Adam Fairley
Harness Racing NSW
PO Box 1034
Bankstown NSW 1885

20140523L

23 May 2014

Attention: Mr. A. Fairley

Dear Adam,

Re: Flood Impact Assessment for proposed construction of Harness Racing Track in North Wagga

This letter details the work carried out by WMAwater in regard to an assessment of flood impact due to the proposed Harness Racing Track on Wagga Wagga's northern floodplain.

INTRODUCTION

Harness Racing NSW (HRNSW) is interested in developing a harness racing track and related infrastructure in the area bounded by Hampden Avenue, Cooramin Street and Wright Street (see Figure 1). This area has been zoned as Rural Primary Production (RU1) as per Wagga Wagga City Council (WWCC) LEP 2010.

The area where development is to take place is flood prone in the 5% AEP event and as such a flood impact assessment is required to accompany the development application (DA).

WMAwater carried out a previous flood impact assessment for the site (Reference 1). Results indicated unacceptable impacts on adjacent properties as a result of the construction of the proposed race track and associated buildings.

Subsequently, HRNSW revised the design of the race course and associated buildings (clubhouse and stables). The HRNSW Board and Wagga Wagga City Council have agreed that the racetrack should be built at the 10% AEP design flood level whilst the on-course buildings shall have floor levels at the 2% AEP design flood level.

OBJECTIVES

The principal objective of this work is to determine whether the proposed harness racing track and its related buildings will adversely affect flood levels in adjoining properties. Flood impacts will be investigated for the 5% and 1% AEP flood events. Also, the design levels for both the racetrack (10% AEP) and the associated buildings (2% AEP) are to be specified.

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METHODOLOGY

WMAwater have carried out the following tasks:

1. Flood model was run for the 10%, 5%, 2%, and 1% AEP events;
2. The proposed layout of the racetrack and associated buildings were modelled as an elevated terrain feature high enough to ensure they remain flood free in the 10% AEP event;
3. The resulting 10% AEP peak flood levels at the race track were extracted from the model and used to set the necessary ground levels of the proposed racetrack;
4. The 5% AEP design flood event was run with the race track ground level set at the 10% AEP flood level and the associated buildings raised high enough to ensure floors remain flood free in the 5% AEP event;
5. The 2% AEP design flood event was run with the race track ground level set at the 10% AEP flood level and the associated buildings raised high enough to ensure floors remain flood free in the 2% AEP event;
6. Flood levels were extracted from the model to define the minimum floor level for the associated buildings, and;
7. The 1% AEP event was run with the race track and associated buildings floor levels defined in step 5.

RESULTS

Results are indicated in the form of maps as following:

- Figure 2 depicts peak flood level impacts in the 5% AEP design event;
- Figure 3 depicts peak flood level impacts in the 1% AEP design event;
- Figure 4 depicts peak flood levels after proposed works in the 5% AEP event, and;
- Figure 5 depicts peak flood levels after proposed works in the 2% AEP event.

Modelling results indicate that peak flood level impacts in the 5% and 1% AEP events (Figures 2 and 3) are less than 0.01 m and do not extend further than existing flood prone areas. Current practice accepts that a flood impact of less than or equal to 0.01 m can be assumed as "no impact".

The results indicate that the 10% AEP flood free ground level of the race track is 178.82 mAHD and the minimum floor level for the on-course buildings to ensure floors remain flood free in the 2% AEP event is 180.62 mAHD (Figure 5).

CONCLUSION

WMAwater have carried out a flood impact assessment of the proposed Harness Racing Track.

Results indicate no impact on peak flood level for the 5% and 1% AEP flood events. This result is based on the racing track being built to the 10% AEP level and also incorporates proposed buildings at the 2% AEP level.

Design levels of the race track and associated buildings were determined to be 178.82 mAHD for the track (10% AEP level) and 180.62 mAHD (2% AEP) for the buildings.

Should you require further clarification please contact Ivan Varga on 9299 2855 or varga@wmawater.com.au

Yours Sincerely,
WMAwater

Ivan Varga
Senior Engineer

REFERENCES

1. Wagga Wagga City Council

   Flood Impact Assessment in North Wagga

   July 2013

2. Wagga Wagga City Council

   Murrumbidgee River Model Conversion Project

   September 2010

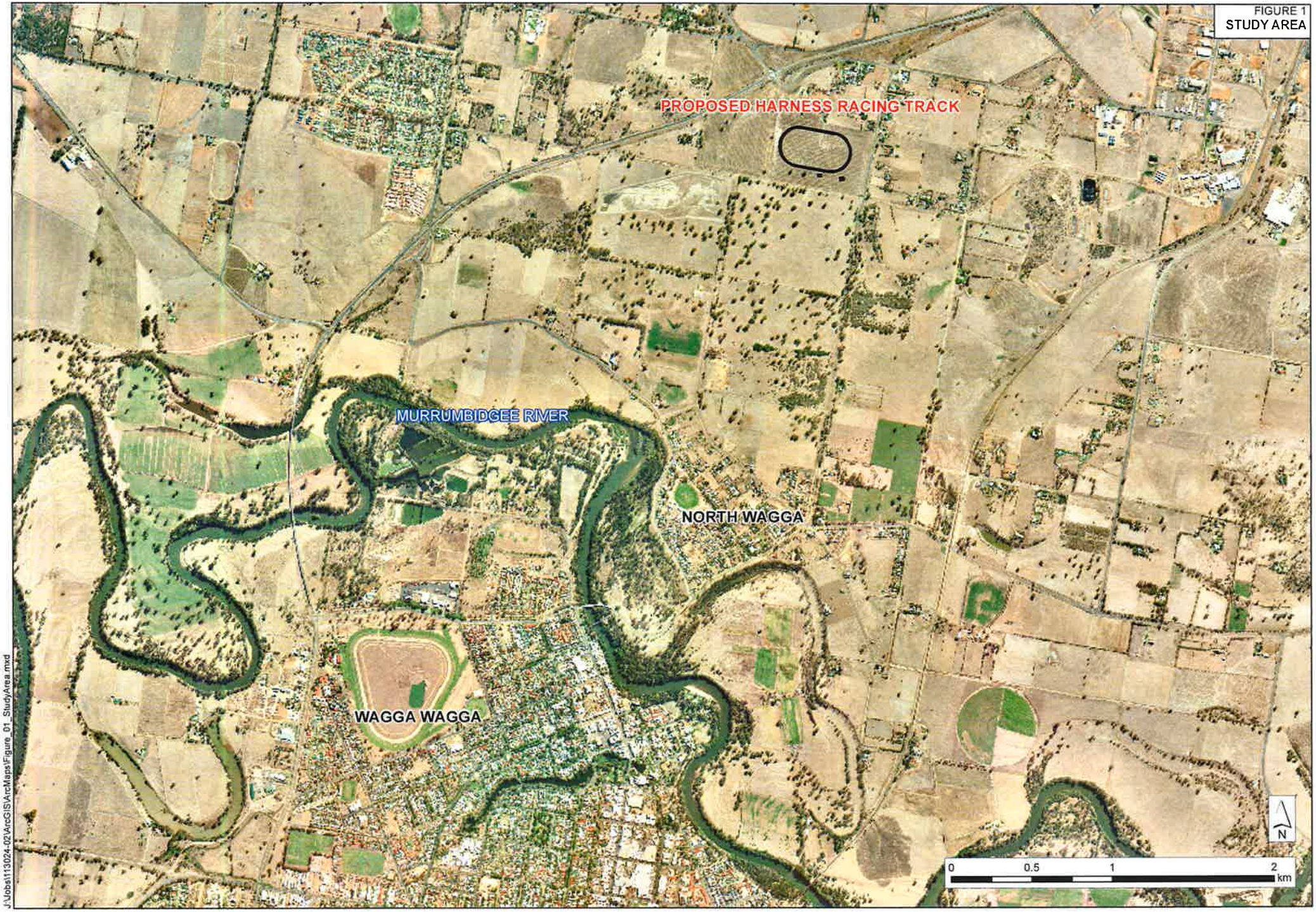

FIGURE 1
STUDY AREA

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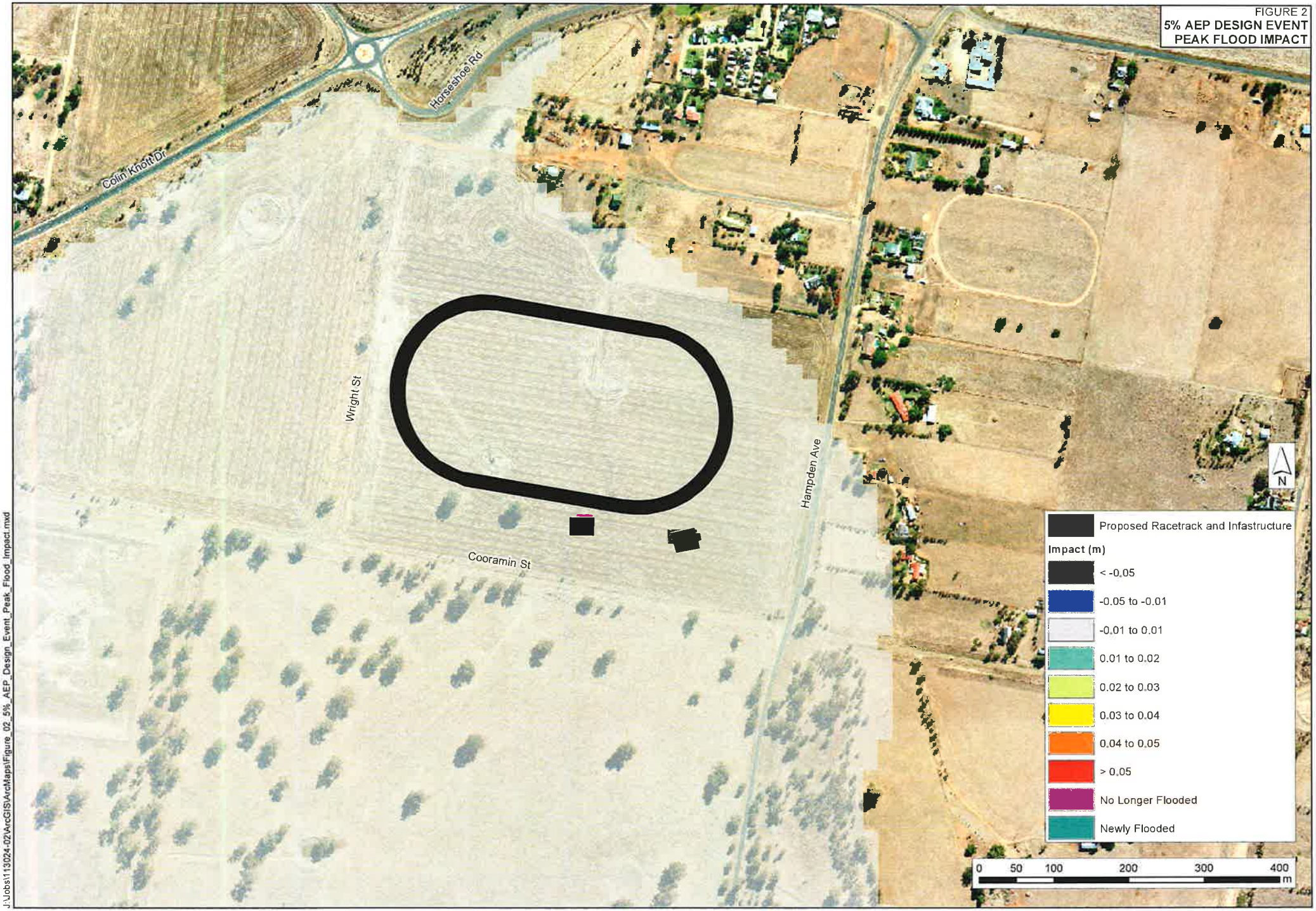
FIGURE 2
5% AEP DESIGN EVENT PEAK FLOOD IMPACT



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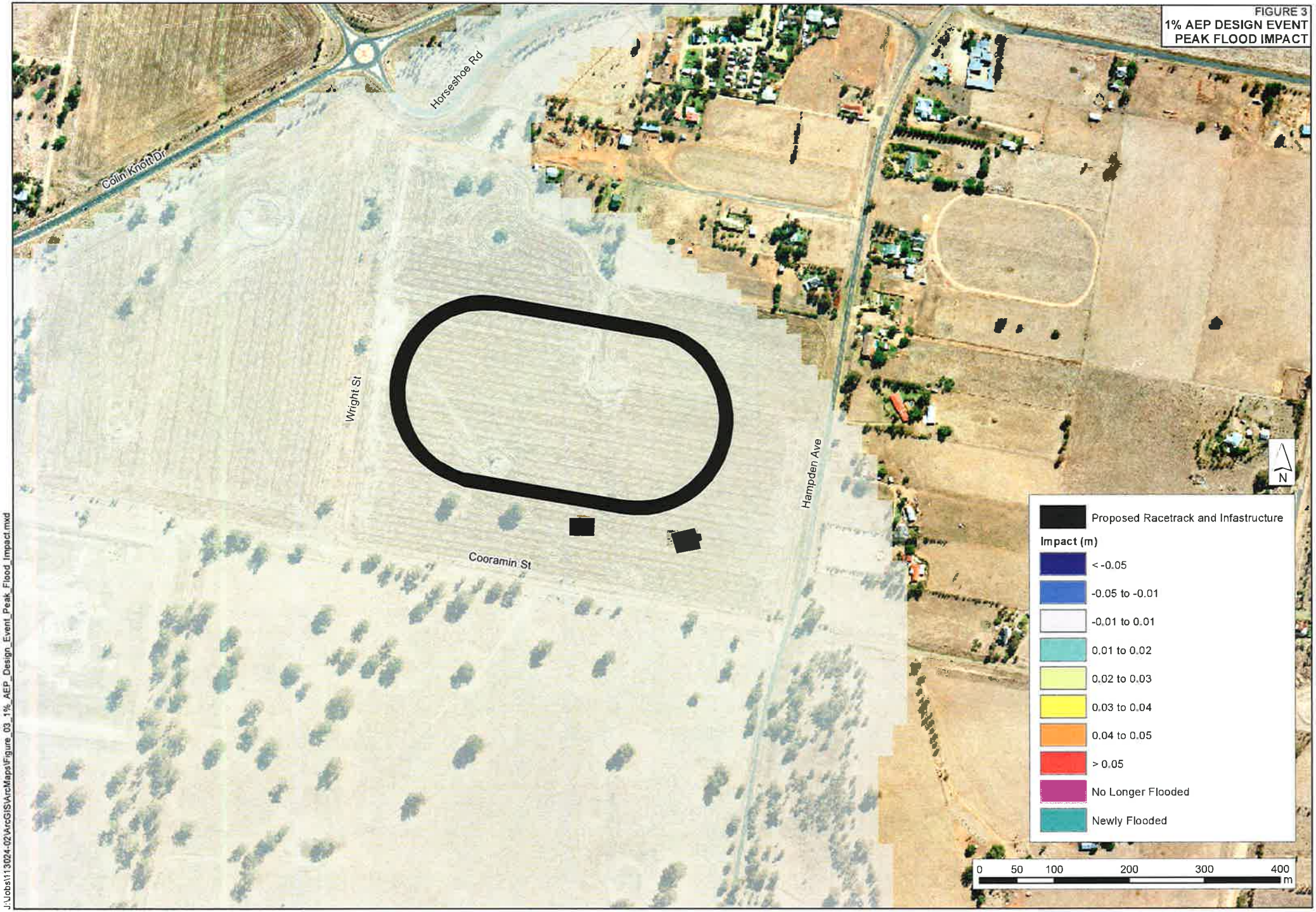

FIGURE 3
1% AEP DESIGN EVENT
PEAK FLOOD IMPACT

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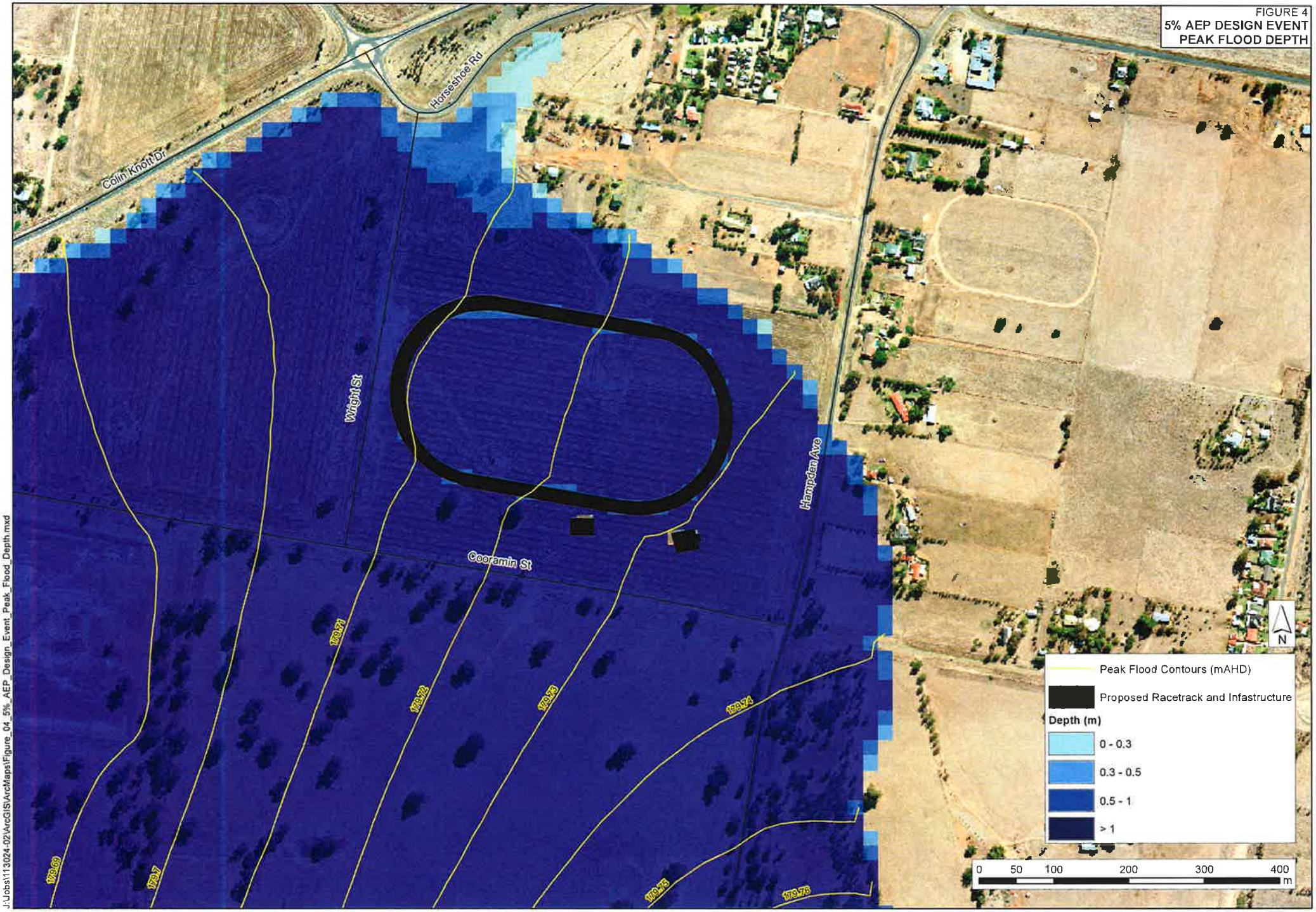

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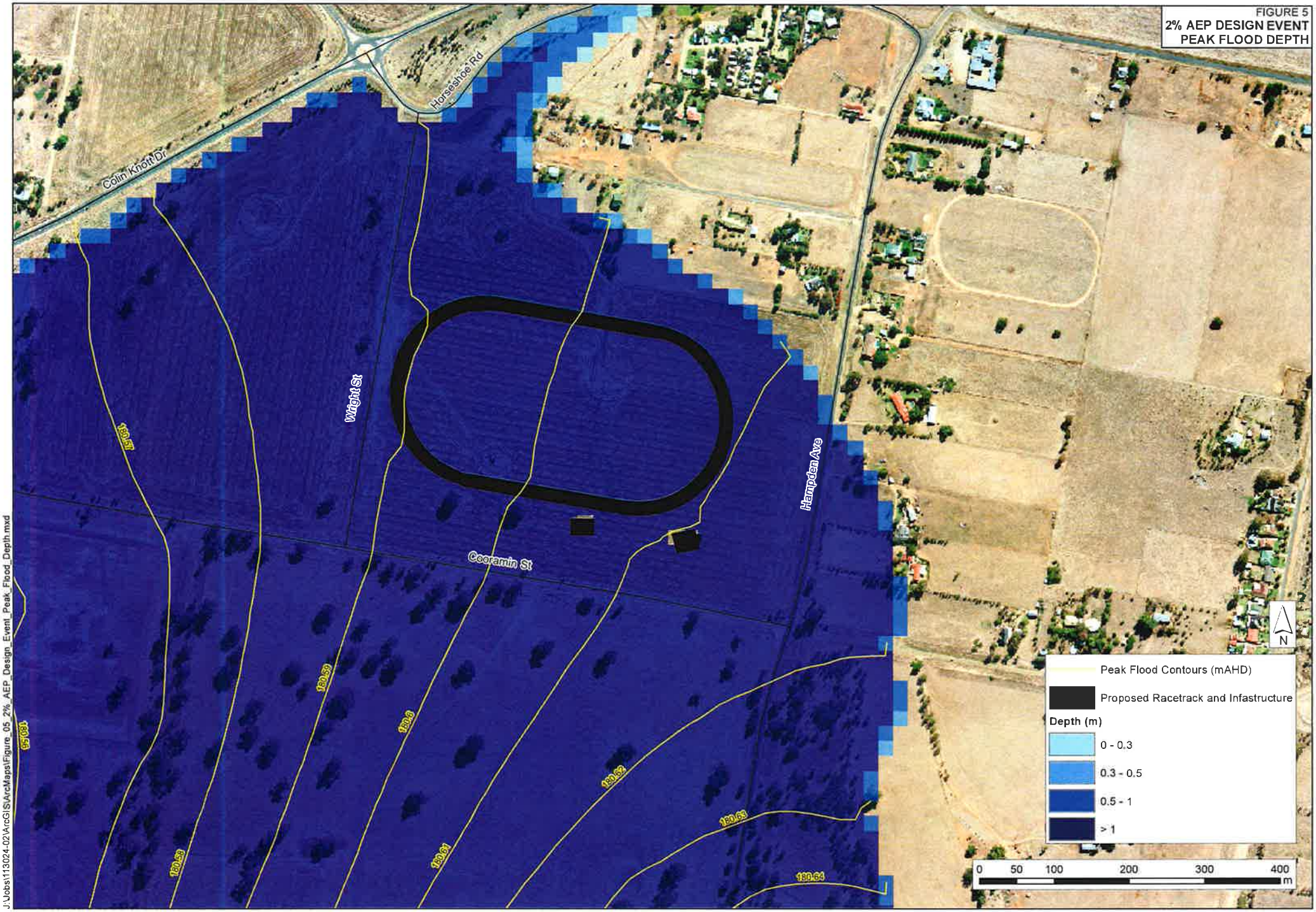

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