

Submission – Warragamba Dam Raising Project – SSI8441

Subject: Objections to raising the Warragamba dam wall

The Hawkesbury valley is recognised worldwide as one of the most flood susceptible river systems in the world, with multiple water sources each capable of creating local or whole valley flooding independent of other inputs.

- Raising of the dam wall will not stop flooding below the wall from tributary rivers (Grose, Colo & MacDonald) and creeks, (South & Rickabys) on the lower floodplain.
- I am given to understand that there is concrete fatigue in the existing structure of the dam and that movement has been detected in the dam wall. I am also concerned that the original dam structure has been built on a fault line with the dam wall having grout injected into the rock structure to stabilise the fault line in the rock.

Any additional work in this project will be adding to potential problems already existing and overseas experience of dam wall raising has in a number of cases led to catastrophic failure to dam wall structures in some instances flooding the valley below the dam.

- Also, the dam has already been recently raised from the original structure, with a new spillway meeting revised discharge standards. This proposal is adding to altered older works – potentially adding new failure risk modes, as well as increased water pressure on and below the dam wall.
- Urban infill on the floodplain significantly increasing flash run off from Urban areas changing flow patterns in the lower catchment – below the dam wall.
- The lower catchment can flood without any water flows from Warragamba dam due to the basin effect of the Hawkesbury catchment – this is enhanced by the choking effect of the narrow Cattai channel gorge terrain choking the river outflow.
- Will cause significant environmental damage in the world heritage forest areas that would be effected by impounding waters during flood mitigation operation. It is not possible to predict frequency of flooding in the world heritage area nor the time inundation would happen. Hence damage to the forest indicated in the EIS is pure speculation.
- The EIS does not consider the economic effects of the damage in the world heritage area due to inundation. The loss of tourism and associated activities related to the world heritage area.
- Loss of biodiversity due to flooding from the raised dam wall has not been adequately dealt with in the EIS.
- Watering down of environmental protections to enable the project to proceed are completely unacceptable, biodiversity offsets also unacceptable in trying to justify this project.
- Significant indigenous areas will be flooded – the consultation process with first nations people is still disputed as being correctly conducted.

- There is significant dispute as to the effectiveness for flood mitigation of a raised dam wall, in the floods of early 2021. Water authorities have stated the dam with a raised wall would have been filled in 4 days, and then needed full discharge from any further water flow to Warragamba. Hence there is significant question as to the utility of a raised dam wall during a major flooding event.

Once the dam is full and rain ceases the water level in the dam requires discharge, this will then extend the period of flooding below the dam wall, potentially increasing the flood damage to properties on the flood plain.

- EIS appears to ignore effects of climate change which predicts more severe weather events on the floodplain both above and below the dam wall. Hence the increased likelihood of intense weather events below the dam wall causing flooding from the lower tributaries to the catchment e.g. storm events in the Grose or Colo catchments. The new dam wall cannot help reduce these flood events below the dam wall.
- Climate change increases the likelihood or chances of storm surge due to East Coast lows, which occurs 10 times each year on average raising the sea level off the coast during severe wet weather events. This sea level rise slows the rate of discharge of the river system extending the flooding time, see page 19 of Resilient Valley Resilient communities, 2017.
- The EIS largely fails to consider much of the state government policy stated in a range of documents covering necessary action on the Hawkesbury floodplain for example “resilient valley, resilient communities,” Hawkesbury –Nepean valley flood risk management strategy Jan 2017, (to name but one of many).
- The dam wall raising is a single issue simplistic approach to the complicated issue of flood mitigation and control on the floodplain. The estimated 2 billion dollars expenditure for construction and biodiversity offsets could be far better spent along the lines suggested in NSW government and local councils desire to minimise flood damage in the river system. Flood evacuation roads and signage promised to councils still not substantially allocated and spent.
- The insurance council of Australia CEO Andrew Hall is also publicly voicing opposition to the dam wall raising suggesting the 700 million dollar construction cost would be better spent moving low lying land holders above 1 in a hundred flood levels – this being similar to policy in European nations.
- A raised dam wall is being used to justify progressively more population being moved into harms way on the floodplain – this is a recipe for disaster. The Badgerys Creek Airport project alone is proposing over a hundred thousand new residents, many of whom are potentially flood affected. There are promises of a limited population increase on the floodplain but past performances would indicate that constant pressure for development on the floodplain will see promises broken.

This development is also taking place on agricultural land that constitutes THE SYDNEY FOOD BOWL which needs to be retained and is becoming more valuable as a local supplier of low carbon miles food to feed a growing Sydney population.

- There is constant pressure to develop more real estate on the Hawkesbury floodplain, a raised dam wall will be another reason used to justify moving more residents into harms way on the flood plain. Climate change indicates these new residents will be increasingly at risk of flooding, potentially from floods originating from below the dam wall even if raised. This adds more weight from the insurance council of Australia comments. Many Hawkesbury residents are unable to afford flood insurance now, their major life asset is at risk and uninsurable; - more new residents on the flood plain are likely to face this scenario.
- The dam wall raising is based upon the existing dam being ONLY used for drinking water storage.

In fact, regular discharges are made from the existing dam structure to keep air space below the dam wall top – the dam has been recently discharging for some 2 weeks – advisory warnings have been given to river users and residents to be aware of higher than usual river levels due to this water discharge

The “water only” statement of dam operation is tied to NSW government legislation as to Sydney Water operations method. The dam could be used for flood mitigation (in some measure) by:-

- Legislative change
- Altered operations in used of the existing dam.

This would allow some measure of flood mitigation of the existing dam, allied with water sourcing in extreme dry periods,

for example

- transfer of water from southern catchments
- Water desalination using renewable energy with potential to build more desal capacity added to existing plant
- Waste water processing increased for reuse, including potential mains water supply.
- Ground water from aquifers – a major drilling operation was conducted to evaluate supply some years ago.

I am concerned about development on the floodplain and the factuality in the EIS. Under the NSW Crimes Act 1900 section 307 A, B and C there is a possibility to prosecute provision of false, misleading and reckless information – this is a serious offence. Under one section of this Act the onus of truth is reversed, I am concerned about the factuality of all information of the EIS being genuine. Additionally under section 148 B of the EPAA Act given false information is an offence.