west towns and options to raise these weirs to improve water security when required'.[248]

6.88 There are over 29 weirs along the Baron-Darling River and the adjoining tributaries, many of which are owned by WaterNSW. The committee heard that the current infrastructure is known to have 'several deficiencies'[249], including:

- the poor condition of some weirs;
- no system level functionality;
- flow regulation limitations;

242 Submission 50, Water NSW, p 29.
243 Submission 152, NSW Government, p 5.
244 Submission 50, Water NSW, p 30.
245 Submission 50, Water NSW, p 3.
246 Submission 50, Water NSW, p 29.
247 Submission 152, NSW Government, p 5.
248 Submission 152, NSW Government, p 5.
249 Submission 50, Water NSW, p 29.

- town water supply and security concerns; and
- unclear responsibility of some structures.[250]

6.89 WaterNSW told the committee that if fully implemented, the project is expected to deliver:

- construction of a new integrated system of gated weirs to replace current fixed weirs along the river allowing WaterNSW to more effectively manage flow along the whole system;
- provision of fish passage on all new and existing fish barriers along the river;
- removal of weirs and structures that provide no benefit to the system;
- implementation of new ownership, maintenance, operations and cost recovery arrangements for infrastructure and operations along the river; and
- amendments of the Water Resource Plan considering the new operational regime on the river.[251]

Stakeholder views on the Western Weirs Project

General support for the Western Weirs Project

6.90 The committee heard evidence from a range of stakeholders supporting the Western Weirs Project. Some stakeholders identified the various opportunities that could be capitalised on through a holistic review of the weirs in the Barwon-Darling and Lower Darling.

6.91 The Nature Conservation Council of NSW described the project as 'timely and important'.[252] They stated that:

> The development of the Western Weirs has been piecemeal and their cumulative impact on the whole river system has not been considered. This project is an opportunity to reassess the Western Weirs and optimise their environmental and social values.[253]

6.92 The National Parks Association of NSW similarly supported the project, and stated that it 'offers the opportunity to improve environmental outcomes through the removal of defunct barriers and thereby enhance connectivity and opportunities for fish passage'.[254]

6.93 The need to review weirs in the Barwon-Darling and Lower Darling was also identified by Professor Pittock, who told the committee that: 'The weirs have severe problems which warrants a program to review their performance to clarify ownership, remove redundant and

250 Submission 50, Water NSW, p 29.

251 Submission 50, Water NSW, p 30.

252 Submission 140, Nature Conservation Council, p 17.

253 Submission 140, Nature Conservation Council, p 17.

254 Submission 120, National Parks Association of NSW, p 3.

unsafe structures, repair those that are needed, and add environmental mitigation measures, such as fish passages'.[255]

6.94 Central Darling Shire told the committee that there is 'an urgent need to finalise the Western Weirs Strategy and Plan'.[256]

6.95 The committee heard that this project presented a specific opportunity to make changes to the way the Barwon-Darling is managed to ensure better outcomes for fish. Dr Mallen-Cooper told the committee that 'the Western Weirs project presents an opportunity to rehabilitate the river and align with the current values of the community which would lead to a healthier river with abundant fish'.[257]

6.96 Dr Lee Baumgartner provided an example of the impact of weirs in the lower Murray River, Dr Baumgartner described downstream of Renmark as having no 'flowing habitat at all'[258], due to the placement of pools and weirs. He said that the project provides an opportunity to address these issues, and take a different, better approach when considering river management.

6.97 The importance of holistic management of the Barwon-Darling and Lower Darling to First Nations people was stressed by the Murray Lower Darling Rivers Indigenous Nations (MLDRN). They told the committee that the river system has previously been 'characterised by poor connectivity; an ongoing significant issue for local Traditional Owners and regional communities'.[259]

Concerns regarding potential new or expanded weirs

6.98 While most stakeholders indicated general support for a holistic review of the management and operation of weirs in the Barwon-Darling and Lower Darling, the committee heard some concern about potential negative outcomes of this project – particularly if it would result in the construction of new or expanded weirs.

6.99 Dr Mallen-Cooper noted that while the project could have positive environmental outcomes, there is also a risk that it could result in permanent damage to the river. He argued that this is because there is minimal detail about the project available to date, and a 'spectrum of options'[260] are available in the context of the project.

6.100 When describing the options that he had concerns about, Dr Mallen-Cooper stated that 'at the other end of the spectrum of options for Western Weirs are new, more numerous or upgraded weirs that may be higher and store more water'.[261] He argued that the environmental impacts of

255 Submission 115, Professor Jamie Pittock, Professor, Fenner School of Environment & Society, Australian National University, p 3.

256 Submission 174, Central Darling Shire Council, p 5.

257 Submission 87, Dr Martin Mallen-Cooper, p 5.

258 Evidence, Dr Lee Baumgartner, Professor of Fisheries and River Management, Institute for Land, Water and Society, Charles Sturt University, 29 October 2020, p 55.

259 Submission 130, Murray Lower Darling Rivers Indigenous Nations (MLDRN), p 7.

260 Submission 87, Dr Martin Mallen-Cooper, p 5.

261 Submission 87, Dr Martin Mallen-Cooper, p 5.

more or larger weirpools would be 'devastating and lead to permanent damage to the Barwon-Darling ecosystem'.[262]

6.101 Dr Mallen-Cooper explained the risks associated with storing water in weirpools: 'Storing the water in the river is not the place to do it. It is exposed to light and heat and gets blue-green algae. There is another reason not to store it in the river. It loses a lot to evaporation'.[263]

6.102 This concern was reiterated by the Inland Rivers Network, which told the committee that if this project were to involve increasing weir height, it would have a 'detrimental environmental impact'.[264] They stressed that 'the project must provide an opportunity to restore river reaches through the removal of weirs and decreasing the number and size of artificial pools'.[265]

6.103 Murray Lower Darling Rivers Indigenous Nations (MLDRN) also expressed concern that the 'proposed holistic management is reliant on constructing and/or replacing weir infrastructure rather than allowing the river to flow naturally'.[266] MLDRN stated that 'over-reliance on engineering interventions to manage flows is at odds with how First Nations want to see country managed'.[267]

6.104 Further, they noted that assessment of cultural heritage impacts of the project were yet to be undertaken, and must include Traditional Owners when it does take place.[268]

Support for alternative options as part of the Western Weirs Project

6.105 In addition to concerns about options that may be pursued as part of this project, such as the construction of new weirs, the committee also heard about broad support for other approaches. Stakeholders expressed support for the removal or repair of existing weirs, and exploring new options, such as off-river storage.

6.106 Professor Pittock identified a number of options that could be examined as part of this project, namely modifying existing weirs and utilising groundwater and off-river storage. He stated that this would 'improve reliability and quality of domestic water supply while reducing environmental impacts'.[269]

6.107 This was reiterated by Dr Mallen-Cooper, who told the committee about the 'significant opportunity' of the project. He stated that old weirs could be removed, and high amenity weirs could be kept. Further, he explained the specific benefits of off-river storage:

> Town water supplies could be moved to off-stream storage, so that all low flows in droughts stay in the river. This provides higher quality, higher security water for towns

262 Submission 87, Dr Martin Mallen-Cooper, p 5.

263 Evidence, Dr Martin Mallen-Cooper, Adjunct Research Professor, Institute for Land, Water and Society, Charles Sturt University, 29 October 2020, p 54.

264 Submission 116, Inland Rivers Network, p 12.

265 Submission 116, Inland Rivers Network, p 12.

266 Submission 130, Murray Lower Darling Rivers Indigenous Nations (MLDRN), p 7.

267 Submission 130, Murray Lower Darling Rivers Indigenous Nations (MLDRN), p 7.

268 Submission 130, Murray Lower Darling Rivers Indigenous Nations (MLDRN), p 7.

269 Submission 15, Professor Jamie Pittock, p 3.

> and eliminates the competition between people and the environment for water at very low flows. It can also save water because off-stream storage can be covered to prevent evaporation, while storing water in weirpools can lose 75% to evaporation.[270]

6.108 The need for 'multi-facetted' solutions to ensure water security and reliability in the Far West was expressed by Ms Kate Boyd, who told the committee that a variety of options should be considered as part of this project. She recommended the use of groundwater, and filling off-river storages from the river in periods of higher flow.[271]

6.109 Further, the Inland Rivers Network similarly recommended that the project examine the 'efficacy of off-stream storage options to secure town water supply'.[272]

Committee comment

6.110 It is clear to the committee that there has been a long-standing need to undertake a holistic review of the weirs in the Barwon-Darling and Lower Darling, and ensure that the management and operation of the weirs facilitates water efficiency and security.

6.111 The committee is pleased to hear about the positive opportunities that are available as part of this review, including the potential to ensure water security for impacted towns, as well as improving fish health and other environmental outcomes.

6.112 However, the committee notes the valid concerns expressed by some stakeholders that the project may lead to the construction of new weirs, or the expansion of existing weirs, which has the potential to lead to negative environmental impacts, and is not necessarily the most efficient way of ensuring water security and reliability.

6.113 The committee found the evidence that weirs negatively impact fish health and river health, due to the disruption to otherwise unregulated flows, compelling. Additionally, utilising on-river storage options, such as weirs, results in significant evaporation losses, an outcome which will likely be exacerbated due to climate change.

6.114 The committee appreciated evidence it received about various positive and useful options that could be explored as part of this project. These include removing old weirs, and exploring new and innovative approaches to water storage, such as groundwater use and off-river storage. The committee is of the view that it is important for the NSW Government to explore these options.

Recommendation 6

That the NSW Government, as part of the Western Weirs Project, investigate options such as the use of groundwater and off-river storage, as a possible alternative to building new weirs or expanding weirs.

270 Submission 87, Dr Martin Mallen-Cooper, p 5.

271 Submission 102, Ms Kate Boyd, p 2.

272 Submission 116, Inland Rivers Network, p 12.

Chapter 7 Menindee Lakes Water Savings Project

This Chapter examines the proposed Menindee Lakes Water Savings Project. The Chapter will first examine the background of the Menindee Lakes Water Savings Project, and its current status, noting that the NSW Government has stated that the project in its initial form would not be delivered, and the project would be rescoped. The concerns that have been identified regarding the project will then be examined, specifically including any environmental, social and cultural impacts.

Overview of the Menindee Lakes

7.1 The Menindee Lakes are located on the Darling River, approximately 200 km upstream of the Darling River and River Murray junction. The closest city to Menindee Lakes is Broken Hill, with the Lakes supplying up to 10,000 ML of water annually to Broken Hill.

7.2 Modifications, such as the construction of weirs, regulators, levees and channels to allow the storage and release of water, were made to Menindee Lakes in the 1950s and 1960s. This changed the 'natural regime' of the Menindee Lakes, which would previously fill during high river flows, and then subsequently recede, with some pools periodically evaporating entirely.[273]

7.3 The government notes that on average, Menindee Lakes lose 426 GL a year to evaporation, and that when full, this increases to 700 GL. There is also 120 GL of what the Government characterised as 'dead storage' across the Menindee Lakes, which cannot be accessed for consumption and may also be lost to evaporation.[274]

7.4 The Menindee Lakes are an important water source for local towns, in addition to being an important cultural, social and economic area for local communities. Additionally, the Lakes are an 'ecologically significant' location, being a habitat for a range of native fish populations.[275]

Background to the Menindee Lakes Water Savings Project

7.5 The Menindee Lakes Water Savings Project ('the project') is one of 21 Sustainable Diversion Limit Adjustment Mechanism (SDLAM) projects under the Murray-Darling Basin Plan. These projects are the mechanism utilised by the Murray-Darling Basin Authority to adjust sustainable diversion limits. These are the limits which set out how much water can be used in the Murray-Darling Basin, while leaving enough water to sustain the health of the natural environment.[276]

7.6 Some of these projects allow environmental outcomes in the Basin Plan to be achieved with less water, and others seek to improve water use efficiency. In the pre-feasibility concept

273 Submission 152a, NSW Government, p 11.

274 Submission 152a, NSW Government, p 11.

275 Submission 152a, NSW Government, p 12.

276 Submission 152a, NSW Government, p 12, Murray-Darling Basin Authority, *Sustainable diversion limit adjustment projects,* https://www.mdba.gov.au/basin-plan-roll-out/sustainable-diversion-limits/sdl-adjustment-proposals-state-projects.

proposal for this Project, there was a focus on 'reducing evaporative losses and delivering water savings'.[277]

7.7 However, the NSW Government noted in their supplementary submission, that following the Vertessy Report, which investigated the 2018-19 mass fish kills in the Lower Darling, the focus of the project has changed.[278]

7.8 The Vertessy Report found that there were three main immediate causes of the fish deaths, being:

- Low flows
- Poor water quality
- Sudden change in temperature.[279]

7.9 Further, the Report also determined that there were other influencing factors that contributed to the fish deaths, being:

- Climatic conditions
- Hydrology and water management
- Menindee Lakes operations.[280]

7.10 The Report made a number of recommendations to policy makers in the Murray-Darling basin. These included:

- The protection of flows in drier conditions, and protecting the first flow after significant rainfall
- Improving basin connectivity, including the removal of barriers to fish movement and protect pools for natural fish habitats
- Improving the Menindee Lakes' operating procedures.[281]

7.11 The Report recommends that this Project aims to 'achieve a holistic mix of social, cultural, environmental and economic outcomes'.[282]

277 Submission 152a, NSW Government, p 12.

278 Submission 152a, NSW Government, p 12,

279 Murray-Darling Basin Authority, *Key recommendations from independent assessment of fish deaths*, 16 June 2020, https://www.mdba.gov.au/issues-murray-darling-basin/fish-deaths/key-recommendations-independent-assessment.

280 Murray-Darling Basin Authority, *Key recommendations from independent assessment of fish deaths*, 16 June 2020, https://www.mdba.gov.au/issues-murray-darling-basin/fish-deaths/key-recommendations-independent-assessment.

281 Murray-Darling Basin Authority, *Key recommendations from independent assessment of fish deaths*, 16 June 2020, https://www.mdba.gov.au/issues-murray-darling-basin/fish-deaths/key-recommendations-independent-assessment.

282 Submission 152a, NSW Government, p 12.

7.12 Subsequently, the NSW Government stated that the revised aim of the project will be to 'enhance the significant natural, ecological and cultural heritage values and still deliver on NSW's commitments under the Basin Plan'.[283]

7.13 The NSW Government has since stated that it is aware of 'strong elements of community opposition to the project, and thus, 'recognising this project as unique sensitivities and cannot be delivered in its current format by 2024, it is currently being rescoped'.[284]

Concerns regarding the Menindee Lakes Water Savings Project

7.14 This section of the report will outline the concerns raised regarding the Menindee Lakes Water Savings Project. This includes a failure to adequately consult with the community on options for water savings in the region and the potential negative impact on river connectivity and river health. Further concerns include the impact on the Barkindji and other First Nations peoples and the potential negative ecological impacts of the proposed project.

Insufficient consultation and engagement

7.15 The committee heard concerns about how WaterNSW and the Department of Planning, Industry and Environment consulted and engaged with impacted communities regarding the project. Inquiry participants told the committee that the consultation on how water savings would be made, and what the detail of the project would be, had been fraught and insufficient.

7.16 One of the primary ways of engaging with the local community regarding this project is the Menindee Lower Darling Stakeholder Advisory Group (SAG), which consists of 25 representative stakeholders, including community groups, First Nations people, irrigators, pastoralists, stock and domestic water users and relevant local councils.[285]

7.17 Cr Tim Kennedy, Broken Hill City Council, told the committee about what he characterised as fundamental issues with the consultation process and the establishment of the SAG. He stated that the terms of reference for the SAG included the delivery of 106 gigalitres of water savings to the Menindee Lakes, which would mean the Menindee Lakes could only hold 80 gigalitres of water, out of the 2,000 gigalitres of storage.[286]

7.18 Cr Kennedy argued that these terms of reference meant that there could be no effective public consultation through this forum, and said that describing this process as adequate consultation was 'disgraceful'.[287]

7.19 Further, when summarising the process of consultation only focusing on mechanisms to deliver water savings, Cr Kennedy stated that:

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283 Submission 152a, NSW Government, p 13.

284 NSW Department of Planning, Industry and Environment, *About the Menindee Lakes Project*, accessed July 2021.

285 Submission 174, Central Darling Shire Council, p 3.

286 Evidence, Cr Tom Kennedy, Councillor, Broken Hill City Council, 10 February 2021, p 6.

287 Evidence, Cr Kennedy, 10 February 2021, p 7.

> That is not public consultation, and that is where the Government has let the communities down at a local level because it is not interested in consultation, it is actually interested in telling us what we will get.[288]

7.20 When asked how the SAG had been operating, representatives from Central Darling Shire Council told the committee that the SAG had been presented with 12 options for how the project may proceed, with very limited supporting information. Mr Greg Hill, General Manager, argued that given the limited options and information that were presented to the SAG, he was unable to make a decision on behalf of the Council and the community.[289]

7.21 Mr Hill stated that in response to these limitations, the SAG had repeatedly expressed the need for there to be a primary focus on improving and sustaining river flow, and enhancing connectivity and river health, before infrastructure options are explored.[290]

7.22 Cr Tim Elstone, Wentworth Shire Council, made a similar point, and said that even after this had been expressed, future meetings of the SAG continued to focus on limited infrastructure options, rather than introducing regular flows and focusing on river connectivity.[291]

7.23 The committee heard that because of these issues and the failure to effectively respond to the concerns of the SAG, DPIE were informed that the SAG would not be attending any future meetings until these issues were addressed. In a letter by the SAG informing DPIE of this and tendered to the committee, it stated that there was a need to address the 'catastrophic flaw' of the project, being the failure to ensure the base water needs for the river, prior to any water savings being made.[292]

7.24 The letter also stated that without ensuring adequate flow and a healthy river, water savings cannot be made. In summarising this issue and the representations in the letter, Ms Jane Macallister stated that:

> It does effectively point out the fatal flaw in the project, being that without water effectively flowing into the Menindee Lakes…there will be no savings. That is the crux of the matter.[293]

NSW Government response to consultation concerns

7.25 In a supplementary submission provided by the NSW Government, it was noted that various community groups had raised concerns about the project. It stated that in response to these concerns, the Minister for Water, Property and Housing had informed other relevant Ministers of Basin Plan states that no Menindee Lakes project could be delivered by the legislated June

288 Evidence, Cr Kennedy, 10 February 2021, p 6.

289 Evidence, Mr Greg Hill, General Manager, Central Darling Shire Council, 10 February 2021, p 5.

290 Evidence, Mr Hill, 10 February 2021, p 6.

291 Evidence, Cr Tim Elstone, Councillor, Wentworth Shire Council, 10 February 2021, p 6.

292 Tabled Document, Letter from Mr Terry Smith, Chairman, Menindee Stakeholder Advisory Group, to the Department of Planning, Industry and Environment, February 2021, p 1.

293 Evidence, Ms Jane Macallister, Community Organiser (Water) Nature Conservation Council of New South Wales and Councillor, Wentworth Shire Council, 10 February 2021, p 10.

2024 timeframe. This was formally expressed to the Commonwealth Minister on 29 January 2021.[294]

7.26 Further, the submission stated that DPIE would not proceed with a project at Menindee unless it has 'broad community support'.[295]

7.27 Based on these factors, the Government noted that DPIE Water had written to the stakeholder advisory group advising it would 'suspend discussions' on the project, and instead 'focus on issues around water reliability and quality'.[296]

Impacts of the proposed project on the Darling-Barka

7.28 The committee heard evidence that the project would impact the health of the Darling River, also known as the Darling-Barka. Inquiry participants told the committee that implementing the significant water savings proposed by the project would irrevocably and permanently damage the River.

7.29 Stakeholders outlined historical river degradation due to past water policy and over allocation. They stressed the need to focus on improving river health and connectivity, rather than attempting to make water savings from the Menindee Lakes.

7.30 The committee heard that while the detail of the Menindee Lakes Water Savings Program had not yet been confirmed, the impact of making the required 106 GL of water savings will be significant and detrimental. This impact is irrespective of how these savings would be made.

7.31 As noted above, Cr Kennedy told the committee that achieving 106 GL of savings in the Menindee Lakes would mean the Menindee Lakes could only hold 80 GL of water, out of a potential 2000 GL of storage. The committee heard that 80 GL would not last 12 months in the heat of a normal year.[297]

7.32 Further, some stakeholders argued that the Menindee Lakes were having to make an unfair and excessive contribution to the overall water savings required by the Murray-Darling Basin Authority. Ms Jane Macallister stated that out of the total 605 GL required to be saved in the Basin, 106 GL is required to come out of Menindee.[298]

7.33 This was characterised by stakeholders as being because the area is an 'easy target' due to the small population and limited financial capacity of the impacted council areas.[299]

294 Submission 152a, NSW Government, p 13.

295 Submission 152a, NSW Government, p 13.

296 Submission 152a, NSW Government, p 13.

297 Evidence, Cr Kennedy, 10 February 2021, p 7.

298 Evidence, Ms Macallister, 10 February 2021, p 16.

299 Evidence, Cr Kennedy, 10 February 2021, p 7.

Ensuring river connectivity and river flow

7.34 Stakeholders told the committee about the importance of the Lower Darling and the Menindee Lakes, and stressed the need for a renewed focus on improving river connectivity to maintain the health of the system more broadly.

7.35 Ms Jane Macallister argued that the Menindee Lakes should not be treated as drought storage, but rather, as a 'living, connected wetland system…The lakes are connected to each other and they are connected to the river'.[300] She summarised the need to protect the Menindee Lakes by stating that 'If we do not sustain the environment which sustains us, then we will perish'.[301]

7.36 The importance of river connectivity was also explained by Dr Lee Baumgartner, who told the committee that:

> The solutions that you need for the Menindee project need to be more than just thinking about one species and one site, it has to be an integrated suite of solutions over the landscape, and it has to consider the Murray and the Upper Darling. The Menindee project needs more than just thinking about Menindee as a single site, it needs thinking about the Barka, or the Darling, as a connected system. The way that water is managed across that landscape has to be fully integrated into that project.[302]

7.37 Impacted local councils in the region stressed the importance of first ensuring river connectivity and river flow, before any water savings or infrastructure programs are pursued. Cr Browne argued that if this was not done, and infrastructure options were undertaken without focusing on ensuring a sustainable river flow, the damage would be irreparable. She stated that:

> Without connectivity, the river will die and we cannot, in good conscience, lend support to any such proposal.[303]

7.38 Wentworth Shire Council and Central Darling Shire Council made similar arguments, and stated that connectivity through the system is a necessity, and must be treated as a priority.[304] Cr Elstone, Wentworth Shire Council stated:

> Connectivity from the top to the bottom is what our communities have been about for as long as I have been a councillor, which is only one term. And it has been repeated, repeated, repeated. And sadly I would say it falls on deaf ears.[305]

7.39 Mr Hill, Central Darling Shire Council, emphasised to the committee that restoring connectivity does not mean continuous flow, but rather, a regular flow. This would mean that the Darling may intermittently stop flowing, but it would not be for long periods of time, as is currently the case.[306]

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300 Evidence, Ms Macallister, 10 February 2021, p 11.

301 Evidence, Ms Macallister, 10 February 2021, p 11.

302 Evidence, Dr Lee Baumgartner, Professor of Fisheries and River Management, Institute for Land Water and Society, Charles Sturt University, 29 October 2020, p 57.

303 Evidence, Cr Marion Browne, Councillor, Broken Hill City Council, 10 February 2021, p 2.

304 Evidence, Mr Ken Ross, General Manager, Wentworth Shire Council, 10 February 2021, p 3, Evidence, Mr Hill, 10 February 2021, p 6.

305 Evidence, Cr Elstone, 10 February 2021, p 4.

306 Evidence, Mr Hill, 10 February 2021, p 8.

7.40 Central Darling Shire said that 'critical flow triggers'[307] must be established in the Barwon-Darling and Lower Darling, which would ensure the health of the river is protected and made a priority before water is accessed for irrigation needs during dry and low flow years. The Council argued that this was a mechanism of prioritising critical human needs for towns, cultural and stock and domestic water needs, and ensuring water turnover to avoid blue-green algal blooms.[308]

7.41 Central Darling Shire Council also argued that a volume target should be established for Lake Wetherell and Lake Pamamaroo in the Menindee Lakes Scheme, with this target providing two years water security for the Lower Darling.[309]

7.42 Broken Hill City Council also recommended that the NSW Water Sharing Plans and Resource Management Plans for the Barwon-Darling, Murray-Lower Darling and Northern Basin Rivers include minimum river flow and storage levels to ensure the health of the rivers. They also recommended that minimum flows be established for sites along the Barwon-Darling and Lower Darling, in addition to water storage volumes in the Menindee Lakes.[310]

Impacts of decreased water flow in the Lower Darling and Menindee Lakes

7.43 The drying of the Darling River and the Menindee Lakes system has led to multiple social and environmental impacts.

7.44 Central Darling Shire Council explained that following changes to water rules in the Northern Basin in 2012, the Menindee Lakes and Lower Darling River have faced critical water storages for more than 50% of that period. The Council noted that there had been 3 instances of 'cease-to-flow' events in the Lower Darling, and 3 significant fish kills in the Menindee weir pools.[311]

7.45 Cr Kennedy told the committee that water in the Lower Darling has been sacrificed for water security in the Northern Basin, with excessive take occurring by irrigators in that region. He stated that excessive take has limited flows in the Darling, meaning there was no drought resilience in towns like Menindee and Wilcannia, resulting in longer and drier periods than had previously been experienced.[312]

7.46 The significant impacts of the lack of flow in the Lower Darling and the drying of the Menindee Lakes were strongly expressed to the committee. These included severe water restrictions, with some towns having to secure bottled water for drinking, historic fish kills at Menindee, and long term drying of impacted wetlands.[313]

7.47 The committee also heard about the significant social impacts of drought. Cr Kennedy, Broken Hill City Council, described these impacts to the committee:

307 Submission 174, Central Darling Shire Council, p 4.

308 Submission 174, Central Darling Shire Council, p 4.

309 Submission 174, Central Darling Shire Council, p 4.

310 Submission 173, Broken Hill City Council, p 1.

311 Submission 174, Central Darling Shire Council, p 3.

312 Evidence, Cr Kennedy, 10 February 2021, p 5.

313 Submission 174, Central Darling Shire Council, pp 2-3.

> I have experienced firsthand the impact this has had on Menindee township and the river communities, particularly Wilcannia and Broken Hill itself. It has resulted in mental health issues, domestic violence, drug and alcohol use and suicide, at its worst.[314]

7.48 The Central Darling Shire Council described the loss of water in Menindee Lakes as having a 'devastating impact'[315] on the community, in a social, economic and environmental sense.

7.49 The importance of the river and the impacts of it running dry were explained to the committee by Mr Chris Gambian, Nature Conservation Council of NSW, who summarised community sentiment on this issue:

> We met locals at Bourke and Wilcannia, we met farmers and irrigators at Tilpa and we met a group of Barkindji leaders in Menindee. Everywhere we went and everyone we spoke to had a very similar message. The river is the life of the region. When the river runs dry so does the community. When the river flourishes, life comes back.[316]

7.50 Further, the impact of prolonged drought on tourism in the Far West was explained to the committee. Cr Marion Browne, Broken Hill City Council, stated that Broken Hill and Darling River towns are reliant on water flows for attracting tourists coming to the towns for camping, boating and other activities. She stated that tourism will be increasingly important for these communities as they try and grow their economies and populations.[317]

Ecological impacts of the Menindee Lakes Water Savings Project

7.51 The committee heard evidence regarding the potential ecological impacts of the project. This evidence related specifically to the ecological impacts arising as a result of drying in the Menindee Lakes and the Lower Darling.

7.52 Many inquiry participants referred to the fish kills that occurred in the region in 2018 and 2019 as an example of the ecological impacts of low flows in the Lower Darling. These fish kills occurred when the river's water level was low, and no environmental flows were available, meaning blue-green algae was unable to be flushed and subsequently bloomed in the river.[318]

7.53 Central Darling Shire Council told the committee that the scale of these fish kills had not previously been historically recorded. [319]

7.54 Professor Lee Baumgartner stated that over three million fish were killed, and explained that:

> The reason that we saw what we did was the river stopped flowing and there just simply was not enough—you need water to disperse a blue-green algal event, which was the cause of that.[320]

314 Evidence, Cr Kennedy, 10 February 2021, p 3.

315 Submission 174, Central Darling Shire Council, p 4.

316 Evidence, Mr Chris Gambian, CEO, Nature Conservation Council of NSW, 27 November 2020, p 36.

317 Evidence, Cr Browne, 10 February 2021, p 3.

318 Submission 173, Broken Hill City Council, p 3.

319 Submission 174, Central Darling Shire Council, p 3, Submission 173, Broken Hill City Council, p 3.

320 Evidence, Dr Baumgartner, 29 October 2020, p 54.

7.55 Dr Mallen-Cooper told the committee that the general decline of fish over the past 35 years in the region, and the recent fish kills were 'devastating'.[321] Similarly, Professor Richard Kingsford characterised these fish kills as 'catastrophic'.[322]

7.56 The committee heard that the Menindee Lakes are an important habitat for a range of birds, particularly waterbirds. Ms Jacqui Mumford, Nature Conservation Council of NSW, noted that water bird numbers in the Menindee Lakes are in long term decline due to the 'ongoing failure to manage water levels'.[323]

7.57 Broken Hill City Council similarly stressed that any reduction in river flows in the Lower Darling would have a detrimental effect on waterbird populations. They noted that environmental flows are physical habitats, and any change to these flows would impact the flood supply and habitat of the waterbirds. These changes would mean the death of waterbirds, or more migration away from the Lower Darling.[324]

7.58 The significance of the waterbird population in Menindee Lakes was stressed to the committee, and some stakeholders recommended that the wetlands be Ramsar listed in the attempt to better ensure their protection. Broken Hill City Council expressed their support for Ramsar listing, while Ms Jane Macallister stated that this process is supported by other local councils and the community more generally.[325]

7.59 The committee also heard about the potential unknown impacts of the project on groundwater, and the subsequent environmental impacts of any disruption to the connectivity between groundwater and surface water. In summarising this issue, Ms Macallister stated:

> The level of environmental damage and the impact that would have on not only the living environment, the plants, the flood plain, but also the creatures—the emus, the kangaroos, the birds and the people—is probably the greatest unknown.[326]

Impact on First Nations people

7.60 The committee heard about the importance of the Darling River, or the Barka, and the Menindee Lakes to the Barkindji people, who are the Traditional Owners of the impacted land.

7.61 The importance of the Barka was explained to the committee by Mr Derek Hardman, Barkindji Native Title Group, who said that: 'Barkindji Aboriginals belong to the river, we always have and I guess we always will'.[327]

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321 Evidence, Dr Martin Mallen-Cooper, Adjunct Research Professor, Institute for Land, Water and Society, Charles Sturt University, 29 October 2020, p 54.

322 Submission 99, Professor Richard Kingsford, p 5.

323 Evidence, Ms Jacqui Mumford, Organising Director, Nature Conservation Council of NSW, 27 November 2021, p 37.

324 Submission 173, Broken Hill City Council, p 4.

325 Evidence, Cr Browne, 10 February 2021, p 3, Evidence, Ms Macallister, 10 February 2021, p 11.

326 Evidence, Ms Macallister, 10 February 2021, p 17.

327 Evidence, Mr Derek Hardman, Chief Executive Officer, Barkindji Native Title Group, 10 February 2021, p 18.

7.62 Mr Hardman noted the detriment to all communities of an unhealthy river:

> The amount of works and things that our people have been exposed to and the detriment that that is having on our communities and our people in regard to infrastructure, dams, dry riverbeds, fish dying, animals—all those things have had some serious impacts on our communities, and not just our community as an Aboriginal community but the whole community up and down the Darling and the Barka and in and around our lake system.[328]

7.63 The importance of the river to the survival of Barkindji culture was expressed, and inquiry participants noted the importance of being able to access water for fishing, and being able to practice and share their culture by the water.[329]

7.64 Mr Hardman summarised the impact of the dry river on the community, and stated that '…you could give me all the money and all the gigalitres in the world but if I see a dry riverbed it just breaks my heart. That does not give us our right for our kids and our communities to live and thrive'.[330]

7.65 The importance of the river was reiterated by Mr Rene Woods, Murray Lower Darling Rivers Indigenous Nations (MLDRN). Mr Woods stated that: 'They are Barka people, they are river people out there. When their river system is sick, their people are sick'.[331]

7.66 Mr Woods went on to state that the project would have a 'huge impact' on culture and heritage, and could have impacts on burial sites, and other significant cultural sites.[332]

7.67 The MLDRN submission provided additional detail about the Aboriginal Cultural Heritage significance of Menindee Lakes and the surrounding floodplain areas. They noted that 442 registered heritage sites had been identified as existing within the project area in a 2017 Department of Primary Industries Business Case. These sites included artefacts and burials, in addition to Aboriginal Ceremony and Dreaming sites. Further, it was noted that the business case stated that many of these sites may be impacted by the project.[333]

7.68 The committee heard about the specific impact of declining animal numbers due to the lack of water sources, and uninhabitable environments in the Menindee Lakes and Darling River. Mr Hardman explained that animals can be the spiritual totems of local Aboriginal people. In describing this relationship, he said that:

> That is our spiritual connection to country and that is our right to protect them, look after them—all those things we were raised on and our stories and our dreaming are attached to them. And to see our country and our animals and plants and mussels, all these things that thrived, now you would hardly see at all.[334]

328 Evidence, Mr Hardman, 10 February 2021, p 18.

329 Evidence, Mr Hardman, 10 February 2021, p 19.

330 Evidence, Mr Hardman, 10 February 2021, p 21.

331 Evidence, Mr Rene Woods, Chair and Nari Nari Delegate, Murray Lower Darling Rivers Indigenous Nations, 29 October 2020, p 28.

332 Evidence, Mr Woods, 29 October 2020, p 28.

333 Submission 130, Murray Lower Darling Rivers Indigenous Nations, p 3.

334 Evidence, Mr Hardman, 10 February 2021, p 23.

7.69 Mr Hardman explained to the committee that the degradation of the river and its surrounding natural environment had serious impacts on his community, as well as other communities up and down the Darling-Barka. He said that these impacts had affected the Barkindji people socially, emotionally, culturally and spiritually.[335]

Case study: Aunty Beryl Carmichael, Ngiyaampaa Elder

Aunty Beryl Carmichael is a Ngiyaampaa Elder who spoke with the committee in Menindee about her experience of the drying of the Lower Darling and the Menindee Lakes.

Aunty Beryl told the committee about the significance of water, describing the Aboriginal spirits around Menindee Lakes.

She spoke about the animals that are no longer around in the same numbers, like emus and kangaroos, telling the committee that these animals can no longer survive in the Lower Darling and Menindee Lakes because of the lack of water. She told the committee that turtles, for example, used to come to the area in large numbers, but that occurrence had not been seen in decades.

This has impacted the important spiritual connection between First Nations people and the animal life in the area. Aunty Beryl told the committee that there had been a failure to properly consult on how water policy would impact First Nations people, meaning that Aboriginal people have been unable to fulfil their duty of protecting the land.

The committee heard about the importance of a flowing river and for the Menindee Lakes being full for social and cultural occasions. Aunty Beryl explained that this was once a busy site for picnics, swimming and many other activities and that now, due to the heat and lack of water, these activities no longer occur, and many young people have moved away because of this.

7.70 Inquiry stakeholders explained that consultation with First Nations people had been ineffective and lacking. The committee heard that the Barkindji Native Title Group Aboriginal Corporation informed the NSW Minister for Water that they were ceasing engagement in regards to this project until flows returned to the Darling-Barka.[336]

7.71 When describing why this consultation process had broken down, Mr Hardman told the committee that the NSW Government was not adequately listening to the community's feedback, and characterised the process as a waste of time. He said that:

> We are not going to sit there to be a tokenistic gesture to any of the Government's projects that are not achieving what it should be for communities and the environment.[337]

7.72 In response to the failure to adequately consult on Aboriginal cultural issues, Mr Hardman told the committee about the push to form the Barka Water Commission, which was described as a 'table created by us, and that all those departments and all those stakeholders come and sit at our table instead of us sitting at theirs and being that little voice over there'[338].

335 Evidence, Mr Hardman, 10 February 2021, p 18.

336 Submission 130, Murray Lower Darling Rivers Indigenous Nations, p 9.

337 Evidence, Mr Hardman, 10 February 2021, p 19.

338 Evidence, Mr Hardman, 10 February 2021, p 22.

7.73 He noted that the first meeting of this Commission would be in March 2021 in Broken Hill, and emphasised the need for his community to be empowered and part of any relevant processes.[339]

7.74 The committee also heard about the existence of Native Title rights for Barkindji Land. Mr Hardman explained that this right should give priority access and allocation to water for cultural purposes, but this has not occurred.[340]

7.75 Mr Hardman summarised this issue, and said that:

> We do have native title rights. We are probably the only nation in the Murray-Darling basin that has native title over its country, but we still find that the Government does not understand or listen to what we have to say.[341]

Committee comment

7.76 The committee has concerns about the Menindee Lakes Water Savings Project and its potential detrimental impact on the community and the environment of the Lower Darling.

7.77 The evidence the committee received from leading water scientists regarding the importance of the ecology, including the complex hydrology of the Menindee Lakes system, was convincing. The committee agrees that there is a need to protect and promote the health of the Menindee Lakes in order to ensure associated social and cultural benefits for the community, as well as maintain the unique ecological characteristics of the lakes and wetlands.

7.78 The committee supports calls by the community to list the Menindee Lakes on the Ramsar Convention because of the significance of the lake system to internationally listed waterbird species.

7.79 The committee was also convinced by evidence from the community in the Lower Darling and Menindee Lakes that there is a need for a determined focus on river connectivity, and restoring river flow in the region. It is clear that the dry riverbeds have had a profound social, economic, cultural and environmental impact on the community of Menindee and the broader Lower Darling.

7.80 The NSW Government should first focus on ensuring river connectivity, before any projects relating to water savings in the Menindee Lakes are pursued.

7.81 Further, the committee was angered to hear the consultation process described as ineffective, and accepts the characterisation of the process as stakeholders having to choose between a range of inadequate options.

7.82 The evidence received about the impacts of the drying of the Darling-Barka River on First Nations people was distressing. The committee was particularly grateful for the valuable evidence from the Barkindji Native Title Corporation and Aunty Beryl Carmichael, and acknowledges that the lack of river flow, and associated impacts on birds, fish and other animals,

339 Evidence, Mr Hardman, 10 February 2021, p 22.

340 Evidence, Mr Hardman, 10 February 2021, p 19.

341 Evidence, Mr Hardman, 10 February 2021, p 18.

has had an unacceptable and extremely significant impact on First Nations people. The committee is therefore of the view that there is an urgent need to restore flow and connectivity to the Darling-Barka River because of the unique and spiritual connection that the Barkindji and other First Nations people have to the river.

Finding 5

That the drying of the Darling-Barka has had a significant negative impact on the Barkindji and other First Nations people of the Lower Darling, including their unique and spiritual connection to the river and country.

Finding 6

That the Menindee Lakes Water Savings Project was having a significant impact on the Lower Darling and Menindee Lakes system.

Recommendation 7

That the NSW Government prioritise restoring river connectivity and river flow in the Lower Darling and Menindee Lakes system.

Recommendation 8

That the NSW Government honour its commitments to restoring the health of the environment and healthy rivers under the Murray Darling Basin Plan in a way that has the support of communities along the entire length of the Darling River.

Chapter 8 The need to consider all water security options in NSW

This Chapter examines the future of water infrastructure in NSW, specifically focusing on changing approaches and attitudes to water management, and options for addressing water security challenges. The Chapter looks at innovative technological solutions that have been identified as being environmentally sustainable alternatives to mass water storage options.

Favouring certain water security options over others

8.1 The committee questioned government witnesses regarding why certain water security options were pursued over others, and how decisions relating to investment in large infrastructure options such as dams and weirs were made.

8.2 Ms Anissa Levy, Department of Planning, Industry and Environment told the committee that decisions to undertake mass water storage options, such as dam construction, were not made prior to investigations regarding their viability and feasibility. When asked about the nature of an announcement made by the Prime Minister, Premier and Deputy Premier in May 2019 of a $1 billion commitment to the three dam projects which are the subject of this Inquiry. Ms Levy characterised this as a 'commitment of funding', rather than an 'investment decision'.

8.3 Ms Levy told the committee that:

> In the world I work in, there are many election commitments made. There are many commitments made about priority projects but we still have to go through that process for the Government to then make a decision. All I can talk to is what process we have been asked to follow and that is the normal process with the exception of the Water Supply (Critical Needs) Act and paralleling the planning approvals pathway. I believe that the Government have made commitments about setting funding aside. I think when they talk about committing funding it is about having money set aside so that it is there if those projects go ahead.[342]

Innovative approaches to water management

8.4 The committee heard evidence regarding changing approaches to the way water security and reliability is understood and managed. Specifically, this included changes around how water allocation is considered, in addition to focusing on the importance of overall river health and connectivity.

8.5 Some stakeholders told the committee that the historical approach to water management in NSW has resulted in a degraded river system, and broader negative ecological consequences. Mr Terry Korn, Immediate Former President, Australian Floodplain Association argued that: 'Our river systems are incessantly undergoing death by a thousand cuts'.[343]

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342 Evidence, Ms Anissa Levy, Chief Executive Officer, Water Infrastructure NSW, Department of Planning, Industry and Environment, 3 May 2021 p 43.

343 Evidence, Mr Terry Korn, Immediate Former President, Australian Floodplain Association, 29 October 2020, p 44.

8.6 Mr Korn went on to describe what the Australian Floodplain Association thought was the optimal way to approach water allocation and river management in NSW. He stressed the significance of river connectivity, noting that this is about 'having a system that is connected from top to bottom in a respectful way for each management reach of the river'.[344] Further, Mr Korn said that:

> There has to be sufficient water kept aside for the environment and communities through the whole system and the water sharing plans have to talk to each other.[345]

Importance of community engagement

8.7 The committee heard evidence regarding the importance of engaging impacted communities in the development of water management policy.

8.8 Dr Baumgartner and Dr Mallen-Cooper told the committee about work they had been a part of in South-East Asia regarding the management of water systems. They described an approach that involved more community engagement, that was less 'top-down', and included 'co-design'.[346]

8.9 Dr Baumgartner gave an example of designing a fish ladder in Laos, and told the committee about the community involvement that was undertaken in establishing what was required, and what their needs were. He stated that:

> They knew exactly what we were going to do because we involved them in every step of the process. I would say that the big difference over there is that they want to be included in the decision-making process. They are actively included and at the end they want to take some ownership of the solution. That is probably a big difference for me.[347]

8.10 Dr Baumgartner and Dr Mallen-Cooper stated that this approach of involving impacted communities in the design of water management systems would be welcomed in NSW. Dr Baumgartner told the committee that basin communities would 'relish that opportunity', and noted that the desire to be involved throughout the entirety of the decision-making process had been expressed to them consistently in their work in impacted communities.[348]

Options for river management and water allocation

8.11 The committee heard from Professor Richard Kingsford, who outlined his view on how approaches to water management should change. He stressed that this question needed to be considered within the context of a changing climate, and the acceptance that there will likely be less rainfall and ultimately, less water available in the future. Because of this, he said it was

344 Evidence, Mr Korn, 29 October 2020, p 48.

345 Evidence, Mr Korn, 29 October 2020, p 48.

346 Evidence, Dr Lee Baumgartner, Professor of Fisheries and River Management, Institute for Land Water and Society, Charles Sturt University, 29 October 2020, p 57.

347 Evidence, Dr Baumgartner, 29 October 2020, p 57.

348 Evidence, Dr Baumgartner, 29 October 2020, p 57.

necessary to change the way water is thought about, and plan appropriately for prolonged dry periods.[349]

8.12 In addition to the broad understanding of water management, Professor Kingsford also told the committee about the different ways of managing and allocating water from dams. The two methods of doing this were described as the debit and credit models.

8.13 Professor Kingsford said that the 'credit' model is what is used to allocate water in the Macquarie and the Lachlan. He explained that this approach involves looking at historical inflows, and determining allocations based on that information, rather than how much water is actually in the dam. This was described as a 'much riskier approach to allocating water'.[350]

8.14 The issues with allocating water under a 'credit' model were that once a dry period arises, the systems are being overused, and too much water is being taken out too early. The Macquarie drying up was used as an example of this, with it being stated that too much water was given out, resulting in insufficient water security and severe water restrictions being put in place.[351]

8.15 Professor Kingsford summarised the general approach of utilising this model, and told the committee that:

> Some dam operators think that the most effective way to run a river is to get as much water out of it as possible, and therefore they will adopt a credit model. They will say, "The best way of getting the most water out of this is to start to predict how much water we are going to get into this river system and give that away as soon as we possibly can." What it pushes the rivers towards is having no buffer.[352]

8.16 He went on to outline the alternative 'debit' model, which is employed in the Gwydir River. This involves waiting until there was enough water in the dam, and then deciding how to allocate water, which was described as a 'less risky approach'.[353]

8.17 Professor Kingsford said that rather than focusing on improving water security by constructing new dams, there is a 'much better argument' for the need for better river management which would ensure there is always enough water in the dams for essential supply.[354]

Committee comment

8.18 The committee appreciates the evidence it received regarding new, thoughtful and innovative ways of approaching water management.

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349 Submission 99, Professor Richard Kingsford, p 13.

350 Evidence, Professor Richard Kingsford, Professor of Environmental Science, Director of Centre for Ecosystem Science, School of Biological, Earth and Environmental Sciences University of New South Wales, 27 November 2020, p 3.

351 Evidence, Professor Kingsford, 27 November 2020, p 3-4.

352 Evidence, Professor Kingsford, 27 November 2020, p 9.

353 Evidence, Professor Kingsford, 27 November 2020, p 4.

354 Evidence, Professor Kingsford, 27 November 2020, p 4.

8.19 The committee is of the view that it is important to consider these new approaches, particularly given the impacts climate change will continue to have on rainfall and water availability.

8.20 The evidence given by Dr Baumgartner and Dr Mallen-Cooper regarding their experience working on water management plans in South-East Asia was particularly compelling. It is clear to the committee that increased community engagement in the decision-making processes around water infrastructure and water allocations would be an effective way of approaching this issue.

8.21 The committee also found the evidence regarding the 'debit' and 'credit' models of water allocation particularly relevant. It is clear that the 'debit' approach, where water allocation does not occur until the dam is full enough to do so, and is based on the reality of available resources, is preferable to a 'credit' approach.

8.22 Further, the committee agrees that moving towards a responsible and more efficient water management and allocation system, where water is preserved for essential supply in drier times, is a more effective way of approaching these issues.

Alternative options for addressing water security and reliability

8.23 As noted in Chapter 2 of this report, the committee heard evidence about the impacts and ramifications of large-scale water storage, such as dams and weirs. This included significant negative ecological impacts on the health of the river, fish and bird species. The committee also heard about the importance of climate change in future planning for water infrastructure, given decreased rainfall and higher temperatures will increase evaporation losses, and will likely mean that the utility of mass storage options will have to be reassessed.

8.24 The committee also heard evidence regarding the benefits of dams, and the water security that has been provided to regional communities, irrigators and businesses as a result of this infrastructure. Many stakeholders noted that without dams, a number of towns may have run out of water during the most recent severe drought.[355]

8.25 This section identifies some of the alternative options for ensuring water security in regional NSW.

Managed aquifer recharge and water banking

8.26 The committee heard about the potential use of managed aquifer recharge (MAR) and water banking from CSIRO scientists, who explained how this technology could aid water security and reliability in a sustainable way.

8.27 MAR, or water banking, is the process of recharging water into an aquifer or underwater storage for later use. A range of water sources can be used in aquifer recharge, including stormwater, waste water, river or dam water, or industrial water. CSIRO explained that aquifers are recharged

[355] Submission 152, NSW Government, p 6, Evidence, Ms Christine Freak, Policy Manager, NSW Irrigators' Council, 27 November 2020, p 28.

when water is 'cheap and plentiful', like during periods of high rainfall, to ensure there is a 'bank' of water available during drought.[356]

8.28 In practice, CSIRO representatives explained that infiltration basins, which are like large swimming pools, are utilised to deliberately recharge an aquifer. Water is conveyed from a river into the pools, and then into the aquifer in a managed and controlled way to specifically 'recharge the water supply'.[357]

8.29 Storage space for water banking already exists in some aquifers, with this space being compared to an 'underground dam or reservoir'. This means that additional water storage does not have to be built, and does not face the same evaporation losses that impact other mass water storage options.[358]

8.30 CSIRO noted that the advantages of aquifer recharge include that it is 'low cost, low energy and provides a bit of natural treatment to the water as the aquifer is not completely inert'.[359] This means that the water quality is being improved in the aquifer. This water assists communities in improving water security in times of drought, where it can then be used for a range of purposes, including:

- Agriculture
- Environmental outcomes
- Urban green space irrigation
- Domestic use, including drinking water.[360]

8.31 Managed aquifer recharge and water banking has already been utilised in a number of locations, both in Australia and internationally. In Australia, managed aquifer recharge has been used on the Burdekin River in Queensland, which recharges approximately 65 gigalitres of water a year, which is then used to irrigate approximately 40,000 hectares of cane sugar. There are further examples of this technology being used in Adelaide and in Perth.[361]

8.32 Internationally, aquifer recharge and water banking has been used in places seeking to improve drought resilience in the United States, such as California and Colorado. The committee also heard about a water bank being operated in Arizona, which as of July 2020, had 4,526 GL water banked as a 'water security measure'.[362]

8.33 The CSIRO has undertaken work regarding the potential to utilise aquifer recharge and water banking in the Murray-Darling Basin to improve drought resilience. A 2020 preliminary study

356 Submission 135, CSIRO, p 1.

357 Evidence, Dr Declan Page, Principal Research Scientist, CSIRO Land and Water, 4 December 2021, p 19.

358 Submission 135, CSIRO, p 1.

359 Evidence, Dr Page, 4 December 2021, p 18.

360 Evidence, Dr Page, 4 December 2021, p 18.

361 Evidence, Dr Page, 4 December 2021, p 18.

362 Submission 135, CSIRO, p 3.

examined potential aquifer storage potential and banking capacity. This was based on site examinations, historical hydrological data, simulations and other data.[363]

8.34 The 2020 study determined that water banking does merit further consideration in the Murray-Darling Basin. When describing the results of the study, Dr Declan Page told the committee that:

> We identified about two to four kilometres cubic metres of aquifer storage potential across the Murray-Darling Basin. For context, that is equivalent to about 16 per cent of total surface water supply of all the combined dams in the Basin or about eight Sydney Harbours.[364]

8.35 CSIRO stated that the next steps for further investigation would include accounting for surface water and groundwater entitlements, developing regulatory arrangements, and undertaking site-specific assessment of water availability and hydrogeological suitability.[365]

8.36 The committee heard about the importance of considering innovative alternatives to water storage even after a drought has ended, and more water has become available. Dr Declan Page observed that: 'We should be investing today when there is water, we should be banking water today, in preparation for the next drought tomorrow'.[366]

Other water technologies

8.37 A number of stakeholders, such as Professor Jamie Pittock, told the committee that new water infrastructure technologies should be part of any conversation about updating approaches to water management.[367]

8.38 These options included water recycling, in addition to efforts on decreasing the pressure on water demand, through water efficiency programs. This includes improving the efficiency of water used in irrigation.

8.39 Professor Richard Kingsford told the committee that both the recycling of waste water, and the capture of stormwater in urban communities, can be effective means of obtaining alternate water supply.[368]

8.40 The committee also heard evidence about Total Channel Control, which is a fully automated system that seeks to improve water efficiency for irrigators. This system allows water users to

363 Correspondence from Dr Declan Page, Principal Research Scientist, CSIRO Land and Water to the secretariat providing a recently published CSIRO study titled *The Potential for Water Banking in Australia's Murray-Darling Basin to Increase Drought Resilience*, 24 November 2020 or Dennis Gonzalez, Peter Dillon, Declan Page and Joanne Vanderzalm, *The Potential for Water Banking in Australia's Murray-Darling Basin to Increase Drought Resilience*, 21 October 2020, p 1.

364 Evidence, Dr Page, 4 December 2021, p 18.

365 Correspondence from Dr Declan Page, Principal Research Scientist, CSIRO Land and Water to the secretariat, 21 October 2020, p 1.

366 Evidence, Dr Page, 4 December 2021, p 23.

367 Submission 115, Professor Pittock, p 8.

368 Submission 99, Professor Richard Kingsford, p 6.

order their water, which then prompts an adjustment of relevant channels to ensure the correct amount of water is delivered, with minimal losses occurring due to overflowing channels.[369]

8.41 Other technological solutions for addressing water security and water efficiency were put to the committee, including the use of hydropanels to generate drinking water. SOURCE Global, formerly Zero Mass Water, explained that this technology could be used to provide drinkable water to rural and remote communities who may have issues with water access.[370]

8.42 This technology aims to reduce community reliance on bottled water, and utilises solar energy to extract water vapour from the air, and convert it into high-quality water. In 2019, hydropanels were installed in remote Aboriginal communities in Queensland, NSW, South Australia, Western Australia and the Northern Territory to ensure the availability of high-quality drinking water.[371]

8.43 Further, it was noted that this is a technological solution that is significantly easier to install than that of traditional water infrastructure.[372]

Committee comment

8.44 The committee appreciated the evidence it received about the various innovative technological options available to address water security concerns in a more sustainable way. The committee was particularly interested in the opportunities associated with managed aquifer recharge and water banking, and is of the view that this option should be investigated more thoroughly.

8.45 The committee was pleased to see this kind of technological innovation which seeks to ensure water security in a way that causes significantly less ecological and social disruption than traditional mass water storage options.

Finding 7

That there are a range of innovative alternative solutions for improving water security and water reliability that are environmentally sustainable. These include managed aquifer recharge and water banking, water recycling and the use of hydropanels.

Recommendation 9

That the NSW Government further investigate alternative options for ensuring water security, such as managed aquifer recharge and water banking for the regulated rivers of NSW.

369 Evidence, Mr Hugh McLean, Secretary, Lachlan Floodplain & Wetlands Group, 29 October 2020, p 40.

370 Evidence, Mr Robert Bartrop, Head of Global Development, Zero Mass Water, 2 November 2020, p 36.

371 Submission 3, Zero Mass Water, p 2.

372 Submission 3, Zero Mass Water, p 2.

Appendix 1 Submissions

No.	Author
1	Name suppressed
2	Mr Gordon Turner
3	Zero Mass Water
4	Mr Andrew McGlashan
5	Mr Robert Caldwell
6	Mr Michael Davey
7	Miss Lucy Benjamin
8	Clarence Environment Centre
9	Mrs Jan Mitchell
10	Mr Rod Kashubin
11	Name suppressed
12	Lake Keepit Family Fishing Club
13	Dr Margaret Lorang
14	Mr David Harris
15	NSW Farmers' Association
16	Cr Craig Davies, Mayor Narromine Shire Council and Chair of the Orana Joint Organisation of councils
17	Mrs Kerrie O'Neill
18	Ms Vicky Grosser
19	Name suppressed
20	Ms Michele Smith
21	Name suppressed
22	Ms Victoria Bail
23	Mr Peter Tebbutt
24	Mr Maurice Perry
25	Mr Ian Onley
26	Mr Trevor Hoare
27	Mr Peter Roche
28	Confidential
29	Name suppressed
30	Mr Mark Merritt
31	Name suppressed

No.	Author
32	BirdLife Southern NSW
33	Ms Diana Palmer
34	Name suppressed
35	Ms Jacqueline Marks
36	Ms Marie Ngai-King
37	Mr Philip Spark
38	Confidential
39	Mr Flynn Webber
40	Peel Valley Water Users Association Inc.
41	Mr Craig Robinson
42	Mr Jim Walker
43	Ms Robyn Bird
44	Ms Cathy Merchant
45	Ms Hayley Talbot
46	Clarence Valley Council
47	Ms Debrah Novak
48	Bathurst Regional Council
49	The Nature Conservancy Australia
50	WaterNSW
51	Mr Dugald Bucknell
52	Mr Alan McGufficke
53	Macquarie River Food & Fibre
54	Name suppressed
55	Ms Wendy Hawes
56	Mr Ivan Kokotovic
57	Professor Uwe Proske
58	Name suppressed
59	Tamworth Regional Council
60	Environmentally Concerned Citizens of Orange
61	Mr David Metzenthen
62	Ms Susan Nichol
63	Ms Ifeanna Tooth
64	NSW Bird Atlassers Inc
65	Ms Mora Main
66	Mr Rick Banyard

No.	Author
67	Wentworth Shire Council
68	Mr David Smith
69	Mr David Gowing
70	Healthy Rivers Dubbo
70a	Healthy Rivers Dubbo
71	Water for Rivers
72	Mrs Linda Said
73	Name suppressed
74	Mrs Yvonne Fessler
75	Wiradjuri Council of Elders
76	Lachlan Floodplain and Wetlands Group
77	Mudgee District Environment Group
78	Mr Bruce Norris
79	Mrs Rosie White
80	Mr John Simpson
81	Dr Lynette Allen
82	Name suppressed
83	Mr Garry Hall
84	Name suppressed
85	Mrs Vivien Smith
86	Macquarie Marshes Environmental Landholders Association (MMELA)
87	Dr Martin Mallen-Cooper
88	Ms Ruby Everett
89	Dr Annette (Tam) Smith
90	Mrs Georgia Green
91	Central West Environment Council
92	Ms Stephanie Canaway
93	Forbes Aboriginal and Community Working Party
94	Daroo Landcare
95	Name suppressed
96	Confidential
97	Lachlandcare Inc
98	Lachlan Valley Water Inc
99	Professor Richard Kingsford
100	Hovells Creek Landcare Group

No.	Author
101	Water Northern Rivers
102	Ms Kate Boyd
103	Mrs Katharine McBride
104	Confidential
105	Cr Mark Rodda
106	Name suppressed
107	Mole River Protection Alliance
107a	Mole River Protection Alliance
108	Griffith City Council
109	Australian Floodplain Association
110	Name suppressed
111	Mr Rodney Jouning
112	Dharriwaa Elders Group
113	Mr Alexander Keeble
114	Latrobe Environmental Action Forum
115	Professor Jamie Pittock
115a	Professor Jamie Pittock
116	Inland Rivers Network
116a	Inland Rivers Network
117	Name suppressed
118	Dr John Bardsley
119	Tolarno Station 1851 Pty Ltd
120	National Parks Association of NSW
121	Buyaan Trust
122	Friends of the Earth Australia
123	Orange Field Naturalist and Conservation Society
124	Mr Paul Leary
125	Murray Darling Basin Authority
126	Mr Peter Gill
127	Parkes Shire Council
128	Miss Sandra Smith
129	Mr Gill Boehringer
130	Murray Lower Darling Rivers Indigenous Nations (MLDRIN)
131	Western Paddlers NSW
132	Upper Lachlan Landcare

No.	Author
133	Professor Evan Leitch – Belubula Headwaters Protection Group Inc
134	Dr Anne Jensen
135	CSIRO
136	Mr Andrew Paul
137	Ms Maria Riedl
138	Name suppressed
139	Clarence Valley Conservation Coalition Inc
140	Nature Conservation Council of NSW
141	Severn River, Ngarabal and Kwiambal Aboriginal Corporation ICN9192
141a	Confidential
142	NSW Farmers Association
143	The Great Cumbung Pty Ltd as Trustee for The Great Cumbung Unit Trust
144	NSW Irrigators' Council
145	Mr Bruce Wilson
146	Webster Pastoral Co
147	Slattery & Johnson
147a	Slattery & Johnson
148	Bathurst Community Climate Action Network
149	Name suppressed
150	Dubbo Environment Group
151	Ms Cathy Merchant
151a	Ms Cathy Merchant
152	NSW Government
152a	NSW Government
153	Mr Paul Van Den Boom
154	Patch Club
155	Belubula Headwaters Protection Group (inc)
156	Name suppressed
157	Confidential
158	Lachlan Valley Water Inc
159	Mrs Rosemary Hadaway
160	Ms Anne Reeves
161	Name suppressed
162	Mr Dugald Bucknell
163	Mr Bruce Norris

No.	Author
164	Ms Prudence Wawn
165	Confidential
166	Cowra Council
167	Central NSW Joint Organisation
168	Name suppressed
169	Name suppressed
170	Ms Rebecca Price – Belubula Headwaters
171	Proforma No 1 - 202 people
172	Proforma No 2 - 8 people
173	Broken Hill City Council
174	Central Darling Shire Council

Appendix 2 Witnesses at hearings

Date	Name	Position and Organisation
Thursday 29 October 2020 **Jubliee Room** **Parliament House, Sydney**	Mr Andrew George	A/Chief Executive Officer, Water NSW
	Mr Jim Bentley	Chief Executive Officer (Deputy Secretary), Department of Planning, Industry and Environment
	Ms Anissa Levy	CEO, Water Infrastructure NSW, Department of Planning, Industry and Environment
	Ms Maryanne Slattery	Director, Slattery & Johnson
	Mr Rene Woods	Chair and Nari Delegate, Murray Lower Darling Rivers Indigenous Nations
	Mr Fred Hooper	Chairperson, Northern Basin Aboriginal Nations
	Mr Hugh McLean	Secretary, Lachlan Floodplain & Wetlands Group
	Mr Ray Woods	Wiradjuri Council of Elders and Buyaan Trust
	Ms Bev Smiles	President, Inland Rivers Network
	Ms Sarah Moles	Secretary, Australian Floodplain Association
	Mr Terry Korn	Immediate Former President, Australian Floodplain Association
	Mr Garry Hall	President, Macquarie Marshes Environmental Landholders Association
	Dr Lee Baumgartner	Professor of Fisheries and River Management, Institute for Land Water and Society, Charles Sturt University
	Dr Martin Mallen-Cooper	Adjunct Research Professor, Institute for Land Water and Society, Charles Sturt University, Director, OzFish Unlimited

Date	Name	Position and Organisation
Monday 2 November 2020 Macquarie Room Parliament House, Sydney	Professor Jamie Pittock	Professor, Fenner School of Environment & Society, Australian National University (appearing via videoconference)
	Mr Matthew Doyle	Chairperson, Lachlandcare Inc.
	Mr Keith Hyde	Deputy Chair, Lachlandcare Inc
	Ms Jane Paul	Conservation Officer, Daroo Landcare
	Dr James Fitzsimons	Director of Conservation and Science, The Nature Conservancy Australia
	Ms Elisabeth Dark	Convenor, Conservation Committee, Birdlife Southern NSW
	Dr Robyn Alders	Chair, Upper Lachlan Branch of the NSW Farmers Association
	Mr Ian Webster	Member, Upper Lachlan Branch of the NSW Farmers Association
	Mr Tom Green	Chairman, Lachlan Valley Water Inc.
	Ms Mary Ewing	Executive Officer, Lachlan Valley Water Inc.
	Mr David Sherley	General Manager, Bathurst Regional Council
	Mr Darren Sturgiss	Director, Engineering Services, Bathurst Regional Council
	Mr Garry Styles	Project Manager, Bathurst Regional Council
	Mr Bruce Logan	Director, Water & Waste, Tamworth Regional Council
	Mr Robert Bartrop	Chief Revenue Officer. Source Global (formerly Zero Mass Water)
	Mr John Richards	Vice President, Peel Valley Water Users Association Inc.
	Mr David Gowing	Committee Member, Peel Valley Water Users Association Inc.
	Mr Ildu Monticone	Committee Member, Peel Valley Water Users Association Inc.

Date	Name	Position and Organisation
Friday 27 November 2020 **Jubilee Room** **Parliament House, Sydney**	Professor Richard Kingsford	Professor of Environmental Science Director of Centre for Ecosystem Science School of Biological, Earth and Environmental Sciences University of New South Wales
	Cr Bill West	Chair, Central NSW Joint Organisation of Councils, Regional Prosperity Portfolio, Mayor of Cowra
	Cr Craig Davies	Chairman, Orana Joint Organisation of Councils, Mayor of Narromine
	Ms Claire Miller	Chief Executive Officer, NSW Irrigators' Council
	Ms Christine Freak	Policy Manager, NSW Irrigators' Council
	Mr Greg Mashiah	Manager, Water Cycle, Clarence Valley Council
	Mr Ross McDonnell	Executive Member, National Parks Association of NSW
	Mr Gary Dunnett,	Executive Officer, National Parks Association of NSW
	Mr Chris Gambian	Chief Executive Officer, Nature Conservation Council of NSW
	Ms Jacqui Mumford	Organising Director, Nature Conservation Council of NSW
	Ms Kate Boyd	Convenor, Mole River Protection Alliance
	Mr Bruce Norris	Land Owner, Mole River Protection Alliance
	Ms Melissa Gray	Convenor, Healthy Rivers Dubbo

Date	Name	Position and Organisation
Friday 4 December 2020 **Macquarie Room** **Parliament House, Sydney**	Mr Michael Drum	Executive Officer, Macquarie River Food and Fibre
	Mr Tony Quigley,	Chairman, Macquarie River Food and Fibre
	Mr Rowan Cleaver,	Member, Macquarie Effluent Creeks Association
	Mr Phillip Spark	Individual
	Mr Mark Rodda	Individual
	Dr Declan Page	Principal Research Scientist, CSIRO Land and Water
	Dr Graham Bonnett	Interim Leader Drought Resilience Mission, CSIRO Agriculture and Food
	Mr John Webster	Owner, Webster Pastoral Co.
	Mrs Kerri Webster	Owner, Webster Pastoral Co.
	The Hon Melinda Pavey MP	Minister for Water, Property and Housing Water NSW
	Mr Andrew George	A/Chief Executive Officer, WaterNSW
	Mr Jim Bentley	Chief Executive Officer (Deputy Secretary), Department of Planning, Industry and Environment
	Ms Anissa Levy	CEO, Water Infrastructure NSW, Department of Planning, Industry and Environment
	Mr Derek Rutherford	Director Water for the Environment, Department of Planning, Industry and Environment
	Ms Michelle Dumazel	Executive Director, Biodiversity and Conservation Environment, Energy and Science Group, Department of Planning, Industry and Environment

Date	Name	Position and Organisation
Wednesday 10 February 2021 **Council Chambers** **Broken Hill, NSW**	Cr Marion Browne	Councillor, Broken Hill City Council
	Cr Tom Kennedy	Councillor, Broken Hill City Council
	Mr Greg Hill	General Manager, Central Darling Shire Council
	Cr Tim Elstone	Councillor, Wentworth Shire Council
	Mr Ken Ross	General Manager, Wentworth Shire Council
	Ms Jane MacAllister	Community Organiser (Water) Nature Conservation Council of NSW
	Mr Darryn Clifton	Vice-President, Darling River Action Group
	Mr Rob McBride	Owner, Tolarno Station
	Mr Derek Hardman	CEO, Barkandji Native Title Group

Date	Name	Position and Organisation
Monday 3 May 2021 **Jubilee Room** **Parliament House, Sydney**	Ms Kate Boyd	Convenor, Mole River Protection Alliance
	Ms Julia Harpham	Secretary, Mingoola Progress Association
	Ms Wendy Hawes	Individual, Ecologist
	Mr Bruce Norris	Landowner, 'Ringtree', Mole River
	Mrs Helen Norris	Landowner, 'Ringtree', Mole River
	Mr Robert Caldwell	Landowner, 'Alister', Mole River
	Ms Ruth Caldwell	Landowner, 'Alister', Mole River
	Ms Sandra Smith	Landowner, Mole River
	Mr Tim Napier	Executive Officer, Border Rivers Food and Fibre
	Ms Kylie Craig	Executive Committee, Border Rivers Food and Fibre
	Mr Chris McCosker	Executive Committee, Border Rivers Food and Fibre
	Uncle Theo Wright	Ngarabal Elder, Director, Severn River, Ngarabal and Kwiambal Aboriginal Corporation
	Ms Lynette Marlow	Director, Severn River, Ngarabal and Kwiambal Aboriginal Corporation
	Aunty Helen Duroux	CEO, Moombahlene Local Aboriginal Land Council
	Mr Peter Petty	Mayor, Tenterfield Shire Council
	Mr Ronan Magaharan	Executive Manager – Assets, WaterNSW
	Ms Anissa Levy	Chief Executive Officer, Water Infrastructure NSW, Department of Planning, Industry and Environment
	Mr Mitchell Isaacs	Chief Knowledge Officer, Department of Planning, Industry and Environment – Water
	Mr Simon Draper	Chief Executive Officer, Infrastructure NSW

Appendix 3 Minutes

Draft minutes no. 49
Monday 3 May 2021
Portfolio Committee No. 7 – Planning and Environment
Jubilee Room and via videoconference, 9.02 am

1. Members present
Ms Faehrmann, *Chair*
Mr Pearson, *Deputy Chair*
Mr Buttigieg
Ms Cusack
Mr Franklin
Mr Mallard
Ms Sharpe

2. Apologies

3. Previous minutes
Resolved on the motion of Mr Pearson: That draft minutes no. 46 and 47 be confirmed.

4. Correspondence
The committee noted the following item of correspondence:

Received:

- 17 March 2021 – Email from Ms Kate Boyd to the secretariat, enclosing a supplementary submission, and audio from an ABC Radio interview relating to the Mole River Dam.
- 22 March 2021 – Email from Mr Tom Watson, Government Relations Adviser, WaterNSW, to the secretariat confirming verbal advice regarding appearing at a public hearing on 3 May 2021.
- 26 April 2021 – Letter from Mr Andrew George, A/CEO, WaterNSW to the Chair in response to a request for WaterNSW to make an additional submission.
- 26 April 2021 – Email from Ms Beverly Smiles, Inland Rivers Network, to the secretariat, providing various documents via Google Drive link.

5. Inquiry into the rationale for, and impacts of, new dams and other water infrastructure in NSW

5.1 Supplementary submissions

- The committee noted it received the following supplementary submissions, which have been previously circulated, and were published by the committee clerk under the authorisation of the resolution appointing the committee:
  - Mole River Protection Alliance (107a), circulated on 23 April 2021
  - NSW Government (152a), circulated on 26 April 2021
- The committee noted it received the following supplementary submissions, which will be published by the committee clerk under the authorisation of the resolution appointing the committee:
  - Healthy Rivers Dubbo (submission 70a) received on 24 April 2021
  - Inland Rivers Network (submission 116a) received on 26 April 2021

5.2 Answers to questions on notice
The committee noted that the following response has been received and was circulated to the committee on 23 April 2021. This response has been published on the committee's website as per the resolution establishing the committee:

- Mr Ken Ross, General Manager, Wentworth Shire Council received on 11 March 2021.

5.3 Public hearing

Witnesses were admitted.

The Chair made an opening statement regarding the broadcasting of proceedings and other matters.

The following witnesses were sworn and examined:
- Ms Julia Harpham, Secretary, Mingoola Progress Association
- Ms Wendy Hawes, Individual, Ecologist

The Chair also reminded Ms Kate Boyd, Convenor, Mole River Protection Alliance, that she did not need to be sworn, as she had been sworn at another hearing for this inquiry.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:
- Mrs Helen Norris, Landowner, 'Ringtree', Mole River
- Mr Robert Caldwell, Landowner, 'Alister', Mole River
- Ms Sandra Smith, Landowner, Mole River

The Chair also reminded Mr Bruce Norris, Landowner, 'Ringtree', Mole River, that he did not need to be sworn, as he had been sworn at another hearing for this inquiry.

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:
- Mr Tim Napier, Executive Officer, Border Rivers Food and Fibre
- Ms Kylie Craig, Executive Committee, Border Rivers Food and Fibre
- Mr Chris McCosker, Executive Committee, Border Rivers Food and Fibre

The evidence concluded and the witnesses withdrew.

The following witnesses were sworn and examined:
- Uncle Theo Wright, Ngarabal Elder, Director, Severn River, Ngarabal and Kwiambal Aboriginal Corporation
- Ms Lynette Marlow, Director, Severn River, Ngarabal and Kwiambal Aboriginal Corporation
- Aunty Helen Duroux, Moombahlene Local Aboriginal Land Council

Ms Marlow tendered the following documents:
- Genealogy and family tree of Ms Lynette Marlow
- Genealogy and family tree of Uncle Theo Wright
- Copy of correspondence from Mr Matthew Dadswell, Assistant Secretary, Murray-Darling Basin Branch to Ms Lynette Marlow regarding water management, dated 15 May 2019.
- Colonial records transcribed by Ms Lynette Marlow
- Original colonial record regarding the Mole River
- Correspondence from Ms Lynette Marlow providing details to be included in the cultural mapping report for Mole River
- Legend and map of the Mole River region
- Map of the Mole River region

The evidence concluded and the witnesses withdrew.

The following witness was sworn and examined:
- Mr Peter Petty, Mayor, Tenterfield Shire Council

The evidence concluded and the witness withdrew.

The following witnesses were sworn and examined:
- Mr Mitchell Isaacs, Chief Knowledge Officer, Department of Planning, Industry and Environment - Water
- Mr Simon Draper, Chief Executive Officer, Infrastructure NSW
- Mr Ronan Magaharan, Executive Manager – Assets, WaterNSW

The Chair also reminded Ms Anissa Levy, Chief Executive Officer, Water Infrastructure NSW, Department of Planning, Industry and Environment, that she did not need to be sworn, as she had been sworn at another hearing for this inquiry.

Ms Sharpe departed at 3.00 pm.

The evidence concluded and the witnesses withdrew.

The public hearing concluded at 3.46 pm.

5.4 Tendered documents

Resolved on the motion of Mr Buttigieg: That the committee accept and publish the following document(s) tendered during the public hearing:

- *Genealogy and family tree of Ms Lynette Marlow*
- *Genealogy and family tree of Uncle Theo Wright*
- *Copy of correspondence from Mr Matthew Dadswell, Assistant Secretary, Murray-Darling Basin Branch to Ms Lynette Marlow regarding water management, dated 15 May 2019.*
- *Colonial records transcribed by Ms Lynette Marlow*
- *Original colonial record regarding the Mole River*
- *Correspondence from Ms Lynette Marlow providing details to be included in the cultural mapping report for Mole River*
- *Legend* and map of the Mole River region
- Map of the Mole River region

6. Adjournment

The committee adjourned at 3.48 pm, *sine die.*

Madeleine Dowd
Clerk to the Committee

Draft minutes no. 50
Thursday 13 May 2021
Portfolio Committee No. 7 – Planning and Environment
Members' Lounge, Parliament House, 1.41 pm

1. Members present

Ms Faehrmann, *Chair*
Mr Pearson, *Deputy Chair* (from 1.43 pm)
Mr Buttigieg
Ms Cusack

Mr Franklin
Mr Mallard (from 1.50 pm)
Ms Sharpe (from 1.43 pm)
Ms Boyd (from 1.42 pm, participating for the inquiry into Protection of the Environment Operations Amendment (Clean Air) Bill 2021)

2. Previous minutes
Resolved, on the motion of Mr Franklin: That draft minutes nos. 43, 44 and 45 be confirmed.

3. ***

4. ***

5. Inquiry into the rationale for, and impacts of, new dams and other water infrastructure in NSW

Future conduct of the inquiry
Resolved, on the motion of Mr Pearson: That the committee table Part 2 of the report by 30 July 2021, and Part 3 of the report at a later date, which will address the final business cases once released, and any other related matter.

Consideration of revised NSW Government supplementary submission
Resolved, on the motion of Mr Sharpe: That the Chair respond in writing to the Department of Planning, Industry and Environment inviting them to make a further submission making any necessary clarifications, and treat the revised supplementary submission as correspondence.

6. ***

7. ***

8. Adjournment
The committee adjourned at 2.10 pm, *sine die.*

Stewart Smith
Committee Clerk

Draft minutes no. 54
Tuesday 15 June 2021
Portfolio Committee No. 7 – Planning and Environment
Macquarie Room and via videoconference, 9.02 am

1. Members present
Ms Faehrmann, *Chair*
Mr Pearson, *Deputy Chair*
Mr Buttigieg
Ms Cusack *(via video conference)*
Mr Franklin
Ms Sharpe

2. Apologies
Mr Mallard

3. ***

4. Inquiry into rationale for, and impacts of, new dams and other water infrastructure in NSW
The committee noted the following item of correspondence:

Received:

- 8 June 2021 – Letter from Mr Andrew George, A/CEO, WaterNSW to the Chair regarding the inquiry into the rationale for, and impacts of, new dams and other water infrastructure in NSW.

Resolved, on the motion of Ms Cusack: That the letter from Mr Andrew George to the Chair, received on 8 June 2021, be published on the committee's website, and that it be provided to representatives from Severn River, Ngarabal and Kwiambal Aboriginal Corporation for their information and opportunity to respond.

5. ***

6. ***

7. Adjournment
The committee adjourned at 5.15 pm, until Monday 19 July, public hearing for Clean Air Bill inquiry.

Peta Leemen
Committee Clerk

Draft Minutes no. 58

Wednesday 21 June 2021
Portfolio Committee No. 7 – Planning and Environment
Via videoconference, 9.31 am

1. Members present
Ms Faehrmann, *Chair*
Mr Pearson, *Deputy Chair*
Ms Cusack
Mr Franklin
Mr Mallard
Ms Jackson
Ms Sharpe

2. Correspondence
The committee noted the following items of correspondence:

Received:

- 7 May 2021 – Email from Mr Terry Marshman, A/Principal Policy Officer, Water Group, Department of Planning, Industry and Environment to the secretariat requesting the NSW Government supplementary submission be replaced with a revised version.
- 1 June 2021 – Email from Mr Ross Leddra, President, Darling River Action Group providing the Menindee Lakes Stakeholder Advisory Group Report.

Sent:

- 19 May 2021 – Chair to Mr Terry Marshman, A/Principal Policy Officer, Water Group, Department of Planning, Industry and Environment regarding the NSW Government supplementary submission.

- 17 June 2021 – Chair to Uncle Theo Wright and Ms Lynette Marlow, providing WaterNSW correspondence regarding the Mole River Dam project, and providing an opportunity to respond.

3. Inquiry into the rationale for, and impacts of, new dams and other water infrastructure in NSW

3.1 Answers to questions on notice

The committee noted that answers to questions on notice taken by Ms Anissa Levy, Department of Planning, Infrastructure and Environment, and Mr Ronan Magaharan, WaterNSW, received 11 June 2021 have been received and were circulated to the committee on 17 Jun2 2021. This response has been published on the committee's website as per the resolution establishing the committee.

3.2 Consideration of Chair's draft report

The Chair submitted her draft report entitled *Rationale for, and impacts of, new dams and other water infrastructure, Part 2* which, having been previously circulated, was taken as being read.

Chapter 4

Mr Franklin moved: That paragraph 4.94 be amended by omitting: 'The evidence from the Productivity Commission that the benefit-cost ratio of the project is only 1.06, and was dependent on optimistic assumptions meaning there is a likelihood that it will be even lower, is of particular concern.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Mr Franklin moved: That paragraph 4.96 be omitted: 'The committee notes that the augmentation of Chaffey Dam in 2016 did not alleviate Tamworth's water security issues and was not convinced by the evidence that the proposed Dungowan Dam would secure Tamworth's future water availability.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Resolved, on the motion of Mr Franklin: That paragraph 4.97 be amended by omitting: 'However, it is also evident that the commitment to the planning and delivery of the Dungowan Dam and Pipeline project occurred without consideration of other more sustainable and cost effective options' and inserting instead:

> 'However, it is also evident that the commitment to the planning and delivery of the Dungowan Dam and Pipeline could also have considered other more sustainable and cost effective options.'

Mr Franklin moved: That paragraph 4.98 be omitted: 'The committee agrees that there is no longer any justification for the project to be designated as Critical State Significant Development under the NSW Water Supply (Critical Needs) Act 2019 and to be fast-tracked given the drought conditions have eased.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Ms Jackson moved: That paragraph 4.98 be omitted: 'The committee agrees that there is no longer any justification for the project to be designated as Critical State Significant Development under the NSW Water Supply (Critical Needs) Act 2019 and to be fast-tracked given the drought conditions have eased' and the following new paragraph be inserted instead:

> 'The committee notes the arguments from experts, stakeholders and the local community challenging the justification for the project to be designated as Critical State Significant Development under the NSW Water Supply (Critical Needs) Act 2019.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Ms Jackson, Mr Mallard, Ms Sharpe.

Noes: Ms Faehrmann, Mr Pearson.

Question resolved in the affirmative.

Mr Franklin moved: That Recommendation 2 be omitted:

> 'That the NSW Government not proceed with the Dungowan Dam and Pipeline Project, due to the significant and persuasive arguments against the project, including:
>
> - its high cost
> - limited additional water yielded
> - impact of climate change resulting in reduced rainfall events and reduced water inflow into dams in the Peel Valley
> - irreversible ecological impacts on fish species, platypus and general river health.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Ms Jackson moved: That Recommendation 2 be omitted:

> 'That the NSW Government not proceed with the Dungowan Dam and Pipeline Project, due to the significant and persuasive arguments against the project, including:
>
> - its high cost
> - limited additional water yielded
> - impact of climate change resulting in reduced rainfall events and reduced water inflow into dams in the Peel Valley
> - irreversible ecological impacts on fish species, platypus and general river health.'

And the following new recommendation be inserted instead:

> 'That the NSW Government note the significant concerns raised in relation to the Dungowan Dam and Pipeline Project and ensure these concerns are adequately addressed as part of any independent planning process to assess the project. These significant concerns include:
>
> - its high cost
> - limited additional water yielded

- impact of climate change resulting in reduced rainfall events and reduced water
- inflow into dams in the Peel Valley
- irreversible ecological impacts on fish species, platypus and general river health.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Ms Jackson, Mr Mallard, Ms Sharpe.

Noes: Ms Faehrmann, Mr Pearson.

Question resolved in the affirmative.

Chapter 5

Mr Franklin moved: That Finding 2 be omitted:

> 'That the construction of the Mole River Dam should not proceed if, in order for it to be economically viable, high security water licence holders will need to shift to more high-value permanent crops, impacting other water users' ability during times of drought, particularly town water supplies.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Ms Jackson moved: That Finding 2 be omitted:

> 'That the construction of the Mole River Dam should not proceed if, in order for it to be economically viable, high security water licence holders will need to shift to more high-value permanent crops, impacting other water users' ability during times of drought, particularly town water supplies.'

And the following new finding be inserted instead:

> 'That considerable issues have been raised by local communities and stakeholders in relation to the construction of the Mole River Dam including its economic viability and concerns that high security water licence holders will need to shift to more high-value permanent crops, impacting other water users' ability during times of drought, particularly town water supplies.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Ms Jackson, Mr Mallard, Ms Sharpe.

Noes: Ms Faehrmann, Mr Pearson.

Question resolved in the affirmative.

Resolved, on the motion of Ms Jackson: That paragraph 5.73 be omitted: 'The committee was convinced by the potential negative impacts of the proposed Mole River Dam on downstream communities and the environment' and the following new paragraph be inserted instead:

> 'The Committee heard compelling evidence of the potential negative impacts of the proposed Mole River Dam on downstream communities and the environment.'

Mr Franklin moved: That paragraph 5.74 be amended by omitting: 'The Government has not answered questions about how the current water arrangements will be impacted, and if water licences will become unaffordable for small-medium operators.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Mr Franklin moved: That the following new paragraph be inserted after paragraph 5.75:

'However the committee also heard that for some rivers to have connectivity year round, they must have storage at the top of the system.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Resolved, on the motion of Mr Pearson: That paragraph 5.77 be amended by omitting: 'The committee was also disturbed about the evidence of some witnesses that WaterNSW and their consultants had failed to undertake consultation on the project in a culturally sensitive way' and inserting instead:

'The committee was shocked and found it unacceptable that state and local government, and the consultants they used, failed to undertake consultation on the project in a culturally sensitive way.'

Resolved, on the motion of Mr Pearson: That the following new paragraph be inserted after 5.77:

'In response to the concerns raised, WaterNSW wrote to the committee stating that it takes these matters very seriously. Further, that WaterNSW and Water Infrastructure NSW are working directly with Indigenous community groups and their contractors to better understand these claims and how these concerns can be addressed.'

Resolved, on the motion of Mr Franklin: That Finding 3 be amended by omitting 'and disrespectful' after 'That the consultation process with some Aboriginal stakeholders with regard to the Mole River Dam was inadequate'.

Resolved, on the motion of Ms Jackson: 'That Finding 4 be amended by omitting 'will sever the unique spiritual connection between First Nations people and the river', and inserting instead 'will negatively impact the unique spiritual connection between First Nations people and the river'.

Mr Franklin moved: That Recommendation 4 be omitted:

'That the NSW Government not proceed with the Mole River Dam project due to the significant negative impacts of the construction and operation of the dam, including:

- impacts on supplementary water users
- irreversible ecological impacts on native vegetation, fish and migratory birds
- impacts on First Nations people and cultural sites.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Ms Jackson moved: That Recommendation 4 be omitted:

'That the NSW Government not proceed with the Mole River Dam project due to the significant negative impacts of the construction and operation of the dam, including:

- impacts on supplementary water users
- irreversible ecological impacts on native vegetation, fish and migratory birds
- impacts on First Nations people and cultural sites.'

And the following new recommendation be inserted instead:

'That the NSW Government note the significant concerns raised in relation to the Mole River Dam project and ensure these concerns are adequately addressed as part of any independent planning process to assess the project. These concerns centre on the significant negative impacts of the construction and operation of the dam, including:

- impacts on supplementary water users
- irreversible ecological impacts on native vegetation, fish and migratory birds
- impacts on First Nations people and cultural sites.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Ms Jackson, Mr Mallard, Ms Sharpe.

Noes: Ms Faehrmann, Mr Pearson.

Question resolved in the affirmative.

Chapter 6

Mr Franklin moved: That paragraph 6.78 be amended by omitting 'The committee has significant concerns about the potential negative ecological impacts of the Macquarie River re-regulating storage project' and inserting instead: 'The committee has concerns about the potential negative ecological impacts of the Macquarie River re-regulating storage project'.

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Resolved, on the motion of Mr Franklin: That paragraph 6.78 be amended by omitting 'the lack of transparency' and inserting instead 'the lack of information'.

Mr Franklin moved: That paragraph 6.80 be amended by omitting 'The re-regulating storage project is likely to change river water temperature and the nutrients in the water' and inserting instead 'The re-regulating project is likely to change the nutrients in the water'.

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Resolved, on the motion of Mr Franklin: That paragraph 6.80 be amended by inserting 'while recognising that the new weir, as long as it is appropriately maintained and monitored, will improve fish passage' after 'The re-regulating storage project is likely to change river water temperature and the nutrients in the water, significantly impacting on fish species such as the Silver Perch, Trout Cod and Murray Cod.'

Mr Franklin moved: That paragraph 6.80 be amended by omitting at the end 'On balance, the committee recommends that the Macquarie River re-regulating storage project not proceed due to its significant negative ecological impact on the riverine environment'.

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Ms Jackson, Mr Mallard, Ms Sharpe.

Noes: Ms Faehrmann, Mr Pearson.

Question resolved in the affirmative.

Mr Franklin moved: That Recommendation 5 be omitted:

> 'That the Macquarie River re-regulating storage project not proceed due to its significant negative ecological impact on the riverine environment.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Resolved, on the motion of Ms Jackson: That Recommendation 5 be omitted:

> 'That the Macquarie River re-regulating storage project not proceed due to its significant negative ecological impact on the riverine environment.'

And the following new recommendation be inserted instead:

> 'That the significant negative ecological impact on the riverine environment of the Macquarie River re-regulating storage project be fully and adequately addressed as part of any independent planning process to assess the project.'

Resolved, on the motion of Ms Jackson: That paragraph 6.112 be omitted:

> 'However, the committee notes the valid concerns expressed by some stakeholders that the project may lead to the construction of new weirs, or the expansion of existing weirs. The committee agrees that this would be an outcome that is likely to have significant negative environmental impacts, and is not the most efficient way of ensuring water security and reliability'

And the following new paragraph be inserted instead:

> 'However, the committee notes the valid concerns expressed by some stakeholders that the project may lead to the construction of new weirs, or the expansion of existing weirs, which has the potential to lead to negative environmental impacts, and is not necessarily the most efficient way of ensuring water security and reliability'.

Mr Franklin moved: That paragraph 6.113 be amended by omitting 'The committee was convinced by evidence that weirs negatively impact fish health and river health, due to the disruption to otherwise unregulated flow' and omitting 'Additionally' before 'utilising on-river storage options, such as weirs, results in significant evaporation losses, an outcome which will likely be exacerbated due to climate change.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Resolved, on the motion of Ms Jackson: That paragraph 6.113 be omitted:

> 'The committee was convinced by evidence that weirs negatively impact fish health and river health, due to the disruption to otherwise unregulated flows. Additionally, utilising on-river

storage options, such as weirs, results in significant evaporation losses, an outcome which will likely be exacerbated due to climate change.'

And the following new paragraph be inserted instead:

'The committee found the evidence that weirs negatively impact fish health and river health, due to the disruption to otherwise unregulated flows, compelling. Additionally, utilising on-river storage options, such as weirs, results in significant evaporation losses, an outcome which will likely be exacerbated due to climate change'.

Resolved, on the motion of Mr Franklin: That paragraph 6.114 be amended by omitting 'which would be more environmentally sustainable, while simultaneously ensuring water supply for regional towns' after 'The committee is of the view that it is important for the NSW Government to explore these options'.

Resolved, on the motion of Mr Franklin: That Recommendation 6 be omitting 'as an alternative to building new weirs or expanding weirs' and inserting instead 'a possible alternative to building new weirs or expanding weirs'.

Chapter 7

Mr Franklin moved: That paragraph 7.76 be omitted:

'The committee has serious concerns about the Menindee Lakes Water Savings Project, and accepts the evidence that savings of 106 GL would have a detrimental impact on the community and the environment of the Lower Darling.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Resolved, on the motion of Ms Jackson: That paragraph 7.76 be omitted:

'The committee has serious concerns about the Menindee Lakes Water Savings Project, and accepts the evidence that savings of 106 GL would have a detrimental impact on the community and the environment of the Lower Darling.'

And the following new paragraph be inserted instead:

'The committee has concerns about the Menindee Lakes Water Savings Project and its potential detrimental impact on the community and the environment of the Lower Darling'.

Mr Franklin moved: That paragraph 7.79 be amended by inserting at the end 'but recognises that 300 gigalites of water is presently flowing towards the Menindee under current rules.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Mr Franklin moved: That paragraph 7.81 be omitted: 'Further, the committee was angered to hear the consultation process described as ineffective, and accepts the characterisation of the process as stakeholders having to choose between a range of inadequate options.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Mr Franklin moved: That paragraph 7.83 be omitted:

> 'It is evident that the proposed water savings project would not have the effect of improving river connectivity, but rather, would worsen the health of the river, and only increase the stress experienced by the Barkindji and other First Nations people as a result of the ongoing degradation of the Darling-Barka River.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Ms Jackson, Mr Mallard, Ms Sharpe.

Noes: Ms Faehrmann, Mr Pearson.

Question resolved in the affirmative.

Mr Franklin moved: That Finding 6 be amended by omitting 'devastating impact' and inserting instead 'significant impact'.

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Ms Jackson, Mr Mallard, Ms Sharpe.

Noes: Ms Faehrmann, Mr Pearson.

Question resolved in the affirmative.

Mr Franklin moved: That Recommendation 8 be omitted:

> 'That the NSW Government not proceed with the Menindee Lakes Water Storage Project due to the urgent need to restore and maintain adequate flows in the Lower Darling for cultural, environmental and social purposes.'

The committee divided.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Resolved, on the motion of Ms Jackson: That recommendation 8 be omitted:

> 'That the NSW Government not proceed with the Menindee Lakes Water Storage Project due to the urgent need to restore and maintain adequate flows in the Lower Darling for cultural, environmental and social purposes.'

And the following new recommendation be inserted instead:

> 'That the NSW Government honour its commitments to restoring the health of the environment and healthy rivers under the Murray Darling Basin Plan in a way that has the support of communities along the entire length of the Darling River.'

Chapter 8

Mr Franklin moved: That paragraph 8.22 be amended by omitting 'is a more effective way of approaching these issues' and inserting instead 'is an effective way of approaching these issues'.

Ayes: Ms Cusack, Mr Franklin, Mr Mallard.

Noes: Ms Faehrmann, Ms Jackson, Mr Pearson, Ms Sharpe.

Question resolved in the negative.

Resolved, on the motion of Mr Pearson: That:

- the draft report as amended be the report of the committee and that the committee present the report to the House;
- the committee secretariat correct any typographical, grammatical and formatting errors prior to tabling;
- the committee secretariat be authorised to update any committee comments where necessary to reflect changes to recommendations or new recommendations resolved by the committee;
- dissenting statements be provided to the secretariat within 24 hours after receipt of the draft minutes of the meeting;
- the secretariat is tabling the report at a time to be determined
- the Chair to advise the secretariat and members if they intend to hold a press conference, and if so, the date and time.

Adjournment

The committee adjourned at 11.30 am until 1.30 pm, Thursday 5 August 2021, Report deliberative (Infrastructure Contributions Bill inquiry).

Madeleine Dowd
Clerk to the Committee

Appendix 4 Dissenting statement

Ms Cate Faehrmann MLC, The Greens

The Greens do not support the proposed new Dungowan and Mole River dams, the massive expansion of the Macquarie River Re-regulating weir and the Menindee Lakes Water Saving Project. Throughout this Inquiry, I have been convinced by the evidence of water scientists, local farmers and floodplain graziers, Aboriginal representatives, environmentalists, local councillors and other stakeholders that these dams pose unacceptable risks to our already struggling river and wetlands systems, as well as to the livelihoods of downstream communities.

The NSW Water Minister sought the fast-tracking of these projects when she brought the NSW Water Supply (Critical Needs) Act bill before the parliament in 2019 at a time of unprecedented drought and when dozens of rural towns and communities were running out of water. The Minister argued that a temporary pathway was urgently needed to authorise critical water infrastructure developments to secure water supplies for regional towns in the current drought where this cannot be achieved through the usual planning approval pathways in time to prevent towns running out of water.

Many witnesses expressed significant concerns about the fast-tracking of these projects, which has allowed them to escape the scrutiny otherwise afforded to projects of this scale, expense and impact. It is my view that there was more than enough evidence to support the inclusion in the report of a committee comment that we agree 'that there is no longer any justification for the project to be designated as Critical State Significant Development under the NSW Water Supply (Critical Needs) Act 2019 (The Act) and to be fast-tracked given the drought conditions have eased'. It is not sufficient, in my view, for the committee to simply note the concerns of witnesses about this given all of the evidence before us.

Despite the Government's justification for the emergency legislation and the building of the new dams being to secure town water supplies, there was substantial evidence by multiple witnesses that these new dams and other water projects are about providing more water for irrigation, not about securing town water supplies.

The Productivity Commission's report in February chose to single out the decision-making process for Dungowan Dam as 'flawed', one reason for which was the fact that non-infrastructure options had been excluded. This is significant.

Now that drought conditions have eased all available options to secure sustainable water supplies for communities without compromising the health of rivers and wetlands must be considered. The Government must pause its ideological and partisan pursuance of these dams and other mass water storage projects so that more sustainable and cost effective options can be considered by WaterNSW.

While the proposal to dam the Mole River is less advanced, with the government having only funded a business case to date, the evidence received by many local landholders of the impact that damming the Mole River would have on their livelihoods and the health of the river and the local environment was extremely convincing.
The decision-making process of the government to pursue a dam on the Mole River could also be considered 'flawed'. Many witnesses raised the Jacobs feasibility study commissioned by WaterNSW which found that a dam would not be economically viable unless there was a shift in land use from

predominantly cotton to permanent crops such as almonds. An outcome which would necessitate even more water for irrigation.

I am therefore disappointed that a finding 'that the construction of the Mole River Dam should not proceed if, in order for it to be economically viable, high security water licence holders will need to shift to more high-value permanent crops, impacting other water users' ability during times of drought, particularly town water supplies' was not supported.

The evidence by Professor Richard Kingsford regarding the significant impact that the expansion of the current Gin Gin weir on the Macquarie River would have on the Ramsar-listed Macquarie Marshes convinced me that this project should not proceed. The Macquarie Marshes have suffered enormously in recent years because water that used to reach them has been diverted for irrigation purposes and anything that would mean even less water should not be supported.

During a visit to Menindee Lakes and Sunset Strip, and a hearing in Broken Hill, the committee heard about the devastating social, economic and cultural impacts the lack of flow to the Lower Darling has had on communities. It is therefore unconscionable that the Government proposes to remove more water from the Lower Darling with its Menindee Lakes Water Savings Project.

Several stakeholders spoke of the need to ensure connectivity and regular flows along the Darling River even in dry years. The Menindee Lakes have seen three significant fish kills and, together with the Lower Darling, has faced critical water shortages more than 50 percent of the time since 2012 when water sharing rules were changed in the Northern Basin.

I am therefore disappointed that my recommendations that the Government not proceed with the Dungowan and Mole River dams, the Macquarie River re-regulating project and the Menindee Lakes Water Savings Project were not supported. Instead, recommendations with a focus on ensuring that the significant concerns expressed by stakeholders about all of the projects are adequately addressed as part of any independent planning process to assess the projects, were.

The problem with this is that the planning process is there to facilitate the approval of these projects, and to offset or mitigate the impacts. Landowners may be compensated and biodiversity will be (grossly inadequately) offset, but regardless of whether they stack up environmentally, socially or economically the Water Minister has given every indication that she wants them approved, hell or high water.

When the Commonwealth and NSW Governments announced $1 billion towards the Wyangala and Dungowan Dams in October 2019, the Prime Minister stated that "the NSW Government is working in lockstep with the Commonwealth to make absolutely certain all obstacles are cleared and these dams get built."

Unfortunately our so-called independent planning processes will find this government ultimatum very hard to ignore.

Cate Faehrmann