

17 February 2017

Project No. 1772513-001-L-Rev0

Matthew Wales
Wales and Associates
PO Box 150
Ettalong Beach, New South Wales 2257

FLOOD IMPACT ASSESSMENT AT 39 DELL ROAD WEST GOSFORD

Dear Matthew

Wales and Associates (W&A) on behalf of Robson Civil Projects has obtained a Gateway Determination for rezoning the property at 39 Dell Road West Gosford from Conservation and Scenic Protection to General Industrial, Environmental Conservation and Public Recreation. One of the conditions of the Gateway Determination is the provision of additional information, including assessing the impacts to flooding and drainage resulting from developments.

Golder Associates Pty Ltd (Golder) has been engaged to provide advice on the impacts to flooding and drainage as a result of the project. Gosford City Council (GCC) engaged Golder in 2012 to review the Narara Creek Flood Study. The study involved developing a hydraulic model of the Gosford region and estimating the flooding for a range of storm events. Golder has utilised the results of this modelling to provide comment on the potential flood impacts. This letter provides our findings and recommendations.

Site Description

An unnamed watercourse runs through the north eastern corner of the project site. The north eastern corner is prone to flooding for the 1:100 AEP flood event, see Figure 1. Additional minor overland flow paths also traverse the site from west to east.



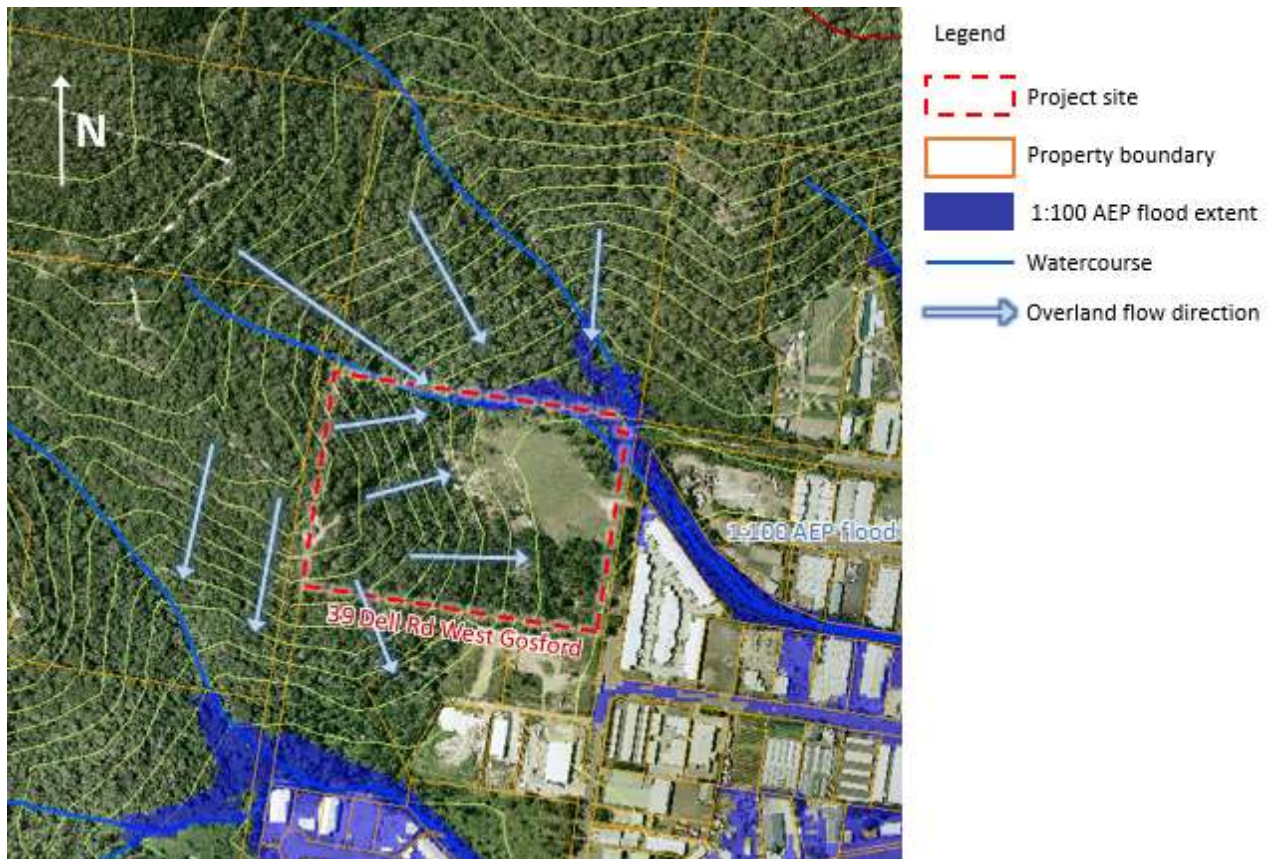


Figure 1: Baseline 1:100 AEP flooding around the project site

As part of the rezoning of the lot, the proposed project involves refilling the topography of the site and removal of the vegetation, see Figure 2. The project plan includes setting back from the unnamed watercourse to minimise impacts within the flood plain storage area.

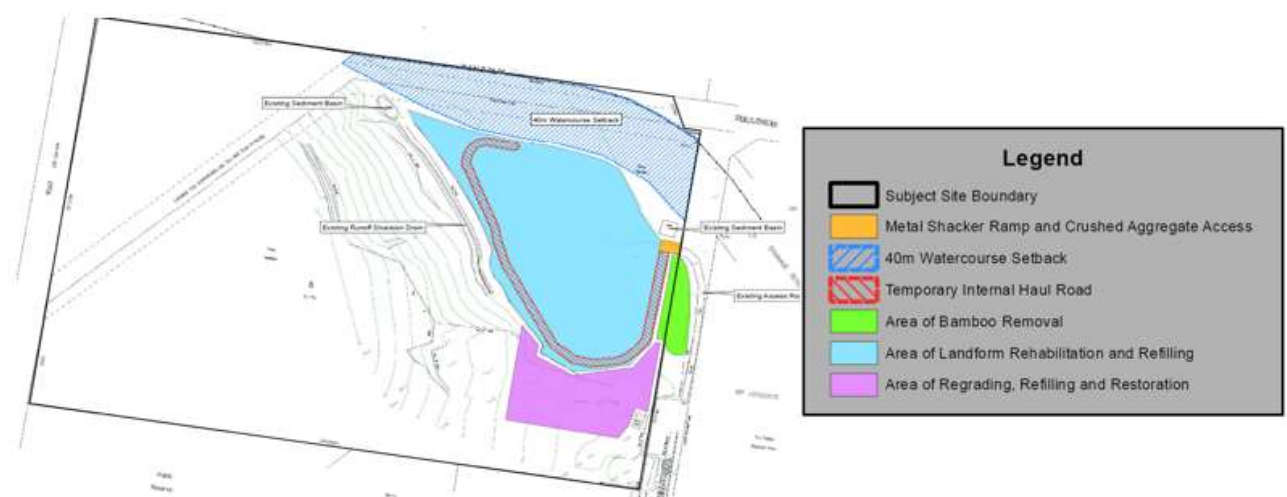


Figure 2: Proposed changes to the site

Stormwater Management Criteria

The Gosford Local Environmental Plan (2014) specifies that developments must:

- Minimise the flood risk to life and property associated with the use of land.
- Avoid significant adverse impacts on flood behaviour and the environment.
- Be not likely to significantly adversely affect flood behaviour resulting in detrimental increases in potential flood affectation of other development or properties.

These requirements are further expanded in the Gosford Development Control Plan (2013) which generally states that the developments must not increase the flood risk to flood prone lands and adversely affect flood behaviour by raising predevelopment flood levels by greater than 10 mm. Additionally overland flow paths should be maintained.

Findings

Impacts to Flood Levels

The biggest impact on flood levels results from modified topography within the existing floodplain storage or stream channel. However on the project site any changes to topography are limited to outside of the 1:100 AEP flood extent presented in the Gosford Narara Creek Flood Study (2012).

Flood levels are also impacted through changes to site drainage characteristics including land use and overland flow. The proposed project will not greatly vary either of these.

Based on our assessment of the property and the proposed changes, we conclude that changes in flooding for post rehabilitation are unlikely within the project site and surrounding properties.

Impacts to Overland Flow Paths

As part of the rezoning, Robson Civil have completed minor earthworks on the site (Figure 2). As part of this project Robson Civil completed site survey of the final landform. This survey is provided as Attachment 1. The survey indicated that the overland flow paths have been maintained and the project will likely not impact this drainage.

Limitations and Assumptions

This analysis only considers the works completed to achieve the rezoning of the lot. Consideration of the final land use has not been given. Additional flood impact assessment work should be completed as part of any proposed development for the site. More general limitations to this letter can be found in Attachment 2.

We have based this proposal on the following assumptions:

- Assessment is based on a visual assessment by comparing the flood extents and the rehabilitation plan.
- Flood extents are based on the Gosford Narara Creek Flood Study (2012).
- No hydraulic model runs were completed.
- The survey plan 'WAE FL.dwg Drawing Number 2017/2-1' is a true representation of the final landform.

Closure

We trust this letter meets W&A and Robson Civil Projects immediate needs. Should you have any queries please do not hesitate to contact the undersigned.

References

- CCC 2013 Central Coast Council, 2013, Gosford Development Control Plan
- Golder 2012 Golder Associates, 2012, Review of the Narara Creek Flood Study, 097626068_006_R_RevF
- NSW 2014 New South Wales Government, 2014, *Gosford Local Environmental Plan*, Current version for 23 December 2016
- NSW 2016 New South Wales Government, 2005, *Floodplain Development Manual – the management of flood liable land*, Department of Infrastructure, Planning and Natural Resources

GOLDER ASSOCIATES PTY LTD



Nigel Moon
Senior Water Resources Engineer

NM/RM/nm

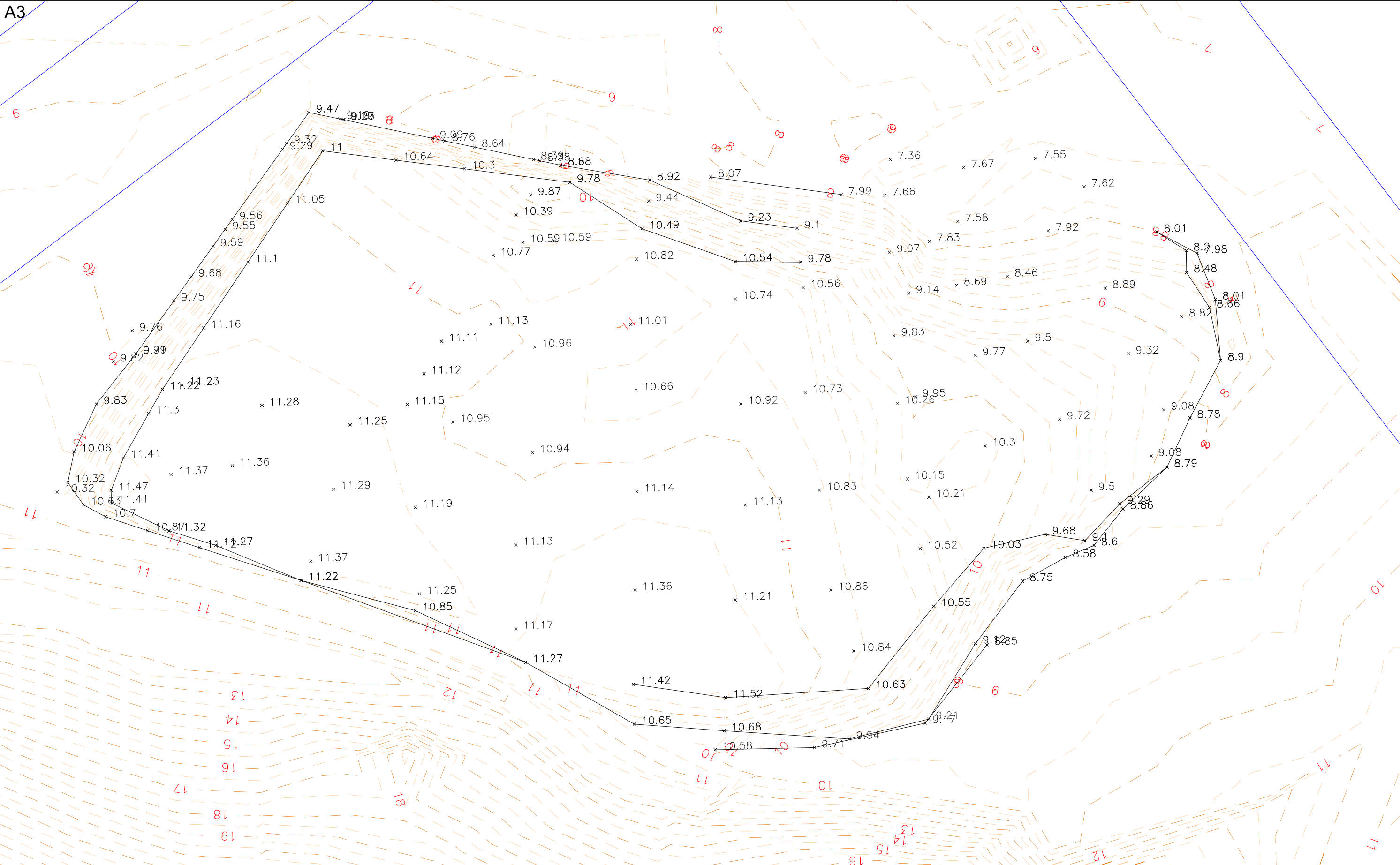



Russell Merz
Principal

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Attachment 1: Site Survey





Drawing File Name: WAE FL.dwg	 ROBSON CIVIL PROJECTS	Datum: AHD	Surveyed: S.Humphrey	Project: DELL ROAD, WEST GOSFORD	
		Scale: 1:500	Drawn: 3.02.2017	Project Number: 8010	
		Date: 3.02.2017	Approved: K.RIGG	Drawing Number: 2017/2-1	Sheet Number: 1 of 1

Attachment 2: Important Information



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