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Dear madam / sir,

Submission – Warragamba Dam Raising Project PIR – SSI-8441 – Pittock

I write with a submission on the Warragamba Dam Raising Project Preferred Infrastructure Report – SSI-8441:

- My submission may be published in full online;
- I object to the proposal;
- The reasons why I object to the proposal are detailed below; and
- I have made no reportable political donations.

My submission here focusses on three elements of the PIR that I consider to be unjustified. Consequently, I object to the proposed Warragamba Dam Raising (WDR) Project and call on the NSW Government to cancel it in favour of a combination of alternative measures. These alternatives include: home buybacks, upgraded evacuation roads and operating Warragamba Dam at a lower full supply level.

My key reasons for rejecting the proposed Warragamba Dam Raising Project are:

1. **Poor quality provision of information and unjustified assertions**

NSW Government agencies' use of acronyms and poor links makes it difficult for anyone to access the information needed to prepare an informed response to the PIR. E.g. Key acronym's like "CIV" (capital investment value) are undefined. E.g. the information relied on in "SR" turns out to be a document named "WDR RTS_final_031122 221118". The information in that report turns out to be from a third report that is also inconsistently named (below). That third report does not include primary data sufficient to form an independent view on Infrastructure NSW's assertions. This obfuscation is poor governance and is to the discredit of the agencies involved.

2. **Home buyback option rejected based on biased analysis**

I object to Infrastructure NSW's attempt to discredit home buyback in the short report: "Assessment of buyback options for the Hawkesbury-Nepean Valley. A technical paper to support the environmental impact assessment submissions report for the proposal to raise Warragamba Dam, October 2022, prepared by Infrastructure NSW." There is no evidence that this technical

paper has been independently reviewed. Such review is essential to test the many assertions that underpin this report, assertions that in this submission I argue are unjustified.

This paper has little credible data, relying on a report called “Infrastructure NSW, 2021A. Hawkesbury-Nepean Valley Flood Risk Management Strategy: Interim Evaluation to June 2021, Sydney: Infrastructure NSW.” There is no link provided to this report. Confusingly, on the Infrastructure NSW website it is called “Interim Evaluation of the Flood Strategy (2021)”. This 2021 report does not include any credible data to enable independent testing of Infrastructure NSW’s conclusions either. For example, an assessment is provided of house buyback below the 1:100 year historical flood standard, does not say how many houses would be bought back, does not distinguish between different kinds of houses with different costs (e.g. “caravans/manufactured homes” vs residential properties, as cited in the technical report).

Essentially, Infrastructure NSW is saying “we won’t be accountable, just trust us”. In my view this is unacceptable for a public consultation process for expenditure of more than $1.3 billion, an attempt to manage one of the greats risks to public safety in NSW, and a proposal that would destroy part of a World Heritage area and cultural sites of the Gundungara nation.

Here I challenge a number of Infrastructure NSW’s assumptions:

i. **The growing population in the Valley makes buyback unrealistic**. You are the government: govern. It is dangerous to allow people to live in large parts of the Hawkesbury-Nepean Valley. You should prohibit development in areas below the historic 1:500 year return interval.

ii. **Land swaps are unsuitable due to lake of suitable land in or near the Valley**. Really? Prove it. Infrastructure NSW provides no evidence for this assertion. I find it inconceivable that in such a large region that there is nowhere to safely develop 7,600 homes, especially when 1,700 of these are “caravans/manufactured homes”.

iii. **Compulsory land acquisition is unviable**. Compulsory acquisition frequently occurs in NSW. Notably, over 150 homes in inner west Sydney due to excessive aircraft noise in the late 1990’s. There are recent, large-scale examples in Australia, for example, up to 2020 the ACT Government compulsory acquired over a thousand homes contaminated by loose fill asbestos. Arguable, the risk to life from flooding in low lying areas of the Valley is similarly high and warrants compulsory acquisition. The lackadaisical NSW voluntary flood prone property buyback projects cited by Infrastructure NSW are misleading as these examples are constrained by the government’s limited policy framing. The NSW Government is willing to compulsory acquire a lot of property for projects like Inland Rail, so why not also to save lives in Western Sydney?

iv. **Home buybacks cause social distress**. Yes, of course involuntary buyback causes distress. There is already great distress, for example, those people whose homes in the Valley have been flooded 2 to 4 times in the past two years. I argue that the socio-economic distress will be worse for people who have damaged homes, cannot get insurance, are forced to live with constant uncertainty of being flooded again and are trapped in poverty. While distressing, buyback can provide residents with immediate financial relief and long-term certainty to rebuild their lives safely. Importantly, raising Warragamba Dam will not stop the most low-lying homes being flooded again, and the resulting socio-economic stress, unlike home buybacks.

v. **It is too hard to buyback homes systematically**. Any intervention is hard. Infrastructure NSW exaggerates the difficulty of relocating enough homes on the floodplain to reduce risk and change land use by: a) not doing its homework on the options for land swaps, and b) ruling out compulsory acquisitions. Buybacks could be undertaken in a staged manner. An obvious first stage – an opportunity that is rapidly being lost – would be to compulsory acquire the several thousand homes destroyed in the past few years rather than allowing residents to rebuild in harm's way. This would then allow the floodplain land to be repurposed to a flood resilient uses, with those new values lessening the cost of buybacks.

vi. **Cost-benefit analysis favours dam raising**. The cost-benefit analysis purporting to show that raising Warragamba Dam offers the greatest benefits is narrowly shaped entirely by Infrastructure NSW's assumptions and is misleading.

a) **Cost of dam raising is underestimated**. It is unclear what cost is used for dam raising in this analysis as Infrastructure NSW provides no details. The "CIV of more than $1.3 billion" in the PIR (pg 4) is much more than the cost previously used by Infrastructure NSW. The words "more than" suggest Infrastructure NSW does have any accurate figures to use in this assessment. Regardless, given advice by other state agencies of the scale of biodiversity offsets required by NSW Government policy of a value approaching an extra billion dollars, it looks like offset costs are not included and the analysis is misleading.

b) **Cost – benefit analysis is misleadingly narrowly framed**. The analysis only includes direct flood mitigation measure costs and does not include other costs (e.g. biodiversity offsets, above), nor non-flood risk reduction benefits of each measure. While the total capital cost may be higher for home buyback compared to the proposed WDR, these costs are not equal. Home buyback costs can be spread over many years or decades, unlike the WDR. The savings in rebuilding costs of several thousand homes for those people flooded in the past year are not considered. The analysis overlooks the greater economic stimulus effect of the resulting investment in new housing compared to a one-off infrastructure project. It also overlooks the potential economic return from repurposing the floodplain lands to flood safe uses, such as farming, extraction of sand and clay, recreation, carbon sequestration and nature conservation. The socio-economic benefits for residents from home relocation are not costed, for instance, improved health and ability to accumulate and insure assets.

c) **The most low-lying homes in the valley will continue to be flooded**. Buying out these homes permanently removes this cost, unlike the proposed WDR.

Finally, from this year the NSW Government is co-funding a buyback of 2,000 homes at a cost of $800 million to reduce flood risk in the Northern Rivers region. How is it then that Infrastructure NSW can say that home buyback is a bad option for the Valley?

3. Lowering the reservoir operating levels during dam construction

The PIR states that parts of the existing Warragamba Dam and the gates will need to be dismantled to enable construction of the raised dam wall (pg 1). A lowering of the reservoir operating levels during the 4-5 years of dam construction is proposed (EIS Chapter 5). This is not detailed in the PIR. In last year's EIS, Infrastructure NSW said that supplying Sydney with drinking water with the reservoir at a lower operating level required expensive additional pumping infrastructure (which is probably required for future drought management) and may reduce water quality (even though the water goes through a treatment plant). So, we are being asked to believe

that it is feasible to lower the reservoir operating levels during the many years of dam construction, but not feasible to do so on a normal operating basis. On face value, Infrastructure NSW's arguments are inconsistent.

Instead, the WDREIS provides an assessment that argues that lowering the full supply level of the dam would require additional water pumping costs, reoperating water infrastructure and jeopardise Sydney's water supply in droughts. In this respect, the proponents are being inconsistent in their arguments. They are happy to say that the increased risk of flooding from climate change requires the WDR. However, they do not acknowledge that the increased risk of drought from climate change makes it imperative that Sydney diversifies its water supply that is over-reliant (80%) on Warragamba Dam. Indeed, the NSW Department of Planning, Industry and Environment acknowledge this when they say: "We need to plan and build a water supply system that is resilient to extreme events —including droughts and floods — that may be more extreme than we have experienced in recent history. This was highlighted in the recent 2017-2020 drought where water storage levels depleted at a much faster rate than in previous droughts. Our preliminary analysis shows that over the past 30 years, average inflows to Sydney's dams have been half the long-term average since records began in 1910" (DPIE, 2021:9). They go onto say: "we need to increase our rainfall-independent supply to provide greater security for our system, particularly in times of drought" (DPIE, 2021: 12).

Infrastructure NSW's attempt to discredit the home buyback or lowering the reservoir operating level options in favour of raising Warragamba Dam is misleading and should be rejected.

It is notable that Infrastructure NSW maintains the assumption that the 1:100 flood return interval should remain as the benchmark for planning restriction to reduce flood risk. Other countries are adopting much safer standards for new developments and as a condition of government funding for new programs. For example, in the United States it is now common to apply a 1:500 year planning standard (Wenger et al., 2012). Even safer standards are applied in the Netherlands (Wenger et al., 2013). The NSW Government should apply a much safer standard in the Hawksbury- Nepean Valley.

Conclusion

Like the EIS, the WDR PIR is deficient in not including any reliable data on the costs of WDR and for failing to adequately assess the costs and benefits of the many alternatives. The NSW Government should not approve the Warragamba Dam raising.

Yours sincerely,

Professor Jamie Pittock

References:

DPIE 2021. *Draft Greater Sydney Water Strategy: Water for a resilient Sydney,* Sydney, NSW Department of Planning, Industry and Environment

WENGER, C., HUSSEY, K. & PITTOCK, J. 2012. The use of the 1:100 year standard in the United States: insights for Australia? *Australian Environment Review,* 27**,** 337-342.

WENGER, C., HUSSEY, K. & PITTOCK, J. 2013. Living with floods: Key lessons from Australia and abroad. Gold Coast: National Climate Change Adaptation Research Facility.