

Submission to Warragamba Dam wall raising project

Public exhibition

21 November to 12 December, 2022

Thank you for the opportunity to participate in this public exhibition and provide feedback about the Warragamba Dam Wall raising project.

Acknowledgement of Country

I write this submission from the unceded homelands of the Gundungurra people. I acknowledge the pain, with which they continue to live, resulting from the destruction of cultural landscape and dispossession for the building of the Warragamba Dam. I pay my deepest respect to their elders; past, present and emerging, and I express my deepest gratitude for sharing this beautiful place with me.

Process

In this submission, I discuss major issues raised by key stakeholders: United Nations Educational Scientific and Cultural Organisation (UNESCO) World Heritage Centre via the International Union for the Conservation of Nature (IUCN) Technical Review of the EIS; Australia International Council on Monuments and Sites (ICOMOS); NSW Department of Planning, Industry and Environment Energy and Science Group (EES); and Heritage NSW (HNSW). I also examine the nature of the responses of WaterNSW to these major issues as presented in the Preferred Infrastructure Report (PIR). The discussion is organised under headings representing these issues. This is followed by an analysis of the consistency and veracity of the conclusions reached by WaterNSW in the PIR, and based on my own reading of all the documents presented as part of this exhibition I present my own conclusions and offer these as recommendations for the NSW Government regarding the approvals sought by WaterNSW for the proposed project.

The PIR includes limited new information and largely defers to the supplementary investigations included in the appendices.

Supplementary investigations were undertaken to address concerns raised in submissions, and I have also read these to inform my analysis for this submission.

Issues

World Heritage Values and National Parks

I begin by noting UNESCO's statement that inundation would damage Outstanding Universal Value (OUV) of the Greater Blue Mountains World Heritage Area (GBMWhA). The Environmental Impact Statement (EIS) does not comply with World Heritage Assessment requirements making it fundamentally flawed. This is because the methodology for assessing the impacts on ecology and cultural values are inadequate; there has been limited survey of flora and fauna and cultural values. The DPIE (EES) concurs that there have been limited assessments of impacts on World Heritage values including biodiversity values, impacts on threatened species, Aboriginal Cultural Heritage and wilderness outside the World Heritage Area and that the EIS has not responded to this. Despite these limitations, the findings presented in the EIS show that the proposal would directly degrade OUV and this is in contradiction to the conclusion presented in the EIS. The DPIE (EES) concur that any diminishment of values on any area of land with World Heritage Values is significant and unacceptable, and that the EIS does not adequately assess or justify impacts on the National Estate and the GBMWhA. Inundation of up to 1,303 ha of reserves, including 304ha of GBMWhA would impact all values including; biodiversity, Aboriginal Cultural Heritage, historic heritage, World Heritage, wilderness and wild rivers, roads and fire trails and other facilities, such as recreational use. The EIS has not responded to this major issue. The EIS makes erroneous assumptions about how to evaluate impact on World Heritage values, including not taking seriously Aboriginal Cultural Heritage. There has been insufficient analysis of World Heritage values related to biodiversity, particularly the significant impacts to *Eucalyptus* communities, and the species *Eucalyptus benthamii* and *Eucalyptus glaucina*. Upstream area inundation will result in habitat destruction with concomitant vulnerability to regional/localised extinctions for many species. Any loss will have significant impacts.

UNESCO also assert that Traditional Owners do not give free, prior and informed consent for the project to proceed (Aboriginal Cultural Heritage is further discussed below). UNESCO also point out that OUV cannot be offset and that this concept is inappropriate and recommendations about offsetting strategies are unacceptable.

UNESCO also make the crucial observation that more than 80% of the upstream impact area has been affected by the unprecedented bushfires of the summer of 2019-2020, but no field surveys have since been conducted. EES concur that the EIS does not recognise the value of unburnt areas as refugia for recovery of species following the 2019-2020 bushfires. The EIS also has not considered impacts on potential OUVs of lands proposed for additions to the National Heritage List, including Yerranderie, Nattai and Burratorang State Conservation Areas.

In response to concerns raised about this issue, the PIR makes much reference to existing risk of temporary inundation with current dam, and figures for depth, duration and frequency given under. Section 6.3.3 that addresses World Heritage does not appear to present much new information. Calculations of depth and duration of temporary inundation seem inconsistent with information supplied by EES about the length of upstream rivers, stream and creeks that will be inundated. These are therefore likely underestimates. Information presented in Appendix F includes calculated increases in the duration of upstream inundation of one to two weeks, and also increases in the depth of inundation.

Assessment against the Statement of OUV is stated to be against that presented in DAWE (2022). It is difficult to assess the effectiveness of this source as it is not presented in the Appendices and is not specific to the area that will be impacted by the proposed project, for example assessment of the Wollemi Pine is not applicable to the proposed project. The PIR reiterates information from the EIS that temporary inundation could result in loss of Endangered Ecological Communities (EECs) in the upstream impact area. The PIR makes reference, for example on pp 55 and 66 to supplementary investigations, including a supplementary biodiversity assessment but does not include these in the appendices. This makes it impossible to independently examine them. No supplementary investigation appears to have been undertaken for this major issue even though a number have been undertaken for other issues. References are made to sections of the EIS, for example in relation to Table 6.7 (pp 58-65) which lists over 70 threatened plant

species likely to be adversely impacted by temporary inundation, and Table 6.8 (pp 67-72; also largely taken from the EIS) that describes loss of habitat for 16 threatened animals. Other research from the literature referenced was published prior to the 2019-2020 bushfires.

I disagree with the comments in Table 6.6 about the potential impacts on *Eucalyptus benthamii*. I note that the source of the comment in this Table is unclear. Most of the species included in this Table are stated to not occur in the upstream impact area, so its inclusion in the report is of questionable value. Finally, instance documented in the PIR on impacts being to only a small area of the GBMWH totally misunderstands OUV and does not address the concerns raised by stakeholders about the significance of degradation to any part of World Heritage.

EES raised the concern that the EIS does not address the requests of the UNESCO World Heritage Committee to assess all potential impacts on OUV, including whether the project will exacerbate bush fire risk and impede recovery of species and habitat post bushfire. It appears that the PIR has also not addressed these requests. In light of this analysis, I must conclude that the PIR does not address the concerns about World Heritage and National Park values raised by key stake holders.

Aboriginal Cultural Heritage

Australia ICOMOS is strongly concerned about the inadequacies of the EIS relating to cultural heritage. Like UNESCO, they state that the EIS is fundamentally flawed because of deficiencies in considering Aboriginal Heritage sites and that it does not even meet SEARS requirement (3.1). This is even despite the ACHAR explicitly stating that harm will be caused to Aboriginal Cultural Heritage. ICOMOS also highlight that the limited survey was conducted prior to the 2019-2020 bushfires and that no assessment of impact on Aboriginal Cultural Heritage has since been undertaken. Like UNESCO, Australia ICOMOS emphasises that Traditional Owners have clearly communicated that they do not support the project, and that therefore there is no free, prior and informed consent from Traditional Owners. EES states that the NSW Government must consider that Registered Aboriginal Parties (RAPs) do not support the project and recommend it not proceed, particularly in light of previous destruction and irreplaceable loss (cumulative impacts discussed further below). This lends more urgency to doing no more

harm. The RAPs do not want to participate in the assessment of their cultural values but have stated that the cultural landscape in the upstream impact area is of high significance, and it must be acknowledged that this is part of World Heritage values.

Australia ICOMOS supports Recommendation 12 of the Interim Report of the NSW Legislative Council Select Committee on the Proposal to Raise the Warragamba Dam Wall (October, 2021), pertaining to the assessment of Aboriginal Cultural Heritage.

Aboriginal cultural heritage values are addressed by WaterNSW in the PIR, through supplementary investigations included in Appendix F: Aboriginal Cultural heritage assessment. This report was prepared by contractor Niche Environment and Heritage. It is clear from the information presented that meaningful consultation with Registered Aboriginal Parties (RAPs) remains problematic and that their concerns are not being addressed.

This report mentions 340 known Aboriginal heritage sites of significance asserting the scientific (archaeological) value of the region, but states that this still presents a limited understanding of the potential scientific significance of the landscape. The authors reinforce that the Traditional Owners have consistently stated that the landscape has high cultural value beyond the expression of scientific significance. The assessment identified 57 sites and places of high cultural significance within the Gundungurra Cultural landscape. Impacts of the proposed project on these sites were summarised as: potential destruction of artefacts, significantly reducing the integrity and value of sites; burying sites making them inaccessible; damage through biomechanical processes that also significantly reduce the integrity and value of sites. The key finding reported was that a total of 260 known Aboriginal cultural heritage sites will be adversely affected by temporary inundation as a result of the project.

In this report, the authors also discussed the high to very high intangible cultural significance of the landscape. Another key finding is quoted below:

“The Project will result in cumulative harm to the intangible values of the cultural landscape through extension of previously unmitigated impact on cultural values from the construction of the Warragamba Dam and flooding of the Burragorang Valley and its tributary valleys. The further

flooding of the Burragorang Valley will contribute to harm to the cultural and spiritual connection that Aboriginal people hold to this part of the Country, their heritage and the cultural landscape and will obscure the tangible aspects of the creation stories associated with the Burragorang such as the Gurrangatch and Mirrigan story.” (p iv)

In the conclusion and recommendations, the authors state that:

“it has been clearly communicated by the RAPs that they do not support the Project. The Project is understood as a continuance of the dispossession and loss of cultural heritage initiated by the original development of the Warragamba Dam in the 1950s” (p iv).

The authors of this supplementary investigation about Aboriginal Cultural Heritage conclude that: *“While the PUIA contains only 304 ha of GBMWhA land (a proportion of 0.03% of the total GBMWhA area) it contributes overall to the GBMWhA cultural values as it is a cultural landscape with a rare and representative example of the interconnectedness of tangible and intangible values.” (p 169).*

The authors conclude that the impacts *“have the potential to cause permanent harm through physical impacts to the sites and potential alterations to the waterways and ecology of the Project area. Further, these potential impacts are cumulative and irreversible in nature” (p 218).*

The authors include a quote from the Gundungurra Aboriginal Heritage Association that clearly illustrates the impacts of the proposed project on the cultural landscape and the cumulative nature of these impacts. This is then supported by an independent scientific assessment that describes additional impacts to intangible places of high cultural significance.

The final conclusion is that the project would result in a diminution of OUV, and that:

“The Project will result in cumulative harm to the intangible values of the cultural landscape through extension of previously unmitigated impact on cultural values from the construction of the Warragamba Dam and flooding of the Burragorang Valley and its tributary valleys. The further flooding of the Burragorang Valley will result in irreversible harm to the cultural and spiritual connection that Aboriginal people hold to this part of the Country, their heritage and the cultural landscape and will obscure

the tangible aspects of the creation stories associated with the Burragorang such as the Gurrangatch and Mirrigan story.” (p 229)

In light of this examination, I must conclude that supplementary assessments undertaken for the PIR support the concerns raised by key stakeholders. These have essentially been ignored within the body of the PIR as reflected by the amendments to the project and the conclusions documented in the PIR.

Floodplain Risk Management

Australia ICOMOS list 12 extremely strong reasons for objection to the proposed project and conclude that:

“Every effort should be made to pursue alternative solutions to the reported downstream flood risk.....[including] downstream flood mitigation activities which might better address dangers from tributaries that flow into the Hawkesbury-Nepean system downstream of Warragamba Dam” (p 6).

The DPIE (EES) recommends that WaterNSW now needs to consider the Intergovernmental Panel on Climate Change (IPCC) 6TH Assessment Report, including sea level rise projections and their potential impact on the floodplain. EES has raised many concerns about discharge and the prolonged release of stored floodwater, being a greater volume over a shorter time period than would currently happen. They note that there has been very little information about discharge and limited discussion about the impacts on downstream communities of controlled release, particularly if there are multiple flood events. “Disbenefits” resulting from impacts on public infrastructure (such as roads and bridges), utilities, services (such as water supply), and morphology of downstream river systems may counter or outweigh any benefits of reduction of flood damage to private properties. Long term risks to water supply because of climate change have also not been assessed. In addition, EES identify that the EIS does not reference the recent planning circular (PS21-06- Considering flooding in land use planning) and the Hawkesbury-Nepean regional land use planning framework.

I read Section 7 of the PIR with compassion. WaterNSW adds a report about recent floods from Infrastructure NSW (2021) in order to increase

justification for the project, but this does not change the fact that this is a complex floodplain and that increasing storage of such enormous volumes of water exacerbates the danger of catastrophic flooding, as was also seen recently with Wyangala Dam in Central West NSW. I believe that Australians everywhere are and will increasingly have to face the climate crisis. The Nepean-Hawkesbury floodplain has been a floodplain for hundreds of millions of years. In Appendix F of the PIR, the authors of the supplementary Aboriginal Cultural heritage assessment (Niche Environment and Heritage) emphasise that the proposed project will not eliminate flood risk because other catchments, such as the Nepean, Grose, Colo and South Creek contribute significantly to flooding downstream, and flows in the FMZ will still need to be emptied.

Coordinated and collaborative work should increasingly go into the funding, research and development and implementation of all the other initiatives identified in the Hawkesbury-Nepean Floodplain Management Strategy (2017). EES notes that flood forecasting by the State Emergency Services (SES) has advanced and: “*The predictive capability is expected to be increased in the future*”. This statement appears to counter the argument made by WaterNSW that there is not enough time under the current dam for evacuations to occur. EES also states that the number of people likely to need to be evacuated is being over estimated.

Nothing further is added in the PIR about floodplain risk management.

The PIR reiterates potential flood mitigation benefits, including lower flood insurance premiums. This is interesting given that the Insurance Council of Australia do not support the proposed project. It seems that the prohibitively high insurance premiums, that many householders cannot afford, are more likely to continue increasing for properties situated in a floodplain within the context of climate change.

The PIR does not clarify issues around the operation of environmental flows/ water releases. This information is highly technical and does not seem to address this issue in a way that makes sense.

Reading of Appendix B indicates that flood waters would be stored to full capacity and would then need to be released. Estimated additional evacuation time of 15 hours can now be available by new systems without the added dangers of increased volumes of stored water needing to be released, as discussed above.

Appendix D about flooding and hydrology includes comments about lack of understanding demonstrated in submissions about how floodwater behaves. These comments should be countered by saying that many submissions were based largely on actual observations of what happens and impacts of temporary inundation, in landscapes where water is meant to move through and not flood (upstream) and where the landscape has been modified such that water moves through too quickly (downstream). The information presented in Appendix D about storage volumes and peak flows serve only to reinforce concerns about the amount of time water would be stored and what happens when it is released. The stated reductions and delays do not change the fact that this is a floodplain, and improved warning systems, evacuations and training of residents to collaborate to manage natural disasters as they likely become more frequent can achieve these outcomes without the accompanying disastrous impacts of the project. The EES states that floodplain risk management in the Hawkesbury-Nepean needs a lot more consideration.

In light of this examination, WaterNSW does not address concerns raised by key stakeholders and appears to have already decided to proceed with this proposal regardless of the significant additional adverse impacts it will cause.

Mitigation measures and offset arrangements

As mentioned above, UNESCO state that OUV cannot be offset and that this concept is inappropriate and recommendations about offsetting strategies are unacceptable. The EES stated that the EIS provides no information about offset strategies and mitigation measures, particularly for World Heritage values. They state that WaterNSW has not detailed its approach to offsetting, for example it has not identified sites or intentions for purchasing land and protecting it by adding it to the National Parks system. EES also make clear that the lack of survey about threatened species in the upstream impact area make it very difficult to impossible to source credits or meaningful offsets. In addition, the very nature of OUV means that it may not be possible to deliver suitable and/ or effective land, because as UNESCO state, these values are irreplaceable. In Appendix F of the PIR, the authors of the supplementary Aboriginal Cultural heritage assessment (Niche Environment and Heritage) outline additional considerations for

mitigation measures, however conclude that all mitigation measures are indirect and limited such that if the project proceeds, there will be “*no capacity for directly applied management measures for the avoidance or minimisation of harm.*” (iv)

As stated in the PIR, WaterNSW makes no changes to the offset strategies presented in the EIS. Appendix C of the PIR outlines updated Mitigation measures. For biodiversity upstream, this is an offset strategy. For all other impacts, various consultations and plans are listed that would be developed or undertaken once construction has begun. Clearly, this is totally unacceptable. In light of this analysis, I must conclude that WaterNSW has not addressed concerns raised by key stakeholders about the major issue of offsets.

Other issues

Additional major issues raised by key stakeholders include: hydrology and aquatic ecology; biodiversity assessment; climate change risk and sustainability; non-Aboriginal heritage; and ecologically sustainable development.

It is beyond the scope of the timeframe provided for this public exhibition to examine these issues in appropriate detail. I request that the Department grant an extension of the exhibition period. These other issues will be the subject of another submission, should an extension be granted by the Department.

Conclusion and Recommendations

UNESCO and Australia ICOMOS both object to the proposed project and conclude that proceeding with it would be inappropriate.

Australia ICOMOS supports Recommendation 9 of the Interim Report of the NSW Legislative Council Select Committee on the Proposal to Raise the Warragamba Dam Wall (October, 2021), that the NSW Government: not proceed with the project; and pursue alternative floodplain management strategies. It also supports Recommendation 11 that the NSW Government not proceed with the project should Traditional Owners not give free, prior and informed consent.

Heritage NSW recommends the long-term conservation and protection from harm of World Heritage values, including Aboriginal Cultural Heritage values.

In Appendix F of the PIR it is stated in relation to Outstanding Universal Value (OUV) of the GBMWhA, incl Aboriginal cultural heritage that the upstream impact area is found to be of very high social and cultural significance to Aboriginal people. In this report, it was also acknowledged that flooding has been part of the downstream landscape prior to the construction of the current dam. The current dam has created an existing flood risk upstream and the proposed project will increase the existing flood risk inundating the GBMWhA. This area is also of high aesthetic significance; high historical significance for both Aboriginal and European cultural heritage; high scientific (archaeological) significance. The authors of the report conclude that the proposed project area is a rare site for the co-existence and inter-relationships of all these values.

EES also recommends that the project does not proceed as a mitigation measure.

WaterNSW states that the only amendments made in PIR are changes to gates in the dam wall design and changes to the EIS offset strategy, and that no other changes were required.

I disagree with the conclusions of the report that it is an ecologically sustainable development. Conclusions of the PIR are not supported by additional investigations included in the appendices. The additional investigations undertaken highlight and provide further support for the issues of concern raised by key stakeholders. Mitigation strategies and offset strategies have been shown to not in any meaningful way protect against the adverse environmental impacts associated with the project, particularly upstream in the GBMWhA.

As a result of the analysis undertaken for this submission, I recommend that the proposed project should not receive approvals sought and should not proceed. I believe that the recommendations of the key stakeholders that the project not proceed should be adopted.

Thankyou once again for the opportunity to participate in this public exhibition.

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