

30 June 2020

D2020/32164[v3]

██████████
Department of Agriculture, Water and Environment
GPO Box 787
Canberra ACT 2601

Dear ██████████

Warragamba Dam Raising 2017/7940 - Request to vary the proposal to take an action under Section 156A of the *Environment Protection and Biodiversity Conservation Act 1999*

The Warragamba Dam Raising project was referred to the Minister for Environment and Energy on 17 May 2017 to determine whether the proposal would be considered a controlled action under the *Environment and Biodiversity Conservation Act 1999* (EPBC Act).

On 17 July 2017, the project as described in the referral was determined under section 75 of the EPBC Act to be a controlled action requiring assessment and decision about whether approval for it should be given under the EPBC Act. The project was advised that it will be assessed under a bilateral agreement under the New South Wales *Environment Planning and Assessment Act 1979*.

In complying with the NSW Secretary's Environmental Assessment Requirement for the project to be resilient to the future impacts of climate change the overall height raising of the dam (i.e. road level) changed from 14m to 17m. WaterNSW is responding to the DAWE request that a variation be made under Section 156A of the EPBC Act, to referral 2017/7940 to note this change and be consistent with the SSI project description regarding the inclusion of environmental flows infrastructure as part of the Project. The requirements of the *Environment Protection Biodiversity Conservation Regulations 2000* (Division 5.4, clause 5.08) are addressed below, and WaterNSW requests that the Minister accept this varied proposal.

a) Details of the proposed variation to the action

This variation allows the Project to include infrastructure for environmental flows and build into design, resilience of impacts to future climate change. The full supply level, spillway levels and flood impact levels remain unchanged from the original referral and proposed action. All upstream and downstream temporary inundation levels, durations and associated impacts remain unchanged from the original proposal. Table 1 below summarises the change in key levels applicable to the variation. Figure 1 attached, shows the consistency between the original proposal and this variation in terms of the storage levels in the dam (for the existing dam and proposed raised dam) but includes the updated height of the road level.

Importantly, the variation does not impact on Matters of National Environmental Significance (MNES) that were not already included in the original proposal.

Table 1 Changes in Key Levels for the Variation (levels in mAHD)

	Existing dam configuration	Post wall raising – 2017 referral	Post wall raising – 2020 this variation	Change due to variation
Full supply level ¹	116.72	116.72	116.72	No change
Spillway crest level	116.72 ²	128.45	128.45	No change
Modelled maximum flood level ³	131.2 ⁵	143.9	143.9	No change
Dam Road level ⁴	130.47	144.47	147.47	Dam road level 3m higher

¹ maximum permanent water storage level; storage returned to this level after any flood above this level

² top of drum gate

³ maximum upstream inundation level at the dam; based on modelled 3-day probable maximum flood (PMF)

⁴ top of the dam wall; the dam road deck level

⁵ the max flood level for existing dam complies with updated guidelines for determining PMF and is above the existing road deck level

b) Reasons for the proposed variation

In June 2016, when the NSW Government approved the preparation of an environmental impact assessment and detailed concept design for flood mitigation at Warragamba the Secretary's Environmental Assessment Requirements (SEAR 7) requires that the project is *designed, constructed and operated to be resilient to the future impacts of climate change* (see [application number SSI 8441](#)).

An assessment of the impact of current and projected climate change conditions on the flood mitigation benefits of various dam raising heights for Warragamba Dam were undertaken based on work by CSIRO, Bureau of Meteorology and the NSW NARCLIM project.

This included a detailed assessment of evidence of projected climate change impacting flood forming severe rainfall events such as East Coast Lows, particular to the Warragamba catchment and a review of all global and regional climate change projections. The unique topography of the Hawkesbury Nepean Valley means that the impacts of climate change are larger than in many other NSW catchments.

Under modelling of a medium climate change projection in increases in rainfall intensity the existing flood risk is set to increase and that the existing dam crest would need to be raised 17 metres to achieve the same benefits in 2090 as raising the dam crest by 14 meters under historical conditions.

Raising the dam and thickening the downstream face by an additional 3 metres in the future to maintain the 14-metre flood mitigation capacity is not considered feasible, both in terms of providing structural engineering integrity for a 3-metre section and the cost. Consequently, to enable the project to address the SEAR 7 requirement to build in resilience to climate change impacts and minimise future costs, the design proceeded on the basis that:

- the overall dam would be raised by 17 metres; but
- the spillway crest levels would be maintained at the levels proposed for the original 14 metre dam raising; so, there would be no change in the upstream inundation impacts or the downstream flood mitigation benefits.

This approach enables for only the spillway crest heights can be raised in the future to accommodate climate change impacts without having to raise the dam structural abutments. Any future proposal for an increase in the spillway crest heights would be subject to a separate environmental assessment and approval from the relevant regulatory authorities.

The original project referral 2017/7940 had not detailed the environmental flows infrastructure as it does not impact on Matters of National Environmental Significance (MNES) that were not already included in the original proposal. However, under the bilateral agreement there is only a single EIS and therefore this variation is proposed to ensure the project description within the EIS is the same as that in the controlled action determination.

c) How the impacts of the proposed variation on matters of national environmental significance, compare with those of the original proposal

The 17 July 2017 referral decision outlined that the project will require assessment and approval under the EPBC Act before it can proceed, based on the following controlling provisions:

- World Heritage properties (sections 12 & 15A)
- National Heritage places (sections 158 & 15C)
- Listed threatened species and communities (sections 18 & 18A)

The spillway crest heights would be maintained at the levels proposed for the original 14 metre dam raising; so, there would be no change in the upstream inundation impacts or the downstream flood mitigation benefits. The variation outlined in this letter, will not change the impacts related to the controlling provisions or any other matters of national environmental significance, because the inundation levels & durations upstream and downstream of the dam will be the same for a 14 metre and 17 metre dam raising with environmental flows infrastructure due to the consistency in spillway crest height.

d) If applicable, the impacts of the proposed variation on matters of national environmental significance not considered in the referral or assessment of the original proposal

This is not applicable, given the proposed variation will not result in any new or different matters of national environmental significance being affected by the action

e) If applicable, alternatives, mitigation measures and offsets to compensate for additional impacts on matters of national environmental significance.

This is not applicable, given there are no additional impacts on matters of national environmental significance.

If you would like to discuss any of the included further, please do not hesitate to contact either myself or [REDACTED].

Yours sincerely,

A handwritten signature in black ink, appearing to be "A. H.", written in a cursive style.

[REDACTED]
Project Director,
Warragamba Dam Raising

[REDACTED]

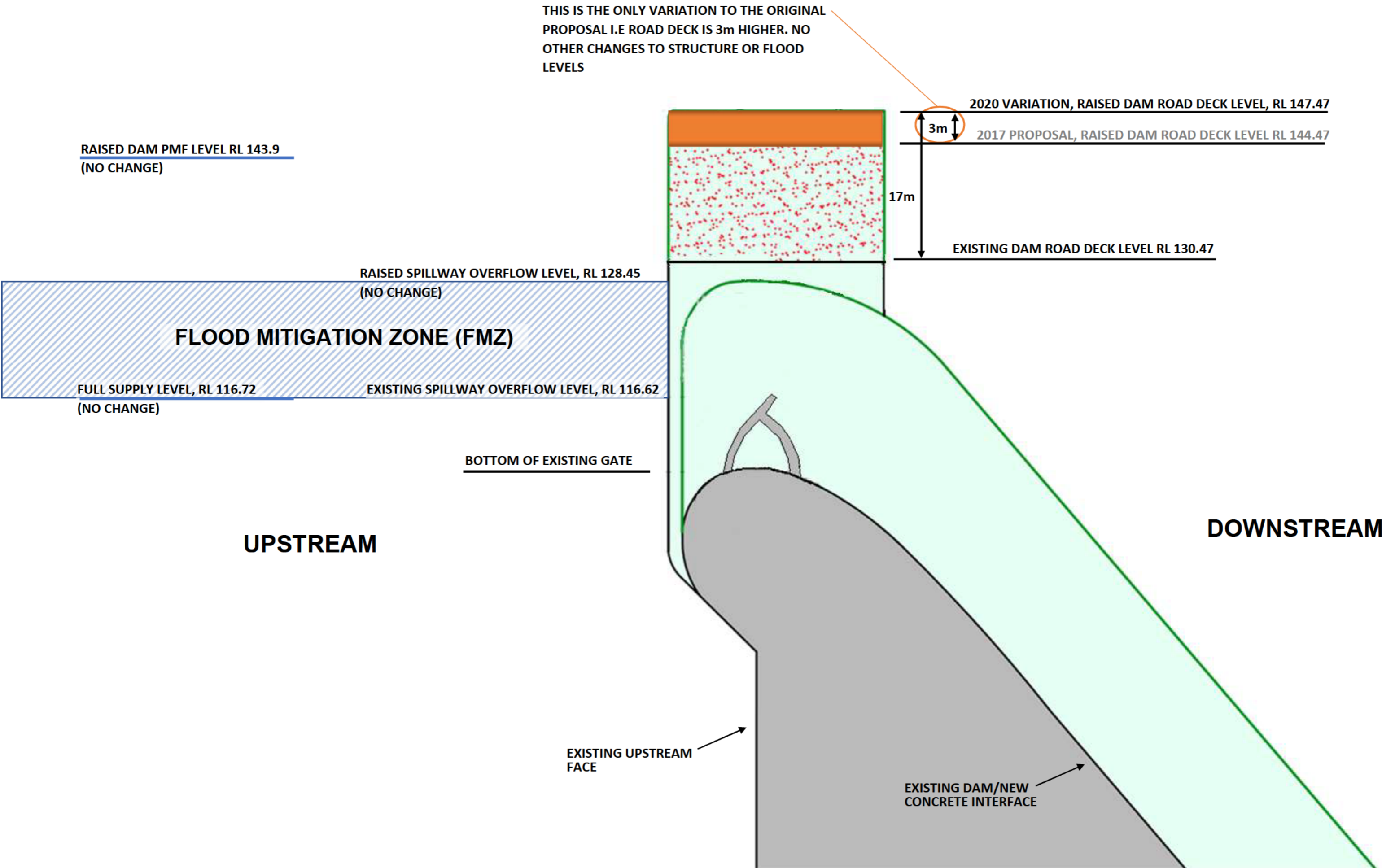


FIGURE 1: Warragamba Dam Raising, Variation to EPBC Referral

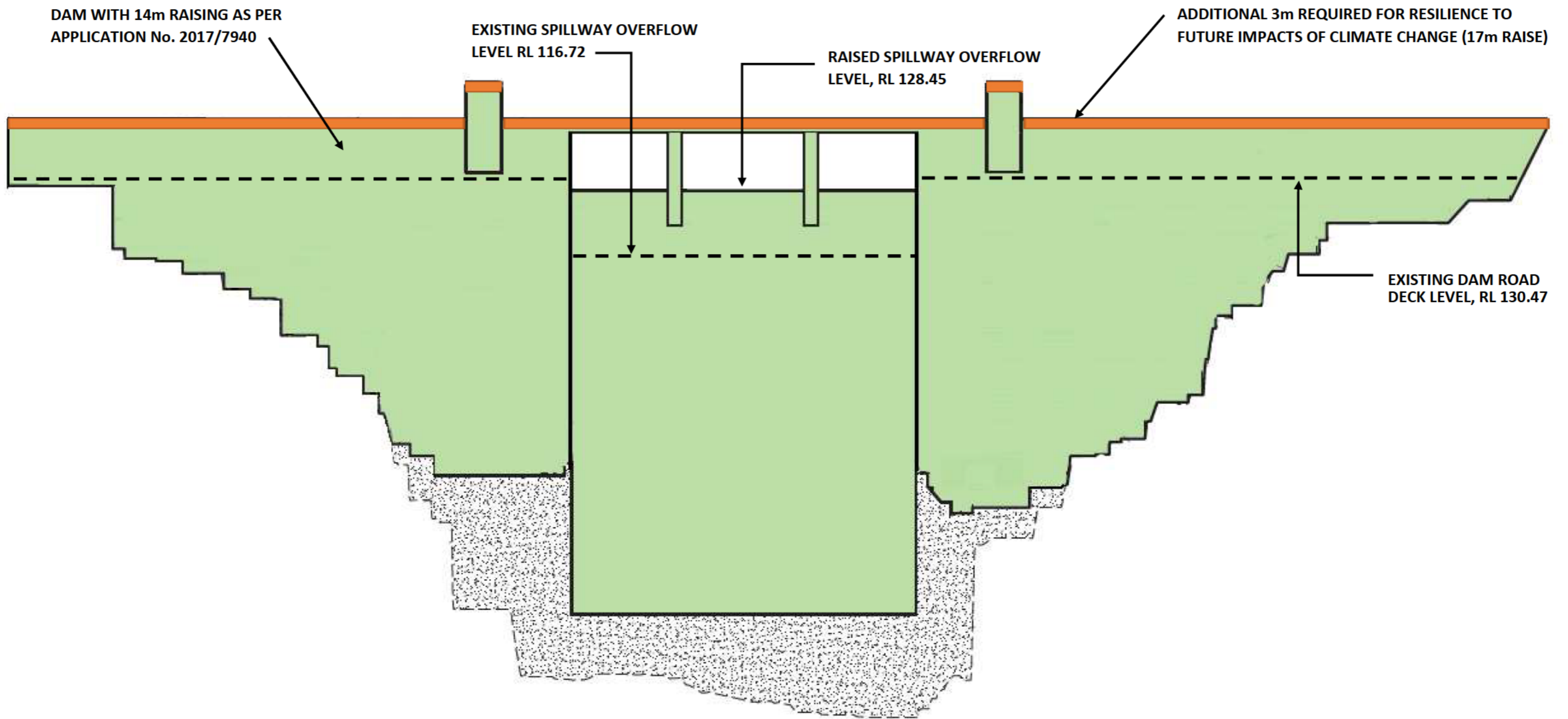


FIGURE 2: Warragamba Dam Raising, Variation to EPBC Referral