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Submission - Warragamba Dam Raising Project - SSI-8441

Thank you for the opportunity to submit on the Preferred Infrastucture Report (PIR) for the Warragamba Dam Raising Project (the "Project").

I accept the Department's submission disclaimer and declaration that I have not made any reportable political donations in the past 2 years.

I am writing as a citizen with grave concerns for the preservation of significant national and internationally acclaimed heritage areas in New South Wales; in particular areas which provide significant amenity and enjoyment to tourists, inhabitants of Greater Sydney and Australians broadly.

I am strongly opposed to the Warragamba Dam Project and subsequent Preferred Infrastructure Report for the following reasons:

1. The proposed Warragamba Offset Strategy does not cut muster.
2. The modelling to identify the "upstream impact area" is flawed.
3. The period of upstream inundation referred to is significantly understated.
4. Temporary inundation does not equate to temporary environmental damage.
5. The impact on visual amenity as a result of the Project is also significantly understated.
6. Aboriginal cultural heritage specifically, and indeed the cultural heritage of all Australians, will be negatively impacted.
7. The period of consultation for the PIR submission has been inadequate.

1. The proposed Warragamba Offset Strategy does not cut muster

EIS:
Despite the EIS acknowledging that the Project will result in *significant environmental and ecological damage* to the Greater Blue Mountains World Heritage Area ("GBMWHA") and adjoining national park (together, the "Blue Mountains" or "BM") it proposes to offset this damage via the Warragamba Offset Strategy; a strategy designed to mitigate impacts via "environmental offset credits" to produce a perceived "gain". This "offset-credit" approach to environmental this damage is quite frankly, absurd.

The Blue Mountains is an iconic natural asset on the edge of Australia's largest city. *It is a priceless treasure* (recognised by its World Heritage status) which makes Sydney the envy of the world and a major international and domestic tourist destination. You simply cannot destroy part of the BM and argue that this can be compensated for by acquiring an equivalent amount of land elsewhere in the state, or by making monetary contributions to a biodiversity fund – or in anyway whatsoever. The absurdity of such a proposition in relation to an iconic (world heritage) asset is obvious.

Even at a micro level the offset strategy is flawed. The EIS acknowledges that temporary flooding from the Project will have a significant impact on the contemporary breeding habitat of the critically endangered Regent Honeyeater, an impact which cannot be avoided or minimised. Given that there are less than 350 known individuals in the wild, and that the habitat is critical for survival, the Project could potentially lead to its extinction.

There is no 'off-set' that compensate for the extinction of a species.

Response to the PIR:

- The PIR adopts a "revised offset strategy" to prioritise identification and costing of a series of "on-park management actions" which will go beyond "business as usual". It is unclear what these provisions are, and how they will reverse/compensate for the massive environmental/ecological damage that will result from the Project. In all other aspects it is the same policy as in the EIS and still does not cut muster.

- Despite the PIR stating that biodiversity offsets are "an accepted and adopted method of compensating for the impacts of a development" this is completely inappropriate in relation to the proposed Project development in an iconic natural asset like the Blue Mountains.

- The PIR suggests in several places that the environmental/ecological damage from the Project might not be as bad as originally assumed for the purposes of the EIS.

  This seems to be based largely on the results of the Longneck Creek ecology report (Appendix E) and the "upstream plant community type analysis" outlined at section 6.7.3 (but significantly not detailed in any appendix to the PIR - because it was not a detailed analysis and would not stand up to scientific scrutiny). The Longneck Creek study was conducted 44km *downstream* of the dam wall and concluded that the areas subject to temporary inundation exhibited lower native species richness and vegetation cover and increased exotic weeds and debris. Moreover, the so-called "upstream plant community analysis" was based entirely on a *single plot of each of two vegetation types* in the upstream inundation area, and as such was so lacking in scientific rigour that it is laughable to even describe it as an "analysis".

2. The modelling to indentify the "upstream impact area" is flawed

EIS:

The Project will result in an increase in the heights of the central and auxiliary spillway crests of 12 and 14 metres above FSL respectively. The modelling, however, used to determine the "upstream impact area" attempts to measure the effected area by reference only to an increase of 7.5 metres (being the difference between a "likely inundation level" of 10.3 metres above FSL for the raised dam wall and 2.8 metres for the existing dam wall).

This approach erroneously limits the impact area to around 1,400 hectares, whereas the area that would actually be affected by a probable maximum flood (PMF) would be likely to be substantially in excess of 5,000 hectares (and in excess of 3,000 hectares for a 1 in a 100 year flood).

The "likely inundation level" appears to have been derived from an averaging approach. This is not an accurate assessment of the actual inundation area which only needs **one flood** in excess of the average to give rise to environmental damage over a much larger area.

Furthermore, the idea that you only have to consider the net incremental inundation area, above what is already inundated with the existing dam, is also flawed because the higher dam wall would mean that existing areas would be inundated for much longer periods and to a greater depth and would therefore suffer more damage.

That the "upstream impact area" is understated much of the analysis of the impacts to the BM are also understated.

Response to the PIR:
The PIR (at section 6.3.4) continues to try to justify the limited upstream impact area of the Project. It still does not stack up for the reasons set out above.

3. The period of upstream inundation referred to is significantly understated.

EIS:
The *period of upstream inundation* will largely be the product of two factors:

- the size of the flood event and
- the rate at which water is released from the dam.

The EIS says that the maximum period of temporary inundation will be an additional 10 days and a total period of less than 14 days based on the flood mitigation zone storing up to 1,000 gigalitres of water in a flood event and a downstream water release rate of 100 gigalitres per day (increased to 230 gigalitres per day in the case of short term "piggyback discharges"). The EIS, and in particular the Flooding and Hydrology Assessment Report in Appendix H1, has been prepared entirely on the basis of a preliminary operating protocol determined by Water NSW which specifies the 100/230 gigalitres per day rate of discharge.

This contrasts with the Preliminary Environmental Assessment ("PEA") released by Water NSW in December 2016 which indicated a lower release rate of 40 gigalitres a day to reduce downstream flooding, especially around Windsor, Richmond, Cattai, Wilberforce and McGrath's Hill. If this lower release rate were to be adopted, the period of upstream inundation would be significantly longer than 14 days.

A downstream water release rate does not appear to be mandated by any design feature of the dam and, in fact, has not yet been determined. Rather it will depend on a detailed operational protocol for the raised dam which is yet to be developed, and which, when it is developed, could potentially be subject to change in the future.

Ultimately the rate of water release will depend on operational decisions to be made well into the future. However, faced with a major flood event (potentially made worse by catchments such as the Grose and Nepean Rivers) it is easy to imagine that the rate of water release may be reduced to the lower end of the scale in the future, thereby extending the extent and period of upstream inundation. As such, the 10-14 day inundation periods referred to in the EIS are potentially misleading.

It would be appropriate to extend the depth-duration and flood frequency analysis in Appendix H1 to also show the effects of a lower water release rate - like 40 gigalitres a day - and the rest of the EIS should be amended to show a range of potential upstream inundation periods.

The likely upstream inundation period is a critical factor as it directly impacts on matters like upstream environmental impacts and visual amenity.

Response to the PIR:
The PIR continues to use the 100/230 gigalitres per day release rate and the Submissions Report states that, " should the Project be approved this release rate would form part of the approval for the Project", therefore, I presume, that Water NSW would be bound to use this rate as well. This is despite the fact that Water NSW will require a new Operating Licence, and that the terms of that licence have not yet been set. I assume that the DPE will satisfy itself as to this.

4. Temporary inundation does not equate to temporary environmental damage

EIS:
Temporary upstream inundation arising from the Project will result in long term and even permanent damage to the environment, with long term impacts (see above).

There are numerous instances in the EIS where the authors seem to imply that temporary inundation will produce only temporary impacts. Such failures to recognise, or at least acknowledge, the long term impacts of the Project go to the very integrity of the EIS.

Response to the PIR:
As discussed above, the PIR again tries to suggest that temporary inundation might not have a significant or long term impact on vegetation. But to come to this conclusion, the PIR needs far more rigorous testing and analysis than a comparative vegetation analysis based on a single test plot of each of two vegetation types. That so superficial an analysis has even been included in the PIR suggests an unseemly desperation to arrive at a predetermined conclusion.

Even worse, the PIR uses this superficial analysis as the basis for other conclusions on the environmental/ecological impacts of the Project such as suggesting that the impacts on the Regent Honeyeater might be less than as stated in the EIS.

5. The impact on visual amenity arising from the Project is also significantly underrated.

EIS:
The following comments are made in relation to the Blue Mountains upstream of the raised dam wall - not the impacts at the project site or downstream.

In Chapter 25, and in the Executive Summary, the EIS concludes that the visual impact of the Project when considered from various viewpoints in the Blue Mountains, such as Echo Point lookout, will be negligible. This conclusion is repeated without proof in other parts of the EIS (for example in the Biodiversity Assessment Report in Appendix F1).

This conclusion is inconsistent with the report in Appendix P "Landscape Character and Visual Impact Assessment" prepared by external consultants SCAPE Design.

In Appendix P the report concludes that the visual impact of the Project at Echo Point of a probable maximum flood (PMF) event would be "High" - the highest rating available (see Table 5-9). It also states that the impact would be "High" under existing conditions.

Kedumba Valley

To the contrary, Figure 5-16 in Appendix P shows that the area in the Kedumba Valley that would be affected by a PMF event post-Project would be significantly larger than the area that would be affected pre-Project.

The area of the Kedumba Valley that would be inundated in a PMF event as a result of the Project is very large indeed, almost twice the land area of Mt Solitary, which is the most prominent landmark in the Jamison/Kedumba Valleys.

As shown in Figure 5-16, it extends north of the Kedumba campground and spreads out over the relatively flat areas around the Kedumba River to the south. Inundation, even for only a very short period, would result in the depositing of silt, the proliferation of weeds and the slumping of riparian banks. Inundation for a longer period would inevitably result in the death of vegetation including large trees, potentially including one of the last known stands of the vulnerable Camden White Gum (E. Benthamii). The result would be a loss of habitat for wildlife and an ugly scar on the landscape.

The Flooding and Hydrology Assessment Report in App H1 does not include a flood depth-duration analysis for the Kedumba River, despite undertaking this analysis for 15 upstream locations including at the Nattai, Wollondilly, Kowmung and Cox's Rivers. This seems to be a most unfortunate omission, especially given the very large area that will be inundated in the Kedumba Valley.

The impact of scarring in the BM from temporary flooding should not be underestimated.

It would not be temporary and would be very ugly.

The scarred area in the Kedumba Valley would not be in the immediate foreground, but it would still be clearly visible from popular tourist lookouts between Wentworth Falls and Katoomba (being approx. 6.5km south of Sublime Point, compared to Mt Solitary which is 5.5km south of Echo Point). In short, tourists could look out on a massive scarred area to the left of Mt Solitary.

The potential impact on Blue Mountains tourism could be severe, especially given that views of the Jamison/Kedumba Valleys from lookouts are critical to the Blue Mountains' "brand".

It is particularly worth noting that scarring will become increasingly evident from lookouts to the east of Echo Point where the view is not obscured by Mt Solitary, as is the case with Echo Point. If the EIS also included another more easterly lookout, like the popular Sublime Point in Leura, it would have given a much more balanced perspective on the loss of visual amenity from the Project.

That part of the Kedumba Valley lies outside the GBMWHA is not a valid reason to not be included in the Projects EIS/PIR. It is in a Special Area, originally not included in the national park application for world heritage status but which was added later. It cannot be asserted that the Special Area is somehow ecologically inferior to the remainder of the national park or that it does not contain the same world heritage values. It is critically important to the integrity of the adjoining GBMWHA.

Response to the PIR:
At section 6.8 the PIR states that, based on the so called "upstream plant community type analysis" in the upstream impact area outlined at section 6.7.3, significant upstream visual impacts as a consequence of temporary inundation are unlikely. This conclusion is clearly reflects the same type of superficial analysis and reasoning as in the EIS - analysis based on one test plot of woodland vegetation.

Whether it is possible draw any conclusions from such a superficial analysis is debatable, but at least the discussion at 6.7.3 states that: "some caution is warranted in interpreting the results for the upstream impact area in view of there being only one survey plot in the area of existing temporary inundation." But at section 6.8, there is no such caution, which seems to equate "significant visual impacts" only with a "total" loss of vegetation, which is patently wrong.

6. There will be a significant negative impact on Aboriginal cultural heritage

EIS:
I am very concerned that the Project will result in irreversible damage to Aboriginal cultural heritage and destroy much of the remaining link that the traditional owners have to country. The Project will destroy significant cultural heritage sites of the Gundungarra people including rock art, scar trees and culturally significant water holes. The Gundungarra people lost many such sites when the dam was filled in the late 1950's, it is simply terrible that we should be contemplating the destruction of those that remain, especially when as a society we now claim to have greater empathy and cultural awareness.

The EIS does not appear to properly address these issues and does not offer any real solutions - because there are none if the Project proceeds.

It makes recommendations to improve "the understanding and the approach to management of Aboriginal cultural heritage values", but in reality these are mere words. For example, once aboriginal rock art is destroyed by inundation, no matter how temporary that inundation, it is lost forever and no amount of soothing words will bring it back. The situation feels very like the recent destruction of the Juukan Gorge aboriginal cultural site by Rio Tinto, except this time the perpetrator would be Water NSW.

I am also concerned that the surveying of cultural sites has been inadequate and covered less than a third of the area that would be inundated under a PMF event as a result of the Project. I understand that the Commonwealth Government has estimated that at least 1,500 indigenous cultural sites would be inundated, yet the surveying undertaken for the EIS has failed to assess, or even identify, many of these sites.

Response to the PIR:
Nothing in the PIR suggests that the concerns of the traditional owners have been properly addressed. In fact, the PIR confirms there are no changes to the "mitigation and management measures" originally proposed.

It is ironic that the PIR begins with an Acknowledgement of Country then proceeds to justify a proposal that will trash aboriginal culture. It is hypocritical and shameful.

7. The period for consultation has been inadequate

EIS:
The period allowed to the public for consultation on the EIS has been woefully inadequate. The EIS, including the various appendices, is a very substantial document of several thousand pages which has taken over 4 years to produce. It is completely unreasonable to expect that the public can properly review and provide meaningful comments on all of details in the EIS in a period of 8 weeks. Many people are likely to simply read the Executive Summary, but it contained significant errors and was misleading.

Response to the PIR:
Once again I consider that the period for consultation on the PIR has been totally inadequate. This is more so because the PIR has received very little publicity and most people would be completely unaware of its existence. I only found out about it a week or so ago and have not had a reasonable opportunity to read all of the 1700+ pages comprising the PIR and Submissions Report.

Thank you for considering this submission.

Yours sincerely,

Alison White