

30012599 – 416 Berrima Road Hydraulics-Variation 01
13 October 2020

Simon Haycock
Associate Director - Civil Engineering
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Dear Simon,

RE: 416 Berrima Road -DPIE RFI Responses

This letter covers the tasks outlined in the approved proposal, dated 1 October 2020, to address Department of Planning and Environment (DPIE)'s comments related to "Flood Impact Assessment Report for New Berrima Brickworks Facility at 416-524 Berrima Rd, moss Vale" dated 9th March 2020.

It supports the previous submission and further addresses DPIE's comments regarding potential flood impacts from/to the Wingecarribee River associated with the proposed development.

1.1 Objectives

This technical note aims at showing that

- The proposed development does not create any flood afflux under 1% Annual Exceedance Probability (AEP) storm on Stony Creek.
- The proposed development does not create afflux under 1% AEP storm on Wingecarribee River.
- 1% AEP and PMF storms from Wingecarribee River mainstream flooding do not flood the site.

1.2 Results and Discussion

Results from the hydraulic model produced for the previous submission are presented here to illustrate the flood impacts of the development. The afflux flood map for the 1% AEP storm event is shown in Figure 1. In contrast to the previous submission, it presents the flood extent through to the model boundary which is around 800m downstream of the proposed development. The invert level at the model boundary is about 4m below the Stony Creek invert level adjacent to the site and it is judged that the modelled outcomes will not be impacted by the location of the model boundary.

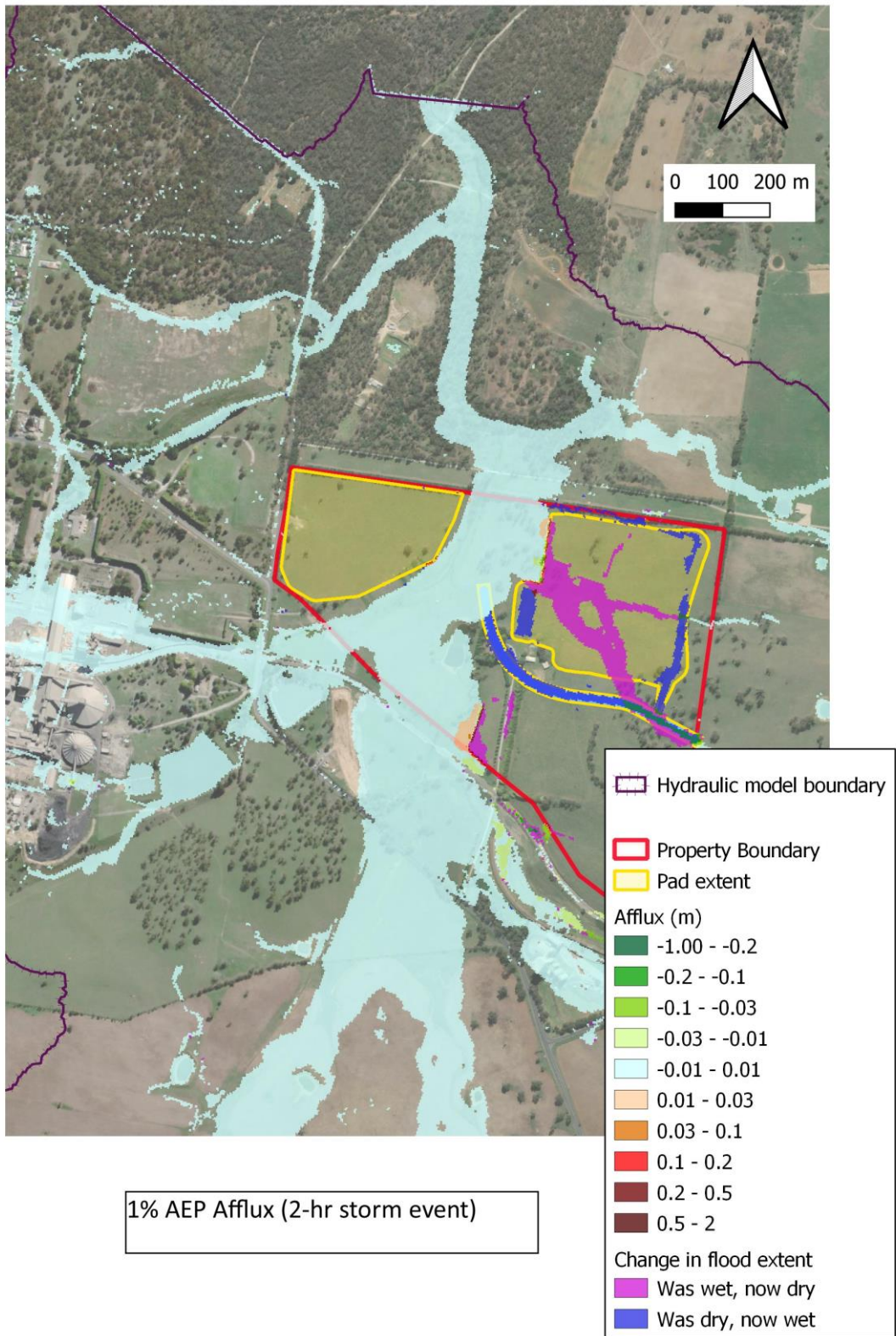


Figure 1. 1%AEP Afflux for the proposed development

As it can be seen in Figure 1, the modelling indicates that the proposed developments (delineated in yellow) will have no or negligible flood impact (up to 10mm increase in water level) on Stony Creek flood levels under the 1% AEP storm event. The results indicate that flood levels within Stony Creek are not impacted by the development.

Furthermore, As shown in Figure 1, the proposed development discharges to Stony Creek only, and there is no direct discharge from the development into the Wingecarribee River.

Flood depth maps for Wingecarribee River mainstream flooding under 1% AEP and Probable Maximum Flood (PMF) storm events are shown in Figure 2 and Figure 3, respectively.

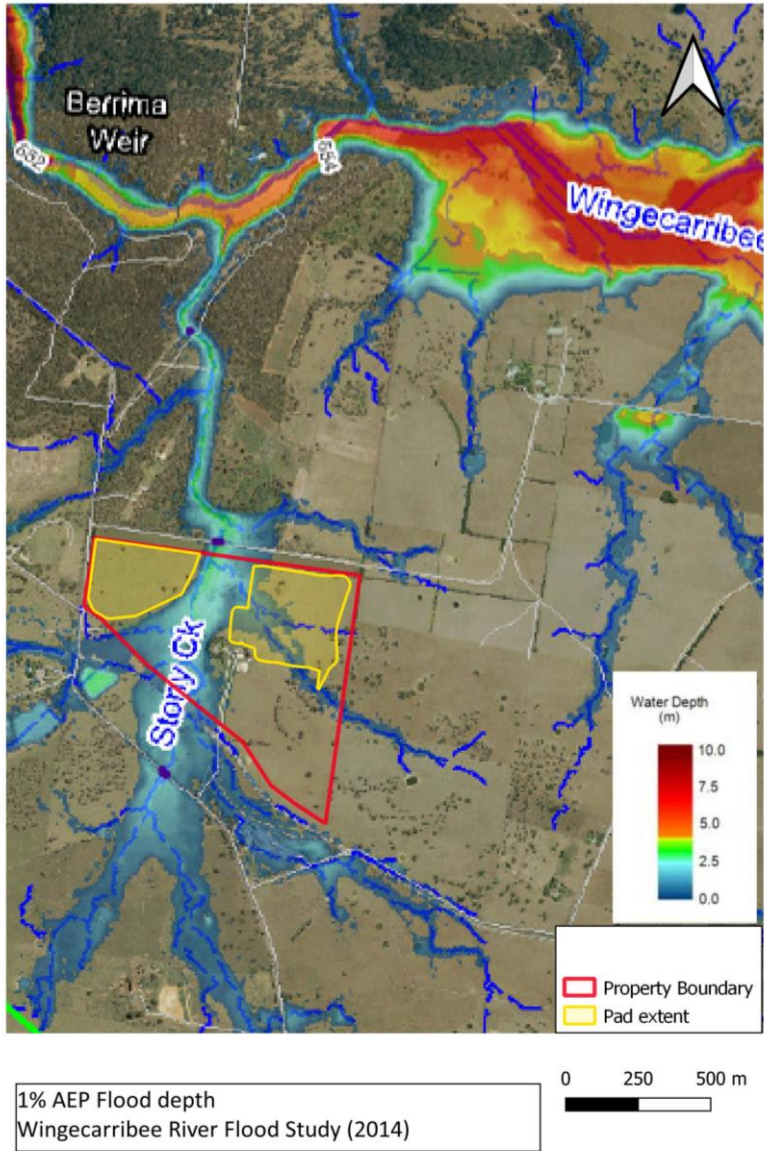


Figure 2. Flood depth 1%AEP storm event (Wingecarribee River Flood Study 2014)

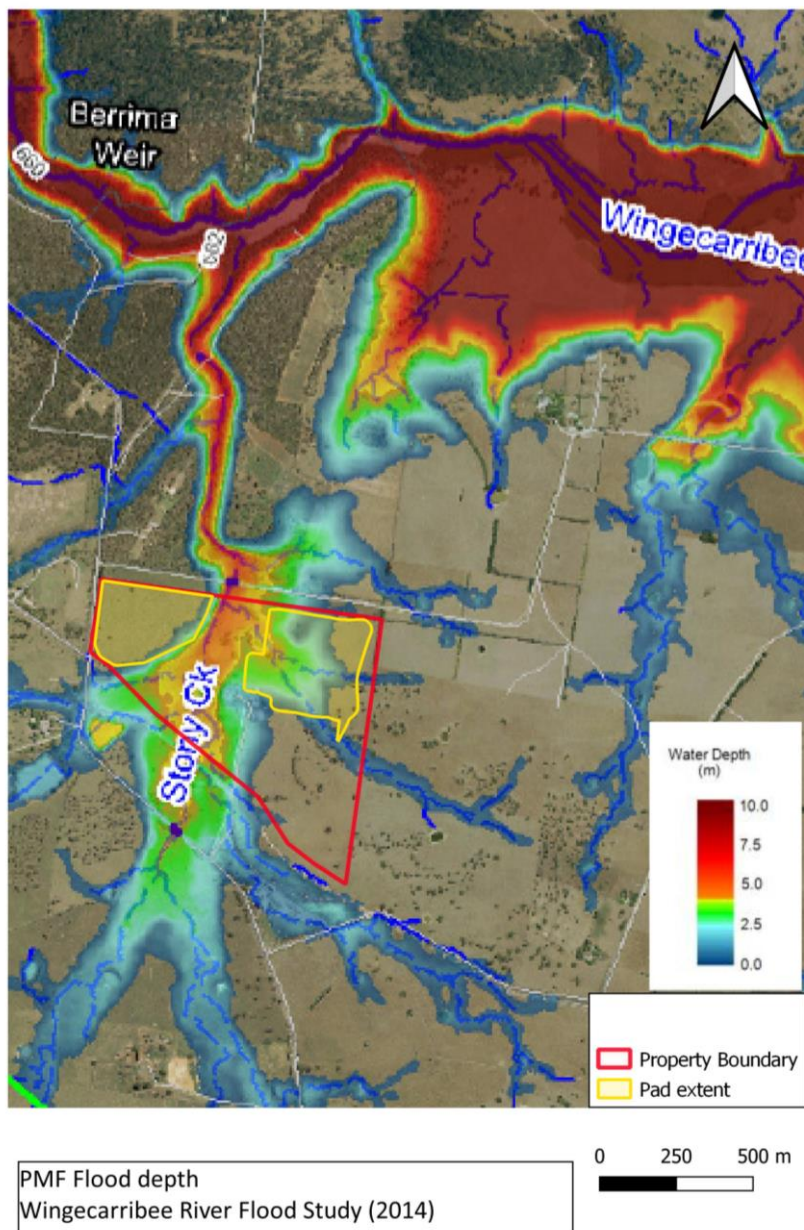


Figure 3. Flood depth under PMF storm event (Wingecarribee River Flood Study 2014)

As shown in Figure 2 and Figure 3, Wingecarribee River mainstream flooding does not affect the site under 1% AEP and PMF storm events. Furthermore, there is no direction interaction between Wingecarribee River mainstream flooding and Stony Creek flooding near the site.

Also, a review of the available digital elevation model (2m grid LiDAR data obtained from Elevation Foundation Spatial Data by NSW Government) shows that Stony Creek invert level (RL 657m AHD) is approximately 10m higher than the invert level (RL 647m AHD) of Wingecarribee River at the confluence point. Whilst, the minimum elevation for the site under the existing condition is about 660m AHD. This shows that mainstream flooding from the Wingecarribee River only would affect the proposed development if water depth reached 13m which is not the case as shown in Figure 2 and Figure 3.

Hence, the site including the proposed development is not affected by Wingecarribee River mainstream flooding under 1% AEP and PMF events.

1.3 Conclusion

The present analysis shows that there will be negligible flood impacts from the proposed development on Stony Creek under the 1% AEP storm. Furthermore, the proposed development does not have a direct stormwater runoff discharge point into Wingecarribee River to cause a direct adverse flood impact. The only stormwater runoff discharge point from the site is to Stony Creek. The modelling indicates there is no flood afflux due to the proposed development under 1% AEP storm events.

Wingecarribee River mainstream flood maps for 1% AEP and PMF storm show that the site is not affected by Wingecarribee River mainstream flooding. The elevation difference between existing levels at the site and the Wingecarribee River invert level confirms this point.

Thus, it is concluded that the proposed development does not affect flood levels in Stony Creek and Wingecarribee River under 1% AEP storm events.

If you have any further queries regarding these results, please do not hesitate to contact myself on (02) 9925 5587 or Gus.naghieb@smec.com.

Yours sincerely,



Gus Naghib

Gus Naghib

Experience Engineer – Water Resources