

stormwater & flood risk management engineering design & documentation hydrologic & hydraulic modelling expert advice & peer review river engineering

NSW Education GPO Box 33 CITY NSW 2001

Job No. FS539

Attn: Mr Matthew Arnett

12 May 2022

Re: Wee Waa High School -Narrabri Shire Council's Advice on Response to Submissions

Dear Sir,

We have reviewed Narrabri Shire Council's advice to the Department of Planning and Environment on the Response to Submissions under the heading "Flooding" and provide the following advice:

- i. While we were not requested by NSW Education to update the flood modelling that is documented in our Technical Working Paper to reflect the changes that were made to several key features of the proposal as part of the Response to Submissions, we could undertake this work and issue an addendum report documenting the updated flood modelling if required.
- ii. We can confirm that a blockage analysis was undertaken in accordance with the procedures set out in the 2019 edition of *Australian Rainfall and Runoff* (Geoscience Australia, 2019), the findings of which are set out in Section 6.7 of our Technical Working Paper. We can also confirm that because we adopted an L₁₀ factor of 1.5 m as part of the assessment, the provision of a screen on the inlet of the twin 1350 mm diameter pipes does not increase the blockage factor from the adopted value of 25%.
- iii. We acknowledge that the use of the word "chain-wire" lead to the author of the comments concluding that a fence was proposed across the channel upstream of the inlet of the twin 1350 mm diameter pipes. This was not our intention. Rather, we envisage that a series of vertical posts would be installed across the channel which would be linked by a series of horizontal chains. The example we would give is that it would be like a light duty tubular handrail with the horizontal tubes replaced with lengths of chain.

Note that on 9 May 2022 we contacted Mr Greg Roads of WRM Water & Environment Pty Ltd who we understand prepared the flooding advice on behalf of Narrabri Shire Council to discuss and communicate the above with him.

We trust that the additional information that is set out in this letter adequately addresses the key issues that have been raised by Narrabri Shire Council under the heading "Flooding". However, please do not hesitate to contact the undersigned should further supporting information/documentation be required.

Yours faithfully

Lyall & Associates Consulting Water Engineers

Scott Button

Principal