

**TAMINDA TAMWORTH PLANNING PROPOSAL
PROPOSED REZONING TO INDUSTRIAL LAND
9 Ha PARCEL**

FLOOD AND RISK IMPACT ASSESSMENT

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1. Introduction

It is proposed to rezone Lots 2 and 3 DP 1234850 in the Racecourse West Development site to employment land (refer Figure 1). The Planning Proposal for this rezoning is being prepared by WSP Consulting on behalf of Chan Abbey Holdings. This report has been prepared to support the Planning Proposal and deals with the potential impacts on the flooding behaviour and impacts on waterfront land as defined by the Water Management Act 2000.

This report was prepared by Mark Tooker from Tooker and Associates who has over 35 years experience in flood impact assessments and management of riparian land under the Water Management Act 2000.

2. Site Description

The proposed rezoning site is located in the western area of the Tamworth urban area (refer Figure 1) and consists of part of the Racecourse West Development site (30ha) on 2 and 3 DP 1234850 (refer Figure 2) over an area of approximately 9 ha. The land to the west consists of Council land and Somerset Farm (Lot 60 DP 1227482). Chan Abbey Holdings own both the Racecourse West Development site and Somerset Farm. While Somerset Farm will not be rezoned, it will be partially regraded as part of the flood mitigation works to ensure that the development on the rezoning lots do not adversely impact the flooding behaviour on adjacent properties.

The Racecourse West Development site has a common boundary on the eastern side with the Tamworth Racecourse and the existing Taminda industrial area on the southern side.

The Somerset Farm site is approximately 250m wide and its southern boundary fronts onto Council land. The Council land and the subject site have frontages to Wallamore Rd. The farmhouse and sheds on Somerset Farm are located on land approximately 300m from Wallamore Road on a higher parcel of land which is above the 100 yr ARI flood level. Otherwise the land would generally slope down towards the north at the same grade as for the Racecourse West Development site.

The lots containing the Somerset Farm and Racecourse West Development area extend further north across the Peel River and its anabranches. As such, the proposed development resulting from the rezoning may impact on the waterfront land as defined in the Water Management Act 2000. Waterfront land is defined as land within 40m of the top of bank of a river. Development within waterfront land requires a Controlled Activity Approval (CAA) from the Department of Natural Resources Access Regulator (NRAR).

Tamworth Council propose to construct, when funding is available, an extension of Jewry Street heading west along the northern boundary of the proposed rezoning land on Lots 2 and 3 DP 123485. This proposed bypass road would then head south through Council land to connect at grade with Wallamore Road. This road is known as the bypass road. Council has

created a lot for this road which could be incorporated into any future development on the Racecourse West Development site.

There is a narrow lot (Lot 1 DP 44224) between the Racecourse West Development site and the Tamworth Racecourse which acts as a drainage corridor to accommodate flows down to the Peel River anabranch from the basin located between Jewry Street and the racecourse system. This overland flow path will need to be retained in any development on the Racecourse West Development site.

3. Flood Behaviour

The site is affected by local flood flows down the Timbumburi Creek and their interaction with the regional flooding in the Peel River (refer Figure 3). The flood flows in Timbumburi Creek from the south are dammed behind the railway embankment on the southern side of Wallamore Rd causing a wide flood area upstream of the railway line. At the eastern extent of this flood area is a drainage culvert under the rail line and Wallamore Rd. Floodwaters discharge from the culvert and over Wallamore Road in a 100 yr ARI flood event. It then flows north along the Racecourse West Development site before joining with the Peel River flood flows at the northern end of the racecourse.

The 100 yr ARI flood levels have a gradient of about 2m varying from approximately RL 374.2m AHD at Wallamore Road to RL 372.2m AHD at the northern end of the racecourse.

The peak flood velocities across the site are low in the 100 year ARI flood compared to the higher velocities in the Peel River anabranches and the railway culvert (larger arrows mean higher velocities).

There is an existing low flow channel extending from opposite the railway culvert in the south and heading around the higher ground of the homestead on Somerset Farm and heading north along the western boundary of the Racecourse West Development site towards the Peel River anabranch system.

4. Proposed Development

The proposed development is to form a 9 ha industrial area on Lots 2 and 3 DP 123485 (see Figure 4). The Council's proposed bypass road bounds the site on the northern boundary. The proposed industrial development area would be filled to above the Flood Planning Level (FPL) (100yr ARI flood level plus 0.5m freeboard).

The depth of fill required over Lots 2 and 3 to achieve the FPL would range between 0.3m to 1.1m and the spoil required for the fill could be sourced from the regrading of Somerset Farm. Fill levels on the subject site would also require consideration of any earthworks required as part of works for services such as the sewer and drainage systems.

The regrading of Somerset Farm (cut) (see Figure 5) would offset the loss of flood storage due to filling of the subject site up to the 100yr ARI flood levels. The regrading depths would

be up to 1.2m at the homestead highpoint reducing to depths of generally 0.2m further to the north.

An earth swale (2m wide) and bund approximately 350mm high would be formed along the western boundary of the Somerset Farm site to ensure that runoff from the land to the west would be drained towards the Peel River to the north and any small increases in flood levels on Somerset Farm were not transferred onto the adjacent property to the west.

The southern boundary of the proposed 9ha industrial area would be offset up to 20m eastwards from the north western boundary corner to further assist with mitigation of flood impacts by providing additional flood conveyance and further offset of lost flood storage. The walls around the subject site boundary could be either a retaining wall along the fill line or batter with the toe of the batter located along the fill line.

5. Flood and Risk Impact Assessment

Lyall and Associates have formulated a flood model for Tamworth Council for the Peel River incorporating the flood flows along the Timbumburi Creek. It is appreciated that Council agreed to allow use of their flood model in the interest of designing a development concept on the subject site that would not have a significant adverse impact on the flood behaviour in adjacent properties. The use of their model also ensures a baseline level of consistency in terms of impact assessment.

Lyall and Associates revised the flood model to incorporate the proposed 9ha development and the regrading ground levels on Somerset Farm which would offset flood storage on the subject site. The 100yr ARI flood was modelled and a plot of flood level changes are presented on Figure 6.

The regrading of Somerset Farm to remove the high point provides compensatory flood storage thereby offsetting any major increases in the 100yr ARI flood levels on adjacent properties. In fact, there are reductions in flood levels on properties to the west of Somerset Farm, significant lowering of flood levels on Council land and significant lowering of flood levels on the proposed bypass road along the northern boundary of the subject site. There is a minor increase in 100yr ARI flood levels on a small area on the Council land near the proposed bypass road route which could be overcome by a minor increase in the filling proposed for the bypass road in this location.

The proposed regrading on Somerset Farm would have no significant impacts on the existing sewer pipe across this area. The proposed low flow channel would reduce the cover to the sewer over a small length and this length may need to have a concrete slab laid in the base of the low flow channel at its crossing of the sewer.

6. EPA Act Section 9.1 Ministerial Directions

Revised Section 9.1 Ministerial Directions were issued recently to come into effect on the 1 March 2022. Section 4.1 entitled Flooding of the Ministerial Directions under Section 9.1 (2) of the EPA Act 1979 apply to planning proposals lodged with the DPIE. This section demonstrates that the proposed planning proposal development complies with directions in Section 4.1 Flooding.

The proposed development complies with the NSW Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005 (FDM) including the Considering Flooding in Land Use Planning Guideline 2021. The manner in which it complies with these documents is that it minimises the risk to flood damages and risk to life in the development. It is proposed that development will occur on filled land with a minimum level as required by the FDM at the Flood Planning Level (FPL – 100 yr flood level plus 500mm freeboard) and and it has no significant adverse impact on the flooding behaviour on adjacent sites. This ensures that the land has a low flood risk and the potential for flood damages and risk to life in floods is minimised and complies with government flood guidelines.

The site will be flood free up to and beyond the 200yr ARI flood and will have ready access to nearby flood free areas in Dampier St and Gunnedah Rd at the peak of a PMF flood. The site adjoins an existing industrial area and would adopt the regional flood evacuation strategy for Tamworth.

There is no Floodplain Risk Management Study or Plan adopted by Tamworth Council for this area. This Flood and Risk Impact Assessment has been prepared in accordance with the principles of the Floodplain Development Manual 2005 and the Tamworth Council flood policies in order that any inconsistencies with the Section 9.1 Ministerial Directions relevant to Section 4.1 are acceptable.

The Considering Flooding in Land Use Planning Guidelines are recommended to be applied by Councils in the Flood Planning Areas (FPA) and Special Flooding Considerations (SFC) are recommended for sensitive and hazardous industries. Sensitive and hazardous landuses are listed in the guideline and an industrial land use is not included. The proposed development is located within the FPA and all the considerations for flood damage and risk to life have been considered when dealing with the NSW Flood Prone Land Policy and the FDM. So, the proposed development does comply with the Considering Flooding in Land Use Planning Guideline.

All lots in the proposed development will be required to have a copy of the Flood Emergency Response Plan for the development which will incorporate a flood controller and flood wardens who will organise the evacuation of the site when a flood evacuation order is provided by the SES. There will be an identified evacuation route to a flood refuge which will be provided to all workers. The flood controller and wardens will organise annual flood evacuation training for all workers on the site.

The consistencies and inconsistencies with Section 4.1 Flooding Ministerial Direction are discussed as follows.

Clause 2) – inconsistent – this planning proposal intends to rezone rural land to industrial landuse contrary to this clause however this is acceptable because this Flood and Risk Impact Assessment Report identifies the compliance with the NSW Flood Prone Land Policy, the FDM and Considering Flooding in Land Use Planning Guideline 2021.

Clause 3) (a) – consistent - the development will have a low flood risk because it would be located on land above the FPL but below the PMF level and not in a floodway.

Clause 3) (b) – consistent – there is only a minor impact on a small area of the proposed bypass road which could be overcome by a small amount of extra filling in a proposed fill area for the road. This is not considered to be a significant adverse flood impact. There are major areas of reduced flood levels on the Council land and the proposed bypass road along the northern boundary of the subject site.

Clause 3) (c) – consistent – there is no proposed residential development.

Clause 3) (d) – inconsistent – however this inconsistency is negated in accord with Clause c) of the Consistency section of the Section 4.1 Directions by this Flood and Risk Impact Assessment for the proposed development which demonstrates that the proposed development complies with the FDM, NSW Flood Prone Land Policy and the Considering Flooding in Land Use Planning Guideline 2021.

Clause 3) (e) – consistent - none of these flood sensitive land uses listed are proposed in this development.

Clause 3) (f) – consistent - this proposal does not permit development without development consent.

Clause 3) (g) – consistent – the development will have a Flood Emergency Response Plan and dedicated Flood Controller and Wardens to organise the flood evacuation when SES provide the order to evacuate. The proposed development is located adjacent to an existing industrial area. No significantly increased government spending will be required on emergency response measures, emergency management measures or flood mitigation measures.

Clause 3) (h) – consistent - no hazardous industries or storage is proposed within this development.

Clause 4) – consistent – Special Flood Considerations are not warranted as the proposed industrial development is not listed under the category of Sensitive and Hazardous landuses in the Considering Flooding in Land Use Planning Guideline.

Clause 5) – consistent – there is no Floodplain Risk Management Study or Plan adopted by Council for the proposed development site however, the proposed development complies with the flood requirements in the FDM as detailed in this Flood and Risk Impact Assessment report.

The proposed development is consistent with all but Clause 2) and Clause 3) (d) in the Section 4.1 Flooding section of the Section 9.1 Ministerial Directions. This inconsistency is considered acceptable based on the findings of this Flood and Risk Impact Assessment (Clause (c) under the Consistency heading) which has demonstrated that the proposed development complies with the NSW Flood Prone Land Policy, the FDM and the Considering Flooding in Land Use Planning Guideline 2021.

7. Riparian Land Assessment

Development on waterfront land requires a Controlled Activity Approval (CAA) under the Water Management Act 2000. Waterfront land is defined as the land 40m from the top of bank of a river. The Department of Primary Industries Office of Water has issued a policy to assist in identification of waterfront land.

This policy uses the blue lines on the NSW 1:25000 topographic maps to show the extent of rivers and hence waterfront land is categorised as land located within 40m from the top of bank of these rivers. Typically, these blue lines extend beyond what might be visually and physically identifiable as rivers because there do not have any banks to define the river. Nonetheless, they are a readily identifiable starting point for assessment of the possible location of waterfront land.

The policy also adopts the Strahler System for classifying the status of rivers from minor (1st order) to major (4th or 5th order) streams.

The 1:25,000 topographic plan for the subject site is presented on Figure 7. It indicates two 1st order streams approximately 400m north of the location of the proposed development site on Lots 2 and 3. On this basis, the proposed development would not impact on waterfront land and does not require an approval under the Water Management Act 2000.

8. Conclusions

The proposed development on Lots 2 and 3 DP 123485 has been formulated to ensure that the development complies with government flood prone land guidelines and has no significant adverse impacts on the flooding behaviour on adjacent properties. This has been tested using Tamworth Council's flood model which has confirmed no significant adverse flood impacts.

The proposed development is consistent with all but Clause 2) and Clause 3) (d) in the Section 4.1 Flooding section of the Section 9.1 Ministerial Directions. This inconsistency is

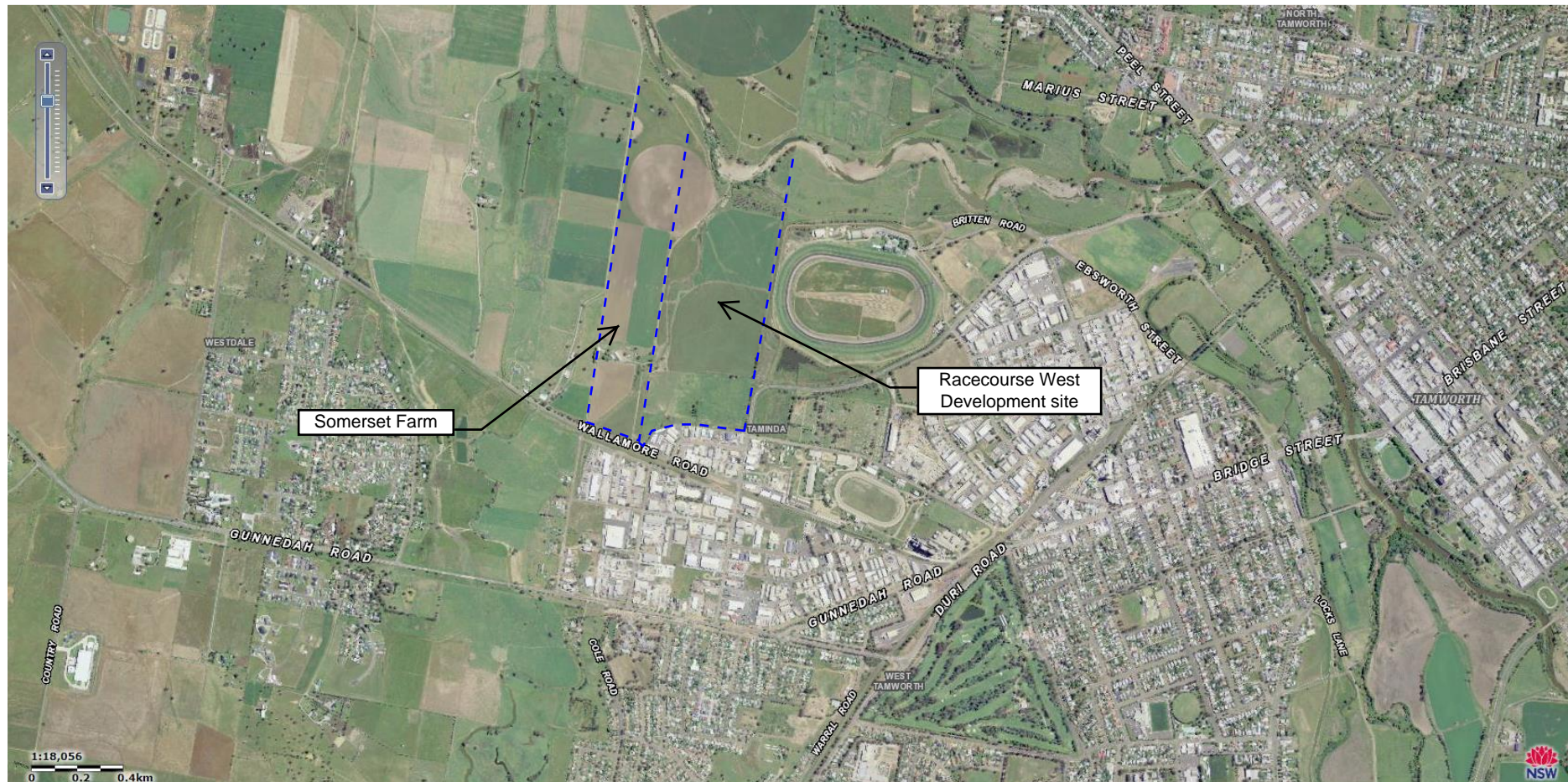
considered acceptable based on the findings of this Flood and Risk Impact Assessment (Clause (c) under the Consistency heading) which has demonstrated that the proposed development complies with the NSW Flood Prone Land Policy, the FDM and the Considering Flooding in Land Use Planning Guideline 2021.

This supports the rezoning of the proposed 9 ha development area for employment land uses subject to the implementation of the flood related measures outlined in this report.

The future development on the rezoned site will not require approval under the Water Management Act 2000 because the development will not be located within 40m of the top of a river bank.

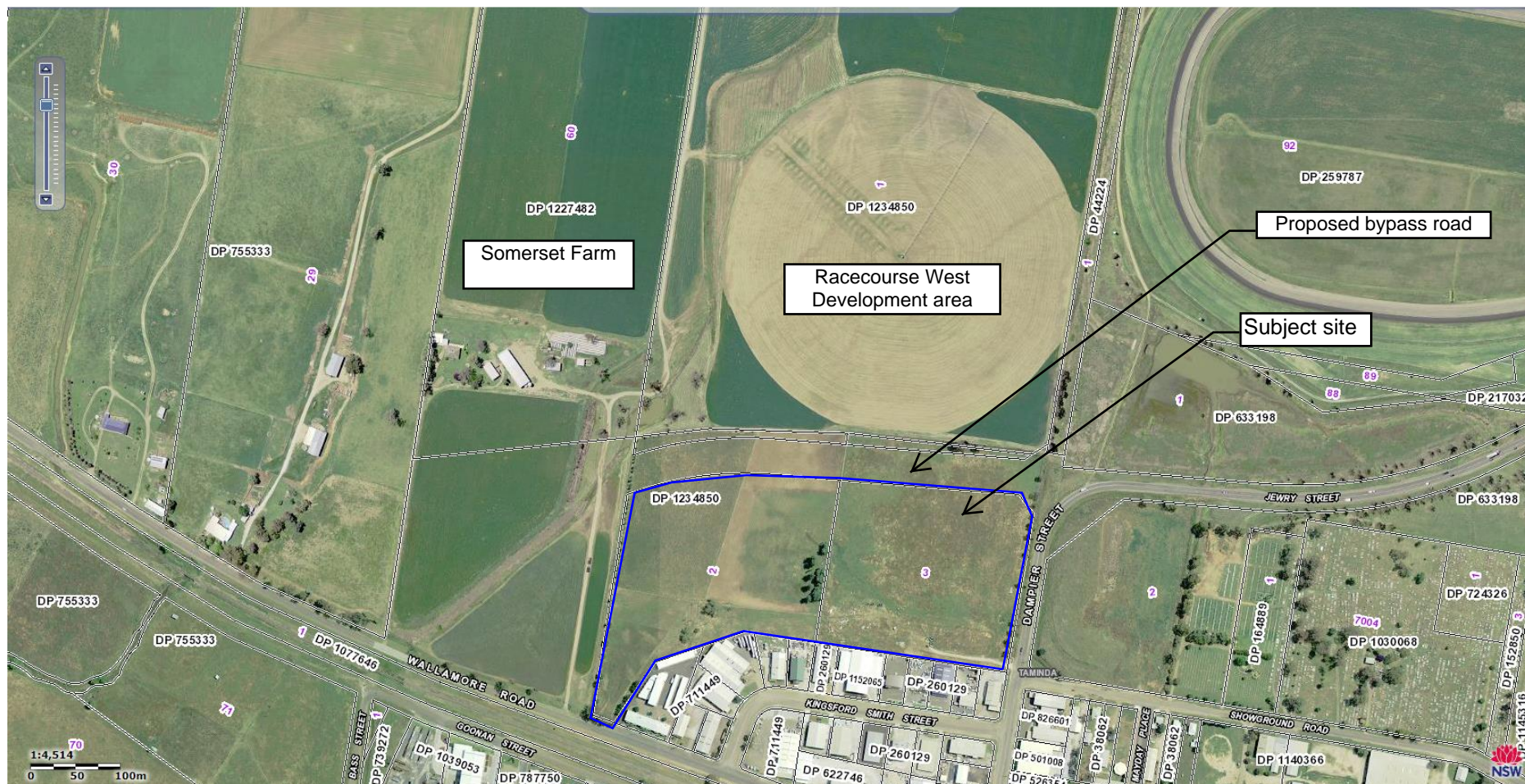
FIGURES

FIGURE 1



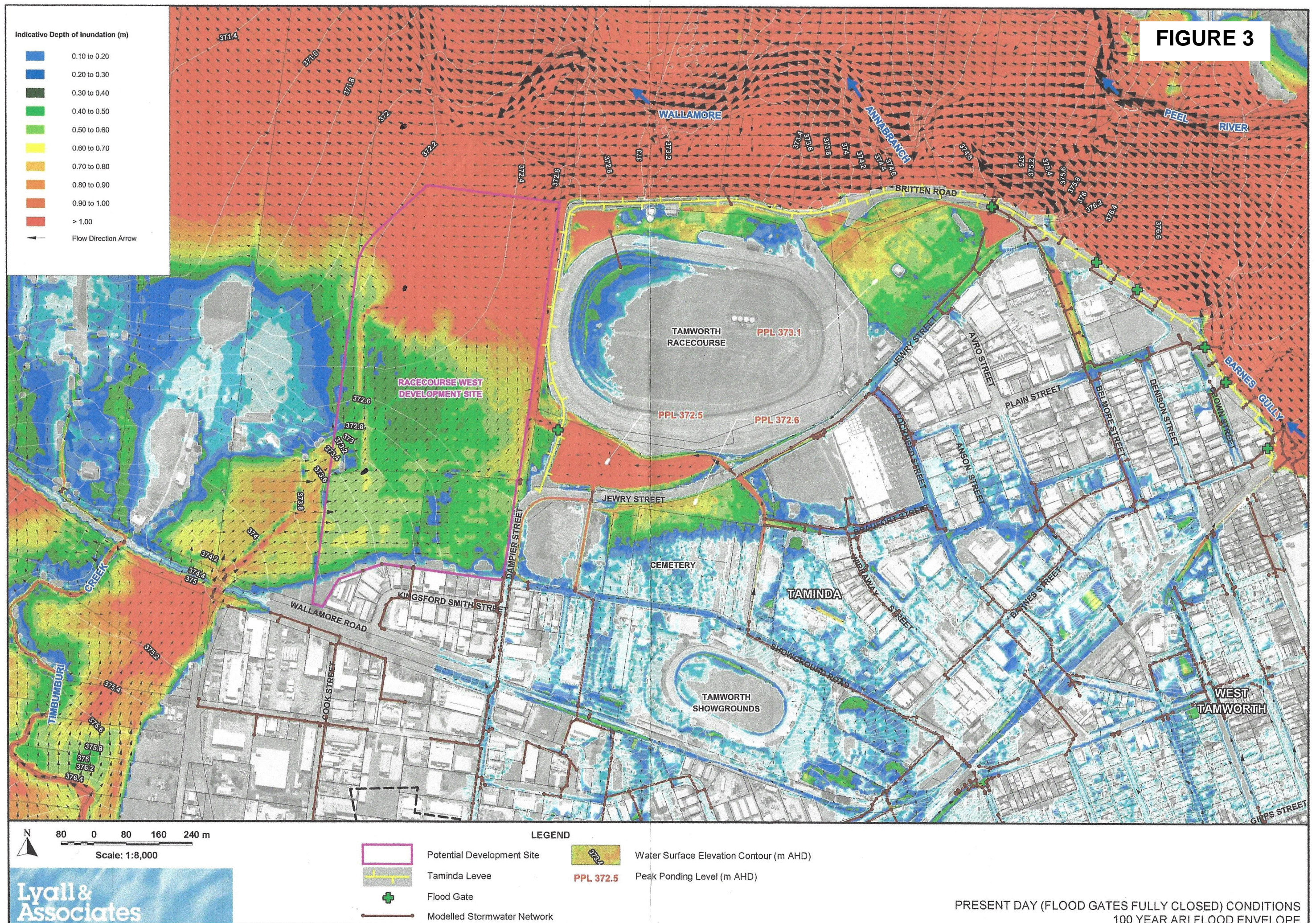
LOCALITY PLAN

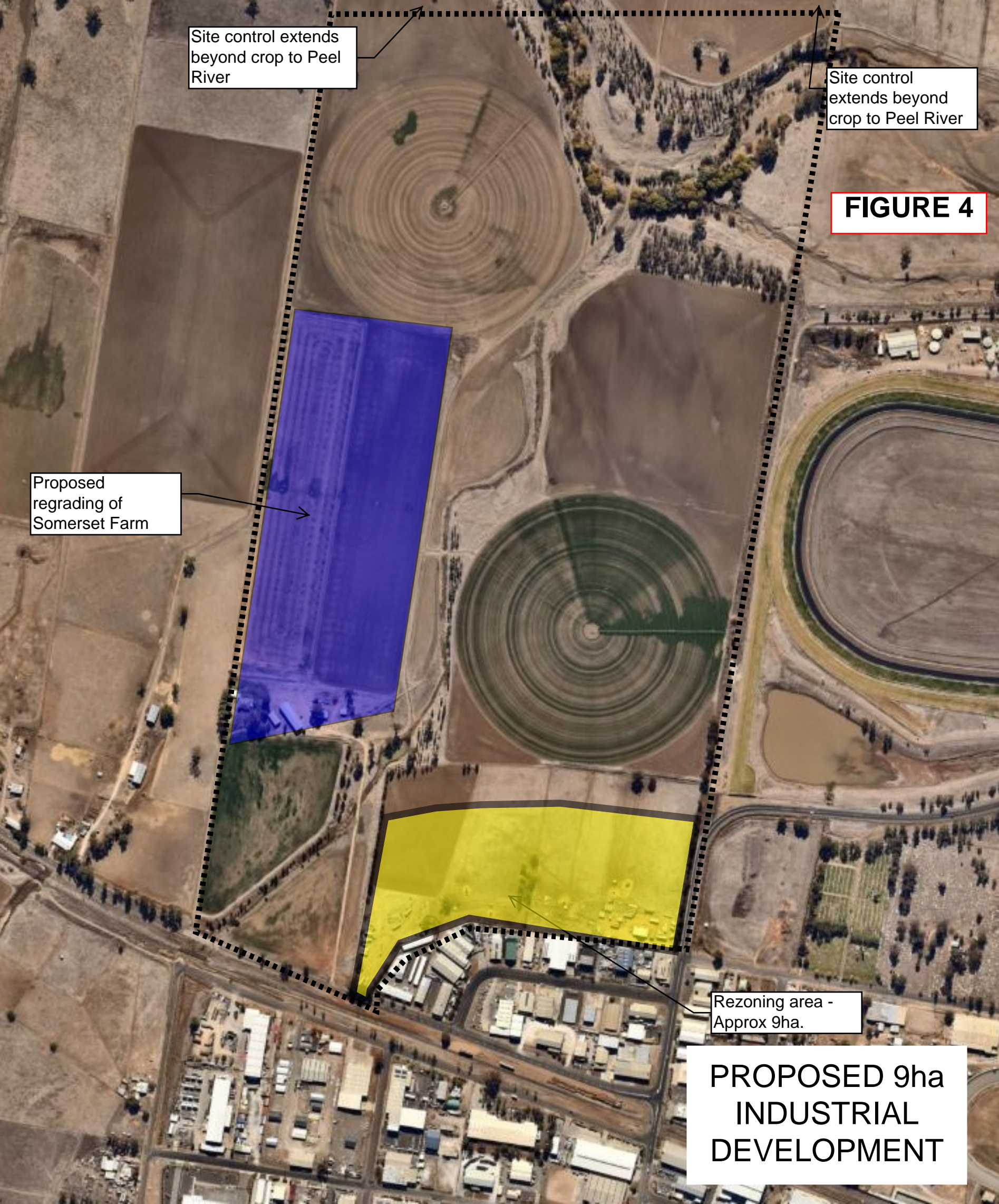
FIGURE 2



SITE PLAN

FIGURE 3





Site control extends
beyond crop to Peel
River

Site control
extends beyond
crop to Peel River

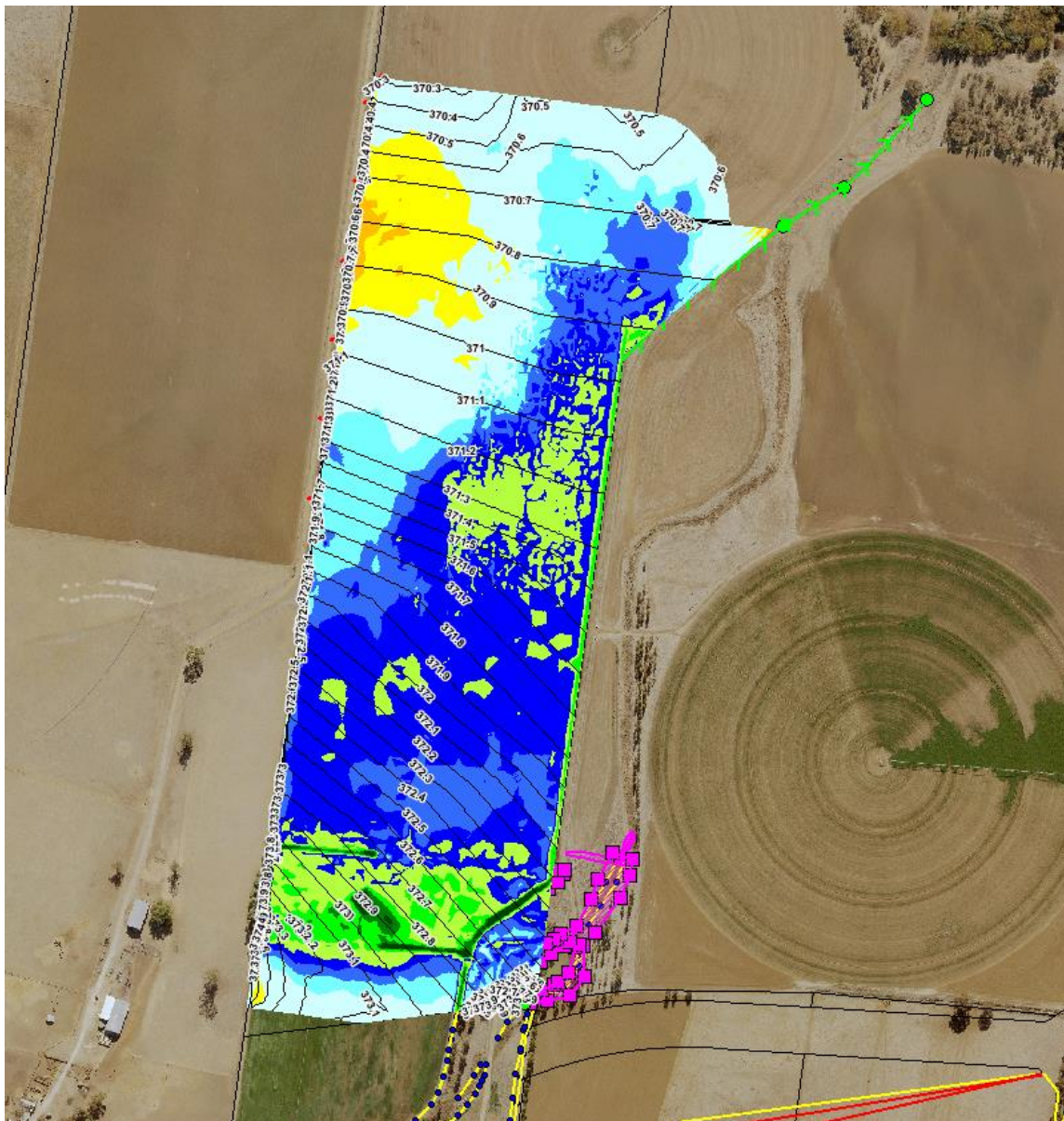
FIGURE 4

Proposed
regrading of
Somerset Farm

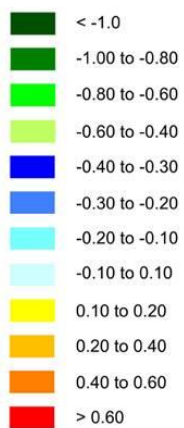
Rezoning area -
Approx 9ha.

**PROPOSED 9ha
INDUSTRIAL
DEVELOPMENT**

FIGURE 5



Depth of Cut/ Fill (m)



PROPOSED
REGRAIDING OF
SOMMERSET FARM

FIGURE 6

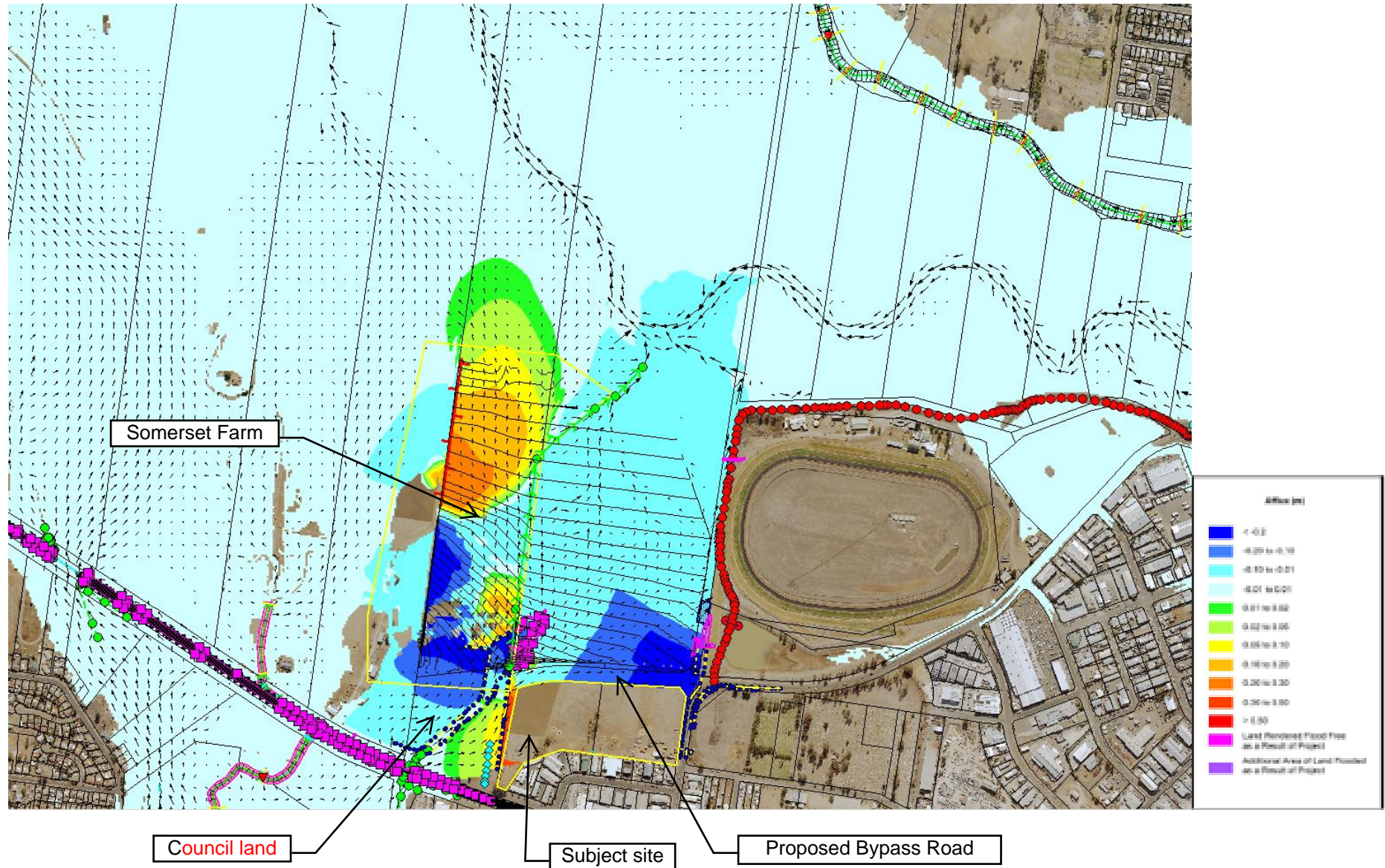


FIGURE 7



1:25,000 TOPOGRAPHIC PLAN