

27 October 2010

Regional Projects
Major Projects
Department of Planning
GPO Box 39
SYDNEY NSW 2001

By email Stuart.Withington@planning.nsw.gov.au

Attention: Stuart Withington

Dear Stuart,

MP 05_0083 Pacific Highway Sandy Beach North

We write in response to our recent meetings regarding the proposed development for Sandy Shores Developments. We have further considered some issues relating to the filling of land for road construction as part of the development proposal and resulting from further consideration of ecological issues.

Land Dedication /Buffers And Environmental Outcomes

As part of the applicant's process for resolving this matter, they are prepared to amend the scheme to allow for further retention of some areas of the site that may be considered desirable to have in public ownership. We have prepared an "offset plan" (see attached) which indicates an area of approximately 5.5 to 6 hectares that the applicant is prepared to dedicate to the state government. In so doing, the scheme will provide for deletion of three (3) allotments in the eastern precinct (on the western side of the access road). The plan also highlights the locations where the applicant acknowledges that a 10 metres setback buffer.

These outcomes further embellish the commitments already made to extensive revegetation planting across the site, provision of large areas for protection of existing habitat and sensitive design outcomes. It has the added benefit of making parts of the site publicly accessible so that the environmental outcomes foreshadowed in the concept plan are also capable of being enjoyed by the general public, not just the future residents of the site.

Land Filling For Roads

We have also provided a further plan which highlights to the Department the small extent of fill required for the internal circulation road that will act as a flood barrier. Whilst we maintain that the advice of Dr Treloar provides the relevant benchmark for flood levels of 3.3 AHD, in the interest of resolving this matter, we will accommodate a level for this road that the Department deems appropriate. We are aware that the Department has implemented a flood level of 3.5 AHD for the nearby 45 Hearn Road development recently approved and would assume that this is the worst case scenario that may be imposed on the Sandy Shores proposal. A further assessment of levels on the site indicates that the fill required to raise the access road to 3.5 AHD is minimal. The attached plan demonstrates the areas with less than 400mm of fill and those areas where fill would be between 400mm and 900mm.

As part of this solution, we would implement a one way stormwater valve system commonly used in this type of subdivision design. This will allow rain water from the residential area to pass into the lake system, but not vice versa. This is a common engineering solution and details will be provided as construction details evolve. These outcomes do not change the design solution proposed by John Holland for swales and on site detention will remain. On site detention and water treatment will still take place prior to water entering the lake system.

Conclusion

As the Department is aware, the Land is zoned land for development under CHLEP 2000 and capable of development. The proponent has developed a concept plan that is an environmentally sympathetic proposal wherein approximately 50% of the land has preserved as a "NO DEVELOPMENT ZONE". The proponent is proposing land dedication off sets to further enhance the environmental performance outcomes of the development and ameliorate the concerns of the department.

We trust that the clarification of these points resulting from our recent meeting allows the Department to finalise their assessment and prepare draft conditions of consent for endorsement by the Minister.

Yours sincerely

Willana Associates Pty Ltd



Stuart Harding
Director

Our Ref LJ2881/L2213 :sge

Contact



25 October 2010

Sandy Shores Development
c/- Sydney NSW Property Consultants
LEVEL 31, 88 PHILLIP STREET
SYDNEY NSW 2000

Attention: Mr Bill Yassine - Director

Dear Sir,

SUMMARY OF CARDNO'S DESIGN WATER LEVEL POSITION

Following a range of review stages, see our letter L2115, meetings with the Department of Planning on 26 July and 22 October 2010, and careful consideration of that material and the current DECCW Draft Flood Risk Management Guide: Appendix A, Cardno advise the following:-

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- DECCW advise (current website information) that, in relation to A4.2 Page 9, Entrance breakout analysis, '... or else a range of known historical configurations.' be considered - since this is not a managed entrance. We have understood that this means that the highest recorded berm level is not the appropriate berm level, but rather that one should adopt a statistical approach that is consistent with the flood flow - ocean boundary design level concept of 100-years ARI runoff combined with a 20-years ARI peak ocean level, for example.
- Hearns Lake opens frequently - about seven times/year, on average. The entrance then closes and rebuilds under wave and onshore wind action and then the volume of available sand. The level of the berm, in terms of the saddle-position hydraulic level, is the important level in terms of entrance breakout processes. The entrance is usually closed, but opens naturally through this pathway following sufficient rainfall. It is estimated that a water depth of about 0.2m is required to initiate berm scour. Scour will normally commence before the peak water level would be reached. Breakout may occur from a single rainfall event or as a result of cumulative rainfall. Hence the appropriate flooding scenario is controlled by the hydraulic berm level.
- Based on an extremal analysis of the entrance berm hydraulic levels determined from the available photogrammetric data, and censoring that data using a peak/over threshold level of 1.3m, the estimated 100-years ARI berm hydraulic level is 2.2m AHD. Adding 0.9m for sea level rise leads to a 2100 berm level of 3.1m AHD. Adding 0.2m for breakout water depth leads to an estimated 100-years ARI flood level of 3.3m AHD.
- Cardno advise that in this instance, where a sea level rise of 0.9m (upper limit of current IPCC sea level rise projections), has been applied to future flood level estimates, a freeboard of 0.3m be adopted for finished floor levels and roadways.

Historically (circa 1980's) an uncertainty allowance of 0.3m was added to estimated flood levels. With a developing awareness of climate change



Quality
ISO 9001
SAI GLOBAL



potential to cause sea level rise an early estimate of 0.2m sea level rise was added to the 0.3m of uncertainty to form a freeboard of 0.5m.

With the inclusion of the current upper limit of projected sea level rise the earlier 0.2m estimate has often not been backed-out of the freeboard parameter. It is recommended that it should be.

It is noted, see Annexure A, that the approved 45 Hearn's Lake Road development advises a minimum level of 3.5m AHD in terms of site risk and that it was agreed at the 22 October meeting that the proposed Sandy Shores Development presents a very low risk to human safety. Roads for the 45 Hearn's Lake Road development would be constructed at a minimum RL of 3.5M AHD and '... so will be above all the flood events in Hearn's Lake including rare occasions when berm levels are high.'

Conclusion

Cardno advise that they have applied an appropriate downstream berm level to their flood level assessment in terms of the most recent DECCW advice and included a realistic freeboard allowance. Note that, if the 100-years ARI flood level is 3.3m AHD and floor levels are set at 3.6m AHD, then there is no inundation of dwellings.

Yours faithfully,

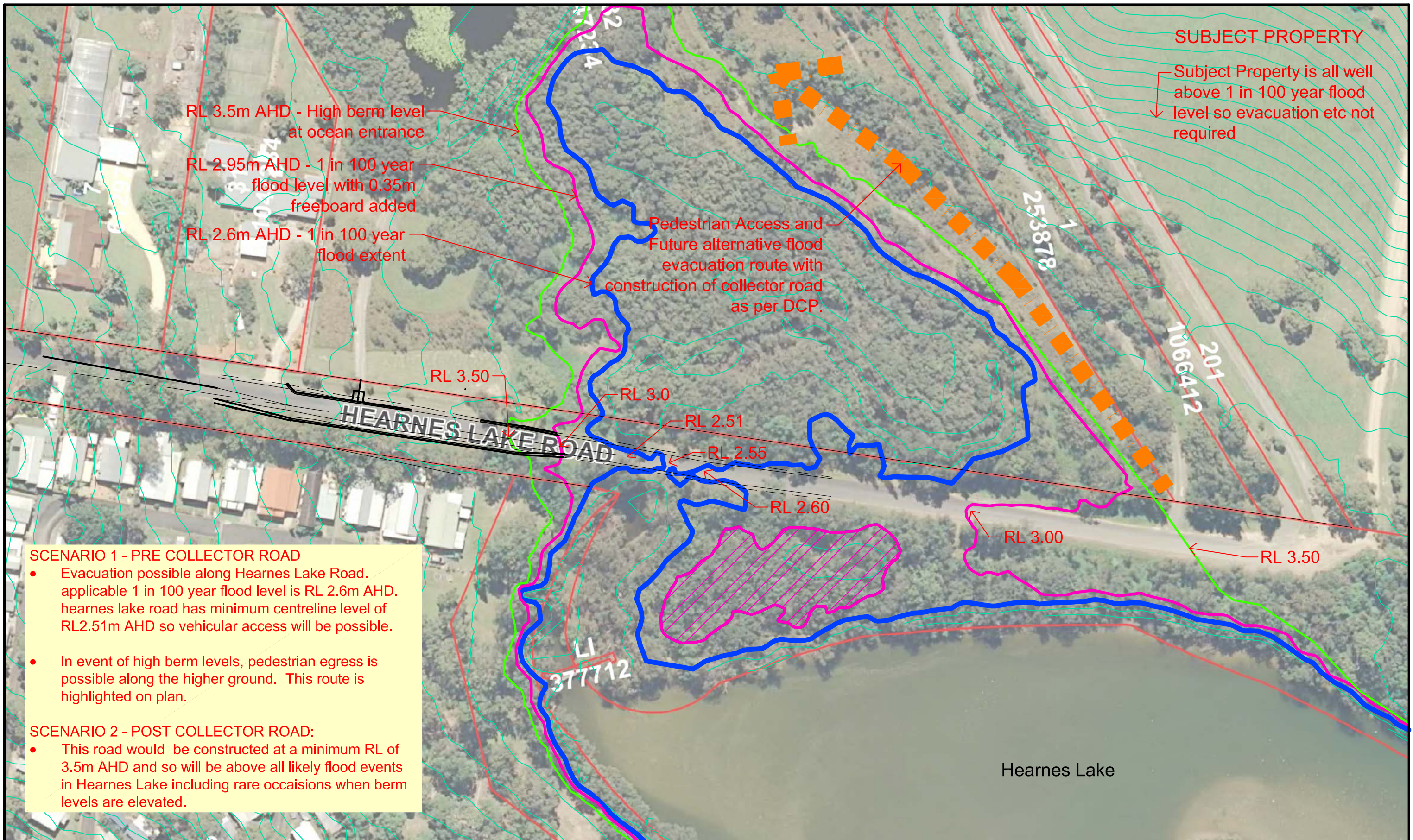
A handwritten signature in blue ink, appearing to read 'P. D. Treloar'.

P.D. Treloar
Manager – Coastal, Ocean & Estuarine Studies
for Cardno (NSW/ACT) Pty Ltd



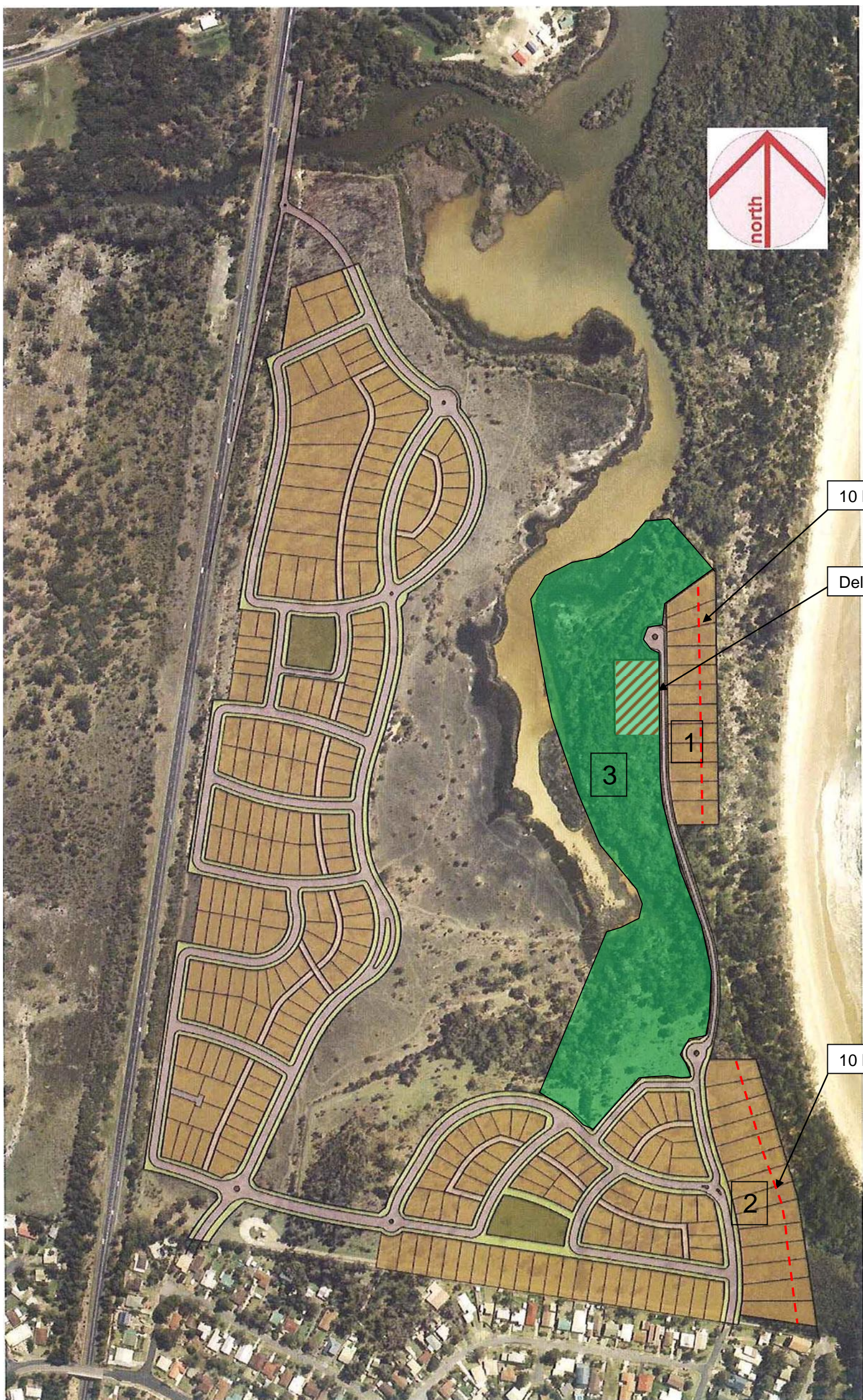
Annexure A

45 Hearn's Lake Road

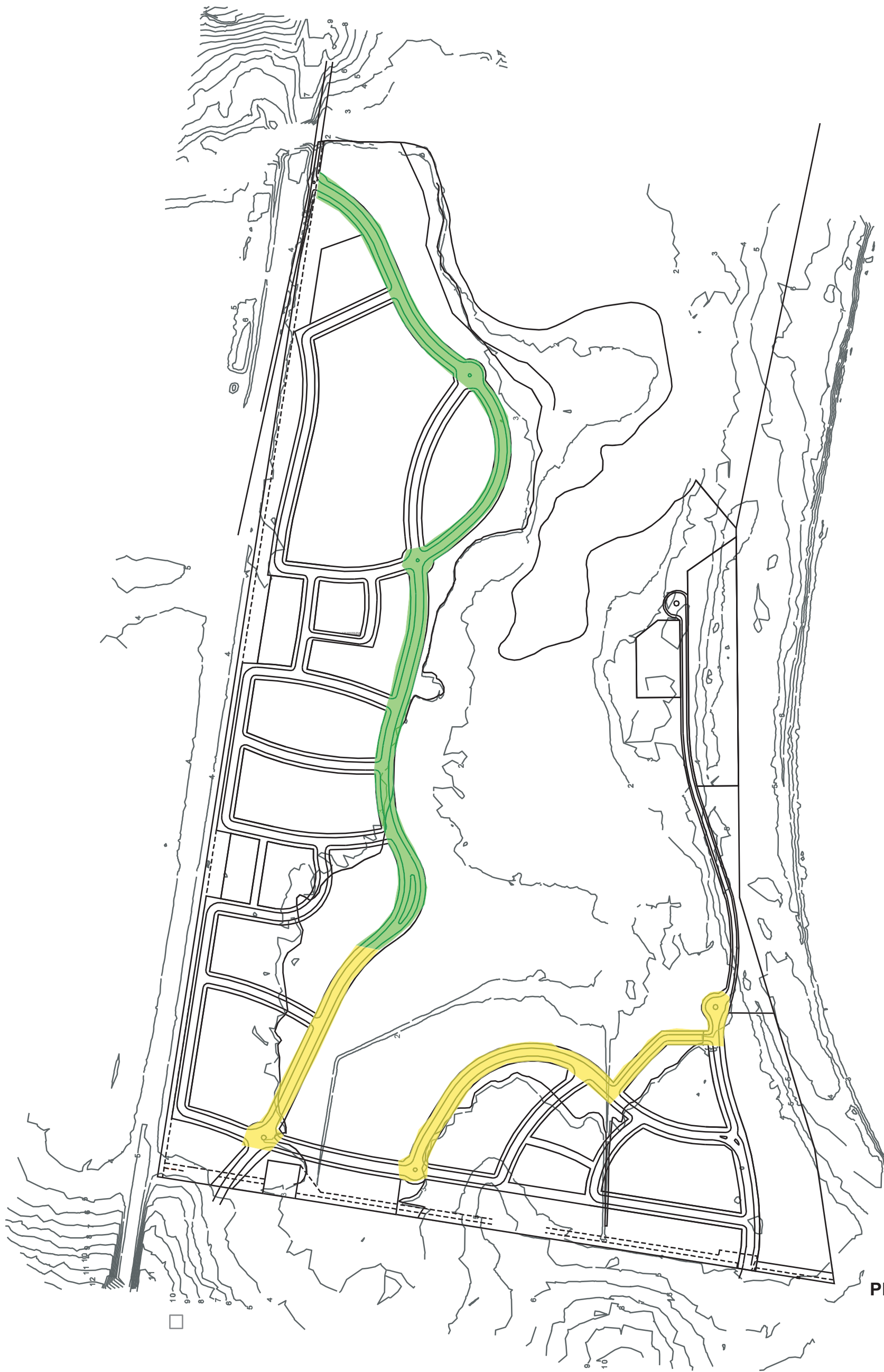


SUBJECT PROPERTY

Subject Property is all well above 1 in 100 year flood level so evacuation etc not required

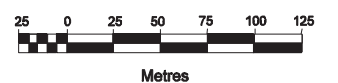



Area 1. Residential – 1.14 hectares
Area 2. Residential – 1.64 hectares
Area 3. Offset – 5.5 to 6.0 hectares



**Plan of Proposed
Road Fill**

October 2010



-  Areas of less than 400mm fill.
-  Areas of between 400mm to 900mm of fill.

willana
associates