Submission No 55

INQUIRY INTO WATER NSW AMENDMENT (WARRAGAMBA DAM) BILL 2018

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I'm concerned that this proposal will not be adequately assessed in relation to matters of national significance (MNES) under the EPBC Act because of its remotelocation and long interface perimeter with the World Heritage Area. The fact that the proposal will cause temporary inundation of parts of national parks immediately adjoining the Greater Blue Mountains World Heritage Area as well as within the World Heritage property is a significant impact on MNES that requires a granular environmental impact assessment. The Warragamba Dam is not in the Hawkesbury-Nepean Valley as claimed, so the first sentence of the referral form is misleading. The dam is located in the upstream catchment of that Valley in a gorge on the Warragamba River.If it were in the Valley wouldn't be of much use to anyone as it would turn the Cumberland Plain into a giant lake. The second and third sentences of Section 1.1 are also of dubious validity .It remains to be seen how flood water may be regulated behind the proposed the dam wall. If it is possible to temporarily store floodwaters, then the new structure may be able to permanently store flood waters behind a raised dam wall. The water demands of a growing urban population could see flood water management of the dam altered for supply security purposes. Figure 2 The proposed temporary water storage must be justified by evidence detailed in the engineering design and operational policies enshrined in statute, otherwise the temporary storage claim in the proposal should be discounted. 2 The development works for dam construction have a much smaller impact footprint in relation to its upstream and downstream flood impact zones. In S ection 1.4 the size of the development footprint is not nearly as important a consideration as the extent of its impact zones as shown on Figure 1 - 2 a nd referred to in S ection 1.2 . Section 1.10 of the referral claims there are no alternative time frame s , locations or activities . As alternatives activities have been examined in past environmental assessments of earlier versions of this proposal, and include flood insurance, flood management, and alternative dam designs, this answer is incorrect. These matters are addressed in the feasible alternatives Section 2.2 of the referral but some are part of considerations for this proposal and should be listed in the referral as such . It is anticipated that t he proponent will address these alternative activitie s as part of the EIS for the proposed project . For example, there should be more public debate on the alternative of lower ing the F u ll Supply Level and manage ment some of the exis ting capacity of the storage for flood mitigation purposes. The proponent should have answered yes to the question in Section 1.10 and included the relevant these alternative activities , such as the flood protection works in other locations i n Section 2.3 of the referral and not in Section 2.2, although this is may appear to be a quibble it is important that environmental assessment authorised under this referral considers alternatives activit i es to this dam wall raising proposal , such as examin ation of the cost effective levees mentioned on page 10 . Detailed description of the proposed action Section 2.1 gives the temporary storage as 991 gigalitres, almost 2 Sydharbs, an enormous amount of temporary storage. Section 2.1 poorly describes the consequences of the proposal in relation to maintenance level in the F lood M anage ment Z one (FMZ) and th is creates confusi o n . Th e area shown in green in F igure 2.1 for this section describe s a maintenance level (routine emptying) band of flood levels. These flood levels sit between the full storage level and floods with a recur rence interval of 1:50 year recurrence, described in this section as inundation extents having a greater than 2% annual exceedance probability (i.e. the frequent , small floods) . Small flood events are not clearly described and as a result the environment al impacts of these events are in consequence poorly described in the subsequent S ection 3.1 . F or example , the second last dot point on page 15 does not properly explain the environmental effects of these small flood events . S mall floods could be used for downstream environ mental flows where water will be stored behind a raised Warragamba Dam wall on a "routine emptying" basis but kept above the full storage level for some extended but unspecified time period . Th e intended management of these small floods require s further explanation in order to assess impacts on matters of national environmental significance in the area of frequent inundation . The areas of frequent inundation must surely have greater environmental effects, but the effects on these areas are ignored in the referral document. Inundation of matter s of national environmental significance will be de pendent on the operational regime, including small flood releases, and this needs to be further explained. Will small floods be 3 held for longer than a few hours and will this inundation impact on matters of national environmental significance be significa nt? The proposed dam wall project is a part of a bigger project of activities . T he second paragraph of Section 2.2 outlines these additional activities where it states "Therefore the proposed dam wall raising is a component of an integrated flood risk management strategy for the Vall ey that covers the full range of measures to reduce flood risk, including governance arrangements, policy settings, planning, community education and infrastructure." The proponent presents the consultation on th is flood risk management strategy for the V alley in section 2.6. So the N/A remark in Section 2.3 is inappropriate. Section 2.2 contradicts the negative answer given to section 1.10 question by making reference to alternative activities. Paragraph 2, section 2.2 "There is no simple solution or si ngle infrastructure option that can address all of the flood risk in the Hawkesbury - Nepean Valley. This risk will continue to

increase with projected population growth. However, it is possible to reduce and manage the risks through a combination of flood prevention, preparedness, response and recovery. ...” This paragraph should be the response to an affirmative response by the proponent to the question asked under section 1.10 and it should lodged in the referral document under Section 2.3 . Of course alternative time frames could be undert aken and to suggest otherwise in Section 2. 3 is ludicrous. The commencement date and rate of construction have been and are a function of project budgetary planning , due process and decision making . After all the proponents have not given up since the wall raising proposal was moo ted in 1985. Section 2.4 refers to consent for works under the Wilderness Act, 1987 . State Significant Infrastructure legislation may or may not prevail over the Wilderness Act , but the Wilderness Act does not permit consent for infrastructure works as these are not permitted under that legislation. Wilderness legislation would become meaningless if infrastructure that causes ecosys tem destruction could be permitted under it. Environmental impacts The approach taken in relation to impact to the World Heritage property and its values in S ection 3.1 is to consider a proportion in hectares of property impacted, which can tr ivialise environmental impacts on this large property of over a million hectares. Infrastructure projects, such as roads, powerlines, pipelines and stored waters , all have high perimeter to area ratios and large extensive linear environmental impacts relative to the area in hectares impacted. Total area is a poor metric to consider environmental impacts for infrastructure and utilities, especially when these can intrude deeply into the core of a World Heritage property. In this regard the remarks in S ection 3.1a are misleading , as the se potential significance of impacts are only assessed in terms of area relative to the total area of the World Heritage property. Impacts on wilderness and wild rivers indicate that the impacts are on core parts of the World Heritage A rea and are significant impacts on the totality of the property . It is the location of the impacts and the linear extent of impact that need s to be considered , and not just the area in hectares that will be ruined by the proposed activity. 4 The other aspec t of the proposed impacts is that the ruination that must be caused by the proposed temporary fl ood inundation will produce a very extensive linear and ugly visual scar in a core part of national parks and wilderness that sit within this World Heritage Are a. The damage will be in full view and cannot be remediated, restored , painted “heritage green” or hid d e n . In relation to the examples in the first dot point on the nature and extent of likely impact noted at the bottom of page 16 of S ection 3.1a , the p roposal will have a significant impact on the hydrology of the Kowmung River, a designated wild river , as well as other rivers in the World Heritage Area . This is acknowledged in the fourth dot point of Table 3 - 1 on page 1 8 and it is a significant impact on hydrology as described in this table. So the conclusion of unlikely to have a significant impact is incorrect and has placed too much reliance on some streams being previously disturbed . The proposals will dama ge landscapes through prominent visual scaring that will be seen from core parts of the World Heritage property. To claim that these landscape impacts do not in effect impact on the World Heritage property is ignoring these visual impacts and placing too much reliance a legal artefact of what is a World Heritage value when really this landscape must be considered as a whole . G iven the region effected is entirely reserved as national park s , reserves and often also as wilderness , to discount these parts as not part of the adjoining World Heritage is a really legal technicality , particularly as these areas have being assessed for listing as national heritage. Regarding S ection 3.3b on hydrology and water flows in the referral should acknowledge that the Kowmung River is a listed wild river (as the proponent has noted) a nd it is un affected by water extraction. The description of potential hydrological impacts under this section is notably absent and is a significant omission. Hydrological impacts are significant and should be specified here. The referral in S ection 3.3c is misleading as the southern Blue Mountains division of the World Heritage Area has geology of Triassic to Silurian in age and so is a relat ively ancient landscape, not a relatively recent one as claimed . The earth forming processes (geomorphological processes) are ten times slower than those which formed the Grand Canyon . The Blue Mountains in situ soils are old where located outside floodplain areas . The age and dispe rsive nature of these old soils when wetted is an element of impact assessment that should have been presented in this section . The areas of inundation will ov er the decades see these impact areas stripped of soil that will move into and settle on the bottom of Lake Burragorang. In relation to threatened sp ecies and endangered ecological communities in section 3.1d , considerations regarding perimeter to area ratios and linear extent of impact ed area s are also relevant in this referral assessment regarding ecological fragmentation. The claimed benefit from smothering threatene d species with sediment and bare areas for seedlings is hardly a credible argument relative to the risk of weed infestation (see paragraph 3 under Nature and Ex t ent of likely impact regarding L isted T hreatened E cological C ommunities). Th e conclusion of this paragraph shou ld be reversed as frequent inundation and sediment will bring in weeds and cause the death of existing native vegetation . In relation to Table 3 - 4 assessment of impacts on threatened ecological communities, there is potential for further fragmentation of these communities that should be

adequately considered, rather than dismissed as in this table. Further, in relation to the survival of a community , this matter is taken in a very narrow sense to consider the entire extent of the TEC being considered , not as the 5 component population of the local area and its relative loss to that local area . A regional approach to impact assessment would produce a more considered approach to environment al impact . In regards to listed threatened species, the proponent claims a benefit to E. benthamii for the frequent floods up to a 1:50 year recurrence . This is unlikely as the impacts of tree death due to smothering, and increased competition between seedlings and weeds in areas subject ed to more frequent inundation. Of course these areas will always be the last to be drained following larger floods, a matter that the referral conveniently overlooks when making its positive assessment on this threatened euc alypt . In the ecological assessments f or TECs and threatened species is also inaccurate regard ing the impact upon those frequently flooded areas . " The remark that area of potential inundation following the raising of Warragamba Dam [sic] may constitute habitat critical to the survival of the species as these areas contain signific ant proportions o f the species (i.e. up to 40%). Further assessments may be required to determine if the species [sic – should be individuals, not species] in these areas are critical to the long term maintenance of the species. " At potential risk of 40% loss in the total number of individuals, the impact does not require further study as all these individuals should be protected . R ather a recovery plan is required , as is an acknowledgement of an extreme impact and relisting of the community as critically en dangered , meriting complete protection . F urther in regard to TECs, f ormer Crown Reserve , known as Crown Reserve 30 contains old growth woodland with many nesting Brown Treecreepers and other endangered hollow - dependent fauna is located in the inundation area . The former Reserve is near just south of the Jooriland homestead on the western side of the Wollondilly River . The area has many trees that have signs of Aborigi nal bark removal and numerous stone tools are located there . It is approximately 130 metres above sea level and could be subjected to inundation. This area could be subject to a significant impact, and is potentially a MNES capable area, as is all the ar eas inundated upstream. Section 3.3d of the referral consider s t he outstanding natural features. This section states that "The most unique and outstanding feature s of the study area are the GBMWHA and associated wilderness areas and wild rivers. These are described in more detail in Section 3. 2 a and 3.3j." Section 3 .2 a refers to nuclear power , which is not a feature of this proposal and the proponent needs to refer to 3.3a , the correct citation reference . The impact assessment that should be reported under section 3.3d is that the proposal will have a significant visual impact. Wilderness and wild rivers will be inundated and the impacts to these outstanding natural features should be described by the area and length of river kilometres that will be impacted or inundated . T he listed outstanding natural features of wilderness and wild rivers are not adequately considered in the referral document under this section . Given t he amount of indigenous heritage mentioned in section 3.3i (87 objects) this heritage i s worthy of further consideration, particularly the modified trees, art sites, grinding grooves and burial sites the associated significant impacts that must to be examined and recorded in great detail . Section 3.3j of the referral incorrectly described Burragorang State Conserva tion Area and Nattai State Conservation Area and other reserves as national parks . 6 The map in F igure 2 - 3 incorrectly maps and indicates the exclusion area which is shown extending to the River Lodge property on the Wollondilly River, when in fact the exc lusion area omits former Crown Reserve 30 and lies closer to the Jooriland homestead some 400 metres downstream from where it is located in this figure . Section 3.3k , the area proposed to be subject to upstream inundation is entirely in national parks an d reserves established under the National Parks and Wildlife Act , not mostly . T he declared Kanangra - Boyd Wilderness is declared to the FSL of the Lake and the Nattai W ilderness will also be inundated . The construction impact area is believed to be owned or ma naged by Sydney Water Corporation. Section 3.3 l on land uses omits reference to the area being managed as a national park in a World Heritage Area, as well as being a Special Area catchment. Its u s es include nature and cultural heritage conservation within the designated three kilometre wide inner catchment zone . Pest control is undertaken join tly by the NSW National Parks and Wildlife Service and WaterNSW. Environmental outcomes Regarding Section 4 environmental outco mes, the World Heritage Area is significantly impacted, and impacts from this proposal penetrate deeply into a core part of property that is in national park and declared wilderness. The conclusion in the referral is too narrowly defined and discounts the public perception of the World Heritage property as being scarred by this proposal . The visual and ecological and heritage impacts on the World Heritage Area need to be adequately specified and acknowledged in this referral so these may be properly assessed . In regard to areas of national park and wilderness that lie between the World Heritage Area and FSL, these areas should be treated as if they were matters of national environmental significance. It is only a matter of time before these areas are listed, a nd these areas are part of an active assessment for national heritage listing . These addition areas are certainly capable of listing under the EPBC Act, and it is because there are many nom in ated addition areas and additional values that the nomination for

extension of the Greater Blue Mountains World Heritage Area has been delayed. A special case should be made to consider these areas that will be heavily impacted as these areas are as far as the public is concerned are part of the World He ritage Area. I believe that the referral should be resubmitted following correction of the errors identified in this review process . Thank you for the opportunity to comment on referral 2017/7940 and I trust these suggestions are of assistance to the Depa rtment and the proponent to improve impact assessment .